Evaluación de sistemas embebidos para un sistema avanzado de asistencia al conductor en ROS.

Nicolás Mosquera Seligmann

Evaluación de sistemas embebidos para un sistema avanzado de asistencia al conductor en ROS.

Nicolás Mosquera Seligmann

Trabajo de grado para optar al título de:
Magíster en Ingeniería Electrónica
con énfasis en Control y Automatización Industrial

Director:
Ing. Javier Alberto Chaparro Preciado PhD.

Codirector:
Ing. Javier Evandro Soto Vargas PhD.

Escuela Colombiana de Ingeniería Julio Garavito
Maestría en Ingeniería Electrónica
Bogotá D.C., Colombia
2019

Nota de aceptación:

La tesis de maestría titulada "Evaluación de sistemas embebidos para un sistema avanzado de asistencia al conductor en ROS", presentada por Nicolás Mosquera Seligmann, cumple con los requisitos establecidos para optar al título de Magíster en Ingeniería Electrónica con énfasis en Control y Automatización.

_____

Director de Trabajo de Grado

_____

Jurado

_____

Jurado

Bogotá, D.C., 16 de mayo de 2020

La aventura solo empieza cuando acompañas la falta de miedo con educación.

Con todo mi amor, para mi Familia.

Agradecimientos

Un agradecimiento especial al Ingeniero Javier Chaparro PhD., quien fue mi director y apoyo en este proyecto,. Agradezco al Ingeniero Javier Soto MSc. PhD., quien me motivo a involucrarme en este proyecto, así como a la empresa Millenium BPO, por permitirme ayudarles con mis conocimientos y la Escuela Colombiana de Ingeniería Julio Garavito por suministrar las tarjetas necesarias para la realización del mismo. Doy gracias por su colaboración al equipo de laboratoristas del programa de Ingeniería Electrónica de la Escuela Colombiana de Ingeniería Julio Garavito. Agradezco al programa de maestría de la Escuela Colombiana de Ingeniería Julio Garavito y a su director, Ingeniero Alexánder Pérez MSc. PhD. por todo su apoyo y consejos. Agradezco a mis amigos en especial la familia Gomez-Anderson que de una forma u otra me han apoyado incondicionalmente y motivado a culminar este proceso. Finalmente agradezco a mi familia en especial a mi madre Myriam Seligmann por ser un ejemplo a seguir.

A todos ustedes, muchas gracias.

Resumen

A continuación se presenta el Trabajo de Grado de Maestría en Ingeniería Electrónica de la Escuela Colombiana de Ingeniería Julio Garavito. Trabajo que ha sido desarrollado dentro del marco del proyecto de investigación e innovación de convocatoria interna denominado *"Sistema de asistencia a conductores basado en monitoreo de parámetros internos y externos de un automóvil"*.

Se buscó determinar si la aplicación de sistemas embebidos en la ejecución de un algoritmo de medición de parámetros internos como la hipovigilancia y fatiga en un sistema avanzado de asistencia del conductor puede reemplazar el uso de computadoras comerciales. Lo anterior con el objetivo puntual de lograr una reducción en los costos de implementación de estas tecnologías contribuyendo de manera directa en la masificación comercial de estos sistemas en el mercado local. En el desarrollo de este trabajo se realizó un análisis de contexto para determinar las características de selección de los sistemas embebidos más idóneos para su posterior implementación en un modelo de pruebas.

Se realizó la evaluación del uso de sistemas embebidos para la disminución de costos de un Sistema Avanzado de Asistencia al Conductor especifico enfocado en la de detección de parámetros internos: Fatiga e hipovigilancia, desarrollado previamente en el proyecto de investigación *"Diseño e implementación del prototipo de un sistema de asistencia al conductor basado en el monitoreo de parámetros de un conductor al interior de un vehículo"*, se buscó evaluar el desempeño de el algoritmo previamente desarrollado sobre diferentes sistemas embebidos analizando el uso de la memoria y la carga computacional en el sistema operativo, determinado así si estos sistemas embebidos pueden ser utilizados como unidades de computo como factor reducción de costos en comparativa a un computador comercial.

Palabras clave: ADAS, SoC, Microcontroladores, Sistemas embebidos, ROS, Computador de placa reducida, Fatiga, Hipovigilancia.

Abstract

This document presents the investigation for the Master deegre in Electronic Engineering, work which is developed within the framework of the internal research and innovation projects *" Driver assistance system based on monitoring internal and external parameters of a vehicule"*.

It is sought to determine if the application of embedded systems in the execution of an algorithm for measuring internal parameters as such as hypovigilance and fatigue in an advanced driver assistance system can replace the use of high-performance commercial computers. The above with the specific objective of achieving a cost reduction of implementing these technologies contributing directly to the commercial massification of these systems in the local market.

In the development of this work, a context analysis was carried out to determine the selection characteristics of the most suitable embedded systems for later implementation in a test model.

The evaluation of the use of embedded systems for the reduction of costs of the Advanced Driver Assistance Systems focused on the detection of internal parameters was carried out: Fatigue and hypovigilance, previously developed in the research project *" Design and implementation From the prototype of a driver assistance system based on monitoring parameters of a driver inside a vehicle "*, we sought to evaluate the performance of a previously developed algorithm on different embedded systems analyzing the use of memory and the computational load in the operating system, determined if these can be used as computing units as cost reduction compared to a commercial computer.

Keywords: ADAS, SoC, Microcontrollers, Embedded systems, ROS, Single board computer, SBC, Fatigue, Hypovigilance.

Contenido

Lista de Figuras

Lista de Tablas

Lista de símbolos

Símbolos con letras latinas

Símbolo	Término	Unidad SI
f	Frecuencia	Hz

Unidades de información

Término	Magnitud	Símbolo	Equivalencia
bit	Unidad binaria SI	b	
byte	Múltiplos del bit SI	B	$1B = 8bits$

Múltiplos de bits o bytes SI

Nombre	Símbolo	Múltiplo SI
Kilo	K	10^3
Mega	M	10^6
Giga	G	10^9
Tera	T	10^{12}
Peta	P	10^{15}
Exa	E	10^{18}
Zetta	Z	10^{21}
Yotta	Y	10^{24}

Múltiplos de bits o bytes ISO/IEC

Nombre	Símbolo	Múltiplo ISO/IEC
Kibi	Ki	2^{10}
Mebi	Mi	2^{20}
Gibi	Gi	2^{30}
Tebi	Ti	2^{40}
Pebi	Pi	2^{50}
Exbi	Ei	2^{60}
Zebi	Zi	2^{70}
Yobi	Yi	2^{80}

Acrónimos

Glosario

ADAS-Karlo Algoritmo de detección Fatiga e Hipovigilancia diseñado en el trabajo de investigacion *"Diseño e implementación del prototipo de un sistema de asistencia al conductor basado en el monitoreo de parámetros de un conductor al interior de un vehículo"*. 5, 9, 11, 25–27, 29, 32, 35, 36, 38, 39, 57, 59–61

BIOS sistema básico de entrada-salida, del inglés: *Basic Input/Output System*. 30, 60, 61, 158, 159

fotopletismografía Procedimiento optico medienate el cual por medido de una imagen se puede obtener el cambio volumen de un organo. 6

hipovigilancia "Trastorno cuantitativo de la estructura de la conciencia en el que existe una disminución del nivel de la atención y de la alerta"[7]. 2, 4–6, 9, 10

Rosbag Herramienta que permite grabar y reproducir las publicaciones de diferentes nodos en ROS. 19, 36–39, 57

1 Introducción

El desarrollo de vehículos autónomos es hoy día una de las mayores apuestas de los fabricantes de automotores en el mundo. Sus ventas anuales vienen creciendo a razón de 5.68 billones de dólares y representan hoy día el 5 % del mercado global [40].

Sin embargo, en Colombia el panorama de la comercialización y uso de este tipo de vehículos es todavía una realidad lejana. Situación que obedece a múltiples factores dentro de los cuales se puedem nombrar algunos como limitaciones legales, costos no competitivos, infraestructura vial deficiente y cobertura limitada de telecomunicaciones. No obstante, esto constituye un escenario de posibilidades para el desarrollo y aplicación de tecnologías emergentes como la propuesta a continuación.

Este proyecto se realiza en el marco del desarrollo de aplicativos que otorguen a los vehículos existentes la capacidad de ser autónomos, al menos, de forma progresiva con las herramientas con que se cuenta. Es de vital importancia comprender que uno de los factores más importantes que influyen en la implementación de estas aplicaciones es el costo que deben pagar los clientes y usuarios finales para su adquisición. Razón por la cuál se decidió intervenir directamente el problema proponiendo el uso de sistemas embebidos para reemplazar el uso de computadoras comerciales en la ejecución de aplicaciones y así lograr disminuir estos costos de forma crucial. Por último, para tal efecto se hizo la estricta selección de una lista de sistemas embebidos que se sometieron a pruebas de desempeño para establecer la viabilidad de su utilización en el corto y mediano plazo. Finalizado este proceso se concluyó que, efectivamente existe una amplia gama de posibilidades que pueden contribuir de forma positiva a la reducción de costos de producción de estos sistemas.

Adicionalmente se estima que, en el marco de la ley de economía creativa ley naranja que en su primer artículo profesa como objeto: "Desarrollar, fomentar, incentivar y proteger las industrias creativas."[9], y considerando que "En Colombia, durante 2017, la economía naranja representó 3,3 % del PIB, por encima de sectores como el cafetero (0,8 %) y el minero (2,2 %), una proporción importante, en un país en el que al petróleo le corresponde 7,5 %"[10] así como se espera la economía naranja impacte positivamente la economía Colombiana con un aumento en la contribución al 5 % del PIB en el periodo del 2018 al 2022[24]. Por esto se espera hacer un pequeño aporte

a mercado nacional con este proyecto teniendo como principio que estas tecnologías tienen un gran potencial explotación y de exportación.

1.1. Antecedentes

La Escuela Colombiana de Ingeniería en su contexto de investigación e innovación se encuentra realizando el proyecto *"Sistema de asistencia a conductores basado en monitoreo de parámetros internos y externos de un automóvil"* en conjunto con la empresa Millenium BPO S. A., este proyecto pretende desarrollar el prototipo funcional de un sistema de asistencia al conductor, que permita la generación automática de alarmas, cuando se detecten niveles de riesgo que puedan conllevar a un accidente de tránsito, involucrando componentes externos e internos a un automóvil.

Haciendo una revisión en el observatorio del Agencia Nacional de Seguridad Vial, se encontró que en Colombia se presentaron 6850 muertos y 39517 lesionados en accidentes de transito de enero a diciembre de 2018 [26], en adición a esto cada año más de 1,2 millones de personas en el mundo mueren por accidentes de tránsito y aproximadamente 50 millones de personas sufren de traumatismos, que con frecuencia, los afectaran por el resto de sus vidas [4].

Los constantes accidentes de transito y el incremento de estos producido por la hipoatención y/o fatiga de los conductores, se está convirtiendo en un problema en constante aumento en la sociedad actual, estadísticas muestran que el 20 % de los accidentes automovilísticos son causados por la hipovigilancia del conductor, así como el 60 % de accidentes fatales que involucran camiones son originados debido a la fatiga del conductor [5]. En Colombia, según un informe de la Federación de aseguradoras de Colombia (Fasecolda) los accidentes de tránsito en 2016 le costaron 3,6 billones de pesos al país [29].

1.1.1. Estados del Arte

La autonomía, en términos generales, se define como la capacidad de tomar decisiones sin la ayuda de agentes externos, por ejemplo, en el contexto de los robots móviles se hace referencia a la navegación como el hecho de explorar diversos tipos de ambientes sin intervención; La cual requiere una descripción topológica y métrica del entorno. Los sistemas autónomos son utilizados en diversos campos donde la intervención de los seres humanos no es necesaria, se espera que en un futuro ayuden a las tareas donde en la actualidad los seres humanos son irreemplazables [41].

Un ejemplo de la inclusión de sistemas autónomos a nivel masivo en la sociedad son los vehículos comerciales, los cuales se estima que para el año 2035 tendrán una

participación aproximada del 25 % del mercado global siendo 100 % autónomos el 10 % y el 15 % restante parcialmente autónomos como se muestra en la Figura 1-1. Actualmente grandes grupos empresariales muestran sus esfuerzos para lograr volver la conducción autónoma una realidad, un ejemplo de estos esfuerzos fue la exhibición realizada por la compañía Audi en 2015 donde se presentó un modelo de A7 altamente autónomo el cual condujo por si solo sin intervención humana por aproximadamente 900 km, al igual que Audi grandes empresas como BMW, GM, Nissan, Tesla y Volvo han mostrado grandes desarrollos en este segmento de vehículos en los últimos años [25].
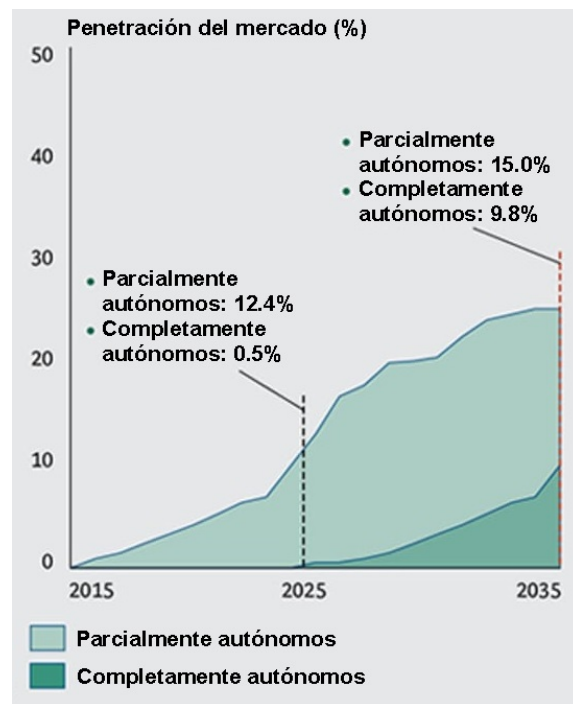
Figura 1-1: Mercado global vehículos Autónomos.

Modificado de[25].

En [36] se realizo un diseño de un Sistema Avanzado de Asistencia al Conductor (ADAS) con detección de parámetros externos al vehículo sobre un Computador de placa reducida (SBC), exactamente un sistema para detección y evasión de colisiones en prototipo a escala 1:10 de un automóvil real, usando un sensor láser para Detección y alcance de luz, del inglés: *Light Detection and Ranging* (LiDAR), una Unidad de medición inercial (IMU) y cuatro codificadores rotativos ubicados de forma independiente en las ruedas del vehículo. Con el uso de estos sensores se efectúa una ubicación espacial del vehículo y el entorno en el cual se encuentra, el software del sistema se implementó en un SBC BeagleBone Black (BBB). Como sistema operativo

se utilizó GNU/linux en una distribución Debian con Kernel mejorado para tareas
en tiempo real, se encontró que las dinámicas de cambio automático de manejo entre
el sistema embebido y el conductor influyen directamente en el sistema de evasión
de colisiones.

En [39], se presenta un enfoque de sistema para disminución de costos de pro-
ducción. Este sistema se diseñó con sensores de bajo costo y fusión sensorial para
una localización precisa del vehículo en aplicaciones de conducción autónoma. Co-
mo primera medida para la disminución de costos se propone cambiar el sensor
LiDAR por una cámara web de bajo costo, un receptor sistema global de navegación
por satélite (GNSS), un giróscopo, el codificador rotativo propio del vehículo y un
computador portátil como unidad de control electrónico (ECU), el vehículo utilizado
fue un VolksWagen Gol 1.6. Como trabajos futuros proponen investigar la viabilidad
de implementar el sistema en una SBC o incluso en un sistema en chip (SoC) como
reemplazo del computador portátil.

En [5] presentan un prototipo no intrusivo de visión por computadora para la
detección de parámetros internos al vehículo, a través de un proceso de vigilancia
para encontrar parámetros de fatiga en el conductor en tiempo real usando una
microcámara CCD, un digitalizador de video comercial, y un iluminador radiación
infrarroja (IR). El iluminador IR fue utilizado para asegurar que la variación de
iluminación día/noche sea lo menor posible. Como plataforma de software fue usado
un computador de escritorio con procesador Pentium IV. El sistema vigila la fatiga
en el conductor midiendo parámetros como: La duración de apertura y cierre de los
ojos, la frecuencia del parpadeo, la frecuencia de cabeceo, la dirección del rostro y
porcentaje del cerrado de los ojos (PERCLOS).

Un método para la detección de hipovigilancia del conductor es presentado en [3],
en este se desarrollo un algoritmo de detección de ojos cerrado y boca abierta para
la evaluación de la fatiga y la somnolencia del conductor. La detección del rostro
se hizo con una máquina de soporte vectorial (SVM) y la detección de los períodos
de microsueño mediante la identificación del iris, a partir de un novedoso método
para detectar el estado ocular del conductor y la detección de la frecuencia de los
bostezos.

Otro método de extracción de parámetros internos al vehículo es desarrollado en
[2], en este se presenta un algoritmo de detección del nivel de fatiga en el conductor
a partir de bostezos, el algoritmo extrae el rostro a través una SVM y detecta los
bostezos usando la transformada circular de Hough, el alcanza una exactitud del
98 % en la detección de fatiga del conductor usando una cámara web de bajo costo
y un computador portátil con un procesador Intel Core 2 Duo.

En Colombia el panorama de investigación de ADAS no es muy claro, unas pocas

referencias pueden encontrase. Como el diseño de un carro eléctrico impulsado por energía solar en el 2011 por parte de la Universidad Distrital Francisco José de Caldas [6] y un algoritmo de seguimiento de trayectorias y la detección del área navegable mientras el vehículo transita sobre un camino predefinido en el 2015 por parte de la Universidad Piloto de Colombia [32].

1.1.2. Proyecto conjunto con Millenium BPO S.A

En enero de 2019, la Escuela Colombiana de Ingeniería Julio Garavito hizo una alianza con la compañía Millenium BPO S.A (Bogotá, Colombia), para realizar de manera conjunta el proyecto de investigación denominado *"Sistema de asistencia a conductores basado en monitoreo de parámetros internos y externos de un automóvil"*. Se dio inicio al proyecto con el trabajo de grado de pregrado *"Diseño e implementación del prototipo de un sistema de asistencia al conductor basado en el monitoreo de parámetros de un conductor al interior de un vehículo"*. En esta primera parte del proyecto se lograron importantes avances en el desarrollo de algoritmos para la medición y comparación en tiempo real de factores que relacionan diferentes componentes del comportamiento de los conductores en la vía así como la detección de patrones relacionados con su grado de alerta, este algoritmo se desarrolló usando el entorno Sistema Operativo Robótico (ROS) y el sistema operativo Linux Ubuntu 16.04 LTS, una de las condiciones fundamentales del proyecto de investigación es el uso imperativo de ROS, este entorno "proporciona una capa de abstracción de hardware, en la que los desarrolladores pueden crear aplicaciones de robótica sin preocuparse por el hardware" [13] a la vez que permite modularidad, portabilidad, reutilización, mantenimiento entre otras características.

El objetivo del algoritmo consistió en la localización y detección de rostro del conductor. Una vez se lograron establecer los principales signos asociados con fatiga o hipovigilancia, el algoritmo fue capás de hacer comparaciones en tiempo real. En la Figura 1-2, se muestra el diagrama de flujo usado por el algoritmo. Para la ubicación del rostro se utilizó un descriptor de características basado en un histograma de gradientes orientados (HOG). Una vez realizada la ubicación se adquirieron las características faciales por medio de una cascada con funciones de regresión, la cual consiste en adquirir 68 características faciales Figura 1-3, usando el algoritmo disponible en la librería *Dlib* de Python.

Nota: Para efectos de síntesis de este documento, de ahora en adelante se denominara al Algoritmo de detección Fatiga e Hipovigilancia diseñado en el trabajo de investigacion *"Diseño e implementación del prototipo de un sistema de asistencia al conductor basado en el monitoreo de parámetros de un conductor al interior de un vehículo"* como ADAS-Karlo.
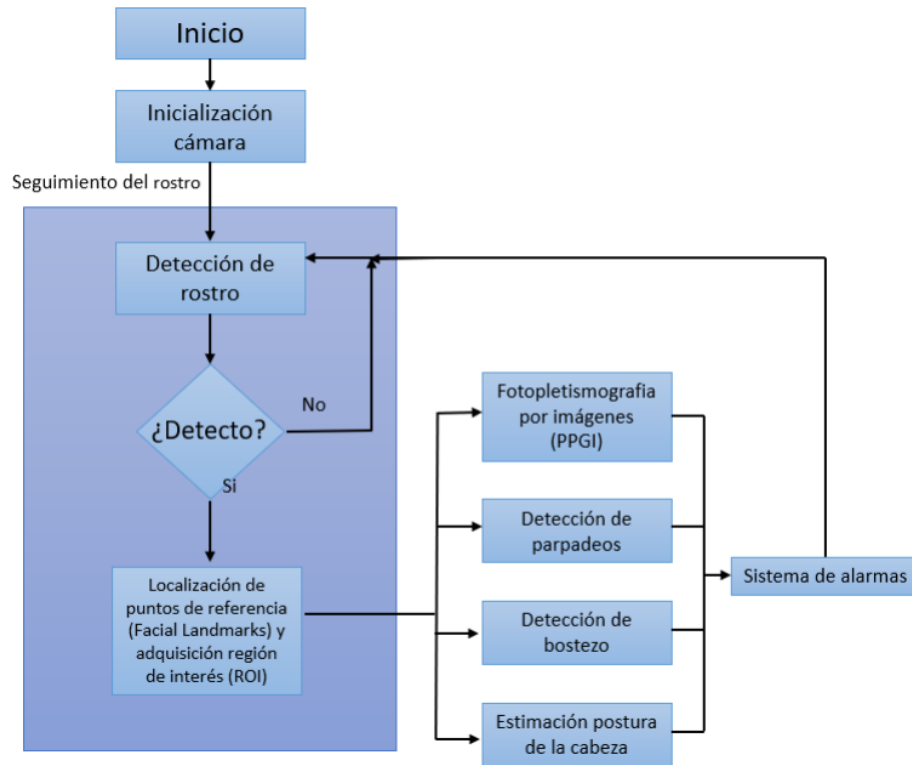
Figura 1-2: Diagrama de flujo para algoritmo de detección Fatiga e Hipovigilancia.

Tomado de[13].

Una vez se lograron identificar las características faciales, se segmentó la imagen obtenida para los diferentes módulos de monitoreo en distintas regiones de interés (ROIs), descritas a continuación:

- ROI Rostro completo: Para encontrar la estimación de la postura de la cabeza respecto a la cámara.

- ROI Frente y nariz: Rasgos necesarios para realizar el calculo de la frecuencia cardíaca utilizando fotopletismografía.

- ROI Boca: Relacionado con la detección de bostezos.

- ROI Ojos: Relacionado con la detección de parpadeos y PERCLOS.

El desarrollo de los algoritmos para las estimaciones y cálculos anteriormente mencionados, así como la integración de los mismo y la adquisición de imágenes se realizó utilizando el pseudo ROS dando como resultado un sistema de detección de fatiga e hipovigilancia en el conductor. Adicionalmente, el sistema se implementó usando
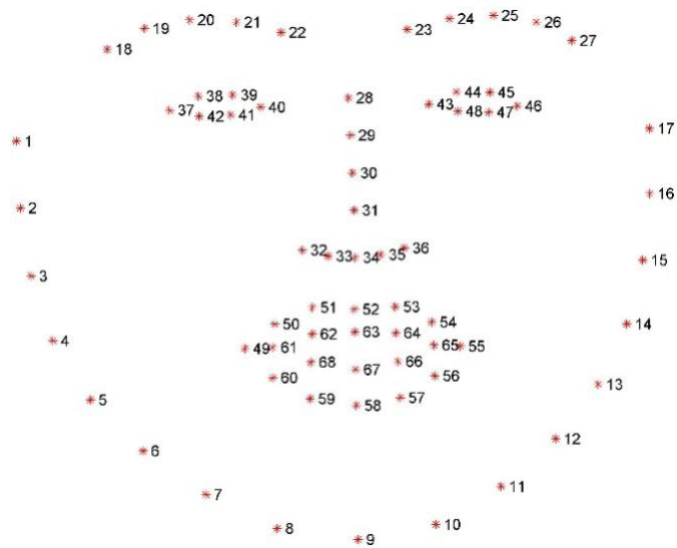
Figura 1-3: Características faciales (Facial Landmarks).

Tomado de[13].

una cámara de profundidad y un computador de escritorio con el sistema operativo
Ubuntu Desktop LTS 16.04 necesario para el uso de ROS[13].

1.2.   Planteamiento de Problema y Pregunta de Investigación

Una vez establecido el cómo los trastornos que disminuyen la alerta en conductores afectan de forma sistemática múltiples contextos de la sociedad. Desde grandes pérdidas de vidas humanas hasta costos exorbitantes en asistencia médica y legal, fueron apenas algunas de las razones de mayor peso que motivaron para tomar decisiones que logren aportar alguna solución. Esta situación constituyó un escenario ideal para que, desde los múltiples enfoques del conocimiento se aúnen esfuerzos para combatir los orígenes del problema. Es así como la Ingeniería puede ser un agente para generar grandes aportes. Para este caso concreto, se tomó la decisión de tomar un enfoque principalmente en la reducción de los costos de producción que implica el desarrollo de este tipo de proyectos. De esta forma afectar el grado de asequibilidad para los usuarios finales y favorecer la potencial aplicación de estos productos a los automotores que llenan las vías de Colombia en la actualidad [30].

Hasta el momento se han logrado grandes avances pero los costos van en contra vía de la intención que se tiene de hacer de estos equipos un bien masivo. Comprendiendo que se trata de una labor titánica pero con la creencia de que paso a paso y de forma evolutiva, se pueden lograr aportes que en sumatoria representen, en prospectiva, una reducción considerable de los índices. De ser así, se puede hablar de la posibilidad de que automóviles que no cuentan con estas tecnologías logren convertirse de forma simple en las versiones actualizadas que corresponden con las demandas del futuro en términos de movilidad.

Teniendo en cuenta lo anterior en relación con el contexto académico en el cuál La Escuela Colombiana de Ingeniería, de la mano de la compañía Millenium BPO S.A. y el trabajo de pregrado realizado por Karlo Gabriel Fonseca Yakovenko, se pudo determinar que, aun cuando el desarrollo de algoritmos para la lectura del comportamiento de un conductor al volante es una realidad, el costo estimado de un sistema completo (como se muestra en la Figura 1-4 [25]), es demasiado alto para considerarlo comercialmente competitivo. Se decidió entonces que era primordial la intervención de los componentes utilizados en los estudios previos con el fin de encontrar sustitutos que cumplan las mismas funciones a la vez que se reducen los costos de forma considerable y se hace un acercamiento a los requerimientos volumétricos espaciales con los que cuenta un automóvil. Dicho de forma más simple, lograr componentes más pequeños, de menor volumen y con las capacidades necesarias para la ejecución de los algoritmos. Para este proyecto puntual y considerando las limitaciones de los tiempos de prueba, se decidió intervenir el recurso que cumple con las características más razonables, el computador de escritorio.

De esta forma la pregunta de investigación consiste en cuál sería la alternativa más óptima a partir de la cuál se podría sustituir un computador de escritorio para la implementación de un Sistema Avanzado de Asistencia al Conductor (ADAS), en el marco de la aplicación del algoritmo resultado del trabajo denominado *"Diseño e implementación del prototipo de un sistema de asistencia al conductor basado en el monitoreo de parámetros de un conductor al interior de un vehículo"*. Cumpliendo con los requerimientos funcionales demandados por el código y sensores con el fin de reducir los costos de producción en pro su implementación comercial.

En los siguientes capítulos se profundiza la metodología para la selección de los equipos, de diseño de pruebas y condiciones para estudios así como de la presentación resultados de las pruebas y conclusiones. Se muestra cómo los sistemas embebidos parecen ser la respuesta más idónea a esta pregunta, la selección de los equipos utilizados y el proceso de sometimiento a pruebas de muestreo, recopilación y comparación de datos para su aplicativo en escenarios previamente establecidos.

El siguiente paso consistió en determinar qué equipo lograría cumplir de forma óptima con los requerimientos por un sistema embebido con precio menor a 150 dólares, así mismo tener la capacidad de ejecutar un sistema operativo Linux y ROS para la implementación del algoritmo ADAS-Karlo y realizar una evaluación de que sistema embebido puede ayudar en la reducción de costos, sin alterar sustancialmente el desempeño del algoritmo previamente desarrollado y descrito en el diagrama de flujo de la Figura 1-2.

El proyecto *"Diseño e implementación del prototipo de un sistema de asistencia al conductor basado en el monitoreo de parámetros de un conductor al interior de un vehículo"* se desarrolló específicamente con una cámara de profundidad Intel realsense SR300, con un costo estimado de 150 dólares, un computador de escritorio HP ProDesk 600 G2 con procesador Intel I5 y 4GB de RAM, con un costo estimado de 800 dólares, cuando se complete el proyecto a estos costos se deben sumar los componentes que permitan la extracción de parámetros externos como: láser Li-DAR, cámaras mono o estéreo, sensores ultrasónicos, sensores para odometría, entre otros. El costo de estos componentes adicionales oscila entre los 1500 hasta los 25000 dólares como se muestra en la Figura 1-4.

A medida que los conductores y los equipos se encuentran conectados con mayor frecuencia, los niveles de hipovigilancia aumentan de forma crítica; de hecho un estudio realizado por la Universidad de Carabobo durante el año 2013 concluyo que el 97 % de conductores conoce los riesgo de usar el celular mientras conduce, un promedio del 72 % realiza y toma llamadas y el 64 % redacta y recibe mensajes mientras conduce [1].

En 2014 [27] resalto la tendencia a la alta de la relación rendimiento/precio de los
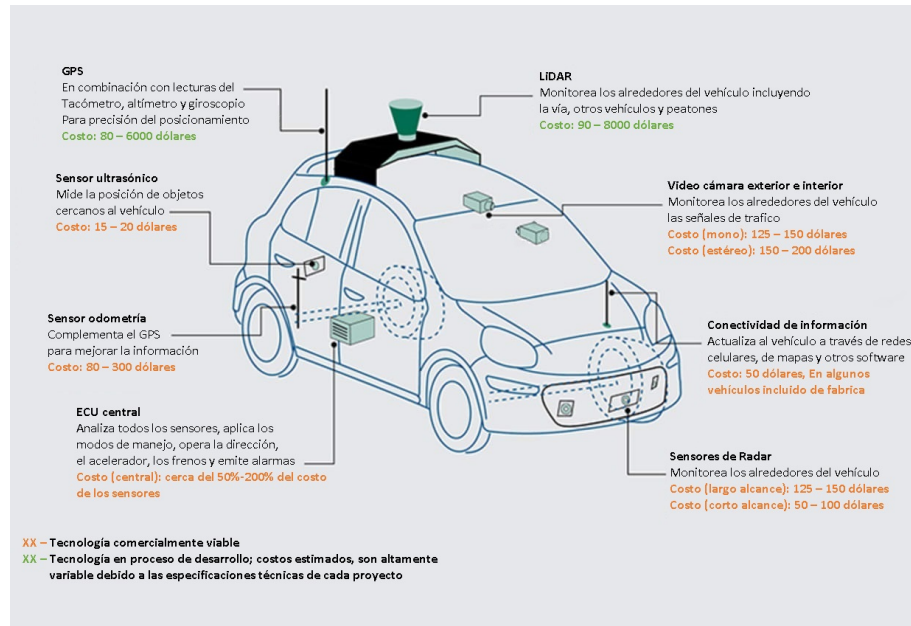
Figura 1-4: Precios de sensores y dispositivos electrónicos en un vehículo con ADAS.

Modificado de [25].

sistemas embebidos. Esta tendencia ha permitido que nuestra vida diaria dependa cada día mas de los sistemas embebidos [12], con un crecimiento exponencial de la tecnología disponible como alternativa para incrementar y a disminuir los costos de diferentes aplicaciones, entre ellas los ADAS.

Se espera que la integración de ADAS en los vehículos entre 2018 y 2022 se encuentre en un precio entre los 5000 y 6000 dólares [25].

Realizar una evaluación de rendimiento de sistemas embebidos permite verificar si estos equipos pueden ser utilizado para ADAS, de esta manera reducir los costos y poder acercar los ADAS a los vehículos en el mercado Colombiano, con la finalidad de reducir la tasa de accidentalidad debido a hipovigilancia y fatiga con el sistema implementado en el proyecto previo.

Por lo mencionado anteriormente surge la siguiente pregunta de investigación: ¿Puede un sistema embebido de bajo costo remplazar un sistema de computo robusto en un ADAS previamente implementado como factor de reducción de costos?

1.3. Objetivos

1.3.1. Objetivo general

Evaluar la viabilidad y desempeño de Sistemas Embebidos de bajo costo, en la implementación de un Sistema Avanzado de Asistencia al Conductor (ADAS), para el monitoreo de parámetros internos al vehículo, como una alternativa para la reducción de costos de producción.

1.3.2. Objetivo específicos

- Identificar qué sistemas embebidos cumplen con los requerimientos para utilizar el Sistema Operativo Robótico (ROS), en el cuál fue implementado el algoritmo resultante ADAS-Karlo .

- Realizar una revisión técnica de sistemas embebidos de bajo costo existentes en el mercado. Seleccionar 3 posibles sistemas para su exposición a las pruebas de compatibilidad y rendimiento de ADAS-Karlo.

- Implementar el ADAS-Karlo en los tres Sistemas Embebidos seleccionados bajo condiciones ideales.

- Medir el desempeño (carga de procesamiento y uso de memoria), durante la ejecución de ADAS-Karlo en los Sistema Embebidos seleccionados previamente.

- Evaluación mediante comparación de resultados de desempeño de los tres Sistemas Embebidos para extracción de conclusiones sobre viabilidad.

1.4. Presentación del documento

Una vez expuestos los antecedentes del problema, así como haber formulado la pregunta de investigación y proponer los objetivos de este trabajo, en las siguientes lineas se presenta la estructura de este documento.

En el Capítulo 2 se hace una revisión bibliográfica de vehículos autónomos, los tipos de sistemas embebidos actuales en el mercado, El Sistema Operativo Robótico (ROS) y como medir de el desempeño.

En el Capítulo 3 se hace una exposición de la metodología de investigación diseñada, que pretenden dar cumplimiento a los objetivos planteados y asimismo responder la pregunta de investigación. Se definen los parámetros de selección de los

sistemas embebidos a evaluar, así como los criterios de evaluación para los sistemas embebidos seleccionados.

En el Capítulo 4 se describe de forma especifica el proceso de selección de los SBCs, así como el proceso de instalación de ROS, se define de forma especifica el protocolo de prueba para los SBCs.

En el Capítulo 5 se muestran en graficas y tablas los resultados obtenidos en los diferentes los SBCs seleccionados, asimismo se realiza el análisis de los resultados, teniendo como referencia los parámetros establecidos en la Metodología.

En el Capítulo 6 se realizan las conclusiones del proyecto, retomando los objetivos planteados y la pregunta de investigación. Posteriormente se hacen las sugerencias y recomendaciones observadas a lo largo del desarrollo del proyecto, brevemente se comentan las contribuciones del proyecto y finalmente se mencionan los posibles trabajos futuros.

Por último, se encuentran las referencias bibliográficas y los anexos.

2 Marco Referencial

En este capítulo se abordan las generalidades de los conceptos relevantes asociados los vehículos móviles autónomos, ADAS, sistemas embebidos, ROS y linux. Sin embargo, se recalca que en los siguientes capítulos se abordan las particularidades cuando correspondan.

2.1. Vehículos móviles autónomos

Desde la perspectiva de la robótica los robots autónomos no son tema nuevo, de hecho, estos robots llevan varias décadas en la industria realizando diferentes tipos de labores, desde robot de limpieza hasta robots de ensamblaje, varios de estos robos deben ser capaces de navegar y evitar colisiones en su área de trabajo la cual puede o no ser conocida. Una de las aplicaciones más comunes de la robótica son los vehículos móviles autónomos, los cuales deben incluir sensores que les permitan navegar en diferentes entornos[34].

Uno de los problemas más difíciles a los que se enfrentan los vehículos móviles autónomos consiste en la localización y evasión de colisiones. En diferentes casos el vehículo puede obtener la información de su localización y la localización de diferentes objetos, con los cuales podría tener una posible colisión, esto mediante la fusión sensorial . La planeación del movimiento se ha convertido un en campo muy estudiado que le ha permitido ser utilizada en diversas aplicaciones en las que se pueden incluir el mapeo de entornos inexplorados y/o navegación de entornos cambiantes [33].

Con el objetivo de que el vehículo realice tareas de movimiento de forma segura, evitando colisiones, debe tener cierto nivel de inteligencia y capacidad de poder realizar una debida planeación del movimiento. La planeación del movimiento de un vehículo autónomo es una meta importante entre la inteligencia artificial y la robótica. Es además un área importante de investigación, pues si se realiza una planeación adecuada del movimiento el vehículo realizará las tareas de movimiento siguiendo rutas evitando los obstáculos interpuestos por el entorno reduciendo las posibilidades de colisión[34].

Según el libro *Principles of Robot Motion*: "Una de las tareas más importantes de un sistema autónomo de cualquier tipo es adquirir conocimiento sobre su entorno.

Esto se hace tomando medidas usando varios sensores y luego extrayendo información significativa de esas mediciones" [34]. Los sensores que utilizan los vehículos no son sensores ideales dado que se rigen bajo las leyes físicas, la incertidumbre y restricciones geométricas establecidas por la naturaleza, por lo tanto, el análisis de las señales generadas por estos y el diseño de algoritmos de planificación de movimiento usando esta información debe plantear combinación única de preguntas en mecánica, teoría de control, geometría computacional y diferencial e informática que permita al vehículo interactuar con su entorno exitosamente a pesar de la incertidumbre de la medición de los mismos[33, 34].

2.1.1. Sistemas Avanzados de Asistencia al Conductor (ADAS)

Los Sistemas Avanzados de Asistencia al Conductor (ADAS) en si son un conjunto de sistemas enfocados en proveer asistencia al conductor en diferentes aspectos, estos pueden funcionar conjunta o independientemente, algunos están incluidos directamente en la fabricación de los automóviles o disponibles como paquetes adicionales que se pueden incluir en el momento de la compra del automóvil a modo de lujo, y otros son soluciones adicionales provistas por el mercado. Uno de los propósitos principales de estos sistemas es la conducción segura, buscando reducir la accidentalidad en las vías [19]. La asistentes a la conducción están contenidos en un espectro muy amplio de aplicaciones, estas pueden ir desde interacción con su teléfono móvil, asistencia para el parqueo, diagnóstico del automóvil, aviso de intento de robo o avisos de posibles colisiones, donde este último es de especial interés para el presente proyecto de investigación.

A continuación, se presenta una lista de los posibles sistemas de asistencia que se pueden encontrar [19]:

- Visión nocturna automática.

- Monitor de puntos ciegos.

- Sistema que permitan evitar accidentes.

- Sistema de detección de somnolencia del conductor.

- Asistencia en intersecciones.

- Adaptadores de velocidad inteligentes o avisos de velocidad inteligentes (ISA – Intelligent Speed Advice).

- Sistema de advertencia de salida de carril.

- Asistente para cambios de carril.

- Sistemas de protección contra peatones.

- Reconocimiento de señales de tráfico.

- Control automático de velocidad.s

- Iluminación adaptable.

- Sistemas de navegación automática.

2.2. Sistemas Embebidos

Los sistemas embebidos y entre ellos los SBCs de hoy en día se han vuelto tan poderosos que están comenzando a tener la capacidad computacional de las tabletas modernas y hasta los computadores portátiles o de escritorio [27] con precios mucho menores que los computadores convencionales, en algunos casos estos pueden partir desde los 35 dólares.

Los sistemas embebidos y los microprocesadores o procesadores de propósito general se encuentran correlacionados desde su invención. Tanto así que puede asegurar, que sin los procesadores los sistemas embebidos no existirían, el termino embebido/integrado se refiere a los procesadores contenidos en cualquier dispositivo electrónico que evidentemente no es un computador [21].

Los microprocesadores en fusión con un software o firmware óptimo permiten implementar sistemas complejos, pero al tiempo con una flexibilidad en formas que no eran posibles antes de que estos mismos existieran [21], un ejemplo de esto son los SBCs y más especifico la Raspberry Pi, un SBC que desde su lanzamiento en el 2012 ha revolucionado el mercado de estos dispositivos.

Los sistemas embebidos pueden dividirse en tres categorías:

- Sistemas en chips (SoCs).

- Circuitos integrados para aplicaciones específicas (ASICs).

- Arreglos de compuertas programables en campo (FPGAs).

2.2.1. Sistemas en chips (SoCs)

Los SoCs son chips que integran todos los componentes de un computador o un sistema electrónico. Por lo general, pero no como regla única, un SoC puede contener

un microprocesador o un microcontrolador con periféricos avanzados como memorias compartidas, unidades de procesamiento grafico, entre otros, en su interior. Y pueden clasificarse en diversos tipos como:

- Microprocesadores (MPUs).

- Microcontroladores (MCUs).

- Procesadores digitales de señales (DSPs).

- Unidades de procesos gráficos (GPUs).

Un MPU es circuito electrónico pequeño y sencillo que posee en una escala reducida las funciones de una unidad central de procesamiento (CPU), se podría decir que es un computador pequeño al cual se le deben añadir los periféricos externamente para su funcionamiento, reloj, memorias, interfaces de entrada salida, temporizadores, entre otros.

Un MCU es un circuito integrado que contiene en su interior un MPU y diversos periféricos básicos dentro del mismo chip, este diverge de los computadores de escritorio o portátiles ya que están diseñados para tareas específicas y ejecutan un único programa que se encuentra contenido en la memoria de programa interna. Se dice que es el primer sistema embebido creado ya que en su interior contiene diversos componentes.

Un DSP es un circuito integrado basado en la estructura de un MPU, su estructura en hardware y el conjunto de instrucciones se encuentra modificado para poder realizar operaciones numéricas a alta velocidad, de manera general son utilizados en el procesamiento de señales análogas en tiempo real.

Una GPU es un co-procesador segmentado a diversas unidades funcionales, por esta razón tienen la facilidad de realizar diferentes procesos en forma paralela, con estas prestaciones se tornar amigables para ser utilizados en el procesamiento de video u operaciones en coma flotante aligerando así la carga del procesador principal, debido a que en la mayoría de los casos los algoritmos no son paralelizables siguen siendo acompañados y manejados por MPU o CPU.

Computadores de placa reducida (SBCs)

Por otro lado los SBCs ya son un sistema independiente totalmente integrado, el cual contiene un SoC de cualquier tipo además de otros componentes y conectores, puede pensarse como el cerebro humano el SoC y el cuerpo el SBC.

En principio SBC hace referencia a Computador de placa única, es decir un sistema implementado en un único circuito impreso que contiene el SoC, las memorias,

interfaces entrada y/o salida y diferentes dispositivos integrados. Estos sistemas de placa única pueden comportarse como un computador de recursos limitados listo para usar. Un ejemplo es *Dyna-micro* el primero de estos el cual fue construido a mediados de los años 70, estos pequeños computadores se distinguen de los computadores convencionales ya que no poseen ranuras de expansión para periféricos adicionales, como tarjetas de Audio, tarjetas graficas, tarjetas de comunicaciones, tarjetas de expansión de memoria, entre otras, esto quiere decir que hay un margen muy reducido de expansión de las capacidades computacionales en los SBCs [27].

2.2.2. Circuitos Integrados para aplicaciones específicas (ASICs)

Un ASIC es un circuito integrado de uso específico, es decir este ha sido diseñado para una realizar una función particular y solo esa función, este no puede ser usado para otro propósito. Los SoC comenzaron siendo ASICs hasta que a mediados de 1995 MCUs se transformaron en núcleos independientes incluidos en los circuitos integrados [21].

2.2.3. Arreglos de compuertas programables en campo (FPGAs)

Las FPGAs son circuitos integrados diseñados para ser re-configurables en cualquier momento, principalmente usadas para el prototipado rápido de sistemas lógicos, están diseñadas a partir de bloques lógicos configurables, permitiendo implementar cualquier sistema lógico en su interior. Son dispositivos volátiles, por está razón generalmente se encuentran acompañadas de una memoria que permite la re-configuración de la misma en el momento del encendido. Las FPGAs pueden ser utilizadas para prototipar y/o diseñar MPUs, MCUs, SoCs, por esto mismo algunas veces toman el nombre de sistema en chip programable (SoPC).

2.3. Sistema Operativo Robótico (ROS)

ROS es una plataforma de código abierto, una colección de herramientas, librerías, controladores y convenciones que como meta tienen simplificar la tarea de crear robots. Fue creado con la idea central de que los robot hagan cosas, y que la gente no requiera de años escribiendo códigos para lograrlo. Es un ecosistema de desarrollo de software compartido. Esto se puede demostrar considerando que la distribución

oficial ROS Kinetic en este momento cuenta con más de 2500 paquetes de uso libre publicados y soporte a más de 130 robots [14].

Una de las ventajas más grandes que presenta ROS, es que no se tiene que desarrollar todo de cero, esto genera que se pueda dar mas tiempo a pensar en que poner a hacer al robot, que en desarrollar controladores.

ROS consta de las siguientes partes [14]:

- Un set de controladores que permite leer el estado de diversos de sensores y escribir comando a actuadores. Diversos dispositivos de Hardware son soportados, incluyendo una gran variedad de sistemas robóticos comerciales.

- Una gran y creciente colección de algoritmos básicos para robots, algoritmos que permiten realizar mapeo y localización simultáneos (SLAM), entre otros. La popularidad de ROS ha causado que la comunidad de investigación de robótica comparta muchos de los algoritmos de vanguardia.

- Una infraestructura que permite al computador mover datos, conectar diversos componentes de un robot e incorporar algoritmos propios. ROS se distribuye de forma inherente y permite dividir la carga de trabajo varios computadores sin problemas.

- Herramienta que ayudan a: la visualización del estado del robot y el comportamiento de los algoritmos, depurar comportamientos indeseados, y grabar un set de datos de diversos sensores. Este conjunto de herramientas permite que realizar la depuración del software del robot sea más sencilla.

- El ecosistema que ha creado ROS incluye un amplio conjunto de recursos, como un wiki que documenta muchos de los aspectos del entorno de trabajo, un sitio de preguntas y respuestas donde se puede pedir ayuda y compartir los conocimientos adquiridos, y una gran comunidad de usuarios y desarrolladores.

la distribución oficial ROS Kinetic soporta de manera estable y oficial los siguientes sistemas operativos [37]:

- Linux Ubuntu 15.10 Wily.

- Linux Ubuntu 16.04 LTS Xenial.

De manera experimental oficial y no oficial:

- OS X (Homebrew).

- Linux Gentoo.

- Linux OpenEmbedded/Yocto.

- Linux Debian 8.11 LTS Jessie.

2.3.1. Rosbag: Registro y análisis de datos en ROS

Rosbag es una herramienta que permite grabar y reproducir mensajes publicados por los nodos de ROS, a continuación se describen algunas de las ventajas del uso de los Rosbags [14]:

- Depurar nuevos algoritmos, ya que le permite ejecutar el mismo algoritmo con los mismos datos de entrada indefinidas veces.

- Permite grabar datos y luego utilizar estos datos guardados en diferentes algoritmos, esto permite desarrollar algoritmos sin la necesidad de tener que usar el robot todo el tiempo, al igual que

- Realizar una captura de datos de uno o varios dispositivos y realizar pruebas estandarizadas diferentes códigos con el mismo conjunto de datos.

2.4. Medición de desempeño del sistema embebido

Como se indico en Sección 2.3 una de las condiciones principales que debe tener el sistema embebido es la capacidad de usar el sistema operativo sobre el cual funciona ROS, teniendo en cuenta que de manera oficial solo esta soportado Linux Ubuntu, el desarrollo de este trabajo se realizara con la versión LTS.

2.4.1. Carga de trabajo del sistema operativo

A medida que más y más software se produce y se ejecuta para sistema operativo Linux, las pruebas de rendimiento de estos software basadas en el Kernel de Linux se están volviendo importantes, tanto así que es posible asegurar que las pruebas de rendimiento del software basadas en el Kernel del sistema nos pueden dar una visión única del software [22].

Hoy en día, la mayoría de los procesadores proporcionan un conjunto de contadores de rendimiento con lo cuales se realiza la medición de eventos clave asociados a la microarquitectura como: ciclos de reloj transcurridos, numero de instrucciones retiradas, predicciones erróneas de saltos, desaciertos de la memoria caché y búfer

de traducción anticipada, del inglés: *translation lookaside buffer* (TLB), entre otros.
Estos eventos permiten un análisis detallado del desempeño del software y pueden
ser utilizados para diversos procesos entre ellos y en el que se centra este trabajo:
la caracterización de la carga de trabajo. hoy en día estos contadores se encuentra
implementados directamente en el chip en una unidad lógica llamada unidad de
monitoreo de desempeño, del inglés: *Performance Monitoring Unit* (PMU) y son
integrados en núcleos físicos del procesador, controladores de caché de último nivel,
controladores de memoria, tarjetas gráficas y dispositivos de E/S [8, 35].

Cuando se analiza el desempeño, uno de los primeros pasos es obtener los paráme-
tros del sistema, esto puede realizarse a través del sistema de archivos virtual /proc o
también llamado como un sistema de pseudoarchivos de información de proceso , en
la Tabla 2-1 se pueden apreciar algunos de los ficheros del sistema de pseudo archivos
la información que contiene cada uno de ellos más relevantes a este proyecto.

Tabla 2-1: Sistema de pseudo archivos /proc.

Modificado de [22, 31, 35].

Nombre del directorio de archivos	Contenido
cpuinfo	información de la cpu
meminfo	información sobre el uso de la memoria, incluida la memoria física y la memoria de intercambio
swaps	Información de la partición de intercambio
version	Versión del Kernel
ioports	Puertos de E/S usados actualmente
locks	información de bloqueos del Kernel

Al analizar el rendimiento, una forma de comenzar puede ser con el comando "top"
o el comando "cat /proc/loadavg", en estos comando el parámetro de "promedio
de carga" es de particular interés, dentro de este se encuentran tres mediciones,
que hacen referencia a el promedio de carga en el último 1 minuto, los últimos 5
minutos y los últimos 15 minutos. Este valor se encuentra normalizado al numero
de núcleos/hilos de la CPU, es decir que, para un valor de referencia de 1.00 en
un sistema de un único nucleo todos los ciclos de la CPU se han utilizado para
la ejecución de procesos, y no hay procesos esperando a ser ejecutados, ni ciclos
de reposo. Entonces, por ejemplo, en un sistema de cuatro núcleos y ocho hilos, el

valor de referencia sería 8.00, un valor de 2.00 indicaría que solo el 25 % de la carga de computacional esta siendo requerida [16, 22, 28, 31, 35, 38], Para identificar el valor de referencia del sistema computacional pueden usarse los comandos "nproc" o "lscpu".

Tener un sistema que funcione exactamente al valor de referencia o mayor no significa que el sistema no sea apropiado, por ejemplo: una tarea en la que se copia el disco duro completo a un dispositivo nulo. Esta tarea también contribuirá fácilmente a una carga de trabajo superior al valor de referencia, pero debido a que hay muchas esperas de los dispositivos de E/S involucradas, la carga dela CPU analizada de manera individual no proporciona demasiada información útil acerca de los procesos de la CPU y se limita sola a la carga del sistema, por lo mismo cuando se observen que la CPU tiene una carga cercana al valor de referencia, debería descubrir por qué está tan ocupada [28, 38].

Una forma más asertiva de analizar la carga de la CPU se puede realizar con el porcentaje de uso de cada uno de los núcleos, una vez ejecutado el comando "top" y seguido se presiona la tecla uno "1" se obtendrá una tabla valores como los de la Figura 2-1, en rojo se subrayan los valores para el análisis de carga[28, 38].

Figura 2-1: Monitoreo desempeño comando "top".

En la Figura 2-1 se observan los valores específicos del uso de la CPU en porcentajes, donde:

- "%us(user)": Muestra el uso de la CPU en procesos del usuario.

- "%sy(system)": Muestra el uso de la CPU en procesos del Kernel del sistema.

- "%ni(nice)": Muestra el uso de la CPU en procesos de baja prioridad.

- "%id(idle)": Muestra el uso de CPU en reposo(disponible para utilizar).

- "%wa(waitng)": Muestra en porcentaje la cantidad de tiempo que la CPU está esperando a los dispositivos de E/S.

- "%hi(hardirqs)": Muestra en porcentaje la cantidad de tiempo que la CPU está procesando interrupciones por hardware.

- "%si(softirqs)": Muestra en porcentaje la cantidad de tiempo que la CPU está procesando interrupciones por software.

- "%st(steal time)": Muestra en porcentaje la cantidad de tiempo que la CPU real no estaba disponible para la máquina virtual actual.

2.4.2. Uso de memoria del sistema operativo

Otro parámetro importante para analizar el rendimiento de una aplicación en el sistema operativo es analizar el uso de memoria. Al igual que con la carga se puede estudiar el estado de memoria usando los comandos "top", "cat /proc/meminfo" o "free -m" en la Figura 2-1 se muestra en verde la información relevante a la memoria en dos linea, la primera linea es la memoria física instalada en el sistema donde [28, 38]:

- "total": Muestra la memoria total instalada.

- "free": Muestra la memoria disponible.

- "used": Muestra la memoria usada.

- "buff/cache": Muestra el uso de memoria por escrituras en las paginas del caché y buffers del Kernel.

La segunda linea hace referencia a la memoria de intercambio del sistema, donde:

- "total": Muestra la memoria total de intercambio.

- "free": Muestra la memoria de intercambio disponible.

- "used": Muestra la memoria de intercambio usada.

- "avail Mem": Hace referencia aun estimado de cuánta memoria está disponible para iniciar nuevas aplicaciones, sin tener en cuenta la memoria de intercambio.

La memoria de intercambio puede o no estar disponible dependiendo de si en la instalación del sistema operativo se asigno espacio a dicha partición, en caso de estar disponible el tamaño de esta depende de la asignación del usuario en el momento de la instalación y es de suma importancia tener en cuenta que la asignación de esta se realiza como una partición no utilizable por el usuario en el sistema disminuyendo la capacidad de almacenamiento disponible en el disco duro [28, 38].

3 Metodología

Esta investigación es de carácter científico cuantitativo experimental. Se plantea un enfoque netamente positivista en donde los datos arrojados por pruebas de laboratorio pre-diseñadas y ejecutadas en un ambiente controlado, se convierten en la información base para la descripción del comportamiento de los elementos a ser investigados. En los siguientes capítulos se hará un listado completo de cada uno de los pasos argumentando cada decisión tomada a lo largo del proceso de estudio, desde la selección de los elementos, el diseño de las pruebas, el sistema de recopilación de datos, el sistema de comparación de datos y por último la publicación de conclusiones.

Como primera medida se definen los parámetros de evaluación, para luego desarrollar el trabajo propuesto en las siguientes fases: 1) Adaptación e Instalación ROS, 2) Toma de datos y 3) Análisis y discusión de resultados.

3.1. Selección de los sistemas embebidos

Para la selección de tres sistemas embebidos se definieron las especificaciones mínimas que debían cumplir los sistemas, tanto en características técnicas, como en necesidades de Hardware requeridas, con respecto a las siguientes requerimientos:

- Establecer los criterios de selección con respecto a Hardware para los sistemas embebidos.

- Establecer los criterios de selección con respecto a Software para los sistemas embebidos.

- Realizar una matriz comparativa de las posibles tarjetas en el mercado que cumplen los criterios de selección establecidos.

3.1.1. Criterios de selección con respecto a Hardware

El primer criterio para la selección del sistema embebido se determino escogiendo qué tipo es el mejor para la aplicación deseada, con respecto a la Tabla 3-1 y como

primera restricción el costo, Se propuso por la Escuela Colombiana de Ingeniería y Millenium BPO S.A. que el valor de los sistemas debía ser cercano a los 150 USD. Así mismo para dar cumplimiento a los objetivos del proyecto conforme a los tiempos académicos se estableció que el sistema debía cumplir con las siguientes características:

- El Tiempo para comercialización, del inglés: *time to market* (TTM), se estableció en seis semanas dado que la duración del proyecto corresponde idealmente a dos periodos académicos o 32 semanas, de las cuales las primeras 16 correspondieron a los procesos de planteamiento del proyecto y las siguientes 16 a la ejecución y documentación del mismo.

- Bajo consumo energético dado que es de carácter imperativo cuidar el estado del vehículo, especialmente el de la batería, se definió el consumo en un valor menor a 40 vatios teniendo como referencia la potencia promedio que puede suministrar el conector de 12 voltios de un vehículo convencional.

- Alto desempeño computacional que corresponda a la demanda de procesamiento de las cámaras de profundidad y otros periféricos adjuntos.

Tabla 3-1: Comparativa sistemas embebidos.

Modificado de [11, 12, 15, 18, 23].

Sistema embebido	SoC	FPGA	ASIC
Funciones del modulo	Variable	Programable	Fijo
Velocidad	Media-Alta	Media	Alta
Viabilidad económica sujeta a cantidades	<1000	<1000	>100000
TTM de la aplicación	Días	Semanas	Año
Desempeño	Medio-Alto	Bajo	Alto
Consumo energético	Bajo	Alto	Bajo

Una vez establecidos estos parámetros se logró inferir que los sistemas que mejor se adaptan a los diferentes requerimientos y el tiempo dispuesto para la elaboración de esta etapa del proyecto son los SoCs. Del mismo modo vale la pena hacer énfasis en la Sección 2.2.1, en donde se argumenta que los SBCs son placas de desarrollo

listas para su uso, las cuales para el caso del desarrollo de un prototipo, como el que se desea lograr en la culminación del proyecto, pueden impactar positivamente en el TTM logrando una contribución aún mayor a los tiempos de la elaboración de esta etapa del proyecto, como criterio adicional se tuvo en cuenta que los sistemas pudieran ser de fácil adquisición mediante el proceso de compras realizado por la Escuela Colombiana de Ingeniería Julio Garavito.

El segundo criterio de selección se formuló teniendo en consideración que ADAS-Karlo fue desarrolló con una cámara de profundidad Intel Realsense SR300. Esta cámara funciona a través de una interfaz USB 3 para la comunicación [17]. Por esta razón, los SBCs deben contar con, al menos, una interfaz de comunicaciones USB 3.x.

3.1.2.   Criterios de selección con respecto a Software

Como se indicó en la Sección 2.3 es imperativo el uso de alguna distribución oficial de Linux para el uso de ROS. Para el caso especifico de este proyecto, este criterio fue de mayor importancia teniendo como requisito que se deseaba adaptar el algoritmo ADAS-Karlo a los SBCs, el cual fue desarrollado con el uso ROS Kinetic. Así la distribución oficial soportada de manera estable corresponde a Linux Ubuntu 16.04 LTS (Xenial Xerus). El uso de este sistema operativo constituyo que los SBCs que cumplan con las determinantes expuestas en la Subsección 3.1.1, debían imperativamente tener la capacidad de ejecutar ROS Kinetic y por ende Linux Ubuntu 16.04 LTS (Xenial Xerus) o las diferentes versiones experimentales oficiales y no oficiales.

3.2.   Criterios para la evaluación para los computadores de placa reducida

Las variables e indicadores seleccionados para evaluar el desempeño de ADAS-Karlo son la carga de la CPU y el uso de la memoria RAM y de intercambio como se describió en Sección 2.4. De igual manera, para dar cumplimiento a los objetivos del proyecto *"Sistema de asistencia a conductores basado en monitoreo de parámetros internos y externos de un automóvil"*, se requiere que el sistema tenga un alto grado de flexibilidad pronosticando que eventualmente puede hacerse necesaria la adición del algoritmo de parameros internos, así como el mejoramiento del algoritmo existente, incluyendo la lectura de diversos sensores no incluidos en la formulación de este proyecto, a razón de estos parámetros se establecen las siguiente métricas como criterios de evaluación:

- Teniendo en cuenta que el algoritmo ADAS-Karlo es solo la parte de medición de parámetros internos, se establece que la carga promedio del procesador no debe ser mayor al 40 %.

- Para cada uno de los núcleos de la CPU, de manera independiente, se espera que la suma de el porcentaje de tiempo ocupado en los procesos *user, system, nice y waiting* no supere el 40 % tiempo, de la misma forma se espera que el tiempo del proceso *idle* se encuentra en porcentaje mayor al 50 %.

- El uso de la memoria RAM o de intercambio en la etapa de ejecución del algoritmo no debe superar el 30 % de la capacidad total del sistema.

Con estas métricas se puede asegurar que se cuenta con la carga computacional y la memoria del sistema suficientes para integrar de manera adicional un algoritmo de medición de parámetros externos o/y sensores adicionales que permitan mejorar la detección de parámetros internos, sin afectar el rendimiento de ADAS-Karlo. En la Tabla 3-2 se puede ver la descripción de las variables de estudio para medir el desempeño de los SBCs en este proyecto:

Tabla 3-2: Definición de las variables de estudio.

Variable	Unidad	Descripción
Carga promedio de la CPU	Adimensional	Mide la carga del sistema operativo en unidades de núcleos/hilos disponibles.
Porcentajes de carga individual de núcleos de la CPU	Porcentaje de tiempo activo	Mide el tiempo de los núcleos de la CPU en los diferentes procesos ejecutados *us(user), sy(system), ni(nice), id(idle), wa(waitng), hi(hardirqs), si(softirqs) y st(steal time)* Sección 2.4.
Memoria física	MB	Mide la memoria total, disponible, usada, escrituras en las paginas del caché o buffers del Kernel y disponible en el sistema operativo.
Memoria de intercambio	MB	Mide la memoria total, disponible y en uso por el sistema operativo.

4 Diseño

Los contenidos abordados en los Capítulo 2 y Capítulo 3 arrojan como una primera conclusión las condiciones con que deben cumplir los sistemas embebidos seleccionados para este estudio, siendo estos los SoCs. Teniendo en cuesta el costo y tiempo de fabricación que puede tomar un desarrollo con este tipo de dispositivos y los tiempos de duración establecidos se decidió hacer uso de sistemas previamente desarrollados como lo son los SBCs.

Este capitulo se divide en tres partes: la primera parte detalla el proceso de selección de los tres SBCs, la segunda parte hace referencia al proceso general de instalación del ADAS-Karlo y la tercera describe la prueba diseñada y ejecutada para evaluar los diferentes SBCs.

4.1. Matriz para la selección computadores de placa reducida

Cómo se describió en la Sección 3.1, los SBCs debían cumplir un mínimo de especificaciones técnicas con respecto a hardware y software. Para la selección de los tres SBCs se acordó de forma conjunta entre los investigadores de la Escuela Colombiana de Ingeniería y Millenium BPO S.A realizar una matriz de selección con pesos que contuviera las siguientes categorías:

- Nombre de la tarjeta.

- Fabricante.

- Sistema en chip (SoC).*
    - Numero de bits del procesador / Núcleos de la CPU / Hilos de la CPU.
    - Frecuencia máxima del procesador / memoria cache.

- Potencia máxima disipada.

- Interfaces USB3.x.*

- Memoria RAM.*

- Tipo de almacenamiento.*

- Soporte por parte del fabricante o comunidades de soporte.*

- Pros.*

- Contras.*

- Cargador necesario para funcionamiento.

- Costo del sistema por unidad en dólares a la fecha.*

- Enlace web de la tarjeta.

- Disponibilidad efectiva de compra (Por factores de tiempo y formas de pago se utilizó la tienda en linea seleccionada por el área de compras de la Escuela Colombiana de Ingeniería).*

- Imagen de referencia de cada tarjeta.

Las categorías marcadas con asteriscos correspondieron a los factores de evaluación para la compra de las diferentes tarjetas, a estas categorías se les asignó un valor de 1-5 siendo 1 el puntaje más alto y 5 el más bajo. Una vez revisados todos los parámetros y asignados todos los pesos, estos fueron sumados. Seguido de esto se escogieron las tarjetas con los mejores resultados. Al final se tomó como un factor adicional la disponibilidad de las tarjetas en el mercado y se realizó el proceso necesario para la adquisición de tres (3) SBCs (ver el anexo Matriz de selección SBCs para revisión de los detalles de selección de todas las tarjetas).

Es importante reiterar que existen otros tipos de sistemas embebidos en el mercado que potencialmente podrían funcionar como los ASICs o FPGAs, los cuales no se tuvieron en cuenta para el desarrollo de este proyecto ya que no pueden cumplir con algunos de los factores que ya fueron establecidos, tales como el tiempo de desarrollo y producción, entre otros. Ya que el propósito de este proyecto es presentar los SBC como solución de reducción de costos para el desarrollo de un sistema ADAS, más no el encontrar la mejor tarjeta para desarrollarlo. Como se puede observar en la Tabla 4-1 se adquirieron dos (2) SBCs con SoC Intel y uno (1) con SoC ARM.

Tabla 4-1: Computadores de placa reducida escogidos en el proceso de selección.

SBC	Arquitectura SoC	SoC	Memoria RAM	Almacenamiento Masivo
Atomic Pi	MPU x64-x86	Intel Atom Z8350	2GB DDR3L-1600	16GB eMMC, expandibles hasta 256GB usando tarjetas SD.
LattePanda 4G/64G	MPU x64-x86 + MCU	Intel Atom Z8350 + ATmega32u4	4GB DDR3L-1600	64GB eMMC + lector de tarjetas SD.
Raspberry Pi 4 Model B	ARM Cortex-A72	Broadcom BCM2711	4GB LPDDR4-3200	Lector de tarjetas SD.

4.2. Instalación del sistema en los computadores de placa reducida

En esta sección se describen de manera general los procedimientos de instalación del algoritmo ADAS-Karlo, el sistema operativo Linux y la instalación de ROS en los SBCs.

Para cualquiera de las dos instalaciones es muy importante anotar que la librería dlib debe ser instalada sin soporte al set de instrucciones AVX, ya que los SoCs utilizados en este proyecto no poseen ese tipo de set de instrucciones.

4.2.1. Instalación en dispositivos Intel

Este apartado proporciona una descripción general de la instalación del algoritmo ADAS-Karlo en los SBCs con SoC Intel, empezando por la instalación del sistema operativo Ubuntu Server 16.04.6 LTS (Xenial Xerus), seguido de la instalación de ROS y Docker.

1. Instalación Ubuntu Server 16.04.6 LTS (Xenial Xerus).

   a) Descargar la imagen .ISO del sistema operativo `http://releases.ubuntu.com/16.04/ubuntu-16.04.6-server-amd64.iso` o puede descargar una versión alternativa desde `http://cdimage.ubuntu.com/releases/`

   b) Usar el software Rufus `https://rufus.ie/` para grabar la imagen .ISO en la USB.

c) Insertar la USB en el SBC, conectar el computador presionando la tecla
"escape" para entrar al menú del BIOS, seleccionar la USB como dispo-
sitivo de arranque "boot", guardar los cambios y reiniciar con la USB
conectada.

d) Instalar el sistema operativo (para más información de cómo realizar la
instalación puede usar el siguiente tutorial `https://tutorials.ubuntu.`
`com/tutorial/tutorial-install-ubuntu-server-1604`). Se recomien-
da asignar al menos 8GB a la partición "/root", el mismo espacio de
memoria RAM para la memoria de intercambio y el espacio sobrante para
la partición "/home".

2. Instalación ROS, Dlib, Docker y paquetes necesarios.

a) Instalación ROS-base y paquetes complementarios

```
 1  # This script configures the desktop computer in
         order to be used in ROS program development
 2
 3  # Add Universe and Multiverse packages repository
 4  sudo apt−add−repository restricted
 5  sudo apt−add−repository universe
 6  sudo apt−add−repository multiverse
 7  sudo apt−get update
 8  sudo apt−get upgrade −y
 9
10  # Now, is time to install ROS!!
11  sudo sh −c 'echo "deb http:// packages.ros.org/ros/
         ubuntu $(lsb_release −sc) main" > /etc/apt/sources
         .list.d/ros−latest.list '
12  sudo apt−key adv −−keyserver 'hkp://keyserver.ubuntu.
         com:80' −−recv−key
         C1CF6E31E6BADE8868B172B4F42ED6FBAB17C654
13  sudo apt−get update
14  sudo apt−get install ros−kinetic−ros−base −y
15  sudo apt−get install python−rosdep −y
16  sudo rosdep init
17  rosdep update
18  echo "source /opt/ros/kinetic/setup.bash" >> ~/.
         bashrc
19  source ~/.bashrc
```

```
20
21  #Configuring ROS enviroment
22  sudo apt−get install ros−kinetic−cv−bridge −y
23
24  #Installing ros−camera packages
25  sudo apt−get install ros−kinetic−usb−cam −y
26  sudo apt−get install ros−kinetic−cv−camera −y
```

b) Instalación Dlib, Docker y paquetes complementarios

```
 1  # Now, is time to install python−dev and pip!!
 2  sudo apt−get install python−dev python−pip −y
 3
 4  #Install open−cv and python needed packages
 5  sudo pip install numpy
 6  sudo pip install imutil
 7  sudo apt−get install python−opencv −y
 8  sudo   apt−get install python−scipy −y
 9
10  #Installing dlib libraries
11  git clone https://github.com/davisking/dlib.git
12  cd dlib
13  sudo python setup.py install −−no
        USE_AVX_INSTRUCTIONS
14
15  #Installing real sense camera drivers
16  sudo apt−key adv −−keyserver keys.gnupg.net −−recv−
        key C8B3A55A6F3EFCDE || sudo apt−key adv −−
        keyserver hkp://keyserver.ubuntu.com:80 −−recv−key
        C8B3A55A6F3EFCDE
17  sudo add−apt−repository "deb␣http://realsense−hw−
        public.s3.amazonaws.com/Debian/apt−repo␣xenial␣
        main" −u
18  sudo apt−get install realsense−uvcvideo
19
20  #Installing ans starting docker
21  sudo apt−get install docker.io −y
22  sudo systemctl start docker
23  sudo docker pull nicmoseli/adas_eci:latteV1.1
```

3. Instalación algoritmo ADAS-Karlo

   a) Descargar la carpeta fuente del algoritmo ADAS-Karlo previamente, disponible en git.

   b) Copiar la carpeta "Flotas-Master" en la ubicación "~/" esta carpeta contiene el desarrollo realizado en ROS ADAS-Karlo.

Una vez terminados los siguientes pasos solo es necesario acceder a la carpeta donde se encuentra el script que lanza el contenedor de docker que se encarga de ejecutar el algoritmo.

```
1  cd ~/Flotas−master/camara/scripts/docker
2  sudo ./script.sh
```

4.2.2.   Instalación en dispositivo ARM

Este apartado proporciona una descripción general de la instalación del algoritmo ADAS-Karlo en el SBC con SoC ARM, empezando por la instalación del sistema operativo Raspbian GNU/Linux 10 (buster) basado Debian GNU/Linux 10 (buster), seguido de la instalación de ROS.

1. Instalación Raspbian GNU/Linux 10 (buster).

   a) Descargar la imagen .IMG del sistema operativo `https://downloads.raspberrypi.org/raspbian_lite_latest`, o puede descargar una versión alternativa desde `https://downloads.raspberrypi.org/raspbian_lite_latest`.

   b) Usar el software balenaEtcher `https://www.balena.io/etcher/` para grabar la imagen .IMG en la tarjeta SD.

   c) Insertar la tarjeta SD en el SBC, conectar el computador y seguir las instrucciones de instalación del sistema operativo (para más información de como realizar la instalación puede usar el siguiente tutorial `https://www.raspberrypi.org/documentation/installation/installing-images/README.md`).

2. Instalación ROS, Dlib, compilación de los paquetes de ROS.

   a) Instalación ROS-base y paquetes complementarios

```
1  # This script configures the desktop computer in
       order to be used in ROS program development
```

```
 2
 3  # Setup ROS Repositories
 4  sudo sh −c 'echo "deb http :// packages . ros . org/ros/
        ubuntu $( lsb_release −sc) main" > /etc/apt/sources
        . list .d/ros−latest . list '
 5  sudo apt−key adv −−keyserver hkp ://ha . pool . sks−
        keyservers . net :80 −−recv−key
        C1CF6E31E6BADE8868B172B4F42ED6FBAB17C654
 6  sudo apt−get update
 7  sudo apt−get upgrade
 8
 9  # Installing Bootstrap Dependencies
10  sudo apt−get install −y python−rosinstall−generator
        python−wstool python−rosinstall build−essential
        cmake libpoco−dev
11  git clone https :// github .com/ros−infrastructure/
        rosdep . git
12  cd rosdep
13  sudo python setup . py install
14  sudo rosdep init
15  rosdep update
16
17  # Installation ROS−base
18  mkdir −p ~/ros_catkin_ws
19  cd ~/ros_catkin_ws
20  rosinstall_generator ros_comm −−rosdistro kinetic −−
        deps −−wet−only −−tar > kinetic−ros_comm−wet .
        rosinstall
21  wstool init src kinetic−ros_comm−wet . rosinstall
22
23  # Resolve Dependencies
24  mkdir −p ~/ros_catkin_ws
25  cd ~/ros_catkin_ws/external_src
26  wget http :// sourceforge . net/projects/assimp/files/
        assimp−3.1/assimp−3.1.1_no_test_models . zip/
        download −O assimp−3.1.1_no_test_models . zip
27  unzip assimp−3.1.1_no_test_models . zip
28  cd assimp−3.1.1
```

```
29  cmake .
30  make
31  sudo make install
32  cd ~/ros_catkin_ws
33  sudo apt-get --purge remove libboost-all-dev libboost
        -doc libboost-dev
34
35  # Get and Install boost 1.58 https://www.boost.org/
        users/history/version_1_58_0.html
36  wget https://managedway.dl.sourceforge.net/project/
        boost/boost/1.58.0/boost_1_58_0.tar.gz
37  tar -xf boost_1_58_0.tar.gz
38  cd boost_1_58_0
39  ./bootstrap.sh
40  sudo ./b2 install -j4
41
42  # Installing aditional packages
43  cd ~/ros_catkin_ws
44  rosinstall_generator ros_comm geometry_msgs
        realsense2 dynamic_reconfigure console_bridge
        sensor_msgs nodelet cv_bridge image_transport tf
        ddynamic_reconfigure diagnostic_updater --
        rosdistro kinetic --deps --wet-only --tar >
        kinetic-custom_ros.rosinstall
45  wstool merge -t src kinetic-custom_ros.rosinstall
46  wstool update -t src
47  sudo ./src/catkin/bin/catkin_make_isolated --install
        --DCMAKE_BUILD_TYPE=Release --install-space /opt/
        ros/kinetic -j4
48  source /opt/ros/kinetic/setup.bash
49  echo "source /opt/ros/kinetic/setup.bash" >> ~/.
        bashrc
```

b) Instalación Dlib y paquetes complementarios

```
1  # Installing dlib
2  sudo apt-get update
3  sudo apt-get install libopenblas-dev liblapack-dev
        libatlas-base-dev
```

```
 4  git clone https://github.com/davisking/dlib.git
 5  cd dlib
 6  python setup.py install --no USE_AVX_INSTRUCTIONS
 7
 8  # Installing necessary python libraries
 9  sudo apt-get install python-dev python-pip -y
10  sudo pip install imutil imutils
11  sudo  apt-get install python-scipy -yes
```

3. Instalación algoritmo ADAS-Karlo

   a) Descargar la carpeta fuente del algoritmo ADAS-Karlo previamente, disponible en git.

   b) Crear la carpeta del espacio de trabajo.

   ```
   1  mkdir -p ~/catkin_ws/src
   ```

   c) Copiar el contenido de la carpeta "Flotas-Master" en la ubicación "~/catkin_ws/src".

   d) Compilar el algoritmo para su funcionamiento.

   ```
   1  cd ~/catkin_ws/
   2  catkin_make
   ```

Una vez terminados los siguientes pasos solo es necesario referenciar el paquete compilado y ejecutar el algoritmo.

```
1  cd ~/ros_catkin_ws
2  source devel/setup.bash
3  roslaunch camara camara_visual.launch
```

4.3. Prueba de los computadores de placa reducida

Teniendo en cuenta los parámetros que permiten realizar la evaluación desempeño obtenidos en el Sección 2.4 y los criterios de evaluación definidos en Sección 3.2, en esta sección se detalla la generación de la prueba y la realización de la misma para los diferentes SBCs. De igual manera se describe el proceso de medición de las variables de interés.

Para la prueba se almacenaron aproximadamente 42 minutos de registros adquiridos por la cámara de profundidad Intel RealSense SR300, en un sujeto expuesto a factores que produjeron características de fatiga, se realizó el almacenamiento de estos en Rosbags usando un nodo de grabación. Por cuestiones de tamaño final y posterior lectura fue necesario fragmentar la prueba en 21 Rosbags cada uno de 2 minutos y aproximadamente 3GB de uso del disco duro. Una vez terminada la prueba se remplazó el nodo grabación de la cámara por un nodo de reproducción con los conjuntos de datos de los 21 Rosbags adquiridos previamente.

4.3.1. Código de ejecución en Bash para la obtención de las variables de interés

Para medir las variables de interés y determinar el desempeño de los SBCs ejecutando el ADAS-Karlo, se realizó la grabación de una prueba, se desalloró el Código 4.1 para bash de Linux. Con este es posible hacer un registro de las variables de carga del procesador y uso de la memoria en los SBCs cada treinta segundos en un rango de tiempo especificado en un archivo de texto plano como se muestra en la Figura 4-1 (El contenido de los archivos se encuentra en el anexo Archivos de texto plano).

Para evaluar de forma eficaz la carga de ADAS-Karlo en los diferentes sistemas se propusieron dos tipos de prueba diferentes:

```
Sat Dec 14 17:17:46 CST 2019 top - 17:17:46 up  3:05,   2 users,  load average: 0.00, 0.00, 0.05
%Cpu0  : 15.4 us,  6.7 sy,  0.0 ni, 75.5 id,  1.9 wa,  0.0 hi,  0.5 si,  0.0 st
%Cpu1  : 14.8 us,  6.3 sy,  0.0 ni, 77.6 id,  1.1 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 14.0 us,  6.5 sy,  0.0 ni, 77.5 id,  1.8 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 13.8 us,  6.5 sy,  0.0 ni, 77.8 id,  1.8 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,  3195988 free,   126028 used,   644308 buff/cache
KiB Swap:  4116476 total,  4085244 free,    31232 used.  3528028 avail Mem
Sat Dec 14 17:18:16 CST 2019 top - 17:18:16 up  3:05,   2 users,  load average: 0.00, 0.00, 0.05
%Cpu0  : 15.4 us,  6.7 sy,  0.0 ni, 75.5 id,  1.9 wa,  0.0 hi,  0.5 si,  0.0 st
%Cpu1  : 14.8 us,  6.3 sy,  0.0 ni, 77.7 id,  1.1 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 14.0 us,  6.5 sy,  0.0 ni, 77.5 id,  1.8 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 13.7 us,  6.4 sy,  0.0 ni, 77.8 id,  1.8 wa,  0.0 hi,  0.2 si,  0.0 st
```

Figura 4-1: Captura en un archivo de texto plano.

- En la primera prueba, se ejecutó el script de medición de las variables a estudiar con una duración de 40 minutos, con el sistema en reposo, sin ningún otro proceso adicionales a los propios del sistema operativo. Con esta prueba se logró obtener una dimensión de la carga computacional que el sistema operativo produce en el SoC .

```
1  cd ~/scripts
2  ./script.sh 40
```

- En la segunda prueba, se ejecutó el script de medición de las variables a estudiar con una duración de 52 minutos acompañado del algoritmo con los conjuntos de datos de pruebas almacenados en los Rosbag. Con esta prueba se logró medir la carga de la CPU en cada uno de los sistemas. Asegurando que la prueba es la misma en los diferentes sistemas.

```
1  cd ~/scripts
2  ./script.sh 52
```

```
1  source devel/setup.bash
2  roslaunch camara
          camara_visual_bag.launch
```

Código 4.1: Adquisición de las variables de estudio

```bash
 1  #!/bin/bash
 2
 3  BASEDIR="${PWD}"
 4  time=40
 5  med=30
 6  echo "measurement_script_PID=_$PPID"
 7  if [[ ! -e ${BASEDIR}/test_data.txt ]]; then
 8      touch ${BASEDIR}/test_data.txt
 9      echo "File_created_Succesfuly!"
10  else
11      echo "File_opened_Succesfuly!"
12  fi
13
14  echo "test_param_=__$#"
15  if [ $# -lt 1 ]; then
16          let time=40
17          echo "test_<1"
18  elif [ $# -eq 1 ]; then
19          let time=$1\*2
20          echo "test_=1_$time"
21  else
22          echo "error"
23  fi
24
25  while [ $time -gt 0 ]; do
26      echo "$(date)_$(top_-bn1_|_grep_-e_"load"_-e_"
          Cpu"_-e_"Mem")" >> ${BASEDIR}/test_data.txt
27      sleep $med
```

```
28        let  time—
29   done
30
31   exit
```

Al ejecutar el ADAS-Karlo con la prueba pre-cargada usando los Rosbags, el siste-
ma debe sincronizar las muestras con respecto a la marca de tiempo de cada conjunto
de datos. Este proceso tarda un promedio de 35 segundos por Rosbag como se pue-
de apreciar en la Código 4.2, este tiempo se determino con las marcas de tiempo
generadas y mostradas en consola por ROS al abrir cada uno de los 21 archivos,
dando un total aproximado de 12 minutos para la carga total de la prueba en todos
los SBC. A partir de este momento se da el comienzo formal de la ejecución de la
prueba. De igual manera, ROS genera una marca de tiempo al empezar el proceso
de indexación y adicionalmente se modifico el algoritmo para indicar el inicio de su
propia ejecución.

Código 4.2: Marcas de tiempo de carga de la prueba pregrabada.

```
[ INFO]  [1576468649.473034669]:  Opening  / root /Bags/
    Tesis_2019 −11−19−12−0.bag
[ INFO]  [1576468684.847991201]:  Opening  / root /Bags/
    Tesis_2019 −11−19−12−1.bag
[ INFO]  [1576468684.847991201]:  Opening  / root /Bags/
    Tesis_2019 −11−19−12−1.bag
[ INFO]  [1576468718.300791306]:  Opening  / root /Bags/
    Tesis_2019 −11−19−12−2.bag
[ INFO]  [1576468753.881525744]:  Opening  / root /Bags/
    Tesis_2019 −11−19−12−3.bag
[ INFO]  [1576468789.506191461]:  Opening  / root /Bags/
    Tesis_2019 −11−19−12−4.bag
. . .
. . .
La  prueba  empezo
         ('Current _Time _=',  '04:09:02')
```

5 Resultados y discusión

Como se estableció en la metodología, las variables de interés de este trabajo fueron la carga del procesador y el uso de la memoria. Con el fin de lograr estandarizar la prueba para todos los SBCs se utilizó un prueba pre-grabada usando Rosbags, a continuación se muestran los resultados obtenidos en cada uno de los SBCs.

5.1. Resultados

En esta sección se presentan y se explican los resultados organizados en tablas y graficas para cada uno de los SBCs:

- Atomic Pi.

- LattePanda.

- Raspberry Pi 4.

Asimismo, como se mencionó en la Subsección 4.3.1 se realizaron dos pruebas: La primera, de 40 minutos con los SBCs en estado de reposo, es decir sin carga computacional. Estos corresponden a todas las graficas (a). La segunda prueba, con un tiempo aproximado de 52 minutos con los SBCs ejecutando el algoritmo ADAS-Karlo correspondientes a todas las graficas (b).

En las graficas (b), se exponen los resultados de los SBCs cuando se encuentran realizando la ejecución de ADAS-Karlo, antes de iniciar los 40 minutos de prueba y como se explicó en la Subsección 4.3.1, existe un periodo de indexación de la grabación o carga previa al inicio de ejecución del algoritmo. Este proceso dura aproximadamente 12 minutos. En todas las graficas (b) divididas por una linea negra se encuentran el proceso de carga (izquierda), y ejecución (derecha).

5.1.1. Atomic Pi

En la Figura 5-1a se puede observar que la carga promedio del sistema operativo en reposo de la tarjeta Atomic Pi tiende a ser 0.0. En la Figura 5-1b se observa que la carga promedio de las CPUs en el periodo de carga del experimento sube máximo

a 2.2 o un 55.0 % de carga computacional. Teniendo en cuenta que el SoC incluido
en esta tarjeta tiene 4 núcleos de CPU. En el periodo de ejecución este disminuye
hasta un promedio de 1.3 o un 32.5 % de carga computacional.

(a) Carga promedio en reposo

(b) Carga promedio en ejecución
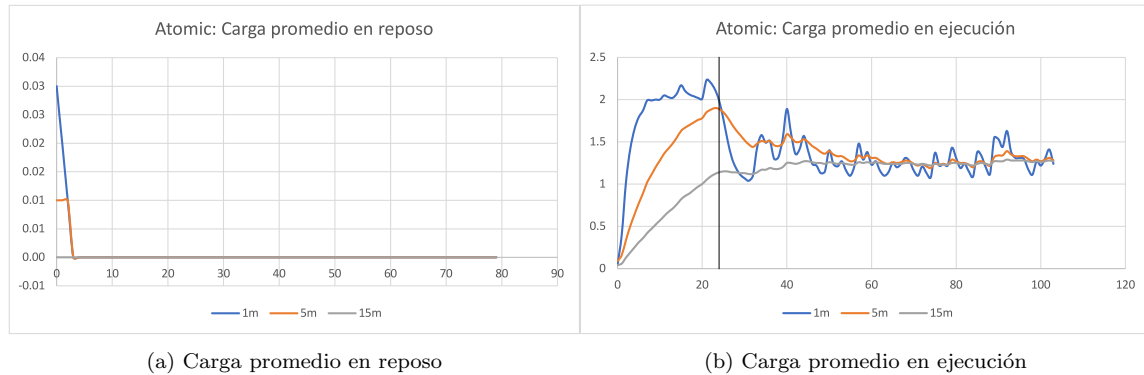
Figura 5-1: Carga Promedio SBC Atomic Pi

En la Figura 5-2 se muestran los porcentaje de tiempo tomados por todos los
procesos asociados a la CPU0. Con respecto a la Figura 5-2a se puede observar que
este núcleo se encuentra en estado de espera, un promedio de 98.4 %. Mientras que
en la Figura 5-2b se ve que, durante el periodo de carga de la prueba los procesos de
usuario aumentan hasta el 28.4 %. La espera de dispositivos de E/S aumenta hasta
9.8 % y los momentos de espera se reducen hasta el 59.3 %. Una vez el periodo de
ejecución comienza, el núcleo aumenta nuevamente los tiempos de espera a un 64.4 %.
Los procesos de usuario se estabilizan en un 27.0 %. La espera de dispositivos de E/S
disminuye hasta el 3.8 %.

(a) Carga CPU0 en reposo

(b) Carga CPU0 en ejecución
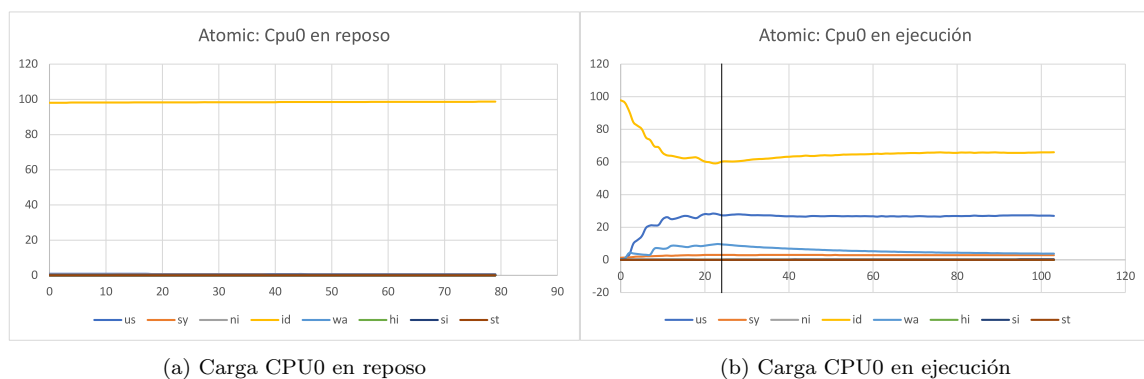
Figura 5-2: Carga CPU0 SBC Atomic Pi

En la Figura 5-3 se muestran los porcentaje de tiempo tomados por todos los
procesos asociados a la CPU1. Con respecto a la Figura 5-3a se puede observar que
este núcleo se encuentra en estado de espera, un promedio de 89.5 %. Mientras que

en la Figura 5-3b se ve que, durante el periodo de carga de la prueba los procesos de usuario aumentan hasta el 18.6 %. La espera de dispositivos de E/S aumenta hasta 12.6 % y los momentos de espera se reducen hasta el 65.6 %. Una vez el periodo de ejecución comienza, el núcleo aumenta nuevamente los tiempos de espera a un 69.0 %. Los procesos de usuario se estabilizan en un 22.8 %. La espera de dispositivos de E/S disminuye hasta el 5.0 %.

(a) Carga CPU1 en reposo

(b) Carga CPU1 en ejecución
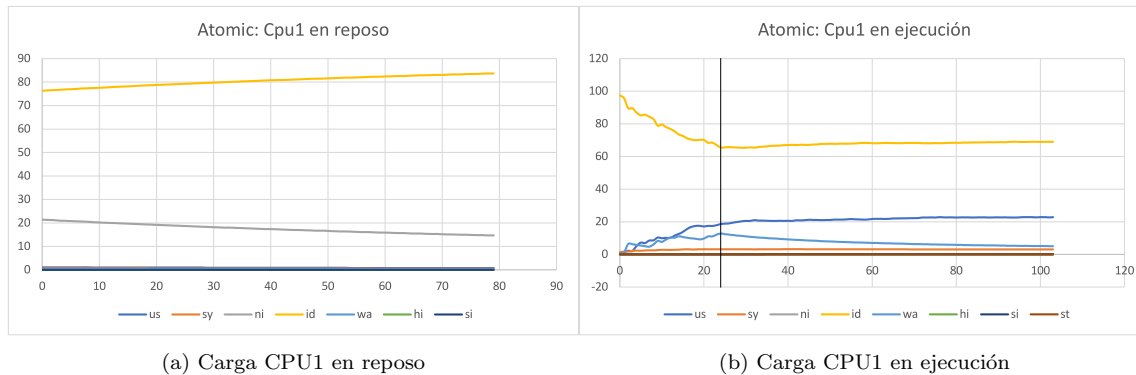
Figura 5-3: Carga CPU1 SBC Atomic Pi

En la Figura 5-4 se muestran los porcentaje de tiempo tomados por todos los procesos asociados a la CPU2. Con respecto a la Figura 5-4a se puede observar que este núcleo se encuentra en estado de espera, un promedio de 98.5 %. Mientras que en la Figura 5-4b se ve que, durante el periodo de carga de la prueba los procesos de usuario aumentan hasta el 11.1 %. La espera de dispositivos de E/S aumenta hasta 23.5 % y los momentos de espera se reducen hasta el 63.2 %. Una vez el periodo de ejecución comienza, el núcleo aumenta nuevamente los tiempos de espera a un 66.4 %. Los procesos de usuario se estabilizan en un 22.5 %. La espera de dispositivos de E/S disminuye hasta el 8.3 %.

(a) Carga CPU2 en reposo

(b) Carga CPU2 en ejecución
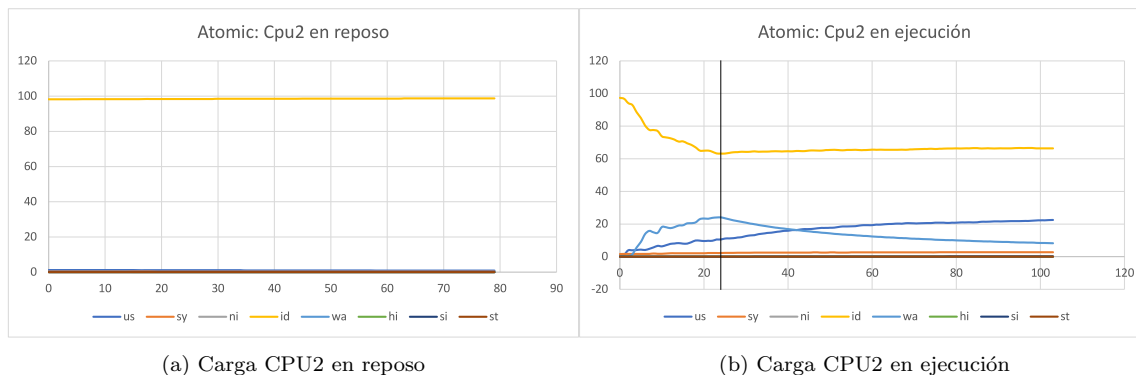
Figura 5-4: Carga CPU2 SBC Atomic Pi

En la Figura 5-5 se muestran los porcentaje de tiempo tomados por todos los procesos asociados a la CPU3. Con respecto a la Figura 5-5a se puede observar que este núcleo se encuentra en estado de espera, un promedio de 98.1 %. Mientras que en la Figura 5-5b se ve que, durante el periodo de carga de la prueba los procesos de usuario aumentan hasta el 13.0 %. La espera de dispositivos de E/S aumenta hasta 21.5 % y los momentos de espera se reducen hasta el 68.7 %. Una vez el periodo de ejecución comienza, el núcleo aumenta nuevamente los tiempos de espera a un 68.7 %. Los procesos de usuario se estabilizan en un 21.5 %. La espera de dispositivos de E/S disminuye hasta el 7.0 %.

(a) Carga CPU3 en reposo   (b) Carga CPU3 en ejecución
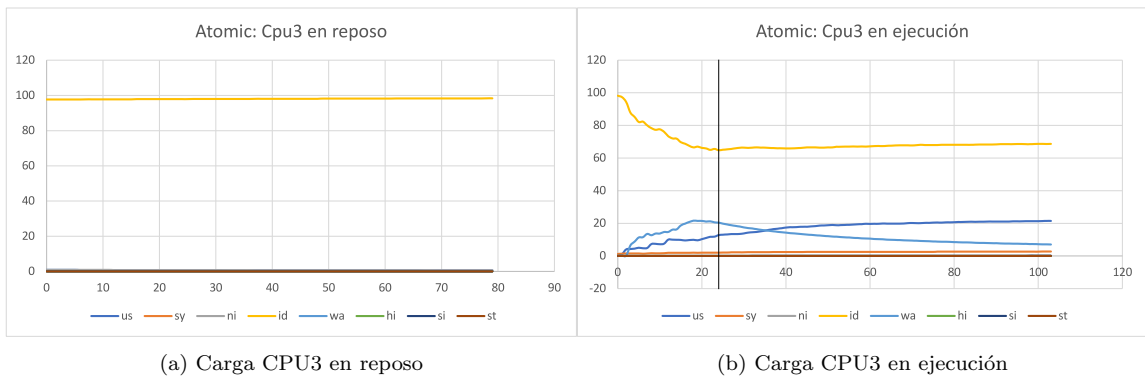
Figura 5-5: Carga CPU3 SBC Atomic Pi

En la Figura 5-6 se ves el uso de la memoria RAM. En la Figura 5-6a se observa cómo el sistema no utiliza de manera sustancial los recursos de la memoria cuando se encuentra en reposo mientras que en la Figura 5-6b se ve que, durante el periodo de carga de la prueba, el uso de memoria por escrituras en paginas del caché y buffers aumenta desde 273.6 MB hasta 1410.9 MB. La memoria disponible se reduce hasta 1294.7 MB y la usada aumenta hasta 473.4 MB. Una vez cargada la prueba se puede ver que el uso de la memoria se mantiene dentro de un promedio con variaciones de máximo 63.1 MB.

(a) Estado memoria RAM en reposo   (b) Estado memoria RAM en ejecución
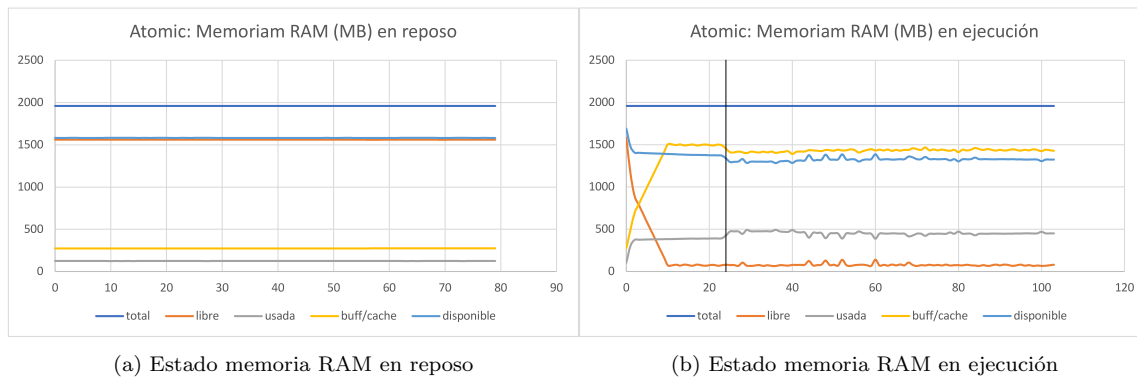
Figura 5-6: Estado memoria RAM SBC Atomic Pi

En la Figura 5-7 se observa el uso de la memoria de intercambio. En la Figura 5-7a se puede ver que en reposo no se afecta la memoria de intercambio. Asimismo, en la Figura 5-7b se utilizan 50.6 MB durante la ejecución.

(a) Estado memoria de intercambio en reposo   (b) Estado memoria de intercambio en ejecución
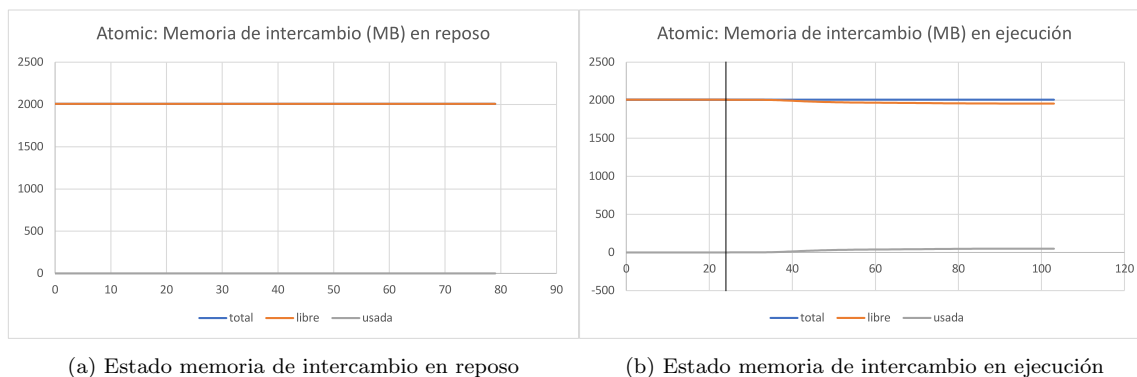
Figura 5-7: Estado memoria de intercambio SBC Atomic Pi

En la Tabla 5-1 se consignan los promedios resultantes del uso promedio de la CPU en el SBC en reposo, así como durante la carga de la prueba y ejecución del algoritmo. En está tabla se puedes apreciar el promedio de las medias móviles a 1m, 5m y 15m. Tomando como referencia la media móvil de la carga a 1m se puede ver que, en reposo el promedio de carga computacional es de 0.0 %. De igual forma, en la carga del algoritmo se presenta la máxima carga del sistema con un promedio de 1.8 o un 45 %, mientras que en el periodo de ejecución el promedio es de 1.31 o 32.8 %.

Tabla 5-1: Promedio resultantes del uso de la CPU.

Atomic Pi	Estado CPU	1m	5m	15m
	Reposo	0.00	0.00	0.01
Promedio	Carga	1.80	1.24	0.62
	Ejecución	1.31	1.37	1.23

En la tabla Tabla 5-2 se muestran los valores promedio de los porcentajes de tiempo que toman todos los procesos asociados a las CPUs en el SBC en reposo, así como durante la carga de la prueba y la ejecución del algoritmo. De está tabla se puede destacar que, en reposo las CPUs se encuentran mínimo al 80.49 %. En el periodo de carga aumentan los procesos de usuario, sistema y espera de dispositivos de E/S con máximos en 20.7 %, 2.6 % y 15.2 % respectivamente. por último, en ejecución se observa que los procesos de usuario y sistema incrementan mientras que la espera de dispositivos de E/S disminuyen con máximos en 27.0 %, 3.1 % y 13.2 % respectivamente.

Tabla 5-2: Promedios de valores específicos del uso de las CPUs.

Atomic Pi	Estado CPU	%us	%sy	%ni	%id	%wa	%hi	%si	%st
	Reposo	0.78	0.45	0.00	98.43	0.32	0.00	0.00	0.00
CPU0	Carga	20.71	2.43	0.00	70.37	6.45	0.00	0.08	0.00
	Ejecución	26.96	2.93	0.00	64.39	5.54	0.00	0.19	0.00
	Reposo	0.91	0.60	17.62	80.49	0.37	0.00	0.00	0.00
CPU1	Carga	10.75	2.63	0.00	78.66	7.97	0.00	0.00	0.00
	Ejecución	21.69	3.06	0.00	67.77	7.39	0.00	0.09	0.00
	Reposo	1.04	0.32	0.00	98.50	0.12	0.00	0.00	0.00
CPU2	Carga	6.71	1.93	0.00	76.13	15.23	0.00	0.00	0.00
	Ejecución	18.63	2.58	0.00	65.49	13.18	0.00	0.12	0.00
	Reposo	0.73	0.31	0.75	98.06	0.16	0.00	0.00	0.00
CPU3	Carga	7.56	1.73	0.00	76.51	14.20	0.00	0.00	0.00
	Ejecución	18.91	2.48	0.00	67.31	11.19	0.00	0.10	0.00

En la tabla Tabla 5-3 se muestran los valores promedio del uso de las memorias RAM y de intercambio en el SBC.

Tabla 5-3: Uso promedio memorias RAM y de intercambio.

Atomic Pi	Estado CPU	total	libre	usada	buff/cache	disponible
Memoria RAM	Reposo	1959.5	1560.8	124.9	273.8	1581.7
	Carga	1959.5	335.3	369.3	1254.8	1403.8
	Ejecución	1959.5	76.9	451.3	1431.3	1323.9
Memoria de inter- cambio	Reposo	2007.0	2007.0	0.0		
	Carga	2007.0	2007.0	0.0		
	Ejecución	2007.0	1972.9	34.1		

5.1.2. LattePanda

En la Figura 5-8a se observa que la carga promedio del sistema operativo sen reposo de la tarjeta LattePanda tiende a ser 0.0, con un máximo en 0.07 o un 1.7 %, teniendo en cuenta que el SoC tiene 4 núcleos de CPU. En la Figura 5-8b se observa que la carga promedio de las CPU en el periodo de carga del experimento sube máximo a un 2.11 o un 52.8 % de carga computacional. En el periodo de ejecución este baja hasta un promedio de 1.36 o un 34.0 % de carga computacional.

(a) Carga promedio en reposo

(b) Carga promedio en ejecución
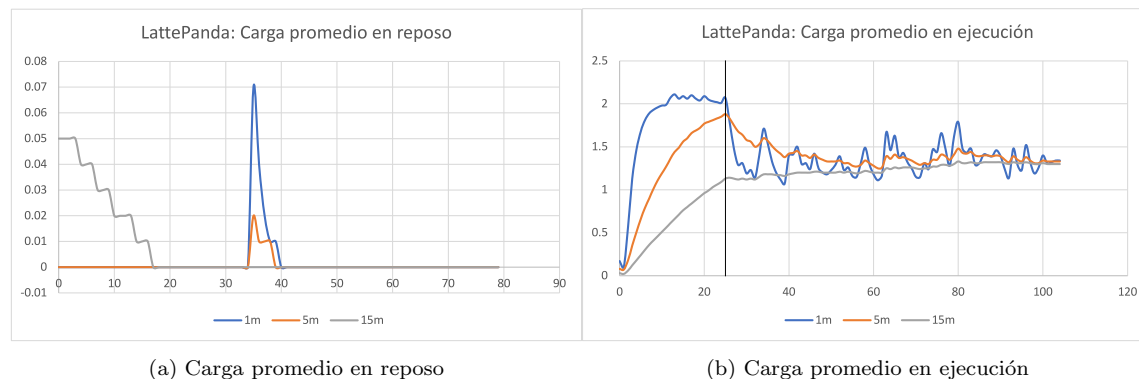
Figura 5-8: Carga Promedio SBC LattePanda

En la Figura 5-9 se muestran los porcentaje de tiempo que están tomando todos los procesos asociados a la CPU0. Con respecto a la Figura 5-9a se puede observar este

núcleo se encuentra en espera un promedio de 77.8 %. Mientras que en la Figura 5-9b
se ve que, durante el periodo de carga de la prueba los procesos de usuario aumentan
hasta el 36.6 %. La espera de dispositivos de E/S aumenta al 24.7 % y los momentos
de espera disminuyen hasta el 49.6 %. Una vez el periodo de ejecución empieza el
núcleo aumenta nuevamente los tiempo de espera a un 63.0 %. Los procesos de usuario
se estabilizan en un 26.5 %. La espera de dispositivos de E/S baja hasta el 6.0 %.

(a) Carga CPU0 en reposo   (b) Carga CPU0 en ejecución
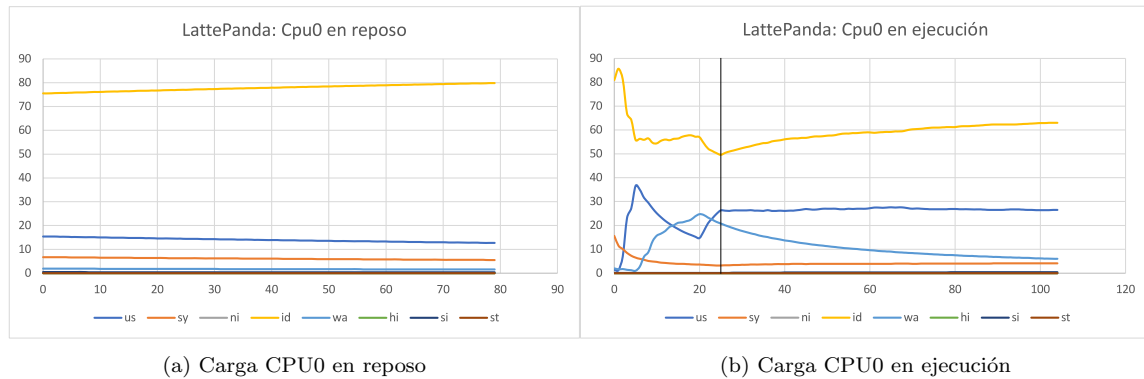
Figura 5-9: Carga CPU0 SBC LattePanda

La Figura 5-10 se muestran los porcentajes de tiempo que están tomando todos
los procesos de la CPU1. Con respecto a la Figura 5-10a se ve que este núcleo se
encuentra en espera un promedio de 77.8 %. Los procesos de usuario se encuentran
en promedio en 13.4 %. Mientras que en la Figura 5-10b se ve que durante el periodo
de carga de la prueba los procesos de usuario disminuyen hasta el 4.6 %. La espera de
dispositivos de E/S incrementa al 8.6 % y los momentos de espera disminuyen hasta
el 83.7 %. Una vez el periodo de ejecución empieza el núcleo disminuye los tiempo de
espera a un 72.1 %. Los procesos de usuario se estabilizan en un 21.3 %. La espera
de dispositivos de E/S baja hasta el 2.3 %.

(a) Carga CPU1 en reposo   (b) Carga CPU1 en ejecución
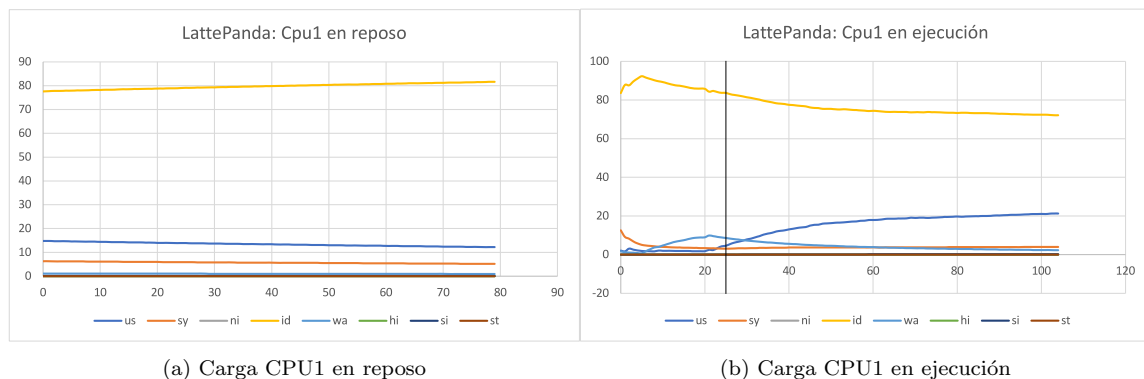
Figura 5-10: Carga CPU1 SBC LattePanda

La Figura 5-11 se muestran los porcentajes de tiempo que están tomando todos los procesos de la CPU2. Con respecto a la Figura 5-11a se ve que este núcleo se encuentra en espera un promedio de 79.6 %. Los procesos de usuario se encuentran en promedio en 12.7 %. Mientras que en la Figura 5-11b se ve que durante el periodo de carga de la prueba los procesos de usuario disminuyen hasta el 10.9 %. La espera de dispositivos de E/S incrementa al 15.7 % y los momentos de espera disminuyen hasta el 71.9 %. Una vez el periodo de ejecución empieza el núcleo disminuye los tiempo de espera a un 69.0 %. Los procesos de usuario se estabilizan en un 22.2 %. La espera de dispositivos de E/S baja hasta el 4.8 %.

(a) Carga CPU2 en reposo

(b) Carga CPU2 en ejecución
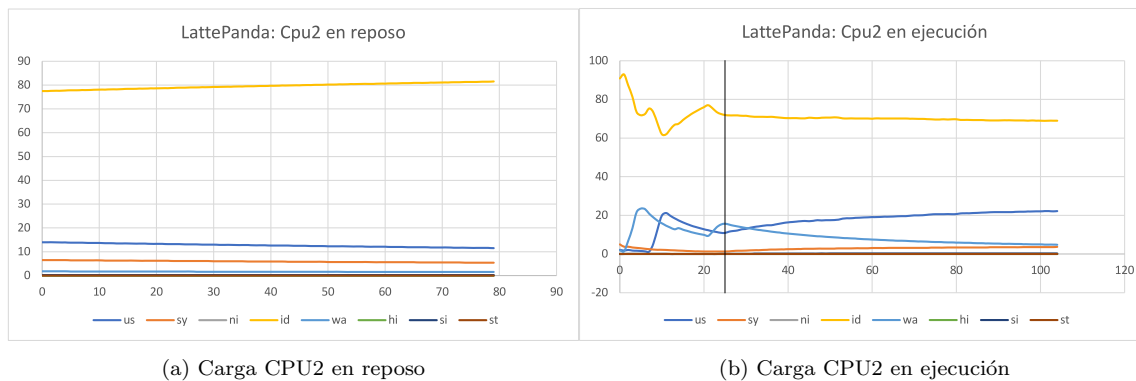
Figura 5-11: Carga CPU2 SBC LattePanda

La Figura 5-12 se muestran los porcentajes de tiempo que están tomando todos los procesos de la CPU3. Con respecto a la Figura 5-12a se ve que este núcleo se encuentra en espera un promedio de 79.9 %. Los procesos de usuario se encuentran en promedio en 12.5 %. Mientras que en la Figura 5-12b se ve que durante el periodo de carga de la prueba los procesos de usuario aumentan hasta el 46.4 %. La espera de dispositivos de E/S incrementa al 10.2 % y los momentos de espera disminuyen hasta el 41.8 %. Una vez el periodo de ejecución empieza el núcleo aumenta los tiempo de espera a un 61.8 %. Los procesos de usuario se estabilizan en un 31.0 %. La espera de dispositivos de E/S baja hasta el 3.4 %.

(a) Carga CPU3 en reposo　　　　　　　　　　(b) Carga CPU3 en ejecución
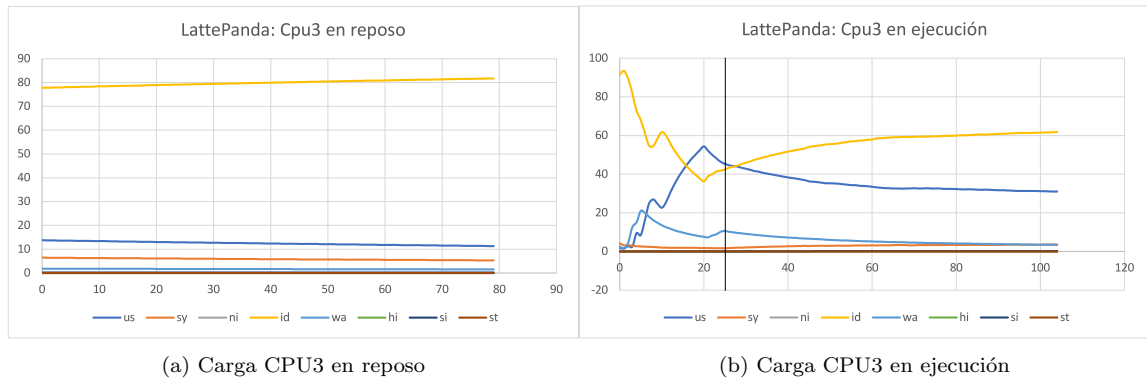
Figura 5-12: Carga CPU3 SBC LattePanda

En la Figura 5-13 se ve el uso de la memoria RAM. En la Figura 5-13a se observa cómo el sistema no utiliza de manera sustancial los recursos de la memoria cuando se encuentra en reposo mientras que en la Figura 5-13b se ve que, durante el periodo de carga de la prueba, el uso de memoria por escrituras en paginas del caché y buffers aumenta desde 431.3 MB hasta 3319.9 MB. La memoria disponible se reduce hasta 3114.4 MB y la usada aumenta hasta 539.1 MB. Una vez cargada la prueba se puede ver que el uso de la memoria se mantiene dentro de un promedio con variaciones de máximo 39.4 MB.

(a) Estado memoria RAM en reposo　　　　　　(b) Estado memoria RAM en ejecución
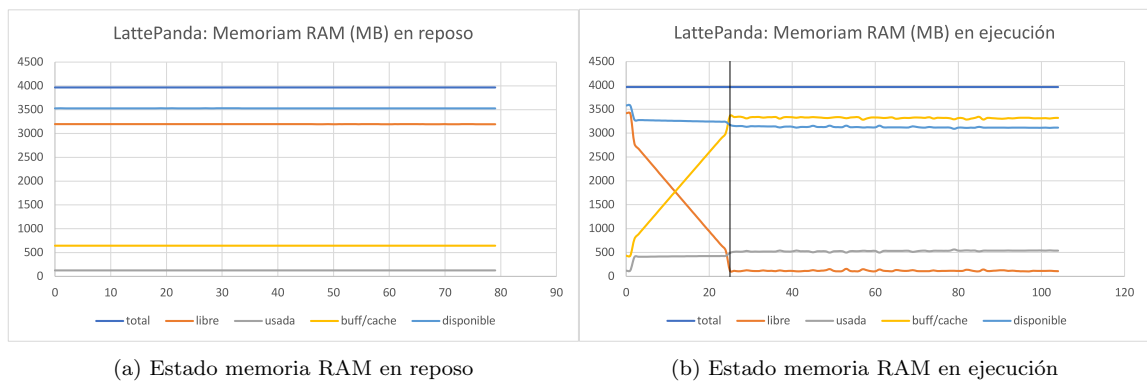
Figura 5-13: Estado memoria RAM SBC LattePanda

En la Figura 5-14 se observa el uso de la memoria de intercambio. En la Figura 5-14a se puede ver que en reposo no se afecta la memoria de intercambio. Asimismo, en la Figura 5-14b se utilizan 10.2 MB durante la ejecución.

(a) Estado memoria de intercambio en reposo   (b) Estado memoria de intercambio en ejecución
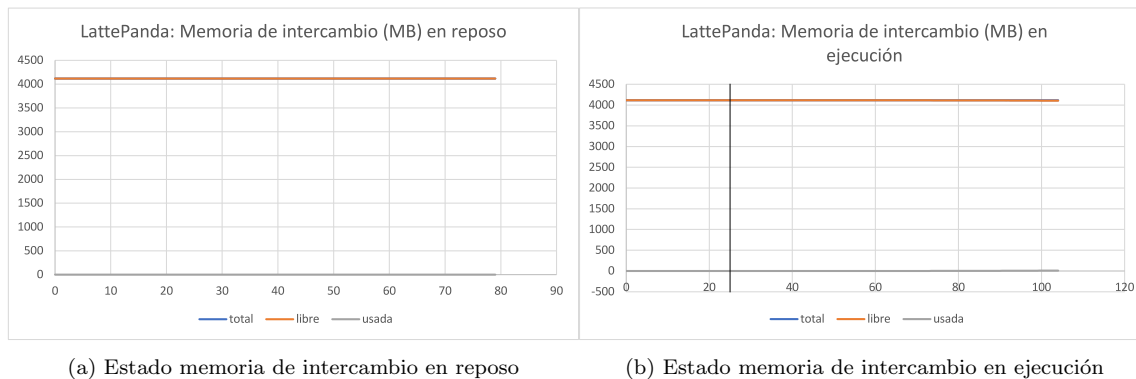
Figura 5-14: Estado memoria de intercambio SBC LattePanda

En la Tabla 5-4 se consignan los promedios resultantes del uso promedio de la CPU en el SBC en reposo, así como durante la carga de la prueba y ejecución del algoritmo. En está tabla se puede apreciar el promedio de las medias móviles a 1m, 5m y 15m. Tomando como referencia la media móvil de la carga a 1m se puede ver que, en reposo el promedio de carga computacional es de 0.0 %. De igual forma, en la carga del algoritmo se presenta la máxima carga del sistema con un promedio de 1.74 o un 43.5 %, mientras que en el periodo de ejecución el promedio es de 1.36 o 34.0 %.

Tabla 5-4: Promedio resultantes del uso de la CPU.

LattePanda	Estado CPU	1m	5m	15m
	Reposo	0.00	0.00	0.01
Promedio	Carga	1.74	1.19	0.58
	Ejecución	1.36	1.40	1.24

En la Tabla 5-5 se muestran los valores promedio de los porcentajes de tiempo que toman todos los procesos asociados a las CPUs en el SBC en reposo, así como durante la carga de la prueba y la ejecución del algoritmo. De está tabla se puede destacar que, en reposo las CPUs se encuentran mínimo al 77.8 %. En el periodo de carga aumentan los procesos de usuario, sistema y espera de dispositivos de E/S con máximos en 30.4 %, 5.5 % y 14.3 % respectivamente. por último, en ejecución se observa que los procesos de usuario y sistema incrementan mientras que la espera de dispositivos de E/S disminuyen con máximos de 34.8 %, 3.9 % y 10.3 % respectivamente.

Tabla 5-5: Promedios de valores específicos del uso de las CPUs.

LattePanda	Estado CPU	%us	%sy	%ni	%id	%wa	%hi	%si	%st
CPU0	Reposo	13.97	6.09	0.00	77.79	1.72	0.00	0.41	0.00
	Carga	20.60	5.54	0.00	59.50	14.28	0.00	0.10	0.00
	Ejecución	26.71	3.90	0.00	58.82	10.27	0.00	0.31	0.00
CPU1	Reposo	13.42	5.69	0.00	79.74	1.03	0.00	0.10	0.00
	Carga	2.18	4.73	0.00	87.58	5.49	0.00	0.00	0.00
	Ejecución	16.76	3.74	0.00	75.22	4.13	0.00	0.15	0.00
CPU2	Reposo	12.70	5.92	0.00	79.59	1.61	0.00	0.20	0.00
	Carga	10.50	2.24	0.00	73.76	13.44	0.00	0.04	0.00
	Ejecución	18.75	2.96	0.00	70.02	8.00	0.00	0.26	0.00
CPU3	Reposo	12.45	5.84	0.00	79.86	1.67	0.00	0.20	0.00
	Carga	30.36	2.25	0.00	56.52	10.87	0.00	0.00	0.00
	Ejecución	34.80	3.05	0.00	56.46	5.51	0.00	0.17	0.00

En la tabla Tabla 5-6 se muestran los valores promedio del uso de las memorias RAM y de intercambio en el SBC.

Tabla 5-6: Uso promedio memorias RAM y de intercambio.

LattePanda	Estado CPU	total	libre	usada	buff/cache	disponible
Memoria RAM	Reposo	3966.3	3195.7	126.0	644.7	3528.1
	Carga	3966.3	1794.6	394.5	1777.3	3281.6
	Ejecución	3966.3	116.3	529.3	3320.7	3125.6
Memoria de inter- cambio	Reposo	4116.5	4116.5	0.0		
	Carga	4116.5	4116.5	0.0		
	Ejecución	4116.5	4113.6	2.9		

5.1.3.   Raspberry Pi 4

En la Figura 5-15a se observa que la carga promedio del sistema operativo en
reposo de la tarjeta Raspberry Pi 4 Model Bi tiende a ser 0.04 o 1.0 %. Este SoC en
específico en la prueba de reposo presenta momentos de carga computacional con un
máximo en 0.37 o un 9.3 %, teniendo en cuenta que el SoC tiene 4 núcleos de CPU.
En la Figura 5-15b se observa que la carga promedio de las CPU en el periodo de
carga del experimento tiene un promedio de 3.69 o un 92.3 % y un máximo con 4.61
o un 115.3 % de carga computacional. En el periodo de ejecución este cambia 3.70 o
un 92.5 % de carga computacional.

(a) Carga promedio en reposo   (b) Carga promedio en ejecución
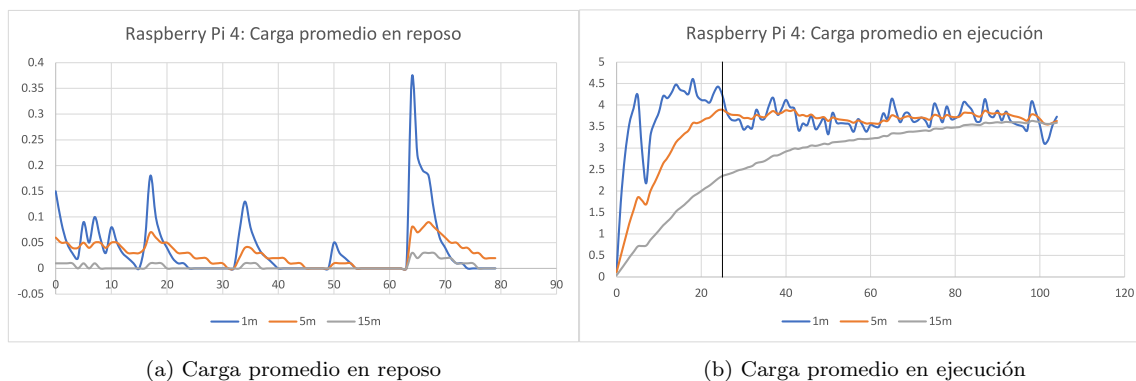
Figura 5-15: Carga Promedio SBC Raspberry Pi 4

En la Figura 5-16 se muestran los porcentaje de tiempo que están tomando todos
los procesos asociados a la CPU0. Con respecto a la Figura 5-16a se puede obser-
var este núcleo se encuentra en espera un promedio de 96.4 %. Mientras que en la
Figura 5-16b se ve que, durante el periodo de carga de la prueba los procesos de
usuario aumentan hasta el 58.6 % en promedio. Los procesos del sistema aumentan
hasta el 31.2 % en promedio y los momentos de espera promedio disminuyen hasta el
9.5 % en. Una vez el periodo de ejecución empieza el núcleo disminuye nuevamente
los tiempo de espera a un 6.9 % promedio. Los procesos de usuario están activos
con un promedio de 56.6 % y los procesos del sistema aumentan hasta el 36.3 % en
promedio.

(a) Carga CPU0 en reposo

(b) Carga CPU0 en ejecución
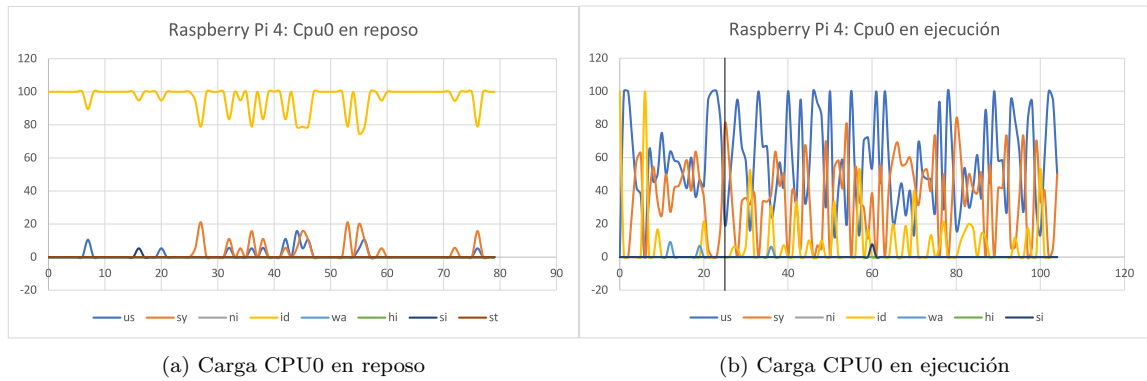
Figura 5-16: Carga CPU0 SBC Raspberry Pi 4

En la Figura 5-17 se muestran los porcentaje de tiempo que están tomando todos los procesos asociados a la CPU1. Con respecto a la Figura 5-17a se puede observar este núcleo se encuentra en espera un promedio de 93.1 %. Mientras que en la Figura 5-17b se ve que, durante el periodo de carga de la prueba los procesos de usuario aumentan hasta el 47.9 % en promedio. Los procesos del sistema aumentan hasta el 42.9 % en promedio y los momentos de espera promedio disminuyen hasta el 8.8 % en. Una vez el periodo de ejecución empieza el núcleo disminuye nuevamente los tiempo de espera a un 4.7 % promedio. Los procesos de usuario están activos con un promedio de 55.0 %. Los procesos del sistema aumentan hasta el 40.3 % en promedio.

(a) Carga CPU1 en reposo

(b) Carga CPU1 en ejecución
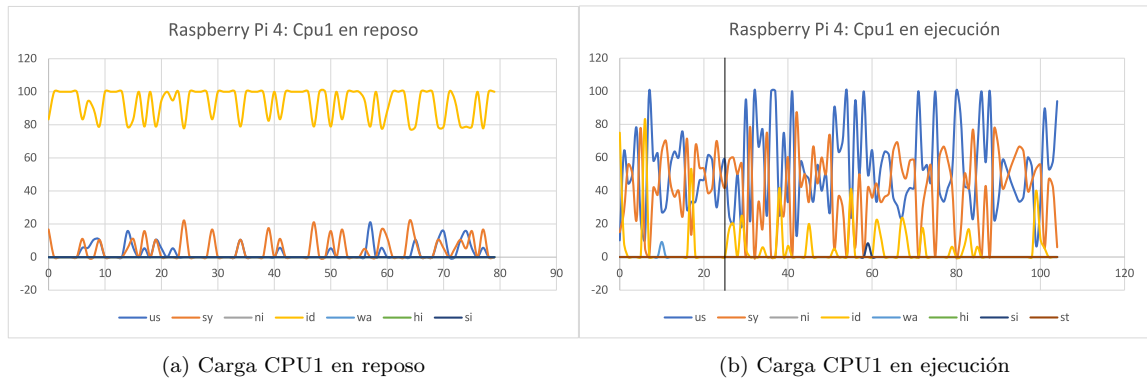
Figura 5-17: Carga CPU1 SBC Raspberry Pi 4

En la Figura 5-18 se muestran los porcentaje de tiempo que están tomando todos los procesos asociados a la CPU2. Con respecto a la Figura 5-18a se puede observar este núcleo se encuentra en espera un promedio de 91.1 %. Mientras que en la Figura 5-18b se ve que, durante el periodo de carga de la prueba los procesos de usuario aumentan hasta el 69.8 % en promedio. Los procesos del sistema aumentan hasta el 18.7 % en promedio y los momentos de espera promedio disminuyen hasta el

11.5 %. Una vez el periodo de ejecución empieza el núcleo disminuye nuevamente los tiempo de espera a un 6.2 % promedio. Los procesos de usuario están activos con un promedio de 51.5 %. Los procesos del sistema aumentan hasta el 42.3 % en promedio y la espera de dispositivos de E/S esta en promedio en el 5.3 %.

(a) Carga CPU2 en reposo

(b) Carga CPU2 en ejecución
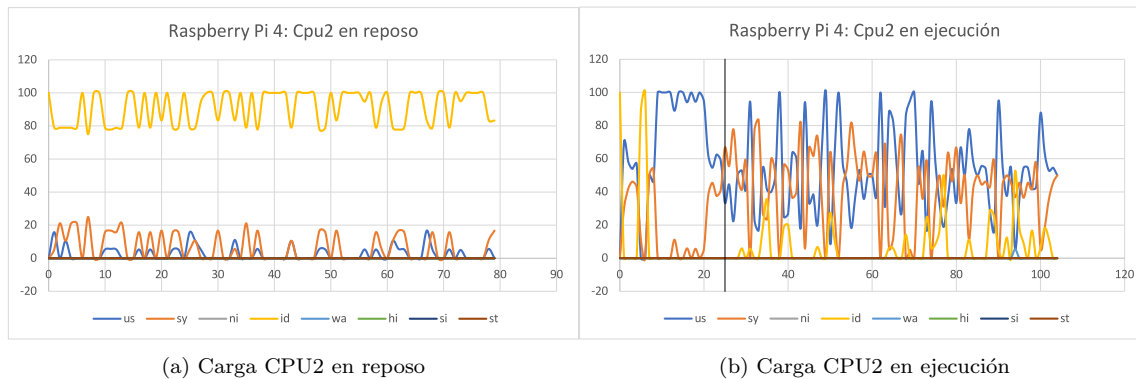
**Figura** 5-18: Carga CPU2 SBC Raspberry Pi 4

En la Figura 5-19 se muestran los porcentaje de tiempo que están tomando todos los procesos asociados a la CPU3. Con respecto a la Figura 5-19a se puede observar este núcleo se encuentra en espera un promedio de 97.8 %. Mientras que en la Figura 5-19b se ve que, durante el periodo de carga de la prueba los procesos del sistema aumentan hasta el 38.6 % en promedio. Los procesos de usuario aumenta al 53.1 % y los momentos de espera promedio disminuyen hasta el 8.4 %. Una vez el periodo de ejecución empieza el núcleo disminuye nuevamente los tiempo de espera a un 6.4 % promedio. Los procesos de usuario están activos con un promedio de 55.5 % y los procesos del sistema están en promedio en el 37.8 %.

(a) Carga CPU3 en reposo

(b) Carga CPU3 en ejecución
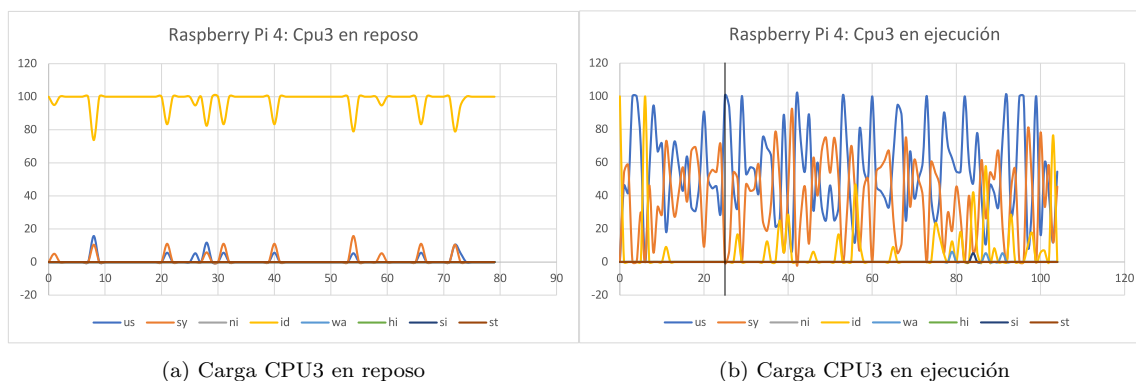
Figura 5-19: Carga CPU3 SBC Raspberry Pi 4

En la Figura 5-20 se ve el uso de la memoria RAM. En la Figura 5-20a se observa cómo el sistema no utiliza de manera sustancial los recursos de la memoria cuando se

encuentra en reposo mientras que en la Figura 5-20b se ve que, durante el periodo de
carga de la prueba, el uso de memoria por escrituras en paginas del caché y buffers
aumenta desde 173.7 MB hasta 1004.5 MB. La memoria disponible se reduce hasta
3461.3 MB y la usada aumenta hasta 303.4 MB. Una vez cargada la prueba alcanza
el máximo uso de memoria por escrituras en paginas del caché y buffers con un valor
de 3231.6 MB. Luego de esto se puede ver que el uso de la memoria se mantiene
dentro de un promedio con variaciones de máximo 74.6 MB.

(a) Estado memoria RAM en reposo   (b) Estado memoria RAM en ejecución
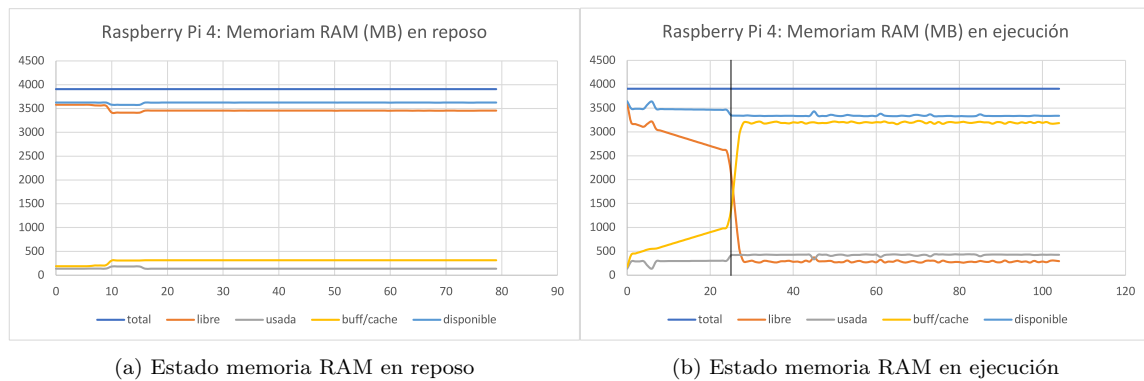
Figura 5-20: Estado memoria RAM SBC Raspberry Pi 4

En la Figura 5-21 se observa el uso de la memoria de intercambio. En la Figura 5-
21a se puede ver que en reposo no se afecta la memoria de intercambio. Asimismo,
en la Figura 5-21b se utilizan 31.2 MB durante la ejecución.

(a) Estado memoria de intercambio en reposo   (b) Estado memoria de intercambio en ejecución
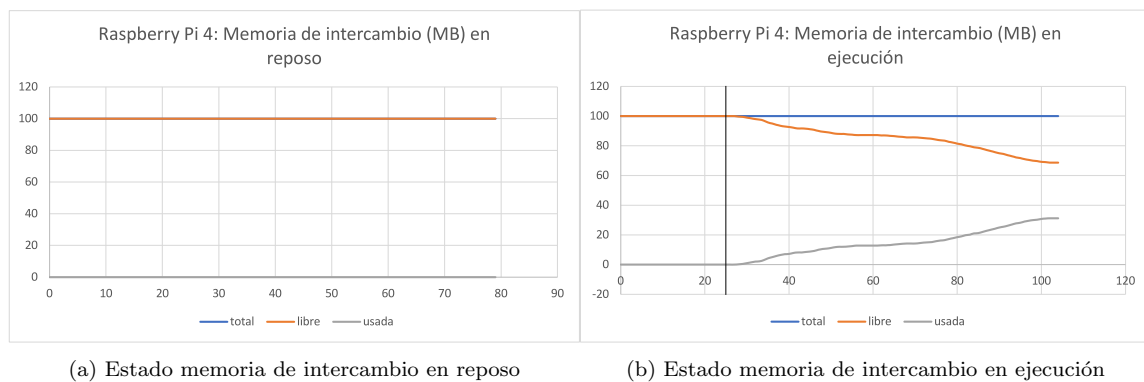
Figura 5-21: Estado memoria de intercambio SBC Raspberry Pi 4

En la Tabla 5-7 se consignan los promedios resultantes del uso promedio de la
CPU en el SBC en reposo así como durante la carga de la prueba y ejecución del
algoritmo. En está tabla se puede apreciar el promedio de las medias móviles a 1m,
5m y 15m. Tomando como referencia la media móvil de la carga a 1m se puede ver
que, en reposo el promedio de carga computacional es de 0.04 o 1.0 %. De igual forma,
en la carga del algoritmo se presenta la máxima carga del sistema con un promedio
de 3.69 o un 92.3 %, mientras que en el periodo de ejecución el promedio es de 3.7 o
92.5 %

Tabla 5-7: Promedio resultantes del uso de la CPU.

Raspberry Pi 4	Estado CPU	1m	5m	15m
	Reposo	0.04	0.03	0.00
Promedio	Carga	3.69	2.54	1.26
	Ejecución	3.70	3.72	3.22

En la Tabla 5-8 se muestran los valores promedio de los porcentajes de tiempo
que toman todos los procesos asociados a las CPUs en el SBC en reposo, así como
durante la carga de la prueba y la ejecución del algoritmo. De está tabla se puede
destacar que, en reposo las CPUs se encuentran mínimo al 91.1 %. En el periodo de
carga aumentan los procesos de usuario y sistema con máximos en 69.8 % y 42.9 %
respectivamente. Por último, en ejecución se observa que los procesos de usuario y
sistema disminuyen a 56.6 % y 42.3 % respectivamente.

Tabla 5-8: Promedios de valores específicos del uso de las CPUs.

Raspberry Pi 4	Estado CPU	%us	%sy	%ni	%id	%wa	%hi	%si	%st
CPU0	Reposo	1.20	2.32	0.00	96.42	0.00	0.00	0.07	0.00
	Carga	58.60	31.24	0.00	9.52	0.63	0.00	0.00	0.00
	Ejecución	56.63	36.25	0.00	6.94	0.08	0.00	0.10	0.00
CPU1	Reposo	2.53	4.35	0.00	93.12	0.00	0.00	0.00	0.00
	Carga	47.93	42.88	0.00	8.83	0.36	0.00	0.00	0.00
	Ejecución	54.95	40.30	0.00	4.65	0.00	0.00	0.10	0.00
CPU2	Reposo	2.54	6.41	0.00	91.06	0.00	0.00	0.00	0.00
	Carga	69.82	18.65	0.00	11.53	0.00	0.00	0.00	0.00
	Ejecución	51.46	42.26	0.00	6.22	0.07	0.00	0.00	0.00
CPU3	Reposo	0.96	1.22	0.00	97.83	0.00	0.00	0.00	0.00
	Carga	53.01	38.62	0.00	8.36	0.00	0.00	0.00	0.00
	Ejecución	55.53	37.79	0.00	6.42	0.21	0.00	0.07	0.00

En la tabla Tabla 5-9 se muestran los valores promedio del uso de las memorias RAM y de intercambio en el SBC.

Tabla 5-9: Uso promedio memorias RAM y de intercambio.

Raspberry Pi 4	Estado CPU	total	libre	usada	buff/cache	disponible
Memoria RAM	Reposo	3906.0	3466.9	140.2	298.9	3621.0
	Carga	3906.0	2939.4	278.9	687.8	3491.7
	Ejecución	3906.0	324.9	424.1	3157.0	3339.7
Memoria de intercambio	Reposo	100.0	100.0	0.0		
	Carga	100.0	100.0	0.0		
	Ejecución	100.0	85.1	14.9		

5.2. Discusión

El trabajo recopilado en este documento buscó determinar la viabilidad del uso de sistemas embebidos como factor de reducción de costos de producción de un sistema ADAS. Para dar cumplimiento a esto se establecieron las especificaciones necesarias para la selección de los sistemas que pudieran dar solución al problema propuesto, una vez adquiridos se realizó una prueba del los sistemas en reposo y otra ejecutando el algoritmo ADAS-Karlo. De esta manera se estableció la carga del algoritmo sobre el sistema operativo en cada uno de los SBC.

Una vez expuestos los resultados de las pruebas realizadas es posible contrastarlos con los requerimientos establecidos en la Sección 3.2. En la Tabla 5-10 se puede ver el resumen del desempeño de las tarjetas con respecto a los criterios de evaluación establecidos.

Tabla 5-10: Resutlados SBCs vs Criterios de evaluación.

SBCs	Carga promedio	Promedio procesos *idle*	Uso memoria RAM/intercambio
Atomic Pi	1.31 (32.8 %)	66.2 %	451.3/34.1 MB
LattePanda	1.36 (34.0 %)	65.1 %	529.3/2.9 MB
Raspberry Pi 4 Model B	3.70 (92.5 %)	6.1 %	424.1/14.9 MB

Tras analizar los resultados obtenidos se puede inferir que los SoCs con arquitectura MPU x64-x86 superan con suficiencia los criterios establecidos para poder incluir un algoritmo de extracción de parámetros externos y/o la inclusión de sensores adicionales para el mejoramiento del algoritmo ADAS-Karlo. Mientras que, el SoC con arquitectura ARM no posee la carga computacional necesaria para ejecutar algoritmos adicionales. Más aún, en la grafica Figura 5-15b se puede ver cómo en la ejecución del algoritmo ADAS-Karlo el SoC supera su capacidad de procesamiento arrojando valores con un máximo de 4.61 o un 115.3 % de carga computacional lo que significa que el SoC no es capaz de atender todos los procesos necesarios y debe dejar alguno pendientes mientras aligera la carga afectando la ejecución de ADAS-Karlo.

También es importante destacar que el mayor uso de la memoria corresponde al uso por escrituras en paginas del caché y buffers en el periodo de indexacción de los Rosbags. Una vez sucedido este proceso e iniciada la ejecución del algoritmo, se

puede apreciar una reducción notable en el consumo de memoria. El uso máximo de memoria utilizado por el algoritmo en MB corresponde al SBC LattePanda con un máximo de 563.1 MB o un 13.6 % y en porcentaje al SBC Atomic Pi con máximo de un 25.2 % o un 493.0 MB.

6 Conclusiones y recomendaciones

En este capítulo se concluye sobre el cumplimiento de los objetivos propuestos y se responde a la pregunta de investigación. De igual forma se hacen algunas recomendaciones para la mejora y la continuación de este proyecto con miras a la integración de un ADAS que logre fusionar lecturas de parameros internos y externos al vehículo.

6.1. Conclusiones

El principal motivo que conllevó a la realización de este trabajo consistió en la necesidad de proveer, desde un enfoque ingenieril, una solución a los elevados costos de producción que devienen del desarrollo de un ADAS. Para tal efecto, la ruta metodológica nos permitió determinar, como una primera conclusión, que los sistemas embebidos efectivamente pueden constituirse como un primer acercamiento a esta solución. También se logró determinar, a través de un elaborado experimento, que, no sólo sería posible lograr el uso de sistemas embebidos como una alternativa viable, sino que, además, existen diversos productos en el mercado que pueden adaptarse de forma flexible, con mayor o menor eficiencia, a las mejoras que se requieran en prospectiva, inclusive, teniendo en cuenta la adición de potenciales herramientas periféricas. Se dio por terminado este proceso de manera exitosa afirmando que se realizó un claro avance que beneficia la implementación de los ADAS en Colombia. También se puede afirmar con total certeza que este trabajo abre las puertas e invita a qué, de manera entusiasta se emprendan nuevos caminos que, a futuro, logren contribuir con el mejoramiento de cuestiones tan cotidianas como la conducción, ejerciendo cambios que logren afectar de forma relevante los diferentes aspectos sociales.

En un segundo plano se pueden destacar algunas conclusiones derivadas de la práctica. Por ejemplo, se pudo observar que, independiente del tipo de SoC que usaran los SBCs, fue posible implementar el algoritmo ADAS-Karlo con la realización de modificaciones que obedecen a la naturaleza de cada algoritmo. Esto refuerza la idea de que, cualquier individuo que diseñe un algoritmo en ROS en una computadora convencional, puede eventualmente adaptarlo teniendo la claridad de que

existen adaptaciones que surgen de acuerdo a las propiedades intrínsecas de los set de instrucciones incluidos en los SoC. Este principio es de suma relevancia para el desarrollo de trabajos futuros ya que también podría contribuir de forma notable a la optimización de algunos esfuerzos en la implementación de otros algoritmos como ADAS-Karlo.

6.1.1. Conclusiones en cuanto a los sistemas embebidos

Para la selección de los SoC se utilizaron dos tipos de arquitecturas diferentes, las cuales son MPU x64-x86 y ARM cortex-A72, luego de hacer uso de algunos parámetros de selección se encontró que las diferentes arquitecturas son capaces de ejecutar algoritmos como ADAS-Karlo.

En el caso del sistema basado en arquitectura ARM este no logro cumplir los criterios de evaluación, aun así cuando este puede ejecutar el algoritmo ADAS-Karlo, no lo hace de manera eficiente. Es de resaltar que los sistemas basados en arquitectura ARM pueden sustituir los computadores convencionales con algoritmos adaptados a estas tecnologías.

- El SBC LattePanda, logró cumplir los criterios de evaluación, ya que cuenta con un promedio de carga computacional del 34 % y las CPUs estando un 65.1 % del tiempo en modo espera y uso de 135 MB mientras se da la ejecución del algoritmo ADAS-Karlo. Es preciso mencionar que al tacto se puede percibir que la temperatura del procesador se eleva de forma notoria, lo cual afecta su desempeño si se compara con el SBC Atomic Pi. Por ultimo se resalta la importancia de modificar la BIOS de la misma tarjeta para poder instalar sistemas operativos basados en GNU Linux. Lo anterior se hace con el fin de realizar una instalación adecuada del sistema operativo, para así poder reducir de problemas asociados al Kernel. Ver Anexo Modificación BIOS LattePanda.

- El SBC Atomic Pi, también cumple con los criterios de evaluación. Con un promedio de carga computacional del 32.8 % y las CPUs estando un 66,2 % del tiempo en modo espera y uso de memoria RAM de aproximadamente 105 MB durante la ejecución del algoritmo ADAS-Karlo. Este SBC presenta el mejor desempeño con respecto a los SBCs LattePanda y Raspberry Pi 4 Model B, siendo este el de menor costo comercial y menor capacidad de memoria RAM. Por último, es el SBC con mayores dimensiones volumétricas.

- El SBC Raspberry Pi 4 Model B, no cumple los criterios de evaluación. Con un promedio de carga computacional del 92.8 % y las CPUs estando un 5.98 % del tiempo en modo espera y un uso de memoria RAM de aproximadamente 110 MB en la ejecución del algoritmo ADAS-Karlo. Como se puede observar, aun cuando la Raspberry Pi 4 Model B cumple con la mayoría de requerimientos funcionales el nivel de carga computacional no logra cumplir las expectativas ya que es insuficiente durante la ejecución del mismo, esto se puede dar por la diferencia de velocidad de lectura y escritura en el almacenamiento masivo, este SBC usa una tarjeta SD, mientras los demás usan un memoria tipo eMMC la cual puede mejorar de manera considerable el movimiento de los datos. Por otra parte puede ser producido porque ROS fue pensado y diseñado para arquitecturas x86. Es de resaltar que a partir de la versión Kinetic se incluyó soporte de manera oficial para las arquitecturas ARM, lo cual brinda un entrono de "desarrollo" estable para arquitecturas amd64, i386, armhf basadas en ARM. Pero aún con la inclusión de soporte de manera oficial a estas arquitecturas el tema del desempeño genera tanto debate en la comunidad que puede incluso llegar a acarrear una investigación completa. Es de destacar que pueden encontrarse múltiples proyectos que se han realizado de manera exitosa sin afección en el desempeño en estas arquitecturas.

6.2. Recomendaciones

Se recomienda crear una imagen del sistema operativo usando la herramienta clonezilla buscando facilitar la optimización de la instalación y puesta en marcha del algoritmo desarrollado en cada una de las plataformas con SoC Intel.

El SBC LattePanda no se recomienda para trabajos futuros, ya que se encuentra en el final de su vida y los fabricantes no dan garantía de soporte en la instalación de sistemas operativos diferentes a Windows. De la misma manera el costo adicional que representa la repetición de tareas que implica modificar la BIOS para utilizar sistemas operativos basados en GNU Linux en la tarjeta LattePanda, hace de esta opción la menos recomendable en términos de logística de procesos al interior una organización. Esto sin nombrar que es la tarjeta más costosa de las estudiadas.

Referencias Bibliográficas

[1] Agüero, D., Almeida, G., Espitia, M., Flores, A., and Espig, H. (2014). Uso del teléfono celular como distractor en la conducción de automóviles. *Salus*, 18:27–34.

[2] Alioua, N., Amine, A., and Rziza, M. (2014). Driver's fatigue detection based on yawning extraction. *International Journal of Vehicular Technology*.

[3] Alioua, N., Amine, A., Rziza, M., and Aboutajdine, D. (2011). Driver's fatigue and drowsiness detection to reduce traffic accidents on road. In Real, P., Diaz-Pernil, D., Molina-Abril, H., Berciano, A., and Kropatsch, W., editors, *Computer Analysis of Images and Patterns*, pages 397–404, Berlin, Heidelberg. Springer Berlin Heidelberg.

[4] Bastidas Espitia, J. A. and Quintero, A. M. (2012). Análisis causal multinivel de accidentes de tránsito en la ciudad de cúcuta. http://hdl.handle.net/10554/11177. Accedido 01-12-2019.

[5] Bergasa, L. M., Nuevo, J., Sotelo, M. A., Barea, R., and Lopez, M. E. (2006). Real-time system for monitoring driver vigilance. *IEEE Transactions on Intelligent Transportation Systems*, 7(1):63–77.

[6] Carreño Aguillón, E. D. P., Vacca Melo, E. A., and Lugo Ariza, I. (2012). Diseño y fabricación de un vehículo autónomo impulsado por energía solar. *Tecnura*, 16(32):91–106.

[7] Clínica Universidad de Navarra (s.f.). Hipovigilancia. https://www.cun.es/diccionario-medico/terminos/hipovigilancia.

[8] Dimakopoulou, M., Eranian, S., Koziris, N., and Bambos, N. (2016). Reliable and Efficient Performance Monitoring in Linux. In *SC16: International Conference for High Performance Computing, Networking, Storage and Analysis*, pages 396–408. IEEE.

[9] Duque Marquez, I. (2017). Ley no 1834, 23 de mayo de 2017. http://shorturl.at/cnUZ6.

[10] Economia Digital (2018). 5 beneficios de la ley naranja para los emprendedores colombianos. https://www.grupobancolombia.com/wps/portal/innovacion/economia-digital/beneficios-ley-naranja. Accedido 01-12-2019.

[11] Fan, X. (2015a). Chapter 1 - introduction to embedded and real-time systems. In Fan, X., editor, *Real-Time Embedded Systems*, pages 3 – 13. Newnes, Oxford.

[12] Fan, X. (2015b). Preface. In Fan, X., editor, *Real-Time Embedded Systems*, pages xv – xviii. Newnes, Oxford.

[13] Fonseca-Yakovenko, K. G. (2019). Diseño e implementación del prototipo de un sistema de asistencia al conductor basado en el monitoreo de parámetros de un conductor al interior de un vehículo. Sin publicar.

[14] Gerkey, B., Smart, W., and Quigley, M. (2015). *Programming Robots with ROS*. O'Reilly Media.

[15] Glisic, S. (2007). *Advanced Wireless Communications: 4G Cognitive and Cooperative Broadband Technology*. Wiley.

[16] Helmke, M., Joseph, E. K., and Rey, J. A. (2016). *The Official Ubuntu Book*. Prentice Hall Press, 9th edition.

[17] Intel Corporation (s.f.). Cámara intel® realsense™ sr300. https://ark.intel.com/content/www/es/es/ark/products/92329/intel-realsense-camera-sr300.html. Accedido 01-12-2019.

[18] Jansen, D. (2010). *The Electronic Design Automation Handbook*. Springer US.

[19] Komzalov, A. and Shilov, N. (2017). Driver Assistance Systems : State-of-the-Art and Possible Improvements. In Balandin, S., Levina, A., and Tyutina, T., editors, *Proceedings of the 20th Conference of Open Innovations Association FRUCT*, pages 602–608, Saint-Petersburg. Saint-Petersburg Electrotechnical University "LETI" and Technopark of ITMO.

[20] LattePanda Team (2019). Multiple OS Support. http://docs.lattepanda.com/content/1st_edition/os/. Accedido 10-12-2019.

[21] Leibson, S., Martin, G., Ayala, J. L., López-Vallejo, M., Bertozzi, D., Benini, L., Gilabert, F., De Micheli, G., Popovici, K., Cesário, W. O., Wagner, F. R., Jerraya, A. A., Hutton, M., and Betz, V. (2009). *Embedded Systems Handbook: Embedded*
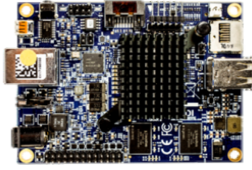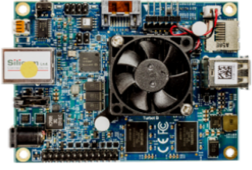
Systems Design and Verification (Industrial Information Technology). CRC Press Taylor & Francis Group, San Francisco, California, 2da edition.

[22] Li Yuanyuan, Xiao Peng, and Deng Wu (2010). The method to test Linux software performance. In *2010 International Conference on Computer and Communication Technologies in Agriculture Engineering*, volume 1, pages 420–423. IEEE.

[23] Lin, Y. (2007). *Essential Issues in SOC Design: Designing Complex Systems-on-Chip*. Springer Netherlands.

[24] Mercadeo y Ventas (2017). ¿cómo le apuesta colombia a la economía naranja? https://www.grupobancolombia.com/wps/portal/negocios-pymes/actualizate/mercadeo-y-ventas/apuesta-colombia-economia-naranja. Accedido 01-12-2019.

[25] Mosquet, X., Dauner, T., Lang, N., Rüßmann, M., Agrawal, R., and Schmieg, F. (2015). Revolution in the driver's seat: The road to autonomous vehicles. https://www.bcgperspectives.com/content/articles/automotive-consumer-insight-revolution-drivers-seat-road-autonomous-vehicles/. Accedido 01-10-2019.

[26] Observatorio Nacional de Seguridad Vial, Instituto Nacional de Medicina Legal y Ciencias Forenses, Ministerio de Transporte, Registro Único Nacional de Tránsito, Policía Nacional de Colombia, and Observatorio Iberoamericano de Seguridad Vial (2019). Cifras definitivas enero - diciembre 2018. https://ansv.gov.co/observatorio/?op=Contenidos&sec=59. Accedido 12-09-2019.

[27] Ortmeyer, C. (2014). Then and now a brief history of single board computers. *Electronic design uncovered*, 06.

[28] Rankin, K. and Mako Hill, B. (2013). *The Official Ubuntu Server Book, Third Edition*. Prentice Hall.

[29] Redacción Economía (2018). Los costos de la accidentalidad vial en el país ascienden a $3,6 billones. https://www.elespectador.com/economia/los-costos-de-la-accidentalidad-vial-en-el-pais-ascienden-36-billones-articulo-814793. Accedido 05-09-2019.

[30] Reyes Fajardo, J. M. (2018). Vehículos autónomos, ¿a la vuelta de la esquina? https://www.bcgperspectives.com/content/articles/automotive-consumer-insight-revolution-drivers-seat-road-autonomous-vehicles/. Accedido 03-12-2019.

[31] Rohaut, S. (2012). *Linux: Preparación para la certificación LPIC-1 (exámenes LPI 101 y LPI 102) - [2a edición]*. Eni.

[32] Sarmiento Gamboa, K. S., Vasquez Lagos, J. E., and Laguna Suarez, O. L. (2015). Desarrollo de planeación y seguimiento de trayectorias para un vehículo autónomo.

[33] Sharma, K. R., Honc, D., and Dusek, F. (2014). Sensor fusion for prediction of orientation and position from obstacle using multiple IR sensors an approach based on kalman filter. In *2014 International Conference on Applied Electronics*. IEEE.

[34] Siegwart, R., Nourbakhsh, I. R., and Scaramuzza, D. (2011). *Introduction to Autonomous Mobile Robots*. The MIT Press, Cambridge, second edi edition.

[35] Soyinka, W. (2016). *Linux Administration A Beginner's Guide*. McGraw Hill Professional, seventh ed edition.

[36] Stevens, T. F. (2015). *A LiDAR Based Semi-Autonomous Collision Avoidance System and the Development of a Hardware-in-the-Loop Simulator to Aid in Algorithm Development and Human Studies*. PhD thesis, California Polytechnic State University.

[37] TullyFoote and Open Source Robotics Foundation, Inc. (2018). Ros kinetic installation instructions. http://wiki.ros.org/kinetic/Installation. Accedido 01-12-2019.

[38] van Vugt, S. (2009). *Pro Ubuntu Server Administration*. Apress, Berkeley, CA.

[39] Vivacqua, R., Vassallo, R., and Martins, F. (2017). A low cost sensors approach for accurate vehicle localization and autonomous driving application. *Sensors*, 17(10).

[40] Wagner, I. (2019). Projected size of the global autonomous car market in 2018 and 2030. https://www.statista.com/statistics/428692/projected-size-of-global-autonomous-vehicle-market-by-vehicle-type/. Accedido 10-12-2019.

[41] Yano, S., Noda, M., Itani, H., Natsume, M., Itoh, H., Hattori, H., Odashima, T., Kaya, K., Kataoka, S., Yuasa, H., Xiangjun Li, Ando, M., Nogimori, W., and Yamada, T. (1996). A study of maze searching with multiple robots system. In *MHS'96 Proceedings of the Seventh International Symposium on Micro Machine and Human Science*, pages 207–211.

Anexos

A. Matriz de selección SBCs

A continuación se encuentra la matriz de selección de los SBCs:

SBC (single Board Computer)

Name of the board	Turbot Dual-Core	Turbot Quad-Core	Turbot Dual Ethernet Dual-Core
Fabricante.	Minnowboard	Minnowboard	Minnowboard
Proccessor	Intel Atom E3826	Intel Atom E3845	Intel Atom E3826
SoC	64 / 2 / 2	64 / 4 / 4	64 / 2 / 2
Frecuency / cache	1.46 GHz / 1MB	1.91 GHz / 2MB	1.46 GHz / 1MB
	4	5	4
Power	7W	10W	7W
USB3.0	1x host	1x host	1x host
	3	3	3
Memory	2GB DDR3L 1067 MT/s (~17 GB/s theoretical)	2GB DDR3L 1333 MT/s (~21 GB/s theoretical)	2GB DDR3L 1067 MT/s (~17 GB/s theoretical)
	3	3	3
Storage	SPI Flash/Boot ROM: 8MB SPI Flash + SATA: 1 port + MicroSD: 1	SPI Flash/Boot ROM: 8MB SPI Flash + SATA: 1 port + MicroSD: 1	SPI Flash/Boot ROM: 8MB SPI Flash + MicroSD: 1 + M.2: M.2 B slot 25/35/60
	4	4	4
Support	ok	ok	ok
	4	4	4
Pros	MinnowBoard is a non-profit backed by Intel, meaning it gets advice for its architecture by Intel. But all hardware and software parts, including all drivers are completely free and open source. Other than releasing all drivers as open source, Intel has also made the schematics of the board available to download. This way, hackers can give it a try and build anything they want without restrictions.	MinnowBoard is a non-profit backed by Intel, meaning it gets advice for its architecture by Intel. But all hardware and software parts, including all drivers are completely free and open source. Other than releasing all drivers as open source, Intel has also made the schematics of the board available to download. This way, hackers can give it a try and build anything they want without restrictions.	MinnowBoard is a non-profit backed by Intel, meaning it gets advice for its architecture by Intel. But all hardware and software parts, including all drivers are completely free and open source. Other than releasing all drivers as open source, Intel has also made the schematics of the board available to download. This way, hackers can give it a try and build anything they want without restrictions.
	4	4	4
Cons	Price, Although this is not the board's fault per-se, no official OS image has enabled support for GPIO. But if the kernel is compiled from source, it can be compiled with GPIO and PWM enabled.	Price, Although this is not the board's fault per-se, no official OS image has enabled support for GPIO. But if the kernel is compiled from source, it can be compiled with GPIO and PWM enabled.	Price, Although this is not the board's fault per-se, no official OS image has enabled support for GPIO. But if the kernel is compiled from source, it can be compiled with GPIO and PWM enabled.
	2	2	2
Charger	5 V, 4 A	5 V, 4 A	5 V, 4 A
Costs per unit (DLS)	$ 149.00	$ 190.00	$ 175.00
	2	2	2
Link	https://minnowboard.org/minnowboard-turbot/	https://minnowboard.org/minnowboard-turbot/	https://minnowboard.org/minnowboard-turbot-dual-
Ease acquisition process for Escuela Colombiana de ingenieria	0	0	0
Picture			
Sensors			
Total	26	27	26

Turbot Dual Ethernet Quad-Core		Atomic Pi		UDOO X86 ULTRA	
Minnowboard		Digital Loggers Direct		Udoo	
Intel Atom E3845		Intel Atom Z8350		Intel N3710	
64 / 4 / 4		64 / 4 / 4		64 / 4 / 4	
1.91 GHz / 2MB		1.92 GHz / 2MB		2.56 GHz / 2MB	
	5		5		5
10W		Typically 4-15 watts.		6W	
1x host		1x host		3 x USB 3.0	
	3		3		5
2GB DDR3L 1333 MT/s (~21 GB/s theoretical)		2GB DDR3L-1600		8 GB DDR3L	
	3		3		5
SPI Flash/Boot ROM: 8MB SPI Flash + MicroSD: 1 + M.2: M.2 B slot 25/35/60		16GB eMMC, SD slot for adding more - up to 256GB		32GB eMMC storage + Standard SATA connector + M.2 Key B SSD slot + Micro SD card slot	
	4		4		4
ok		Not ok		Ok	
	4		3		4
MinnowBoard is a non-profit backed by Intel. meaning it gets advice for its architecture by Intel. But all hardware and software parts, including all drivers are completely free and open source. Other than releasing all drivers as open source, Intel has also made the schematics of the board available to download. This way, hackers can give it a try and build anything they want without restrictions.		Cheapest intel SBC, System is installed on eMMC rather than an SD card like other SBCs. This means no extra physical components are required in order to get the computer to boot. The 64-bit Intel Atom system-on-a-chip used in the Atomic pi board offers greater processing power in comparison to ARM-based single-board computers. Started as Asus project, adpted by a third party.		Has good guides available online and the community is quite helpful, even if a bit small. With 8 GB of RAM and a 2.56 GHz quad-core Intel CPU, the Udoo x86 Ultra is capable of running most applications an average user would need on a daily basis without any particular problems. You can run an office suite, web browser, or an IDE the same way you would in a normal PC. It can also run some PC games such as DotA, League of Legends and Team Fortress 2 on 720p at 20-30 frames per second. For wired connectivity, the Udoo x86 stands out: It has three USB 3.0 ports, a SATA connector, M.2 slot, microSD slot, Ethernet, HDMI, two DisplayPort connectors, and even an IR RC5 interface. This is on par with what regular desktop computers require.	
	4		5		5
Price, Although this is not the board's fault per-se, no official OS image has enabled support for GPIO. But if the kernel is compiled from source, it can be compiled with GPIO and PWM enabled.		Support is not very realiable, unknown quantities.		It's very expensive though, at least as far as single-board computers go. It's priced at $259. The Udoo x86 community is small as it's just off from the Kickstarter. Not many people have their boards yet, but the fact that Udoo raised over $800,000 at Kickstarter sounds promising. The official forum seems fairly active with an average of 200 views and 5 replies per discussion. The official documentation available at the official website is lacking. Apart from the hardware specification sheet, there's generally not much information or project examples available for the Udoo x86 at the moment. The users will have a lot of tinkering and hacking to do if they want to achieve any positive results with their projects.	
	2		3		3
5 V, 4 A		12V		12V, 3.5A	
$ 199.00		$ 35.88		$ 267.00	
	2		5		1
https://minnowboard.org/minnowboard-turbot-dual-e/		https://dlidirect.com/products/atomic-pi		https://shop.udoo.org/usa/x86/udoo-x86-ultra.html?___from_s	
	0		5		0

| 27 | | 36 | | 32 | |

LattePanda 4G/64G	ESPRESSObin	ROC-RK3328-CC (Renegade)
Lattepanda	Marvell Technology Group and Globalscale Technologies	Libre Computer
Intel Z8350 + Arduino Co-processor: ATmega32u4	Marvell Armada 3700LP (88F3720) ARM Cortex A53	RK3328 SoC ARM Cortex-A53
64 / 4 / 4	64 / 2 / 2	64 / 4 / 4
1.92 GHz / 2MB	1.2GHz / 32KB	1.4 GHz / 256KB
5	3	4
2 W	1 W	8 W
1x	1x	1 USB 3.0 Type A
3	3	3
2/4GB DDR3	1/2 GB DDR3	4GB DDR4-2133 SDRAM
4	3	4
64 GB eMMC + Micro SD card slot	1 SATA interface + 1 micro SD card slot with footprint for an optional 4GB EMMC	MicroSD Card Slot with UHS support + eMMC Interface with 5.x support
5	3	3
Win 10	not ok	good
2	1	4
System is installed on eMMC rather than an SD card like other SBCs. This means no extra physical components are required in order to get the computer to boot. The 64-bit Intel Atom system-on-a-chip used in the LattePanda board offers greater processing power in comparison to ARM-based single-board computers.	The SATA support is native on SoC. There is a PCIe that eventually can be connected to a board like this: SATA 3.0 PCIe adapter Last kernel version is available.	Once you get fast storage and a decent power supply everything appears to work fairly well with GPIO supported, and 3D graphics acceleration working in Ubuntu and Debian. ince the board comes with DDR4 memory it may perform better than competing solution It is the only other board besides Le Potato to support UHS
5	4	3
While it may work with other OSes such as Linux or Android, it has no official images for these operating systems and may have compatibility issues.	Is very expensive! The board is very young and maybe leak some experience and user support.	performance looks a bit lower than accepted
2	1	3
5V, 2A	12V , 2A	5/12V , 2A
89.00 - 149.00	$ 49.00	$ 80.00
2	4	3
https://www.lattepanda.com/products/3.html	http://espressobin.net/tech-spec/	https://libre.computer/products/boards/roc-rk3328-cc/
5	0	0

| 33 | 22 | 27 |
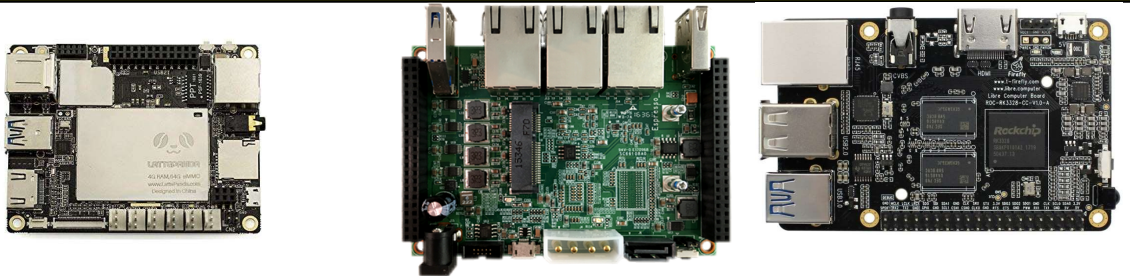
ROC-RK3399-PC (Renegade Elite)	ROCK64	ROCK64PRO
Libre Computer	PINE64	PINE64
RK3399 SoC 2 ARM Cortex-A72 + 4 ARM Cortex-A53	RK3328 SoC ARM Cortex-A53	RK3399 SoC 2 ARM Cortex-A72 + 4 ARM Cortex-A53
64 / 2 + 4 / 4	64 / 4 / 4	64 / 2 + 4 / 4
1.8 GHz / 1MB	1.4 GHz / 256KB	1.8 GHz / 1MB
5	4	5
8 W	8 W	8 W
2 USB 3.0 Type C	1 USB 3.0 Type A	2 USB 3.0 1 Type A + Type C
4	3	4
4GB LPDDR4 SDRAM	4GB LPDDR3-1600 SDRAM	2/4GB LPDDR4 SDRAM
4	4	4
MicroSD Card Slot with UHS support + eMMC Interface with 5.x support	128 Mbit SPI Flash + eMMC Interface + MicroSD Card Slot	129 Mbit SPI Flash + eMMC Interface + MicroSD Card Slot
3	3	4
good	not ok	not ok
4	2	3
Once you get fast storage and a decent power supply everything appears to work fairly well with GPIO supported, and 3D graphics acceleration working in Ubuntu and Debian. Renegade Elite will support Linux based operating systems like Debian, Arch, Ubuntu, Fedora, OpenSUSE, Android 8.1, and more. Supported Linux kernel versions will include Linux mainline 4.19 or greater, and Linux 4.4 from Rockchip SDK. The company will also provide a UEFI-capable GUI bootloader stored in the SPI flash for network boot. ince the board comes with DDR4 memory it may perform better than competing solution It is the only other board besides Le Potato to support UHS	eMMC + Beats Raspberry Pi on price and performance. Can use Pi shields.	eMMC + Beats Raspberry Pi on price and performance. Can use Pi shields.
3	3	3
performance looks a bit lower than accepted	Only Android with TV UI is available. It is almost unusable with a touchscreen display. Lack of accessories Community is somewhat helpful but is very small. The board developers do not participate in community discussions. No regular Android build available. Lack of accessories and project guidelines.	Only Android with TV UI is available. It is almost unusable with a touchscreen display. Lack of accessories Community is somewhat helpful but is very small. The board developers do not participate in community discussions. No regular Android build available. Lack of accessories and project guidelines.
3	2	2
5/12V , 2A	5V , 3A	12V , 3/5A
$ 100.00	$ 44.99	$ 79.99
2	4	3
https://libre.computer/products/boards/roc-rk3399-pc/	https://www.pine64.org/?page_id=7147	https://www.pine64.org/?page_id=61456
0	0	0

| 28 | 25 | 28 |
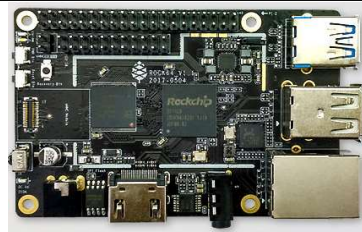
UP core	Orange Pi 3	Orange Pi lite2
Digital Loggers Direct	OrangePi	OrangePi
Intel Atom Z8350	Allwinner H6 Quad-core ARM Cortex™-A53	Allwinner H6 Quad-core ARM Cortex™-A53
64 / 4 / 4	64 / 4 / 4	64 / 4 / 4
1.92 GHz / 2MB	1.8GHz / 64KB	1.8GHz / 64KB
5	4	4
x1 (Type A)	4x USB 3.0 Host	1x USB 3.0 Host
3	5	3
1GB/2GB/4GB DDR3L	2GB LPDDR3	1GB LPDDR3
3	3	3
16GB/32GB/64GB eMMC	8GB eMMC flash + SD card	TF card (Max. 32GB) /MMC card slot
4	5	3
ok	not good	not good
4	2	2
System is installed on eMMC rather than an SD card like other SBCs. This means no extra physical components are required in order to get the computer to boot. The 64-bit Intel Atom system-on-a-chip used in the LattePanda board offers greater processing power in comparison to ARM-based single-board compute	Orange Pi supports Raspbian, Ubuntu, Android and many more operating systems. It claims to support all OSes supported by Raspberry Pi and it seems to be true most of the time. The Orange Pi PC is extremely cheap, especially compared to the SBCs it competes against.	Orange Pi supports Raspbian, Ubuntu, Android and many more operating systems. It claims to support all OSes supported by Raspberry Pi and it seems to be true most of the time. The Orange Pi PC is extremely cheap, especially compared to the SBCs it competes against.
5	4	4
Is expensive! And getting to end of life. Need accesories	Lack os sofware support	Lack os sofware support
3	2	2
5V, 3A	5V , 2A	5V , 2A
99-169	$ 39.90	$ 25.00
3	4	5
https://up-shop.org/up-core/271-up-core.html	http://www.orangepi.org/Orange%20Pi%203/	http://www.orangepi.org/Orange%20Pi%20Lite%202/
5	0	0

| 32 | 29 | 26 |
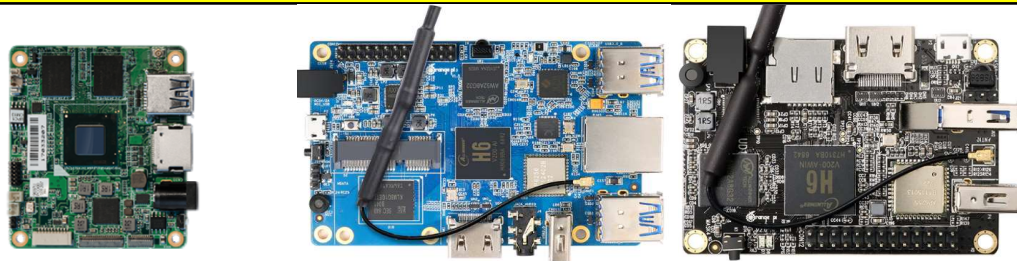
Orange Pi RK3399	Odroid-XU4	ODROID-XU4Q
OrangePi	HARDKERNEL CO	HARDKERNEL CO
RK3399 SoC 2 ARM Cortex-A72 + 4 ARM Cortex-A53 with sep	Samsung Exynos5422 Cortex™-A15 an Cortex™-A7	Samsung Exynos5422 Cortex™-A15 an Cortex™-A7
64 / 2 + 4 / 4	32 / 4 + 4 / 8	32 / 4 + 4 / 8
1.8 GHz / 1MB	2.1 Ghz / 1MB	2.1 Ghz / 1MB
5	**3**	**3**
8 W	10 W	10 W
1x USB 3.0 Host	2 x USB 3.0 Hos	2 x USB 3.0 Hos
3	**4**	**4**
4GB DDR3	2GB LPDDR3	2GB LPDDR3
4	**3**	**3**
16GB High-Speed eMMC + MicroSD (TF) Card Slot + miniPCIe (for LTE / mSATA) + mSATA interface	eMMC5.0 HS400 Flash Storage	eMMC5.0 HS400 Flash Storage
5	**3**	**3**
not good	ok	ok
2	**3**	**3**
It claims to support Android 6.0、Debian 9. The Orange Pi PC is extremely cheap, especially compared to the SBCs it competes against. Has a lot of sensor already included	The performance runs laps around competitors in terms of raw power with its impressive specs and octa-core processing. ODROID supports and can run a full desktop version of Ubuntu. Other than that it can run Android, of which there are some excellent ports for ODROID-XU4.	The performance runs laps around competitors in terms of raw power with its impressive specs and octa-core processing. ODROID supports and can run a full desktop version of Ubuntu. Other than that it can run Android, of which there are some excellent ports for ODROID-XU4.
4	**4**	**4**
Lack os sofware support	The ODROID GPIO pins operate at 1.8V which means that it cannot support most accessories and sensors on the market which operate at 3.3V or 5V. But this can be fixed for the XU4 with the XU4 Shifter Shield which adapts them for voltages used in the market. It comes at an extra cost of $18 though. SD card corrupts easily with the XU4, you can use emmc for more stability but even then it is not that reliable. You will also need to reimage the memory every so often.	The ODROID GPIO pins operate at 1.8V which means that it cannot support most accessories and sensors on the market which operate at 3.3V or 5V. But this can be fixed for the XU4 with the XU4 Shifter Shield which adapts them for voltages used in the market. It comes at an extra cost of $18 though. SD card corrupts easily with the XU4, you can use emmc for more stability but even then it is not that reliable. You will also need to reimage the memory every so often.
2	**3**	**3**
5/12V , 2A	5V, 4A	5V, 4A
$ 89.39	$ 59.00	$ 59.00
3	**4**	**4**
http://www.orangepi.org/Orange%20Pi%20RK3399/	https://www.hardkernel.com/shop/odroid-xu4-special-price/	https://www.hardkernel.com/shop/odroid-xu4q-special-price/
5	**5**	**0**
1 x Gyroscope+G-Sensor(MPU6500) 1 x Gyroscope(LSM6DS3) 1 x HALL Sensor(HAL248TWCL) 1 x Light Sensor(CM32181) 1 x Compass(AK09911)		
33	**32**	**27**
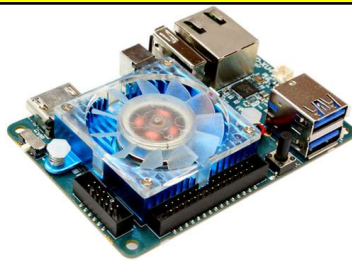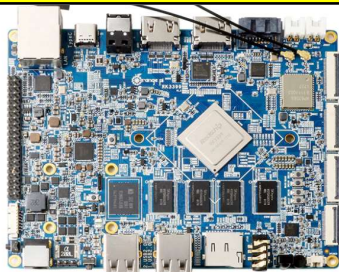
ODROID-H2	Raspberry pi 4	BeagleBoard-X15
HARDKERNEL CO		BeagleBoard.org
Intel J4105	Broadcom BCM2711	TI AM5728 ARM® Cortex-A15 + 2×700-MHz C66 (DSPs) + 2×A
64 / 4 / 4	64 / 4 / 4	32 / 2 / 2
2.5 Ghz / 4MB	1.5GHz / 1MB	1.5 GHz / 2MB
5	4	4
10 W, 22W under CPU+GPU Stress	8 W	8 W
2 x 3.0	2 x 3.0	3×SuperSpeed USB 3.0 host
4	4	5
DDR4-PC19200 (2400MT/s) SO-DIMM slots Max memory capa	1GB, 2GB or 4GB LPDDR4-2400 SDRAM	2GB DDR3 RAM
5	4	3
4 x PCIe 2.0 for one M.2 NVMe storage + 2 x SATA 3.0	Micro-SD card slot for loading operating system and data storag	eSATA (500mA) + microSD card slot + 4×60-pin headers with PCIe, mSATA
3	2	2
ok	Excelent	not bad
3	5	2
The performance runs laps around competitors in terms of raw power with its impressive specs and octa-core processing. ODROID supports and can run a full desktop version of Ubuntu. Other than that it can run Android.	Best support in the marker, Can run diferents operative systems	Multiplatafor, multiple unit of data processing
4	5	2
	Needs a SD card or an aditional SSD to mount operative systems, can't not boot directly from USB, need an special image to lanch Oss	
2	3	2
14V ~ 20V, 4A	5V 3A	12V, 5A
$ 111.00	35 -55	$ 259.99
2	4	1
https://www.hardkernel.com/shop/odroid-h2/	https://www.raspberrypi.org/products/raspberry-pi-4-model-b/	https://beagleboard.org/x15
0	5	0
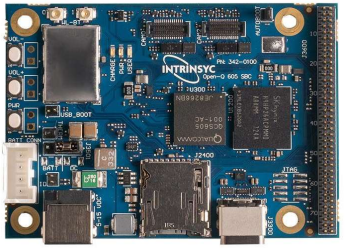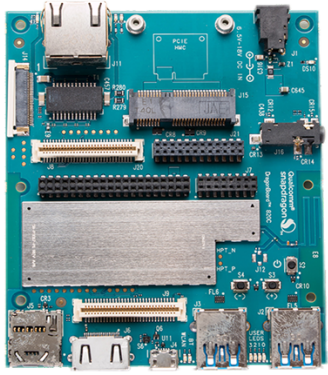
| 28 | 30 | 21 |

Magicstickone	INFORCE 6560	INFORCE 6640
MagicStick	Inforce Computing, Inc	Inforce Computing, Inc
Intel Z8700	Snapdragon™ 660	Snapdragon™ 820
64 / 4 / 4	64 / 4 + 4 / 4	63 / 2 + 2 / 2
2.40 GHz / 2 MB	2.2GHz / 1MB High Cores 1.8GHz / 1MB Low Cores	2.2GHz / 1MB High Cores 1.6GHz / 1MB Low Cores
5	5	4
5 W	10 W	10 W
One USB 3.1 Type C	USB-C on USB 3.1/gen1 + USB-HS	1× USB 3.0 (Host)
4	3	3
2 GB DDR3L RAM	3GB on-board LPDDR4 RAM	4GB on-board LPDDR4 RAM
3	3	4
	32GB eMMC ROM + 1 x µSD card v3.0 interface + USB-HS	64GB UFS 2.0 gear 3 (1 lane) + 1x µSD card v3.0 interface with support for SDR104 (UHS-I)
	2	4	4
ok	ok	ok
4	4	4
	2	2	2
	2		
5V, 4A		
$ 249.00	$ 220.00	$ 289.00
1	1	1
https://www.magicstickone.com	https://www.inforcecomputing.com/products/single-board-comp	https://www.inforcecomputing.com/products/single-board-comp
	5	0	0

| 28 | 22 | 22 |

iW-RainboW-G25S Snapdragon 820 SBC	Open-Q™ 605	Arrow Dragonboard 820c
iWave Systems Technologies	Intrinsyc Technologies Corporation	Arrow - 96Boards
Snapdragon 820	Qualcomm® Kryo™ 300 Octa-core	Snapdragon 820
64 / 2 + 2 / 2	64/ 2 + 6 / 6	64 / 2 + 2 / 2
2.2GHz / 1MB High Cores 1.6GHz / 1MB Low Cores	2.5GHz / 1MB High Cores 1.7GHz / 1MB Low Cores	2.2GHz / 1MB High Cores 1.6GHz / 1MB Low Cores
4	4	4
10 W		10 W
2x USB 3.0	USB3.1 Type-C interface with DisplayPort video output and Qui	2x USB 3.0 port,
4	3	4
3GB LPDDR4 expandable to 6GB	4GB LPDDR4X SDRAM	3 GB LPDDR4
3	4	3
32GB eMMC flash expandable to 128 GB, microSD slot	32GB eMMC Flash storage	32 GB UFS Flash + micro SD slot + maybe an mSATA slot
5	5	4
ok	ok	Very Good
4	4	5
2	2	2
There is NO Linux support for this board from Arrow, Qualcomm, or Linaro.org	There is NO Linux support for this board from Arrow, Qualcomm, or Linaro.org	There is NO Linux support for this board from Arrow, Qualcomm, or Linaro.org
1	1	1
< 250	$ 359.00	$ 199.00
1	1	1
http://www.embeddedtechnologies.com/solutions/iwave_systems_technologies/single_board_computers/snapdragon_820_sbc/		
0	0	0

| 24 | 24 | 24 |

B. Archivos de texto plano

Este anexo contiene los archivos de texto plano para la adquisición de variables de interés en las pruebas realizadas a los SBCs

B.1. Adquisición datos Atomic Pi

Prueba sin carga

Anexos/atomic_sin_carga.txt

```
Sat Dec 14 19:24:35 -05 2019 top - 19:24:35 up  1:26,  2 users,  load average: 0.03, 0.01, 0.00
%Cpu0  :  0.9 us,  0.5 sy,  0.0 ni, 98.1 id,  0.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  1.1 us,  0.7 sy, 21.4 ni, 76.3 id,  0.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  1.2 us,  0.4 sy,  0.0 ni, 98.2 id,  0.2 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.9 us,  0.4 sy,  0.9 ni, 97.7 id,  0.2 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959840 total,   185844 free,   124668 used,  1649328 buff/cache
KiB Swap:  2007036 total,  2007028 free,        8 used.  1581920 avail Mem
Sat Dec 14 19:25:05 -05 2019 top - 19:25:05 up  1:27,  2 users,  load average: 0.02, 0.01, 0.00
%Cpu0  :  0.9 us,  0.5 sy,  0.0 ni, 98.1 id,  0.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  1.1 us,  0.7 sy, 21.3 ni, 76.5 id,  0.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  1.2 us,  0.4 sy,  0.0 ni, 98.2 id,  0.2 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.9 us,  0.4 sy,  0.9 ni, 97.7 id,  0.2 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959840 total,   185332 free,   125172 used,  1649336 buff/cache
KiB Swap:  2007036 total,  2007028 free,        8 used.  1581424 avail Mem
Sat Dec 14 19:25:35 -05 2019 top - 19:25:36 up  1:27,  2 users,  load average: 0.01, 0.01, 0.00
%Cpu0  :  0.9 us,  0.5 sy,  0.0 ni, 98.1 id,  0.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  1.1 us,  0.7 sy, 21.2 ni, 76.6 id,  0.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  1.2 us,  0.4 sy,  0.0 ni, 98.2 id,  0.2 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.9 us,  0.4 sy,  0.9 ni, 97.7 id,  0.2 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959840 total,   185580 free,   124880 used,  1649380 buff/cache
KiB Swap:  2007036 total,  2007028 free,        8 used.  1581696 avail Mem
Sat Dec 14 19:26:06 -05 2019 top - 19:26:06 up  1:28,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.9 us,  0.5 sy,  0.0 ni, 98.1 id,  0.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  1.1 us,  0.7 sy, 21.0 ni, 76.7 id,  0.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  1.2 us,  0.4 sy,  0.0 ni, 98.2 id,  0.2 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.9 us,  0.4 sy,  0.9 ni, 97.7 id,  0.2 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959840 total,   185876 free,   124588 used,  1649376 buff/cache
KiB Swap:  2007036 total,  2007028 free,        8 used.  1582008 avail Mem
Sat Dec 14 19:26:36 -05 2019 top - 19:26:36 up  1:28,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.9 us,  0.5 sy,  0.0 ni, 98.2 id,  0.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  1.1 us,  0.7 sy, 20.9 ni, 76.9 id,  0.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  1.2 us,  0.4 sy,  0.0 ni, 98.2 id,  0.2 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.9 us,  0.3 sy,  0.9 ni, 97.7 id,  0.2 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959840 total,   185672 free,   124784 used,  1649384 buff/cache
KiB Swap:  2007036 total,  2007028 free,        8 used.  1581820 avail Mem
Sat Dec 14 19:27:06 -05 2019 top - 19:27:06 up  1:29,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.9 us,  0.5 sy,  0.0 ni, 98.2 id,  0.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  1.1 us,  0.7 sy, 20.8 ni, 77.0 id,  0.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  1.2 us,  0.4 sy,  0.0 ni, 98.2 id,  0.2 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.9 us,  0.3 sy,  0.9 ni, 97.7 id,  0.2 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959840 total,   185548 free,   124896 used,  1649396 buff/cache
KiB Swap:  2007036 total,  2007028 free,        8 used.  1581704 avail Mem
Sat Dec 14 19:27:36 -05 2019 top - 19:27:37 up  1:29,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.9 us,  0.5 sy,  0.0 ni, 98.2 id,  0.4 wa,  0.0 hi,  0.0 si,  0.0 st
```

```
%Cpu1  :  1.1 us,  0.7 sy, 20.7 ni, 77.1 id,  0.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  1.2 us,  0.4 sy,  0.0 ni, 98.3 id,  0.2 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.8 us,  0.3 sy,  0.9 ni, 97.7 id,  0.2 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959840 total,   185208 free,   125200 used,  1649432 buff/cache
KiB Swap:  2007036 total,  2007028 free,        8 used.  1581376 avail Mem
Sat Dec 14 19:28:07 -05 2019 top - 19:28:07 up  1:30,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.9 us,  0.5 sy,  0.0 ni, 98.2 id,  0.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  1.1 us,  0.7 sy, 20.6 ni, 77.3 id,  0.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  1.2 us,  0.4 sy,  0.0 ni, 98.3 id,  0.2 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.8 us,  0.3 sy,  0.9 ni, 97.8 id,  0.2 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959840 total,   185472 free,   124924 used,  1649444 buff/cache
KiB Swap:  2007036 total,  2007028 free,        8 used.  1581640 avail Mem
Sat Dec 14 19:28:37 -05 2019 top - 19:28:37 up  1:30,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.9 us,  0.5 sy,  0.0 ni, 98.2 id,  0.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  1.1 us,  0.7 sy, 20.5 ni, 77.4 id,  0.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  1.2 us,  0.4 sy,  0.0 ni, 98.3 id,  0.2 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.8 us,  0.3 sy,  0.9 ni, 97.8 id,  0.2 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959840 total,   185272 free,   125104 used,  1649464 buff/cache
KiB Swap:  2007036 total,  2007028 free,        8 used.  1581448 avail Mem
Sat Dec 14 19:29:07 -05 2019 top - 19:29:07 up  1:31,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.9 us,  0.5 sy,  0.0 ni, 98.2 id,  0.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  1.0 us,  0.7 sy, 20.3 ni, 77.5 id,  0.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  1.2 us,  0.4 sy,  0.0 ni, 98.3 id,  0.2 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.8 us,  0.3 sy,  0.9 ni, 97.8 id,  0.2 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959840 total,   185688 free,   124668 used,  1649484 buff/cache
KiB Swap:  2007036 total,  2007028 free,        8 used.  1581872 avail Mem
Sat Dec 14 19:29:37 -05 2019 top - 19:29:37 up  1:31,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.9 us,  0.5 sy,  0.0 ni, 98.2 id,  0.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  1.0 us,  0.7 sy, 20.2 ni, 77.6 id,  0.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  1.2 us,  0.4 sy,  0.0 ni, 98.3 id,  0.2 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.8 us,  0.3 sy,  0.9 ni, 97.8 id,  0.2 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959840 total,   186044 free,   124320 used,  1649476 buff/cache
KiB Swap:  2007036 total,  2007028 free,        8 used.  1582236 avail Mem
Sat Dec 14 19:30:07 -05 2019 top - 19:30:08 up  1:32,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.9 us,  0.5 sy,  0.0 ni, 98.2 id,  0.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  1.0 us,  0.7 sy, 20.1 ni, 77.7 id,  0.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  1.2 us,  0.4 sy,  0.0 ni, 98.3 id,  0.2 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.8 us,  0.3 sy,  0.9 ni, 97.8 id,  0.2 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959840 total,   185580 free,   124748 used,  1649512 buff/cache
KiB Swap:  2007036 total,  2007028 free,        8 used.  1581788 avail Mem
Sat Dec 14 19:30:38 -05 2019 top - 19:30:38 up  1:32,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.9 us,  0.5 sy,  0.0 ni, 98.2 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  1.0 us,  0.7 sy, 20.0 ni, 77.9 id,  0.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  1.2 us,  0.4 sy,  0.0 ni, 98.3 id,  0.2 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.8 us,  0.3 sy,  0.8 ni, 97.8 id,  0.2 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959840 total,   185952 free,   124400 used,  1649488 buff/cache
KiB Swap:  2007036 total,  2007028 free,        8 used.  1582160 avail Mem
Sat Dec 14 19:31:08 -05 2019 top - 19:31:08 up  1:33,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.9 us,  0.5 sy,  0.0 ni, 98.2 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  1.0 us,  0.7 sy, 19.9 ni, 78.0 id,  0.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  1.2 us,  0.4 sy,  0.0 ni, 98.3 id,  0.2 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.8 us,  0.3 sy,  0.8 ni, 97.8 id,  0.2 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959840 total,   185676 free,   124660 used,  1649504 buff/cache
KiB Swap:  2007036 total,  2007028 free,        8 used.  1581900 avail Mem
Sat Dec 14 19:31:38 -05 2019 top - 19:31:38 up  1:33,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.9 us,  0.5 sy,  0.0 ni, 98.2 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  1.0 us,  0.7 sy, 19.8 ni, 78.1 id,  0.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  1.2 us,  0.4 sy,  0.0 ni, 98.3 id,  0.2 wa,  0.0 hi,  0.0 si,  0.0 st
```

```
%Cpu3  :  0.8 us,  0.3 sy,  0.8 ni, 97.8 id,  0.2 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959840 total,    185968 free,    124344 used,  1649528 buff/cache
KiB Swap:  2007036 total,  2007028 free,        8 used.  1582200 avail Mem
Sat Dec 14 19:32:08 -05 2019 top - 19:32:08 up  1:34,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.9 us,  0.5 sy,  0.0 ni, 98.3 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  1.0 us,  0.7 sy, 19.7 ni, 78.2 id,  0.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  1.2 us,  0.4 sy,  0.0 ni, 98.3 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.8 us,  0.3 sy,  0.8 ni, 97.8 id,  0.2 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959840 total,    185456 free,    124836 used,  1649548 buff/cache
KiB Swap:  2007036 total,  2007028 free,        8 used.  1581696 avail Mem
Sat Dec 14 19:32:39 -05 2019 top - 19:32:39 up  1:34,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.9 us,  0.5 sy,  0.0 ni, 98.3 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  1.0 us,  0.7 sy, 19.6 ni, 78.3 id,  0.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  1.1 us,  0.4 sy,  0.0 ni, 98.3 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.8 us,  0.3 sy,  0.8 ni, 97.9 id,  0.2 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959840 total,    185688 free,    124608 used,  1649544 buff/cache
KiB Swap:  2007036 total,  2007028 free,        8 used.  1581944 avail Mem
Sat Dec 14 19:33:09 -05 2019 top - 19:33:09 up  1:35,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.9 us,  0.5 sy,  0.0 ni, 98.3 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  1.0 us,  0.7 sy, 19.5 ni, 78.5 id,  0.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  1.1 us,  0.4 sy,  0.0 ni, 98.4 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.8 us,  0.3 sy,  0.8 ni, 97.9 id,  0.2 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959840 total,    185424 free,    124860 used,  1649556 buff/cache
KiB Swap:  2007036 total,  2007028 free,        8 used.  1581680 avail Mem
Sat Dec 14 19:33:39 -05 2019 top - 19:33:39 up  1:35,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.8 us,  0.5 sy,  0.0 ni, 98.3 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  1.0 us,  0.7 sy, 19.4 ni, 78.6 id,  0.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  1.1 us,  0.4 sy,  0.0 ni, 98.4 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.8 us,  0.3 sy,  0.8 ni, 97.9 id,  0.2 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959840 total,    185676 free,    124604 used,  1649560 buff/cache
KiB Swap:  2007036 total,  2007028 free,        8 used.  1581940 avail Mem
Sat Dec 14 19:34:09 -05 2019 top - 19:34:09 up  1:36,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.8 us,  0.5 sy,  0.0 ni, 98.3 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  1.0 us,  0.6 sy, 19.3 ni, 78.7 id,  0.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  1.1 us,  0.3 sy,  0.0 ni, 98.4 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.8 us,  0.3 sy,  0.8 ni, 97.9 id,  0.2 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959840 total,    185720 free,    124556 used,  1649564 buff/cache
KiB Swap:  2007036 total,  2007028 free,        8 used.  1581992 avail Mem
Sat Dec 14 19:34:39 -05 2019 top - 19:34:40 up  1:36,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.8 us,  0.5 sy,  0.0 ni, 98.3 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  1.0 us,  0.6 sy, 19.2 ni, 78.8 id,  0.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  1.1 us,  0.3 sy,  0.0 ni, 98.4 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.8 us,  0.3 sy,  0.8 ni, 97.9 id,  0.2 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959840 total,    185580 free,    124644 used,  1649616 buff/cache
KiB Swap:  2007036 total,  2007028 free,        8 used.  1581872 avail Mem
Sat Dec 14 19:35:10 -05 2019 top - 19:35:10 up  1:37,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.8 us,  0.5 sy,  0.0 ni, 98.3 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  1.0 us,  0.6 sy, 19.1 ni, 78.9 id,  0.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  1.1 us,  0.3 sy,  0.0 ni, 98.4 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.8 us,  0.3 sy,  0.8 ni, 97.9 id,  0.2 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959840 total,    185440 free,    124816 used,  1649584 buff/cache
KiB Swap:  2007036 total,  2007028 free,        8 used.  1581740 avail Mem
Sat Dec 14 19:35:40 -05 2019 top - 19:35:40 up  1:37,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.8 us,  0.5 sy,  0.0 ni, 98.3 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  1.0 us,  0.6 sy, 19.0 ni, 79.0 id,  0.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  1.1 us,  0.3 sy,  0.0 ni, 98.4 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.8 us,  0.3 sy,  0.8 ni, 97.9 id,  0.2 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959840 total,    185176 free,    125068 used,  1649596 buff/cache
```

```
KiB Swap:  2007036 total,  2007028 free,        8 used.  1581476 avail Mem
Sat Dec 14 19:36:10 -05 2019 top - 19:36:10 up  1:38,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.8 us,  0.5 sy,  0.0 ni, 98.3 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  1.0 us,  0.6 sy, 18.9 ni, 79.1 id,  0.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  1.1 us,  0.3 sy,  0.0 ni, 98.4 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.8 us,  0.3 sy,  0.8 ni, 97.9 id,  0.2 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959840 total,   185472 free,   124764 used,  1649604 buff/cache
KiB Swap:  2007036 total,  2007028 free,        8 used.  1581780 avail Mem
Sat Dec 14 19:36:40 -05 2019 top - 19:36:40 up  1:38,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.8 us,  0.5 sy,  0.0 ni, 98.3 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  1.0 us,  0.6 sy, 18.8 ni, 79.2 id,  0.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  1.1 us,  0.3 sy,  0.0 ni, 98.4 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.8 us,  0.3 sy,  0.8 ni, 97.9 id,  0.2 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959840 total,   185052 free,   125160 used,  1649628 buff/cache
KiB Swap:  2007036 total,  2007028 free,        8 used.  1581368 avail Mem
Sat Dec 14 19:37:10 -05 2019 top - 19:37:11 up  1:39,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.8 us,  0.5 sy,  0.0 ni, 98.3 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  1.0 us,  0.6 sy, 18.7 ni, 79.3 id,  0.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  1.1 us,  0.3 sy,  0.0 ni, 98.4 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.8 us,  0.3 sy,  0.8 ni, 97.9 id,  0.2 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959840 total,   185440 free,   124756 used,  1649644 buff/cache
KiB Swap:  2007036 total,  2007028 free,        8 used.  1581772 avail Mem
Sat Dec 14 19:37:41 -05 2019 top - 19:37:41 up  1:39,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.8 us,  0.5 sy,  0.0 ni, 98.3 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  1.0 us,  0.6 sy, 18.6 ni, 79.4 id,  0.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  1.1 us,  0.3 sy,  0.0 ni, 98.4 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.8 us,  0.3 sy,  0.8 ni, 98.0 id,  0.2 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959840 total,   185580 free,   124616 used,  1649644 buff/cache
KiB Swap:  2007036 total,  2007028 free,        8 used.  1581912 avail Mem
Sat Dec 14 19:38:11 -05 2019 top - 19:38:11 up  1:40,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.8 us,  0.5 sy,  0.0 ni, 98.4 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  1.0 us,  0.6 sy, 18.5 ni, 79.5 id,  0.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  1.1 us,  0.3 sy,  0.0 ni, 98.4 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.8 us,  0.3 sy,  0.8 ni, 98.0 id,  0.2 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959840 total,   185660 free,   124520 used,  1649660 buff/cache
KiB Swap:  2007036 total,  2007028 free,        8 used.  1582004 avail Mem
Sat Dec 14 19:38:41 -05 2019 top - 19:38:41 up  1:40,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.8 us,  0.5 sy,  0.0 ni, 98.4 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  1.0 us,  0.6 sy, 18.4 ni, 79.6 id,  0.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  1.1 us,  0.3 sy,  0.0 ni, 98.4 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.8 us,  0.3 sy,  0.8 ni, 98.0 id,  0.2 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959840 total,   185548 free,   124620 used,  1649672 buff/cache
KiB Swap:  2007036 total,  2007028 free,        8 used.  1581900 avail Mem
Sat Dec 14 19:39:11 -05 2019 top - 19:39:12 up  1:41,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.8 us,  0.5 sy,  0.0 ni, 98.4 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.9 us,  0.6 sy, 18.3 ni, 79.7 id,  0.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  1.1 us,  0.3 sy,  0.0 ni, 98.4 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.8 us,  0.3 sy,  0.8 ni, 98.0 id,  0.2 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959840 total,   185192 free,   124952 used,  1649696 buff/cache
KiB Swap:  2007036 total,  2007028 free,        8 used.  1581560 avail Mem
Sat Dec 14 19:39:42 -05 2019 top - 19:39:42 up  1:41,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.8 us,  0.5 sy,  0.0 ni, 98.4 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.9 us,  0.6 sy, 18.2 ni, 79.8 id,  0.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  1.1 us,  0.3 sy,  0.0 ni, 98.5 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.8 us,  0.3 sy,  0.8 ni, 98.0 id,  0.2 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959840 total,   185176 free,   124972 used,  1649692 buff/cache
KiB Swap:  2007036 total,  2007028 free,        8 used.  1581544 avail Mem
Sat Dec 14 19:40:12 -05 2019 top - 19:40:12 up  1:42,  2 users,  load average: 0.00, 0.00, 0.00
```

```
%Cpu0  :  0.8 us,  0.5 sy,  0.0 ni, 98.4 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.9 us,  0.6 sy, 18.1 ni, 79.9 id,  0.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  1.1 us,  0.3 sy,  0.0 ni, 98.5 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.8 us,  0.3 sy,  0.8 ni, 98.0 id,  0.2 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959840 total,   185348 free,   124800 used,  1649692 buff/cache
KiB Swap:  2007036 total,  2007028 free,        8 used.  1581724 avail Mem
Sat Dec 14 19:40:42 -05 2019 top - 19:40:42 up  1:42,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.8 us,  0.5 sy,  0.0 ni, 98.4 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.9 us,  0.6 sy, 18.0 ni, 80.0 id,  0.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  1.1 us,  0.3 sy,  0.0 ni, 98.5 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.7 us,  0.3 sy,  0.8 ni, 98.0 id,  0.2 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959840 total,   185256 free,   124888 used,  1649696 buff/cache
KiB Swap:  2007036 total,  2007028 free,        8 used.  1581640 avail Mem
Sat Dec 14 19:41:12 -05 2019 top - 19:41:12 up  1:43,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.8 us,  0.5 sy,  0.0 ni, 98.4 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.9 us,  0.6 sy, 18.0 ni, 80.1 id,  0.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  1.1 us,  0.3 sy,  0.0 ni, 98.5 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.7 us,  0.3 sy,  0.8 ni, 98.0 id,  0.2 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959840 total,   185068 free,   125068 used,  1649704 buff/cache
KiB Swap:  2007036 total,  2007028 free,        8 used.  1581464 avail Mem
Sat Dec 14 19:41:42 -05 2019 top - 19:41:43 up  1:43,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.8 us,  0.5 sy,  0.0 ni, 98.4 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.9 us,  0.6 sy, 17.9 ni, 80.2 id,  0.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  1.1 us,  0.3 sy,  0.0 ni, 98.5 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.7 us,  0.3 sy,  0.8 ni, 98.0 id,  0.2 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959840 total,   184836 free,   125284 used,  1649720 buff/cache
KiB Swap:  2007036 total,  2007028 free,        8 used.  1581248 avail Mem
Sat Dec 14 19:42:13 -05 2019 top - 19:42:13 up  1:44,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.8 us,  0.5 sy,  0.0 ni, 98.4 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.9 us,  0.6 sy, 17.8 ni, 80.3 id,  0.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  1.0 us,  0.3 sy,  0.0 ni, 98.5 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.7 us,  0.3 sy,  0.8 ni, 98.0 id,  0.2 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959840 total,   185084 free,   125040 used,  1649716 buff/cache
KiB Swap:  2007036 total,  2007028 free,        8 used.  1581500 avail Mem
Sat Dec 14 19:42:43 -05 2019 top - 19:42:43 up  1:44,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.8 us,  0.5 sy,  0.0 ni, 98.4 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.9 us,  0.6 sy, 17.7 ni, 80.4 id,  0.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  1.0 us,  0.3 sy,  0.0 ni, 98.5 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.7 us,  0.3 sy,  0.8 ni, 98.0 id,  0.2 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959840 total,   185300 free,   124816 used,  1649724 buff/cache
KiB Swap:  2007036 total,  2007028 free,        8 used.  1581732 avail Mem
Sat Dec 14 19:43:13 -05 2019 top - 19:43:13 up  1:45,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.8 us,  0.5 sy,  0.0 ni, 98.4 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.9 us,  0.6 sy, 17.6 ni, 80.5 id,  0.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  1.0 us,  0.3 sy,  0.0 ni, 98.5 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.7 us,  0.3 sy,  0.7 ni, 98.1 id,  0.2 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959840 total,   185164 free,   124944 used,  1649732 buff/cache
KiB Swap:  2007036 total,  2007028 free,        8 used.  1581596 avail Mem
Sat Dec 14 19:43:43 -05 2019 top - 19:43:43 up  1:45,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.8 us,  0.5 sy,  0.0 ni, 98.4 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.9 us,  0.6 sy, 17.5 ni, 80.6 id,  0.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  1.0 us,  0.3 sy,  0.0 ni, 98.5 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.7 us,  0.3 sy,  0.7 ni, 98.1 id,  0.2 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959840 total,   185052 free,   125048 used,  1649740 buff/cache
KiB Swap:  2007036 total,  2007028 free,        8 used.  1581500 avail Mem
Sat Dec 14 19:44:13 -05 2019 top - 19:44:14 up  1:46,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.8 us,  0.4 sy,  0.0 ni, 98.4 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.9 us,  0.6 sy, 17.4 ni, 80.7 id,  0.4 wa,  0.0 hi,  0.0 si,  0.0 st
```

```
%Cpu2  :  1.0 us,  0.3 sy,  0.0 ni, 98.5 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.7 us,  0.3 sy,  0.7 ni, 98.1 id,  0.2 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959840 total,   184836 free,   125256 used,  1649748 buff/cache
KiB Swap:  2007036 total,  2007028 free,        8 used.  1581292 avail Mem
Sat Dec 14 19:44:44 -05 2019 top - 19:44:44 up  1:46,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.8 us,  0.4 sy,  0.0 ni, 98.4 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.9 us,  0.6 sy, 17.4 ni, 80.8 id,  0.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  1.0 us,  0.3 sy,  0.0 ni, 98.5 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.7 us,  0.3 sy,  0.7 ni, 98.1 id,  0.2 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959840 total,   184836 free,   125252 used,  1649752 buff/cache
KiB Swap:  2007036 total,  2007028 free,        8 used.  1581292 avail Mem
Sat Dec 14 19:45:14 -05 2019 top - 19:45:14 up  1:47,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.8 us,  0.4 sy,  0.0 ni, 98.5 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.9 us,  0.6 sy, 17.3 ni, 80.9 id,  0.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  1.0 us,  0.3 sy,  0.0 ni, 98.5 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.7 us,  0.3 sy,  0.7 ni, 98.1 id,  0.2 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959840 total,   184928 free,   125144 used,  1649768 buff/cache
KiB Swap:  2007036 total,  2007028 free,        8 used.  1581392 avail Mem
Sat Dec 14 19:45:44 -05 2019 top - 19:45:44 up  1:47,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.8 us,  0.4 sy,  0.0 ni, 98.5 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.9 us,  0.6 sy, 17.2 ni, 80.9 id,  0.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  1.0 us,  0.3 sy,  0.0 ni, 98.5 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.7 us,  0.3 sy,  0.7 ni, 98.1 id,  0.2 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959840 total,   185084 free,   124972 used,  1649784 buff/cache
KiB Swap:  2007036 total,  2007028 free,        8 used.  1581564 avail Mem
Sat Dec 14 19:46:14 -05 2019 top - 19:46:15 up  1:48,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.8 us,  0.4 sy,  0.0 ni, 98.5 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.9 us,  0.6 sy, 17.1 ni, 81.0 id,  0.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  1.0 us,  0.3 sy,  0.0 ni, 98.5 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.7 us,  0.3 sy,  0.7 ni, 98.1 id,  0.2 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959840 total,   184836 free,   125192 used,  1649812 buff/cache
KiB Swap:  2007036 total,  2007028 free,        8 used.  1581332 avail Mem
Sat Dec 14 19:46:45 -05 2019 top - 19:46:45 up  1:48,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.8 us,  0.4 sy,  0.0 ni, 98.5 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.9 us,  0.6 sy, 17.0 ni, 81.1 id,  0.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  1.0 us,  0.3 sy,  0.0 ni, 98.5 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.7 us,  0.3 sy,  0.7 ni, 98.1 id,  0.2 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959840 total,   184696 free,   125344 used,  1649800 buff/cache
KiB Swap:  2007036 total,  2007028 free,        8 used.  1581192 avail Mem
Sat Dec 14 19:47:15 -05 2019 top - 19:47:15 up  1:49,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.8 us,  0.4 sy,  0.0 ni, 98.5 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.9 us,  0.6 sy, 17.0 ni, 81.2 id,  0.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  1.0 us,  0.3 sy,  0.0 ni, 98.6 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.7 us,  0.3 sy,  0.7 ni, 98.1 id,  0.2 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959840 total,   185068 free,   124952 used,  1649820 buff/cache
KiB Swap:  2007036 total,  2007028 free,        8 used.  1581572 avail Mem
Sat Dec 14 19:47:45 -05 2019 top - 19:47:45 up  1:49,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.7 us,  0.4 sy,  0.0 ni, 98.5 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.9 us,  0.6 sy, 16.9 ni, 81.3 id,  0.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  1.0 us,  0.3 sy,  0.0 ni, 98.6 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.7 us,  0.3 sy,  0.7 ni, 98.1 id,  0.2 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959840 total,   185052 free,   124960 used,  1649828 buff/cache
KiB Swap:  2007036 total,  2007028 free,        8 used.  1581564 avail Mem
Sat Dec 14 19:48:15 -05 2019 top - 19:48:15 up  1:50,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.7 us,  0.4 sy,  0.0 ni, 98.5 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.9 us,  0.6 sy, 16.8 ni, 81.4 id,  0.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  1.0 us,  0.3 sy,  0.0 ni, 98.6 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.7 us,  0.3 sy,  0.7 ni, 98.1 id,  0.2 wa,  0.0 hi,  0.0 si,  0.0 st
```

```
KiB Mem :  1959840 total,   184696 free,   125308 used,  1649836 buff/cache
KiB Swap:  2007036 total,  2007028 free,        8 used.  1581224 avail Mem
Sat Dec 14 19:48:45 -05 2019 top - 19:48:46 up  1:50,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.7 us,  0.4 sy,  0.0 ni, 98.5 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.9 us,  0.6 sy, 16.7 ni, 81.5 id,  0.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  1.0 us,  0.3 sy,  0.0 ni, 98.6 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.7 us,  0.3 sy,  0.7 ni, 98.1 id,  0.2 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959840 total,   185124 free,   124864 used,  1649852 buff/cache
KiB Swap:  2007036 total,  2007028 free,        8 used.  1581660 avail Mem
Sat Dec 14 19:49:16 -05 2019 top - 19:49:16 up  1:51,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.7 us,  0.4 sy,  0.0 ni, 98.5 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.9 us,  0.6 sy, 16.7 ni, 81.5 id,  0.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  1.0 us,  0.3 sy,  0.0 ni, 98.6 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.7 us,  0.3 sy,  0.7 ni, 98.2 id,  0.2 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959840 total,   185232 free,   124756 used,  1649852 buff/cache
KiB Swap:  2007036 total,  2007028 free,        8 used.  1581772 avail Mem
Sat Dec 14 19:49:46 -05 2019 top - 19:49:46 up  1:51,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.7 us,  0.4 sy,  0.0 ni, 98.5 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.9 us,  0.6 sy, 16.6 ni, 81.6 id,  0.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  1.0 us,  0.3 sy,  0.0 ni, 98.6 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.7 us,  0.3 sy,  0.7 ni, 98.2 id,  0.2 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959840 total,   184984 free,   124988 used,  1649868 buff/cache
KiB Swap:  2007036 total,  2007028 free,        8 used.  1581540 avail Mem
Sat Dec 14 19:50:16 -05 2019 top - 19:50:16 up  1:52,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.7 us,  0.4 sy,  0.0 ni, 98.5 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.9 us,  0.6 sy, 16.5 ni, 81.7 id,  0.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  1.0 us,  0.3 sy,  0.0 ni, 98.6 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.7 us,  0.3 sy,  0.7 ni, 98.2 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959840 total,   184968 free,   124988 used,  1649884 buff/cache
KiB Swap:  2007036 total,  2007028 free,        8 used.  1581528 avail Mem
Sat Dec 14 19:50:46 -05 2019 top - 19:50:47 up  1:52,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.7 us,  0.4 sy,  0.0 ni, 98.5 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.9 us,  0.6 sy, 16.4 ni, 81.8 id,  0.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  1.0 us,  0.3 sy,  0.0 ni, 98.6 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.7 us,  0.3 sy,  0.7 ni, 98.2 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959840 total,   185352 free,   124604 used,  1649884 buff/cache
KiB Swap:  2007036 total,  2007028 free,        8 used.  1581928 avail Mem
Sat Dec 14 19:51:17 -05 2019 top - 19:51:17 up  1:53,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.7 us,  0.4 sy,  0.0 ni, 98.5 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.9 us,  0.6 sy, 16.4 ni, 81.9 id,  0.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  1.0 us,  0.3 sy,  0.0 ni, 98.6 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.7 us,  0.3 sy,  0.7 ni, 98.2 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959840 total,   185256 free,   124684 used,  1649900 buff/cache
KiB Swap:  2007036 total,  2007028 free,        8 used.  1581832 avail Mem
Sat Dec 14 19:51:47 -05 2019 top - 19:51:47 up  1:53,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.7 us,  0.4 sy,  0.0 ni, 98.5 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.8 us,  0.6 sy, 16.3 ni, 81.9 id,  0.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  1.0 us,  0.3 sy,  0.0 ni, 98.6 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.7 us,  0.3 sy,  0.7 ni, 98.2 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959840 total,   184836 free,   125100 used,  1649904 buff/cache
KiB Swap:  2007036 total,  2007028 free,        8 used.  1581432 avail Mem
Sat Dec 14 19:52:17 -05 2019 top - 19:52:17 up  1:54,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.7 us,  0.4 sy,  0.0 ni, 98.5 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.8 us,  0.6 sy, 16.2 ni, 82.0 id,  0.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  1.0 us,  0.3 sy,  0.0 ni, 98.6 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.7 us,  0.3 sy,  0.7 ni, 98.2 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959840 total,   185040 free,   124888 used,  1649912 buff/cache
KiB Swap:  2007036 total,  2007028 free,        8 used.  1581636 avail Mem
```

```
Sat Dec 14 19:52:47 -05 2019 top - 19:52:47 up  1:54,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.7 us,  0.4 sy,  0.0 ni, 98.5 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.8 us,  0.6 sy, 16.1 ni, 82.1 id,  0.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  1.0 us,  0.3 sy,  0.0 ni, 98.6 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.7 us,  0.3 sy,  0.7 ni, 98.2 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem : 1959840 total,   184636 free,   125272 used,  1649932 buff/cache
KiB Swap: 2007036 total,  2007028 free,        8 used.  1581248 avail Mem
Sat Dec 14 19:53:17 -05 2019 top - 19:53:18 up  1:55,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.7 us,  0.4 sy,  0.0 ni, 98.6 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.8 us,  0.6 sy, 16.1 ni, 82.2 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  1.0 us,  0.3 sy,  0.0 ni, 98.6 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.7 us,  0.3 sy,  0.7 ni, 98.2 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem : 1959840 total,   184512 free,   125368 used,  1649960 buff/cache
KiB Swap: 2007036 total,  2007028 free,        8 used.  1581140 avail Mem
Sat Dec 14 19:53:48 -05 2019 top - 19:53:48 up  1:55,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.7 us,  0.4 sy,  0.0 ni, 98.6 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.8 us,  0.5 sy, 16.0 ni, 82.3 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.9 us,  0.3 sy,  0.0 ni, 98.6 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.7 us,  0.3 sy,  0.7 ni, 98.2 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem : 1959840 total,   184480 free,   125400 used,  1649960 buff/cache
KiB Swap: 2007036 total,  2007028 free,        8 used.  1581116 avail Mem
Sat Dec 14 19:54:18 -05 2019 top - 19:54:18 up  1:56,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.7 us,  0.4 sy,  0.0 ni, 98.6 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.8 us,  0.5 sy, 15.9 ni, 82.3 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.9 us,  0.3 sy,  0.0 ni, 98.6 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.7 us,  0.3 sy,  0.7 ni, 98.2 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem : 1959840 total,   184744 free,   125128 used,  1649968 buff/cache
KiB Swap: 2007036 total,  2007028 free,        8 used.  1581396 avail Mem
Sat Dec 14 19:54:48 -05 2019 top - 19:54:48 up  1:56,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.7 us,  0.4 sy,  0.0 ni, 98.6 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.8 us,  0.5 sy, 15.9 ni, 82.4 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.9 us,  0.3 sy,  0.0 ni, 98.6 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.7 us,  0.3 sy,  0.7 ni, 98.2 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem : 1959840 total,   184744 free,   125124 used,  1649972 buff/cache
KiB Swap: 2007036 total,  2007028 free,        8 used.  1581396 avail Mem
Sat Dec 14 19:55:18 -05 2019 top - 19:55:18 up  1:57,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.7 us,  0.4 sy,  0.0 ni, 98.6 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.8 us,  0.5 sy, 15.8 ni, 82.5 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.9 us,  0.3 sy,  0.0 ni, 98.6 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.7 us,  0.3 sy,  0.7 ni, 98.2 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem : 1959840 total,   184852 free,   125000 used,  1649988 buff/cache
KiB Swap: 2007036 total,  2007028 free,        8 used.  1581512 avail Mem
Sat Dec 14 19:55:48 -05 2019 top - 19:55:49 up  1:57,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.7 us,  0.4 sy,  0.0 ni, 98.6 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.8 us,  0.5 sy, 15.7 ni, 82.6 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.9 us,  0.3 sy,  0.0 ni, 98.6 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.7 us,  0.3 sy,  0.7 ni, 98.3 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem : 1959840 total,   185128 free,   124708 used,  1650004 buff/cache
KiB Swap: 2007036 total,  2007028 free,        8 used.  1581804 avail Mem
Sat Dec 14 19:56:19 -05 2019 top - 19:56:19 up  1:58,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.7 us,  0.4 sy,  0.0 ni, 98.6 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.8 us,  0.5 sy, 15.7 ni, 82.6 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.9 us,  0.3 sy,  0.0 ni, 98.7 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.7 us,  0.3 sy,  0.7 ni, 98.3 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem : 1959840 total,   185396 free,   124436 used,  1650008 buff/cache
KiB Swap: 2007036 total,  2007028 free,        8 used.  1582076 avail Mem
Sat Dec 14 19:56:49 -05 2019 top - 19:56:49 up  1:58,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.7 us,  0.4 sy,  0.0 ni, 98.6 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
```

```
%Cpu1  :  0.8 us,  0.5 sy, 15.6 ni, 82.7 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.9 us,  0.3 sy,  0.0 ni, 98.7 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.7 us,  0.3 sy,  0.7 ni, 98.3 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959840 total,   185100 free,   124744 used,  1649996 buff/cache
KiB Swap:  2007036 total,  2007028 free,        8 used.  1581788 avail Mem
Sat Dec 14 19:57:19 -05 2019 top - 19:57:19 up  1:59,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.7 us,  0.4 sy,  0.0 ni, 98.6 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.8 us,  0.5 sy, 15.5 ni, 82.8 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.9 us,  0.3 sy,  0.0 ni, 98.7 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.7 us,  0.3 sy,  0.7 ni, 98.3 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959840 total,   185348 free,   124492 used,  1650000 buff/cache
KiB Swap:  2007036 total,  2007028 free,        8 used.  1582044 avail Mem
Sat Dec 14 19:57:49 -05 2019 top - 19:57:50 up  1:59,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.7 us,  0.4 sy,  0.0 ni, 98.6 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.8 us,  0.5 sy, 15.5 ni, 82.9 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.9 us,  0.3 sy,  0.0 ni, 98.7 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.7 us,  0.3 sy,  0.7 ni, 98.3 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959840 total,   185044 free,   124776 used,  1650020 buff/cache
KiB Swap:  2007036 total,  2007028 free,        8 used.  1581760 avail Mem
Sat Dec 14 19:58:20 -05 2019 top - 19:58:20 up  2:00,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.7 us,  0.4 sy,  0.0 ni, 98.6 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.8 us,  0.5 sy, 15.4 ni, 82.9 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.9 us,  0.3 sy,  0.0 ni, 98.7 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.6 us,  0.3 sy,  0.7 ni, 98.3 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959840 total,   185256 free,   124564 used,  1650020 buff/cache
KiB Swap:  2007036 total,  2007028 free,        8 used.  1581972 avail Mem
Sat Dec 14 19:58:50 -05 2019 top - 19:58:50 up  2:00,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.7 us,  0.4 sy,  0.0 ni, 98.6 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.8 us,  0.5 sy, 15.3 ni, 83.0 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.9 us,  0.3 sy,  0.0 ni, 98.7 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.6 us,  0.3 sy,  0.7 ni, 98.3 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959840 total,   185148 free,   124664 used,  1650028 buff/cache
KiB Swap:  2007036 total,  2007028 free,        8 used.  1581872 avail Mem
Sat Dec 14 19:59:20 -05 2019 top - 19:59:20 up  2:01,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.7 us,  0.4 sy,  0.0 ni, 98.6 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.8 us,  0.5 sy, 15.3 ni, 83.1 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.9 us,  0.3 sy,  0.0 ni, 98.7 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.6 us,  0.3 sy,  0.6 ni, 98.3 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959840 total,   184620 free,   125184 used,  1650036 buff/cache
KiB Swap:  2007036 total,  2007028 free,        8 used.  1581352 avail Mem
Sat Dec 14 19:59:50 -05 2019 top - 19:59:50 up  2:01,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.7 us,  0.4 sy,  0.0 ni, 98.6 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.8 us,  0.5 sy, 15.2 ni, 83.1 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.9 us,  0.3 sy,  0.0 ni, 98.7 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.6 us,  0.3 sy,  0.6 ni, 98.3 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959840 total,   184372 free,   125424 used,  1650044 buff/cache
KiB Swap:  2007036 total,  2007028 free,        8 used.  1581112 avail Mem
Sat Dec 14 20:00:20 -05 2019 top - 20:00:21 up  2:02,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.7 us,  0.4 sy,  0.0 ni, 98.6 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.8 us,  0.5 sy, 15.1 ni, 83.2 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.9 us,  0.3 sy,  0.0 ni, 98.7 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.6 us,  0.3 sy,  0.6 ni, 98.3 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959840 total,   184904 free,   124852 used,  1650084 buff/cache
KiB Swap:  2007036 total,  2007028 free,        8 used.  1581664 avail Mem
Sat Dec 14 20:00:51 -05 2019 top - 20:00:51 up  2:02,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.7 us,  0.4 sy,  0.0 ni, 98.6 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.8 us,  0.5 sy, 15.1 ni, 83.3 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.9 us,  0.3 sy,  0.0 ni, 98.7 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
```

```
%Cpu3  :  0.6 us,  0.3 sy,  0.6 ni, 98.3 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959840 total,    184992 free,    124780 used,   1650068 buff/cache
KiB Swap:  2007036 total,   2007028 free,         8 used.   1581752 avail Mem
Sat Dec 14 20:01:21 -05 2019 top - 20:01:21 up  2:03,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.7 us,  0.4 sy,  0.0 ni, 98.6 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.8 us,  0.5 sy, 15.0 ni, 83.3 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.9 us,  0.3 sy,  0.0 ni, 98.7 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.6 us,  0.3 sy,  0.6 ni, 98.3 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959840 total,    185240 free,    124512 used,   1650088 buff/cache
KiB Swap:  2007036 total,   2007028 free,         8 used.   1582008 avail Mem
Sat Dec 14 20:01:51 -05 2019 top - 20:01:51 up  2:03,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.7 us,  0.4 sy,  0.0 ni, 98.6 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.8 us,  0.5 sy, 15.0 ni, 83.4 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.9 us,  0.3 sy,  0.0 ni, 98.7 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.6 us,  0.3 sy,  0.6 ni, 98.3 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959840 total,    185148 free,    124596 used,   1650096 buff/cache
KiB Swap:  2007036 total,   2007028 free,         8 used.   1581924 avail Mem
Sat Dec 14 20:02:21 -05 2019 top - 20:02:21 up  2:04,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.7 us,  0.4 sy,  0.0 ni, 98.6 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.8 us,  0.5 sy, 14.9 ni, 83.5 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.9 us,  0.3 sy,  0.0 ni, 98.7 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.6 us,  0.3 sy,  0.6 ni, 98.3 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959840 total,    184728 free,    125008 used,   1650104 buff/cache
KiB Swap:  2007036 total,   2007028 free,         8 used.   1581512 avail Mem
Sat Dec 14 20:02:51 -05 2019 top - 20:02:52 up  2:04,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.7 us,  0.4 sy,  0.0 ni, 98.7 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.8 us,  0.5 sy, 14.8 ni, 83.5 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.9 us,  0.3 sy,  0.0 ni, 98.7 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.6 us,  0.3 sy,  0.6 ni, 98.3 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959840 total,    184912 free,    124796 used,   1650132 buff/cache
KiB Swap:  2007036 total,   2007028 free,         8 used.   1581712 avail Mem
Sat Dec 14 20:03:22 -05 2019 top - 20:03:22 up  2:05,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.7 us,  0.4 sy,  0.0 ni, 98.7 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.8 us,  0.5 sy, 14.8 ni, 83.6 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.9 us,  0.3 sy,  0.0 ni, 98.7 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.6 us,  0.3 sy,  0.6 ni, 98.3 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959840 total,    185132 free,    124588 used,   1650120 buff/cache
KiB Swap:  2007036 total,   2007028 free,         8 used.   1581932 avail Mem
Sat Dec 14 20:03:52 -05 2019 top - 20:03:52 up  2:05,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.7 us,  0.4 sy,  0.0 ni, 98.7 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.8 us,  0.5 sy, 14.7 ni, 83.7 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.9 us,  0.3 sy,  0.0 ni, 98.7 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.6 us,  0.3 sy,  0.6 ni, 98.4 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959840 total,    184852 free,    124856 used,   1650132 buff/cache
KiB Swap:  2007036 total,   2007028 free,         8 used.   1581672 avail Mem
Sat Dec 14 20:04:22 -05 2019 top - 20:04:22 up  2:06,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.7 us,  0.4 sy,  0.0 ni, 98.7 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.8 us,  0.5 sy, 14.7 ni, 83.7 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.9 us,  0.3 sy,  0.0 ni, 98.7 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.6 us,  0.3 sy,  0.6 ni, 98.4 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959840 total,    184884 free,    124816 used,   1650140 buff/cache
KiB Swap:  2007036 total,   2007028 free,         8 used.   1581704 avail Mem
```

Prueba con carga

Anexos/atomic_con_carga.txt

```
Sun Dec 15 22:57:03 -05 2019 top - 22:57:03 up 4,  2 users,  load average: 0.05, 0.09, 0.04
%Cpu0  :  0.6 us,  1.3 sy,  0.0 ni, 97.8 id,  0.3 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu1  :  0.7 us,  1.4 sy,  0.0 ni, 97.4 id,  0.5 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.9 us,  1.6 sy,  0.0 ni, 97.3 id,  0.2 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.5 us,  1.2 sy,  0.0 ni, 98.2 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
Mem :  1959456 total,  1583432 free,   102376 used,   273648 buff/cache
Swap:  2007036 total,  2007036 free,        0 used.  1690884 avail Mem
Sun Dec 15 22:57:33 -05 2019 top - 22:57:33 up 5,  2 users,  load average: 0.40, 0.16, 0.06
%Cpu0  :  1.2 us,  1.4 sy,  0.0 ni, 96.3 id,  1.0 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu1  :  1.3 us,  1.7 sy,  0.0 ni, 95.7 id,  1.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  1.2 us,  1.7 sy,  0.0 ni, 96.8 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  1.1 us,  1.4 sy,  0.0 ni, 97.3 id,  0.2 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959456 total,  1165308 free,   302092 used,   492056 buff/cache
KiB Swap:  2007036 total,  2007036 free,        0 used.  1480220 avail Mem
Sun Dec 15 22:58:03 -05 2019 top - 22:58:03 up 5,  2 users,  load average: 1.03, 0.34, 0.13
%Cpu0  :  3.0 us,  1.5 sy,  0.0 ni, 91.2 id,  4.2 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu1  :  2.2 us,  1.8 sy,  0.0 ni, 89.6 id,  6.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  3.9 us,  1.7 sy,  0.0 ni, 94.1 id,  0.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  4.0 us,  1.5 sy,  0.0 ni, 94.4 id,  0.2 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959456 total,   893048 free,   373932 used,   692476 buff/cache
KiB Swap:  2007036 total,  2007036 free,        0 used.  1407484 avail Mem
Sun Dec 15 22:58:33 -05 2019 top - 22:58:33 up 6,  2 users,  load average: 1.41, 0.50, 0.19
%Cpu0  :  9.9 us,  1.8 sy,  0.0 ni, 84.4 id,  3.9 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu1  :  2.1 us,  2.1 sy,  0.0 ni, 89.6 id,  6.2 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  3.9 us,  1.7 sy,  0.0 ni, 92.9 id,  1.5 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  4.2 us,  1.5 sy,  0.0 ni, 87.9 id,  6.4 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959456 total,   790132 free,   375216 used,   794108 buff/cache
KiB Swap:  2007036 total,  2007036 free,        0 used.  1405148 avail Mem
Sun Dec 15 22:59:03 -05 2019 top - 22:59:04 up 6,  2 users,  load average: 1.65, 0.64, 0.25
%Cpu0  : 12.2 us,  2.0 sy,  0.0 ni, 82.2 id,  3.6 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu1  :  5.2 us,  2.3 sy,  0.0 ni, 86.8 id,  5.8 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  4.1 us,  1.7 sy,  0.0 ni, 88.5 id,  5.7 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  4.5 us,  1.5 sy,  0.0 ni, 85.2 id,  8.8 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959456 total,   686108 free,   377508 used,   895840 buff/cache
KiB Swap:  2007036 total,  2007036 free,        0 used.  1401768 avail Mem
Sun Dec 15 22:59:34 -05 2019 top - 22:59:34 up 7,  2 users,  load average: 1.79, 0.77, 0.31
%Cpu0  : 14.5 us,  2.0 sy,  0.0 ni, 80.2 id,  3.3 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu1  :  7.2 us,  2.2 sy,  0.0 ni, 85.2 id,  5.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  4.3 us,  1.7 sy,  0.0 ni, 85.0 id,  9.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  5.0 us,  1.5 sy,  0.0 ni, 82.1 id, 11.3 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959456 total,   583308 free,   378460 used,   997688 buff/cache
KiB Swap:  2007036 total,  2007036 free,        0 used.  1399812 avail Mem
Sun Dec 15 23:00:04 -05 2019 top - 23:00:04 up 7,  2 users,  load average: 1.87, 0.89, 0.36
%Cpu0  : 19.6 us,  2.2 sy,  0.0 ni, 75.0 id,  3.1 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu1  :  6.9 us,  2.4 sy,  0.0 ni, 85.6 id,  5.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  4.1 us,  1.7 sy,  0.0 ni, 80.4 id, 13.8 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  4.7 us,  1.4 sy,  0.0 ni, 82.3 id, 11.5 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959456 total,   481400 free,   379616 used,  1098440 buff/cache
KiB Swap:  2007036 total,  2007036 free,        0 used.  1397800 avail Mem
Sun Dec 15 23:00:34 -05 2019 top - 23:00:34 up 8,  2 users,  load average: 1.99, 1.02, 0.42
%Cpu0  : 21.1 us,  2.2 sy,  0.0 ni, 73.4 id,  3.2 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu1  :  8.5 us,  2.5 sy,  0.0 ni, 84.3 id,  4.7 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  4.8 us,  1.7 sy,  0.0 ni, 77.7 id, 15.8 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  4.9 us,  1.5 sy,  0.0 ni, 80.0 id, 13.5 wa,  0.0 hi,  0.0 si,  0.0 st
```

```
KiB Mem :  1959456 total,    379740 free,    380136 used,  1199580 buff/cache
KiB Swap:  2007036 total,  2007036 free,         0 used.  1396416 avail Mem
Sun Dec 15 23:01:04 -05 2019 top - 23:01:04 up 8,  2 users,  load average: 1.99, 1.11, 0.47
%Cpu0  : 21.1 us,  2.3 sy,  0.0 ni, 69.6 id,  6.9 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu1  :  8.6 us,  2.5 sy,  0.0 ni, 82.9 id,  6.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  5.7 us,  1.9 sy,  0.0 ni, 77.6 id, 14.9 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  7.3 us,  1.7 sy,  0.0 ni, 78.3 id, 12.7 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959456 total,    277304 free,    381104 used,  1301048 buff/cache
KiB Swap:  2007036 total,  2007036 free,         0 used.  1394364 avail Mem
Sun Dec 15 23:01:34 -05 2019 top - 23:01:35 up 9,  2 users,  load average: 2.00, 1.20, 0.52
%Cpu0  : 21.4 us,  2.4 sy,  0.0 ni, 69.0 id,  7.2 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu1  : 10.3 us,  2.6 sy,  0.0 ni, 78.9 id,  8.2 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  6.6 us,  1.8 sy,  0.0 ni, 77.0 id, 14.6 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  7.4 us,  1.6 sy,  0.0 ni, 77.3 id, 13.7 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959456 total,    176584 free,    381984 used,  1400888 buff/cache
KiB Swap:  2007036 total,  2007036 free,         0 used.  1392340 avail Mem
Sun Dec 15 23:02:05 -05 2019 top - 23:02:05 up 9,  2 users,  load average: 2.00, 1.28, 0.57
%Cpu0  : 25.0 us,  2.5 sy,  0.0 ni, 65.5 id,  6.8 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu1  :  9.9 us,  2.8 sy,  0.0 ni, 79.6 id,  7.7 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  6.3 us,  1.8 sy,  0.0 ni, 73.7 id, 18.2 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  7.2 us,  1.6 sy,  0.0 ni, 77.6 id, 13.7 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959456 total,     73644 free,    383064 used,  1502748 buff/cache
KiB Swap:  2007036 total,  2007036 free,         0 used.  1390492 avail Mem
Sun Dec 15 23:02:35 -05 2019 top - 23:02:35 up 10,  2 users,  load average: 2.05, 1.36, 0.62
%Cpu0  : 26.2 us,  2.6 sy,  0.0 ni, 64.1 id,  7.1 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu1  : 10.1 us,  2.8 sy,  0.0 ni, 78.0 id,  9.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  7.0 us,  1.9 sy,  0.0 ni, 73.1 id, 18.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  7.5 us,  1.7 sy,  0.0 ni, 76.1 id, 14.7 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959456 total,     71560 free,    383688 used,  1504208 buff/cache
KiB Swap:  2007036 total,  2007032 free,         4 used.  1388888 avail Mem
Sun Dec 15 23:03:05 -05 2019 top - 23:03:05 up 10,  2 users,  load average: 2.03, 1.42, 0.67
%Cpu0  : 25.0 us,  2.5 sy,  0.0 ni, 63.8 id,  8.6 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu1  : 10.1 us,  2.7 sy,  0.0 ni, 76.9 id, 10.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  7.8 us,  2.1 sy,  0.0 ni, 72.6 id, 17.5 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 10.0 us,  1.9 sy,  0.0 ni, 73.4 id, 14.7 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959456 total,     80032 free,    384728 used,  1494696 buff/cache
KiB Swap:  2007036 total,  2007032 free,         4 used.  1386724 avail Mem
Sun Dec 15 23:03:35 -05 2019 top - 23:03:35 up 11,  2 users,  load average: 2.02, 1.48, 0.71
%Cpu0  : 25.3 us,  2.6 sy,  0.0 ni, 63.3 id,  8.7 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu1  : 11.5 us,  2.8 sy,  0.0 ni, 75.5 id, 10.2 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  8.1 us,  2.1 sy,  0.0 ni, 71.7 id, 18.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 10.0 us,  1.9 sy,  0.0 ni, 72.0 id, 16.1 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959456 total,     69496 free,    386132 used,  1503828 buff/cache
KiB Swap:  2007036 total,  2007032 free,         4 used.  1384344 avail Mem
Sun Dec 15 23:04:05 -05 2019 top - 23:04:06 up 11,  2 users,  load average: 2.07, 1.55, 0.76
%Cpu0  : 26.1 us,  2.7 sy,  0.0 ni, 62.7 id,  8.4 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu1  : 12.5 us,  2.9 sy,  0.0 ni, 73.5 id, 11.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  8.3 us,  2.1 sy,  0.0 ni, 70.5 id, 19.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  9.9 us,  1.9 sy,  0.0 ni, 71.9 id, 16.3 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959456 total,     81204 free,    386956 used,  1491296 buff/cache
KiB Swap:  2007036 total,  2007032 free,         4 used.  1382512 avail Mem
Sun Dec 15 23:04:36 -05 2019 top - 23:04:36 up 12,  2 users,  load average: 2.17, 1.63, 0.82
%Cpu0  : 26.9 us,  2.8 sy,  0.0 ni, 62.2 id,  8.1 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu1  : 13.8 us,  3.0 sy,  0.0 ni, 72.6 id, 10.6 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  8.0 us,  2.1 sy,  0.0 ni, 70.7 id, 19.2 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  9.8 us,  1.9 sy,  0.0 ni, 69.7 id, 18.7 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959456 total,     74412 free,    388216 used,  1496828 buff/cache
KiB Swap:  2007036 total,  2007032 free,         4 used.  1380608 avail Mem
```

```
Sun Dec 15 23:05:06 -05 2019 top - 23:05:06 up 12,  2 users,  load average: 2.10, 1.67, 0.86
%Cpu0  : 26.8 us,  2.9 sy,  0.0 ni, 62.5 id,  7.8 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu1  : 15.6 us,  3.1 sy,  0.0 ni, 71.1 id, 10.2 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  8.0 us,  2.1 sy,  0.0 ni, 69.5 id, 20.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  9.5 us,  1.9 sy,  0.0 ni, 68.8 id, 19.8 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959456 total,    67120 free,   388768 used,  1503568 buff/cache
KiB Swap:  2007036 total,  2007032 free,        4 used.  1379088 avail Mem
Sun Dec 15 23:05:36 -05 2019 top - 23:05:36 up 13,  2 users,  load average: 2.06, 1.70, 0.89
%Cpu0  : 26.0 us,  2.8 sy,  0.0 ni, 62.7 id,  8.5 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu1  : 16.8 us,  3.0 sy,  0.0 ni, 70.4 id,  9.8 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  8.9 us,  2.1 sy,  0.0 ni, 68.5 id, 20.5 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  9.7 us,  1.9 sy,  0.0 ni, 67.5 id, 20.8 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959456 total,    81680 free,   387336 used,  1490440 buff/cache
KiB Swap:  2007036 total,  2007032 free,        4 used.  1379912 avail Mem
Sun Dec 15 23:06:06 -05 2019 top - 23:06:06 up 13,  2 users,  load average: 2.04, 1.73, 0.93
%Cpu0  : 25.6 us,  2.8 sy,  0.0 ni, 62.8 id,  8.7 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 17.4 us,  3.0 sy,  0.0 ni, 70.0 id,  9.6 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  9.9 us,  2.1 sy,  0.0 ni, 67.0 id, 21.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  9.9 us,  2.0 sy,  0.0 ni, 66.5 id, 21.6 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959456 total,    73652 free,   388788 used,  1497016 buff/cache
KiB Swap:  2007036 total,  2007032 free,        4 used.  1378116 avail Mem
Sun Dec 15 23:06:36 -05 2019 top - 23:06:37 up 14,  2 users,  load average: 2.02, 1.76, 0.97
%Cpu0  : 27.1 us,  2.9 sy,  0.0 ni, 61.5 id,  8.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 17.5 us,  3.1 sy,  0.0 ni, 70.2 id,  9.2 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  9.8 us,  2.1 sy,  0.0 ni, 65.0 id, 23.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  9.6 us,  1.9 sy,  0.0 ni, 67.0 id, 21.5 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959456 total,    66896 free,   389032 used,  1503528 buff/cache
KiB Swap:  2007036 total,  2007032 free,        4 used.  1377432 avail Mem
Sun Dec 15 23:07:07 -05 2019 top - 23:07:07 up 14,  2 users,  load average: 2.01, 1.78, 1.00
%Cpu0  : 28.1 us,  3.0 sy,  0.0 ni, 60.2 id,  8.7 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 17.1 us,  3.1 sy,  0.0 ni, 70.1 id,  9.7 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  9.6 us,  2.1 sy,  0.0 ni, 64.9 id, 23.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 10.3 us,  2.0 sy,  0.0 ni, 66.2 id, 21.5 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959456 total,    73064 free,   389844 used,  1496548 buff/cache
KiB Swap:  2007036 total,  2007032 free,        4 used.  1375800 avail Mem
Sun Dec 15 23:07:37 -05 2019 top - 23:07:37 up 15,  2 users,  load average: 2.23, 1.85, 1.05
%Cpu0  : 27.9 us,  3.0 sy,  0.0 ni, 59.9 id,  9.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 17.5 us,  3.1 sy,  0.0 ni, 68.4 id, 11.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  9.7 us,  2.2 sy,  0.0 ni, 65.0 id, 23.2 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 11.0 us,  2.0 sy,  0.0 ni, 65.9 id, 21.1 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959456 total,    78648 free,   390752 used,  1490056 buff/cache
KiB Swap:  2007036 total,  2007032 free,        4 used.  1374596 avail Mem
Sun Dec 15 23:08:07 -05 2019 top - 23:08:07 up 15,  2 users,  load average: 2.20, 1.88, 1.09
%Cpu0  : 28.4 us,  3.0 sy,  0.0 ni, 59.2 id,  9.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 17.4 us,  3.1 sy,  0.0 ni, 68.5 id, 11.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  9.7 us,  2.2 sy,  0.0 ni, 64.3 id, 23.8 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 11.7 us,  2.0 sy,  0.0 ni, 65.0 id, 21.2 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959456 total,    67448 free,   390700 used,  1501308 buff/cache
KiB Swap:  2007036 total,  2007032 free,        4 used.  1374080 avail Mem
Sun Dec 15 23:08:37 -05 2019 top - 23:08:37 up 16,  2 users,  load average: 2.12, 1.90, 1.12
%Cpu0  : 28.0 us,  3.0 sy,  0.0 ni, 59.3 id,  9.7 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 17.9 us,  3.1 sy,  0.0 ni, 67.0 id, 12.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 10.5 us,  2.2 sy,  0.0 ni, 63.3 id, 24.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 11.8 us,  2.0 sy,  0.0 ni, 65.6 id, 20.6 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959456 total,    72768 free,   392756 used,  1493932 buff/cache
KiB Swap:  2007036 total,  2007024 free,       12 used.  1371308 avail Mem
Sun Dec 15 23:09:07 -05 2019 top - 23:09:08 up 16,  2 users,  load average: 1.99, 1.89, 1.14
%Cpu0  : 27.3 us,  3.0 sy,  0.0 ni, 60.2 id,  9.5 wa,  0.0 hi,  0.0 si,  0.0 st
```

```
%Cpu1  : 18.6 us,  3.1 sy,  0.0 ni, 65.5 id, 12.8 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 10.5 us,  2.2 sy,  0.0 ni, 63.2 id, 24.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 12.8 us,  2.0 sy,  0.0 ni, 64.8 id, 20.4 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959456 total,    79528 free,   425904 used,  1454024 buff/cache
KiB Swap:  2007036 total,  2006836 free,      200 used.  1337832 avail Mem
Sun Dec 15 23:09:38 -05 2019 top - 23:09:38 up 17,  2 users,  load average: 1.77, 1.85, 1.15
%Cpu0  : 27.3 us,  3.0 sy,  0.0 ni, 60.4 id,  9.3 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu1  : 18.8 us,  3.1 sy,  0.0 ni, 65.6 id, 12.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 11.1 us,  2.3 sy,  0.0 ni, 63.2 id, 23.5 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 13.0 us,  2.1 sy,  0.0 ni, 65.1 id, 19.8 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959456 total,    75172 free,   473424 used,  1410860 buff/cache
KiB Swap:  2007036 total,  2005676 free,     1360 used.  1294692 avail Mem
Sun Dec 15 23:10:08 -05 2019 top - 23:10:08 up 17,  2 users,  load average: 1.52, 1.79, 1.15
%Cpu0  : 27.6 us,  3.0 sy,  0.0 ni, 60.3 id,  9.1 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu1  : 19.0 us,  3.1 sy,  0.0 ni, 65.7 id, 12.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 11.2 us,  2.3 sy,  0.0 ni, 63.6 id, 22.9 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 13.2 us,  2.1 sy,  0.0 ni, 65.3 id, 19.3 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959456 total,    75668 free,   474116 used,  1409672 buff/cache
KiB Swap:  2007036 total,  2005176 free,     1860 used.  1298016 avail Mem
Sun Dec 15 23:10:38 -05 2019 top - 23:10:38 up 18,  2 users,  load average: 1.31, 1.71, 1.14
%Cpu0  : 27.8 us,  3.0 sy,  0.0 ni, 60.3 id,  8.9 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu1  : 19.5 us,  3.1 sy,  0.0 ni, 65.6 id, 11.8 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 11.3 us,  2.3 sy,  0.0 ni, 64.0 id, 22.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 13.4 us,  2.2 sy,  0.0 ni, 65.6 id, 18.8 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959456 total,    65616 free,   474088 used,  1419752 buff/cache
KiB Swap:  2007036 total,  2005176 free,     1860 used.  1300472 avail Mem
Sun Dec 15 23:11:08 -05 2019 top - 23:11:09 up 18,  2 users,  load average: 1.19, 1.64, 1.14
%Cpu0  : 27.9 us,  2.9 sy,  0.0 ni, 60.5 id,  8.6 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu1  : 19.9 us,  3.1 sy,  0.0 ni, 65.5 id, 11.5 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 11.7 us,  2.4 sy,  0.0 ni, 64.1 id, 21.8 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 13.4 us,  2.2 sy,  0.0 ni, 66.0 id, 18.4 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959456 total,   104344 free,   444920 used,  1410192 buff/cache
KiB Swap:  2007036 total,  2005152 free,     1884 used.  1330416 avail Mem
Sun Dec 15 23:11:39 -05 2019 top - 23:11:39 up 19,  2 users,  load average: 1.11, 1.58, 1.13
%Cpu0  : 27.8 us,  2.9 sy,  0.0 ni, 60.7 id,  8.5 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu1  : 20.3 us,  3.1 sy,  0.0 ni, 65.3 id, 11.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 12.0 us,  2.4 sy,  0.0 ni, 64.3 id, 21.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 13.5 us,  2.2 sy,  0.0 ni, 66.3 id, 18.0 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959456 total,    69176 free,   490512 used,  1399768 buff/cache
KiB Swap:  2007036 total,  2005152 free,     1884 used.  1284572 avail Mem
Sun Dec 15 23:12:09 -05 2019 top - 23:12:09 up 19,  2 users,  load average: 1.07, 1.52, 1.13
%Cpu0  : 27.6 us,  2.9 sy,  0.0 ni, 61.1 id,  8.3 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu1  : 20.5 us,  3.1 sy,  0.0 ni, 65.4 id, 11.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 12.6 us,  2.4 sy,  0.0 ni, 64.2 id, 20.8 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 13.8 us,  2.2 sy,  0.0 ni, 66.4 id, 17.5 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959456 total,    65776 free,   475356 used,  1418324 buff/cache
KiB Swap:  2007036 total,  2005128 free,     1908 used.  1299924 avail Mem
Sun Dec 15 23:12:39 -05 2019 top - 23:12:39 up 20,  2 users,  load average: 1.04, 1.47, 1.12
%Cpu0  : 27.4 us,  2.9 sy,  0.0 ni, 61.4 id,  8.1 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu1  : 20.5 us,  3.1 sy,  0.0 ni, 65.6 id, 10.8 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 13.0 us,  2.4 sy,  0.0 ni, 64.3 id, 20.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 14.3 us,  2.3 sy,  0.0 ni, 66.2 id, 17.1 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  1959456 total,    69728 free,   475932 used,  1413796 buff/cache
KiB Swap:  2007036 total,  2005080 free,     1956 used.  1299352 avail Mem
Sun Dec 15 23:13:09 -05 2019 top - 23:13:09 up 20,  2 users,  load average: 1.10, 1.44, 1.12
%Cpu0  : 27.4 us,  2.9 sy,  0.0 ni, 61.7 id,  7.9 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu1  : 21.0 us,  3.0 sy,  0.0 ni, 65.4 id, 10.5 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 13.2 us,  2.5 sy,  0.0 ni, 64.5 id, 19.9 wa,  0.0 hi,  0.1 si,  0.0 st
```

```
%Cpu3  : 14.5 us,  2.3 sy,  0.0 ni, 66.4 id, 16.8 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem : 1959456 total,    76264 free,   475964 used,  1407228 buff/cache
KiB Swap: 2007036 total, 2005052 free,     1984 used.  1299304 avail Mem
Sun Dec 15 23:13:39 -05 2019 top - 23:13:40 up 21,  2 users,  load average: 1.44, 1.48, 1.14
%Cpu0  : 27.4 us,  3.0 sy,  0.0 ni, 61.8 id,  7.8 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu1  : 20.7 us,  3.1 sy,  0.0 ni, 65.8 id, 10.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 13.8 us,  2.5 sy,  0.0 ni, 64.3 id, 19.4 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  : 14.7 us,  2.3 sy,  0.0 ni, 66.5 id, 16.4 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem : 1959456 total,    65156 free,   475784 used,  1418516 buff/cache
KiB Swap: 2007036 total, 2004732 free,     2304 used.  1299344 avail Mem
Sun Dec 15 23:14:10 -05 2019 top - 23:14:10 up 21,  2 users,  load average: 1.58, 1.51, 1.17
%Cpu0  : 27.3 us,  3.0 sy,  0.0 ni, 61.9 id,  7.6 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu1  : 20.7 us,  3.1 sy,  0.0 ni, 66.0 id, 10.2 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 14.1 us,  2.5 sy,  0.0 ni, 64.4 id, 19.0 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  : 15.1 us,  2.3 sy,  0.0 ni, 66.4 id, 16.0 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem : 1959456 total,    73560 free,   476268 used,  1409628 buff/cache
KiB Swap: 2007036 total, 2003892 free,     3144 used.  1298840 avail Mem
Sun Dec 15 23:14:40 -05 2019 top - 23:14:40 up 22,  2 users,  load average: 1.49, 1.50, 1.17
%Cpu0  : 27.3 us,  3.0 sy,  0.0 ni, 62.1 id,  7.5 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu1  : 20.6 us,  3.1 sy,  0.0 ni, 66.2 id, 10.0 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 14.5 us,  2.5 sy,  0.0 ni, 64.4 id, 18.6 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  : 15.5 us,  2.3 sy,  0.0 ni, 66.4 id, 15.7 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem : 1959456 total,    65176 free,   475216 used,  1419064 buff/cache
KiB Swap: 2007036 total, 2002956 free,     4080 used.  1300480 avail Mem
Sun Dec 15 23:15:10 -05 2019 top - 23:15:10 up 22,  2 users,  load average: 1.51, 1.51, 1.19
%Cpu0  : 27.2 us,  3.0 sy,  0.0 ni, 62.3 id,  7.4 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu1  : 20.5 us,  3.1 sy,  0.0 ni, 66.5 id,  9.8 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 14.7 us,  2.5 sy,  0.0 ni, 64.5 id, 18.2 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  : 16.0 us,  2.3 sy,  0.0 ni, 66.2 id, 15.4 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem : 1959456 total,    64008 free,   492972 used,  1402476 buff/cache
KiB Swap: 2007036 total, 2001480 free,     5556 used.  1282472 avail Mem
Sun Dec 15 23:15:40 -05 2019 top - 23:15:40 up 23,  2 users,  load average: 1.30, 1.46, 1.18
%Cpu0  : 27.0 us,  3.0 sy,  0.0 ni, 62.6 id,  7.3 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu1  : 20.5 us,  3.1 sy,  0.0 ni, 66.6 id,  9.7 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 15.1 us,  2.5 sy,  0.0 ni, 64.6 id, 17.8 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  : 16.4 us,  2.4 sy,  0.0 ni, 66.1 id, 15.1 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem : 1959456 total,    74544 free,   473396 used,  1411516 buff/cache
KiB Swap: 2007036 total, 1999744 free,     7292 used.  1302060 avail Mem
Sun Dec 15 23:16:10 -05 2019 top - 23:16:11 up 23,  2 users,  load average: 1.32, 1.45, 1.18
%Cpu0  : 26.9 us,  3.0 sy,  0.0 ni, 62.8 id,  7.1 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu1  : 20.6 us,  3.1 sy,  0.0 ni, 66.7 id,  9.5 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 15.4 us,  2.5 sy,  0.0 ni, 64.5 id, 17.5 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  : 16.7 us,  2.4 sy,  0.0 ni, 66.0 id, 14.8 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem : 1959456 total,    72468 free,   469724 used,  1417264 buff/cache
KiB Swap: 2007036 total, 1997640 free,     9396 used.  1305884 avail Mem
Sun Dec 15 23:16:41 -05 2019 top - 23:16:41 up 24,  2 users,  load average: 1.53, 1.48, 1.20
%Cpu0  : 26.7 us,  3.0 sy,  0.0 ni, 63.1 id,  7.0 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu1  : 20.5 us,  3.2 sy,  0.0 ni, 66.9 id,  9.3 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 15.8 us,  2.5 sy,  0.0 ni, 64.5 id, 17.2 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  : 17.0 us,  2.4 sy,  0.0 ni, 66.0 id, 14.5 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem : 1959456 total,    68500 free,   468524 used,  1422432 buff/cache
KiB Swap: 2007036 total, 1995352 free,    11684 used.  1306924 avail Mem
Sun Dec 15 23:17:11 -05 2019 top - 23:17:11 up 24,  2 users,  load average: 1.89, 1.59, 1.25
%Cpu0  : 26.7 us,  3.0 sy,  0.0 ni, 63.2 id,  6.9 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu1  : 20.6 us,  3.2 sy,  0.0 ni, 67.0 id,  9.2 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 15.9 us,  2.5 sy,  0.0 ni, 64.6 id, 16.9 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  : 17.4 us,  2.4 sy,  0.0 ni, 65.9 id, 14.3 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem : 1959456 total,    78580 free,   490236 used,  1390640 buff/cache
```

```
KiB Swap:  2007036 total,  1993272 free,    13764 used.  1284808 avail Mem
Sun Dec 15 23:17:41 -05 2019 top - 23:17:41 up 25,  2 users,  load average: 1.60, 1.55, 1.25
%Cpu0  : 26.7 us,  3.0 sy,  0.0 ni, 63.4 id,  6.8 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu1  : 20.5 us,  3.2 sy,  0.0 ni, 67.2 id,  9.0 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 16.3 us,  2.5 sy,  0.0 ni, 64.5 id, 16.6 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  : 17.6 us,  2.4 sy,  0.0 ni, 65.9 id, 14.0 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem :  1959456 total,    77216 free,   465572 used,  1416668 buff/cache
KiB Swap:  2007036 total,  1990960 free,    16076 used.  1309772 avail Mem
Sun Dec 15 23:18:11 -05 2019 top - 23:18:11 up 25,  2 users,  load average: 1.36, 1.50, 1.24
%Cpu0  : 26.6 us,  3.0 sy,  0.0 ni, 63.5 id,  6.7 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu1  : 20.9 us,  3.2 sy,  0.0 ni, 67.0 id,  8.9 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 16.3 us,  2.5 sy,  0.0 ni, 64.8 id, 16.3 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  : 17.6 us,  2.4 sy,  0.0 ni, 66.0 id, 13.8 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem :  1959456 total,    78272 free,   462152 used,  1419032 buff/cache
KiB Swap:  2007036 total,  1988052 free,    18984 used.  1313052 avail Mem
Sun Dec 15 23:18:41 -05 2019 top - 23:18:42 up 26,  2 users,  load average: 1.41, 1.50, 1.25
%Cpu0  : 26.6 us,  3.0 sy,  0.0 ni, 63.6 id,  6.6 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu1  : 20.8 us,  3.2 sy,  0.0 ni, 67.2 id,  8.8 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 16.7 us,  2.5 sy,  0.0 ni, 64.7 id, 16.0 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  : 17.8 us,  2.4 sy,  0.0 ni, 66.1 id, 13.6 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem :  1959456 total,    79088 free,   461392 used,  1418976 buff/cache
KiB Swap:  2007036 total,  1985332 free,    21704 used.  1314156 avail Mem
Sun Dec 15 23:19:12 -05 2019 top - 23:19:12 up 26,  2 users,  load average: 1.57, 1.53, 1.27
%Cpu0  : 26.5 us,  3.0 sy,  0.0 ni, 63.9 id,  6.5 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu1  : 21.0 us,  3.1 sy,  0.0 ni, 67.1 id,  8.6 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 16.9 us,  2.5 sy,  0.0 ni, 64.7 id, 15.7 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  : 17.9 us,  2.4 sy,  0.0 ni, 66.3 id, 13.3 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem :  1959456 total,   123572 free,   399588 used,  1436296 buff/cache
KiB Swap:  2007036 total,  1983912 free,    23124 used.  1376076 avail Mem
Sun Dec 15 23:19:42 -05 2019 top - 23:19:42 up 27,  2 users,  load average: 1.40, 1.50, 1.27
%Cpu0  : 26.8 us,  3.0 sy,  0.0 ni, 63.7 id,  6.4 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu1  : 21.2 us,  3.1 sy,  0.0 ni, 67.1 id,  8.5 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 16.9 us,  2.5 sy,  0.0 ni, 65.0 id, 15.5 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  : 17.9 us,  2.5 sy,  0.0 ni, 66.5 id, 13.1 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem :  1959456 total,    70056 free,   458092 used,  1431308 buff/cache
KiB Swap:  2007036 total,  1982324 free,    24712 used.  1317220 avail Mem
Sun Dec 15 23:20:12 -05 2019 top - 23:20:12 up 27,  2 users,  load average: 1.24, 1.45, 1.26
%Cpu0  : 26.9 us,  3.0 sy,  0.0 ni, 63.7 id,  6.3 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu1  : 21.1 us,  3.1 sy,  0.0 ni, 67.3 id,  8.4 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 17.1 us,  2.6 sy,  0.0 ni, 65.1 id, 15.2 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  : 18.1 us,  2.5 sy,  0.0 ni, 66.5 id, 12.9 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem :  1959456 total,    75356 free,   455076 used,  1429024 buff/cache
KiB Swap:  2007036 total,  1980336 free,    26700 used.  1320204 avail Mem
Sun Dec 15 23:20:42 -05 2019 top - 23:20:42 up 28,  2 users,  load average: 1.22, 1.42, 1.25
%Cpu0  : 26.8 us,  3.0 sy,  0.0 ni, 63.9 id,  6.2 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu1  : 21.1 us,  3.1 sy,  0.0 ni, 67.4 id,  8.3 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 17.4 us,  2.6 sy,  0.0 ni, 65.0 id, 15.0 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  : 18.3 us,  2.5 sy,  0.0 ni, 66.5 id, 12.7 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem :  1959456 total,    79944 free,   454820 used,  1424692 buff/cache
KiB Swap:  2007036 total,  1978188 free,    28848 used.  1320488 avail Mem
Sun Dec 15 23:21:12 -05 2019 top - 23:21:13 up 28,  2 users,  load average: 1.13, 1.38, 1.25
%Cpu0  : 26.7 us,  3.0 sy,  0.0 ni, 64.1 id,  6.1 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu1  : 21.0 us,  3.1 sy,  0.0 ni, 67.7 id,  8.1 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 17.6 us,  2.5 sy,  0.0 ni, 65.0 id, 14.7 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  : 18.6 us,  2.5 sy,  0.0 ni, 66.4 id, 12.5 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem :  1959456 total,   128076 free,   393416 used,  1437964 buff/cache
KiB Swap:  2007036 total,  1976888 free,    30148 used.  1382144 avail Mem
Sun Dec 15 23:21:43 -05 2019 top - 23:21:43 up 29,  2 users,  load average: 1.15, 1.36, 1.24
```

```
%Cpu0  : 26.8 us,  2.9 sy,  0.0 ni, 64.1 id,  6.0 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu1  : 21.1 us,  3.1 sy,  0.0 ni, 67.7 id,  8.0 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 17.6 us,  2.5 sy,  0.0 ni, 65.3 id, 14.5 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  : 18.7 us,  2.5 sy,  0.0 ni, 66.4 id, 12.3 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem :  1959456 total,    75704 free,   448092 used,  1435660 buff/cache
KiB Swap:  2007036 total,  1975976 free,    31060 used.  1327172 avail Mem
Sun Dec 15 23:22:13 -05 2019 top - 23:22:13 up 29,  2 users,  load average: 1.40, 1.39, 1.26
%Cpu0  : 26.9 us,  2.9 sy,  0.0 ni, 64.0 id,  5.9 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu1  : 21.1 us,  3.1 sy,  0.0 ni, 67.8 id,  7.9 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 17.7 us,  2.6 sy,  0.0 ni, 65.4 id, 14.3 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  : 18.8 us,  2.5 sy,  0.0 ni, 66.5 id, 12.1 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem :  1959456 total,    78808 free,   451608 used,  1429040 buff/cache
KiB Swap:  2007036 total,  1974380 free,    32656 used.  1323820 avail Mem
Sun Dec 15 23:22:43 -05 2019 top - 23:22:43 up 30,  2 users,  load average: 1.24, 1.35, 1.25
%Cpu0  : 26.9 us,  3.0 sy,  0.0 ni, 64.2 id,  5.8 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu1  : 21.3 us,  3.1 sy,  0.0 ni, 67.7 id,  7.8 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 17.8 us,  2.6 sy,  0.0 ni, 65.5 id, 14.0 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  : 19.0 us,  2.5 sy,  0.0 ni, 66.5 id, 11.9 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem :  1959456 total,    69296 free,   448980 used,  1441180 buff/cache
KiB Swap:  2007036 total,  1973136 free,    33900 used.  1326416 avail Mem
Sun Dec 15 23:23:13 -05 2019 top - 23:23:13 up 30,  2 users,  load average: 1.21, 1.33, 1.24
%Cpu0  : 26.8 us,  2.9 sy,  0.0 ni, 64.3 id,  5.8 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu1  : 21.3 us,  3.1 sy,  0.0 ni, 67.8 id,  7.7 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 18.2 us,  2.5 sy,  0.0 ni, 65.3 id, 13.8 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  : 18.8 us,  2.5 sy,  0.0 ni, 66.9 id, 11.8 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem :  1959456 total,   138248 free,   389656 used,  1431552 buff/cache
KiB Swap:  2007036 total,  1972332 free,    34704 used.  1385880 avail Mem
Sun Dec 15 23:23:43 -05 2019 top - 23:23:44 up 31,  2 users,  load average: 1.27, 1.33, 1.25
%Cpu0  : 26.7 us,  2.9 sy,  0.0 ni, 64.5 id,  5.7 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu1  : 21.3 us,  3.1 sy,  0.0 ni, 67.9 id,  7.6 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 18.5 us,  2.5 sy,  0.0 ni, 65.2 id, 13.6 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  : 18.9 us,  2.5 sy,  0.0 ni, 66.9 id, 11.6 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem :  1959456 total,    75216 free,   450356 used,  1433884 buff/cache
KiB Swap:  2007036 total,  1971652 free,    35384 used.  1324980 avail Mem
Sun Dec 15 23:24:14 -05 2019 top - 23:24:14 up 31,  2 users,  load average: 1.16, 1.30, 1.24
%Cpu0  : 26.8 us,  2.9 sy,  0.0 ni, 64.5 id,  5.6 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu1  : 21.5 us,  3.1 sy,  0.0 ni, 67.8 id,  7.5 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 18.5 us,  2.5 sy,  0.0 ni, 65.4 id, 13.4 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  : 19.0 us,  2.5 sy,  0.0 ni, 67.0 id, 11.4 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem :  1959456 total,    65508 free,   448788 used,  1445160 buff/cache
KiB Swap:  2007036 total,  1970352 free,    36684 used.  1326680 avail Mem
Sun Dec 15 23:24:44 -05 2019 top - 23:24:44 up 32,  2 users,  load average: 1.10, 1.27, 1.23
%Cpu0  : 26.7 us,  2.9 sy,  0.0 ni, 64.6 id,  5.5 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu1  : 21.6 us,  3.1 sy,  0.0 ni, 67.9 id,  7.4 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 18.6 us,  2.6 sy,  0.0 ni, 65.4 id, 13.3 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  : 19.1 us,  2.5 sy,  0.0 ni, 67.0 id, 11.3 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem :  1959456 total,    74616 free,   448624 used,  1436216 buff/cache
KiB Swap:  2007036 total,  1969744 free,    37292 used.  1326948 avail Mem
Sun Dec 15 23:25:14 -05 2019 top - 23:25:14 up 32,  2 users,  load average: 1.22, 1.28, 1.23
%Cpu0  : 26.8 us,  2.9 sy,  0.0 ni, 64.6 id,  5.5 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu1  : 21.5 us,  3.1 sy,  0.0 ni, 68.0 id,  7.3 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 18.7 us,  2.6 sy,  0.0 ni, 65.5 id, 13.1 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  : 19.2 us,  2.5 sy,  0.0 ni, 67.1 id, 11.1 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem :  1959456 total,    78504 free,   473768 used,  1407184 buff/cache
KiB Swap:  2007036 total,  1969344 free,    37692 used.  1301324 avail Mem
Sun Dec 15 23:25:44 -05 2019 top - 23:25:44 up 33,  2 users,  load average: 1.48, 1.34, 1.26
%Cpu0  : 26.7 us,  2.9 sy,  0.0 ni, 64.7 id,  5.4 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu1  : 21.4 us,  3.1 sy,  0.0 ni, 68.2 id,  7.3 wa,  0.0 hi,  0.1 si,  0.0 st
```

```
%Cpu2  : 19.1 us,  2.6 sy,  0.0 ni, 65.3 id, 12.9 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  : 19.4 us,  2.5 sy,  0.0 ni, 67.0 id, 11.0 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem :  1959456 total,    79476 free,   455244 used,  1424736 buff/cache
KiB Swap:  2007036 total,  1968888 free,    38148 used.  1320196 avail Mem
Sun Dec 15 23:26:14 -05 2019 top - 23:26:15 up 33,  2 users,  load average: 1.29, 1.31, 1.25
%Cpu0  : 26.8 us,  2.9 sy,  0.0 ni, 64.7 id,  5.4 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu1  : 21.3 us,  3.1 sy,  0.0 ni, 68.3 id,  7.2 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 19.3 us,  2.6 sy,  0.0 ni, 65.3 id, 12.7 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  : 19.5 us,  2.5 sy,  0.0 ni, 67.1 id, 10.8 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem :  1959456 total,    73424 free,   448864 used,  1437168 buff/cache
KiB Swap:  2007036 total,  1968256 free,    38780 used.  1326484 avail Mem
Sun Dec 15 23:26:45 -05 2019 top - 23:26:45 up 34,  2 users,  load average: 1.38, 1.34, 1.26
%Cpu0  : 26.7 us,  2.9 sy,  0.0 ni, 64.8 id,  5.3 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu1  : 21.4 us,  3.1 sy,  0.0 ni, 68.3 id,  7.1 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 19.3 us,  2.6 sy,  0.0 ni, 65.4 id, 12.6 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  : 19.7 us,  2.5 sy,  0.0 ni, 67.0 id, 10.7 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem :  1959456 total,    65520 free,   446708 used,  1447228 buff/cache
KiB Swap:  2007036 total,  1967736 free,    39300 used.  1328816 avail Mem
Sun Dec 15 23:27:15 -05 2019 top - 23:27:15 up 34,  2 users,  load average: 1.23, 1.31, 1.25
%Cpu0  : 26.7 us,  2.9 sy,  0.0 ni, 64.9 id,  5.3 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu1  : 21.7 us,  3.1 sy,  0.0 ni, 68.1 id,  7.0 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 19.3 us,  2.6 sy,  0.0 ni, 65.6 id, 12.4 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  : 19.6 us,  2.5 sy,  0.0 ni, 67.2 id, 10.6 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem :  1959456 total,   139072 free,   388176 used,  1432208 buff/cache
KiB Swap:  2007036 total,  1967492 free,    39544 used.  1387376 avail Mem
Sun Dec 15 23:27:45 -05 2019 top - 23:27:45 up 35,  2 users,  load average: 1.27, 1.31, 1.26
%Cpu0  : 26.5 us,  2.9 sy,  0.0 ni, 65.1 id,  5.2 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu1  : 21.8 us,  3.1 sy,  0.0 ni, 68.1 id,  7.0 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 19.6 us,  2.6 sy,  0.0 ni, 65.5 id, 12.2 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  : 19.7 us,  2.5 sy,  0.0 ni, 67.3 id, 10.4 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem :  1959456 total,    70316 free,   447784 used,  1441356 buff/cache
KiB Swap:  2007036 total,  1967256 free,    39780 used.  1327596 avail Mem
Sun Dec 15 23:28:15 -05 2019 top - 23:28:15 up 35,  2 users,  load average: 1.16, 1.28, 1.25
%Cpu0  : 26.8 us,  2.9 sy,  0.0 ni, 64.9 id,  5.1 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu1  : 21.8 us,  3.1 sy,  0.0 ni, 68.2 id,  6.9 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 19.6 us,  2.6 sy,  0.0 ni, 65.6 id, 12.1 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  : 19.7 us,  2.5 sy,  0.0 ni, 67.4 id, 10.3 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem :  1959456 total,    78172 free,   448452 used,  1432832 buff/cache
KiB Swap:  2007036 total,  1966896 free,    40140 used.  1326968 avail Mem
Sun Dec 15 23:28:45 -05 2019 top - 23:28:46 up 36,  2 users,  load average: 1.10, 1.25, 1.24
%Cpu0  : 26.6 us,  2.9 sy,  0.0 ni, 65.2 id,  5.1 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu1  : 21.7 us,  3.1 sy,  0.0 ni, 68.3 id,  6.8 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 19.9 us,  2.6 sy,  0.0 ni, 65.5 id, 11.9 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  : 19.9 us,  2.5 sy,  0.0 ni, 67.3 id, 10.2 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem :  1959456 total,    68984 free,   447476 used,  1442996 buff/cache
KiB Swap:  2007036 total,  1966512 free,    40524 used.  1328104 avail Mem
Sun Dec 15 23:29:16 -05 2019 top - 23:29:16 up 36,  2 users,  load average: 1.14, 1.24, 1.24
%Cpu0  : 26.7 us,  2.9 sy,  0.0 ni, 65.1 id,  5.0 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu1  : 21.8 us,  3.1 sy,  0.0 ni, 68.3 id,  6.8 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 20.0 us,  2.6 sy,  0.0 ni, 65.5 id, 11.8 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  : 19.8 us,  2.5 sy,  0.0 ni, 67.5 id, 10.0 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem :  1959456 total,    81500 free,   451300 used,  1426656 buff/cache
KiB Swap:  2007036 total,  1966044 free,    40992 used.  1323816 avail Mem
Sun Dec 15 23:29:46 -05 2019 top - 23:29:46 up 37,  2 users,  load average: 1.25, 1.26, 1.24
%Cpu0  : 26.7 us,  2.9 sy,  0.0 ni, 65.2 id,  5.0 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu1  : 22.0 us,  3.1 sy,  0.0 ni, 68.2 id,  6.7 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 20.1 us,  2.6 sy,  0.0 ni, 65.5 id, 11.7 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  : 19.8 us,  2.5 sy,  0.0 ni, 67.6 id,  9.9 wa,  0.0 hi,  0.1 si,  0.0 st
```

```
KiB Mem :  1959456 total,    71376 free,    449676 used,  1438404 buff/cache
KiB Swap: 2007036 total, 1965532 free,     41504 used.  1325552 avail Mem
Sun Dec 15 23:30:16 -05 2019 top - 23:30:16 up 37,  2 users,  load average: 1.20, 1.25, 1.24
%Cpu0  : 26.6 us,  2.9 sy,  0.0 ni, 65.3 id,  4.9 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu1  : 22.0 us,  3.1 sy,  0.0 ni, 68.2 id,  6.6 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 20.3 us,  2.6 sy,  0.0 ni, 65.5 id, 11.5 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  : 19.8 us,  2.5 sy,  0.0 ni, 67.7 id,  9.8 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem :  1959456 total,    82820 free,    446960 used,  1429676 buff/cache
KiB Swap: 2007036 total, 1965024 free,     42012 used.  1328720 avail Mem
Sun Dec 15 23:30:46 -05 2019 top - 23:30:46 up 38,  2 users,  load average: 1.24, 1.26, 1.24
%Cpu0  : 26.7 us,  2.9 sy,  0.0 ni, 65.3 id,  4.9 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu1  : 22.1 us,  3.1 sy,  0.0 ni, 68.1 id,  6.6 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 20.2 us,  2.6 sy,  0.0 ni, 65.6 id, 11.4 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  : 19.8 us,  2.5 sy,  0.0 ni, 67.8 id,  9.7 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem :  1959456 total,    72240 free,    447132 used,  1440084 buff/cache
KiB Swap: 2007036 total, 1964456 free,     42580 used.  1328080 avail Mem
Sun Dec 15 23:31:16 -05 2019 top - 23:31:17 up 38,  2 users,  load average: 1.31, 1.28, 1.25
%Cpu0  : 26.7 us,  2.9 sy,  0.0 ni, 65.4 id,  4.8 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu1  : 22.1 us,  3.1 sy,  0.0 ni, 68.3 id,  6.5 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 20.5 us,  2.6 sy,  0.0 ni, 65.5 id, 11.3 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  : 19.9 us,  2.5 sy,  0.0 ni, 67.8 id,  9.6 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem :  1959456 total,   105184 free,    415584 used,  1438688 buff/cache
KiB Swap: 2007036 total, 1964216 free,     42820 used.  1360204 avail Mem
Sun Dec 15 23:31:47 -05 2019 top - 23:31:47 up 39,  2 users,  load average: 1.27, 1.27, 1.25
%Cpu0  : 26.6 us,  2.9 sy,  0.0 ni, 65.5 id,  4.8 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu1  : 22.2 us,  3.0 sy,  0.0 ni, 68.3 id,  6.4 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 20.5 us,  2.6 sy,  0.0 ni, 65.7 id, 11.1 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  : 20.1 us,  2.5 sy,  0.0 ni, 67.8 id,  9.5 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem :  1959456 total,    75944 free,    425376 used,  1458136 buff/cache
KiB Swap: 2007036 total, 1964108 free,     42928 used.  1349984 avail Mem
Sun Dec 15 23:32:17 -05 2019 top - 23:32:17 up 39,  2 users,  load average: 1.16, 1.24, 1.24
%Cpu0  : 26.7 us,  2.9 sy,  0.0 ni, 65.5 id,  4.7 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu1  : 22.2 us,  3.0 sy,  0.0 ni, 68.3 id,  6.3 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 20.4 us,  2.6 sy,  0.0 ni, 65.8 id, 11.0 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  : 20.2 us,  2.5 sy,  0.0 ni, 67.7 id,  9.4 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem :  1959456 total,    64872 free,    447184 used,  1447400 buff/cache
KiB Swap: 2007036 total, 1963588 free,     43448 used.  1328144 avail Mem
Sun Dec 15 23:32:47 -05 2019 top - 23:32:47 up 40,  2 users,  load average: 1.10, 1.22, 1.23
%Cpu0  : 26.8 us,  2.9 sy,  0.0 ni, 65.4 id,  4.7 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu1  : 22.3 us,  3.0 sy,  0.0 ni, 68.3 id,  6.3 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 20.4 us,  2.6 sy,  0.0 ni, 65.9 id, 10.9 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  : 20.1 us,  2.5 sy,  0.0 ni, 67.9 id,  9.3 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem :  1959456 total,    74396 free,    446828 used,  1438232 buff/cache
KiB Swap: 2007036 total, 1962996 free,     44040 used.  1328484 avail Mem
Sun Dec 15 23:33:17 -05 2019 top - 23:33:17 up 40,  2 users,  load average: 1.21, 1.24, 1.24
%Cpu0  : 26.7 us,  2.9 sy,  0.0 ni, 65.6 id,  4.6 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu1  : 22.6 us,  3.0 sy,  0.0 ni, 68.1 id,  6.2 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 20.5 us,  2.6 sy,  0.0 ni, 66.0 id, 10.8 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  : 20.1 us,  2.5 sy,  0.0 ni, 68.1 id,  9.2 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem :  1959456 total,    70568 free,    420916 used,  1467972 buff/cache
KiB Swap: 2007036 total, 1962804 free,     44232 used.  1354728 avail Mem
Sun Dec 15 23:33:47 -05 2019 top - 23:33:48 up 41,  2 users,  load average: 1.13, 1.21, 1.23
%Cpu0  : 26.6 us,  2.9 sy,  0.0 ni, 65.7 id,  4.6 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu1  : 22.6 us,  3.0 sy,  0.0 ni, 68.1 id,  6.2 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 20.6 us,  2.6 sy,  0.0 ni, 66.0 id, 10.7 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  : 20.3 us,  2.5 sy,  0.0 ni, 68.0 id,  9.1 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem :  1959456 total,    79456 free,    446220 used,  1433780 buff/cache
KiB Swap: 2007036 total, 1962252 free,     44784 used.  1328960 avail Mem
```

```
Sun Dec 15 23:34:18 -05 2019 top - 23:34:18 up 41,  2 users,  load average: 1.08, 1.19, 1.22
%Cpu0  : 26.6 us,  2.9 sy,  0.0 ni, 65.7 id,  4.6 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu1  : 22.7 us,  3.0 sy,  0.0 ni, 68.1 id,  6.1 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 20.6 us,  2.6 sy,  0.0 ni, 66.1 id, 10.6 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  : 20.3 us,  2.5 sy,  0.0 ni, 68.0 id,  9.0 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem :  1959456 total,    71164 free,   444632 used,  1443660 buff/cache
KiB Swap:  2007036 total,  1961484 free,    45552 used.  1330456 avail Mem
Sun Dec 15 23:34:48 -05 2019 top - 23:34:48 up 42,  2 users,  load average: 1.37, 1.25, 1.24
%Cpu0  : 26.6 us,  2.9 sy,  0.0 ni, 65.8 id,  4.5 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu1  : 22.6 us,  3.0 sy,  0.0 ni, 68.2 id,  6.1 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 20.8 us,  2.6 sy,  0.0 ni, 66.0 id, 10.4 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  : 20.4 us,  2.5 sy,  0.0 ni, 68.0 id,  8.9 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem :  1959456 total,    78252 free,   447464 used,  1433740 buff/cache
KiB Swap:  2007036 total,  1960708 free,    46328 used.  1327972 avail Mem
Sun Dec 15 23:35:18 -05 2019 top - 23:35:18 up 42,  2 users,  load average: 1.22, 1.23, 1.23
%Cpu0  : 26.5 us,  2.9 sy,  0.0 ni, 65.9 id,  4.5 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu1  : 22.8 us,  3.0 sy,  0.0 ni, 68.1 id,  6.0 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 20.8 us,  2.7 sy,  0.0 ni, 66.1 id, 10.3 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  : 20.5 us,  2.6 sy,  0.0 ni, 68.0 id,  8.8 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem :  1959456 total,    70328 free,   446468 used,  1442660 buff/cache
KiB Swap:  2007036 total,  1960304 free,    46732 used.  1328772 avail Mem
Sun Dec 15 23:35:48 -05 2019 top - 23:35:48 up 43,  2 users,  load average: 1.24, 1.24, 1.23
%Cpu0  : 26.8 us,  2.9 sy,  0.0 ni, 65.7 id,  4.4 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu1  : 22.7 us,  3.0 sy,  0.0 ni, 68.2 id,  6.0 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 20.8 us,  2.7 sy,  0.0 ni, 66.2 id, 10.2 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  : 20.4 us,  2.6 sy,  0.0 ni, 68.1 id,  8.7 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem :  1959456 total,    81020 free,   445036 used,  1433400 buff/cache
KiB Swap:  2007036 total,  1960000 free,    47036 used.  1329996 avail Mem
Sun Dec 15 23:36:18 -05 2019 top - 23:36:19 up 43,  2 users,  load average: 1.22, 1.23, 1.23
%Cpu0  : 26.8 us,  2.9 sy,  0.0 ni, 65.7 id,  4.4 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu1  : 22.7 us,  3.0 sy,  0.0 ni, 68.3 id,  5.9 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 20.7 us,  2.7 sy,  0.0 ni, 66.3 id, 10.1 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 20.6 us,  2.6 sy,  0.0 ni, 68.1 id,  8.7 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem :  1959456 total,    69908 free,   461204 used,  1428344 buff/cache
KiB Swap:  2007036 total,  1959716 free,    47320 used.  1314240 avail Mem
Sun Dec 15 23:36:49 -05 2019 top - 23:36:49 up 44,  2 users,  load average: 1.43, 1.29, 1.25
%Cpu0  : 26.9 us,  2.9 sy,  0.0 ni, 65.6 id,  4.4 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu1  : 22.7 us,  3.0 sy,  0.0 ni, 68.4 id,  5.9 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 20.8 us,  2.7 sy,  0.0 ni, 66.3 id, 10.1 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 20.6 us,  2.6 sy,  0.0 ni, 68.1 id,  8.6 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem :  1959456 total,    74556 free,   445476 used,  1439424 buff/cache
KiB Swap:  2007036 total,  1959460 free,    47576 used.  1329592 avail Mem
Sun Dec 15 23:37:19 -05 2019 top - 23:37:19 up 44,  2 users,  load average: 1.31, 1.27, 1.25
%Cpu0  : 26.9 us,  2.9 sy,  0.0 ni, 65.6 id,  4.4 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu1  : 22.6 us,  3.0 sy,  0.0 ni, 68.4 id,  5.8 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 20.8 us,  2.7 sy,  0.0 ni, 66.4 id, 10.0 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 20.7 us,  2.6 sy,  0.0 ni, 68.1 id,  8.5 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem :  1959456 total,    74732 free,   472164 used,  1412560 buff/cache
KiB Swap:  2007036 total,  1959232 free,    47804 used.  1303056 avail Mem
Sun Dec 15 23:37:49 -05 2019 top - 23:37:49 up 45,  2 users,  load average: 1.19, 1.25, 1.24
%Cpu0  : 26.8 us,  2.9 sy,  0.0 ni, 65.8 id,  4.3 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu1  : 22.7 us,  3.0 sy,  0.0 ni, 68.4 id,  5.8 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 21.0 us,  2.7 sy,  0.0 ni, 66.3 id,  9.9 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 20.8 us,  2.6 sy,  0.0 ni, 68.1 id,  8.4 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem :  1959456 total,    71388 free,   446936 used,  1441132 buff/cache
KiB Swap:  2007036 total,  1958876 free,    48160 used.  1328400 avail Mem
Sun Dec 15 23:38:19 -05 2019 top - 23:38:19 up 45,  2 users,  load average: 1.24, 1.25, 1.24
%Cpu0  : 26.9 us,  2.9 sy,  0.0 ni, 65.7 id,  4.3 wa,  0.0 hi,  0.2 si,  0.0 st
```

```
%Cpu1  : 22.7 us,  3.0 sy,  0.0 ni, 68.5 id,  5.7 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 21.0 us,  2.7 sy,  0.0 ni, 66.4 id,  9.8 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 20.8 us,  2.6 sy,  0.0 ni, 68.1 id,  8.3 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem :  1959456 total,    79860 free,   447856 used,  1431740 buff/cache
KiB Swap:  2007036 total,  1958424 free,    48612 used.  1327880 avail Mem
Sun Dec 15 23:38:49 -05 2019 top - 23:38:49 up 46,  2 users,  load average: 1.15, 1.23, 1.23
%Cpu0  : 26.9 us,  2.9 sy,  0.0 ni, 65.8 id,  4.3 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu1  : 22.7 us,  3.0 sy,  0.0 ni, 68.5 id,  5.7 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 21.1 us,  2.7 sy,  0.0 ni, 66.4 id,  9.7 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 20.9 us,  2.6 sy,  0.0 ni, 68.1 id,  8.3 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem :  1959456 total,    72064 free,   446652 used,  1440740 buff/cache
KiB Swap:  2007036 total,  1957796 free,    49240 used.  1329020 avail Mem
Sun Dec 15 23:39:20 -05 2019 top - 23:39:20 up 46,  2 users,  load average: 1.09, 1.20, 1.22
%Cpu0  : 27.1 us,  2.9 sy,  0.0 ni, 65.6 id,  4.2 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu1  : 22.6 us,  3.0 sy,  0.0 ni, 68.6 id,  5.6 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 21.0 us,  2.7 sy,  0.0 ni, 66.5 id,  9.6 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 21.0 us,  2.6 sy,  0.0 ni, 68.1 id,  8.2 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem :  1959456 total,    70484 free,   427740 used,  1461232 buff/cache
KiB Swap:  2007036 total,  1957400 free,    49636 used.  1347660 avail Mem
Sun Dec 15 23:39:50 -05 2019 top - 23:39:50 up 47,  2 users,  load average: 1.38, 1.26, 1.24
%Cpu0  : 27.0 us,  2.9 sy,  0.0 ni, 65.7 id,  4.2 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu1  : 22.7 us,  3.0 sy,  0.0 ni, 68.6 id,  5.6 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 21.1 us,  2.7 sy,  0.0 ni, 66.5 id,  9.5 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 20.9 us,  2.6 sy,  0.0 ni, 68.2 id,  8.1 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem :  1959456 total,    65204 free,   445800 used,  1448452 buff/cache
KiB Swap:  2007036 total,  1956996 free,    50040 used.  1329576 avail Mem
Sun Dec 15 23:40:20 -05 2019 top - 23:40:20 up 47,  2 users,  load average: 1.33, 1.27, 1.25
%Cpu0  : 26.9 us,  2.9 sy,  0.0 ni, 65.8 id,  4.2 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu1  : 22.7 us,  3.0 sy,  0.0 ni, 68.6 id,  5.6 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 21.4 us,  2.7 sy,  0.0 ni, 66.3 id,  9.4 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 21.0 us,  2.6 sy,  0.0 ni, 68.3 id,  8.0 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem :  1959456 total,    74252 free,   446276 used,  1438928 buff/cache
KiB Swap:  2007036 total,  1956980 free,    50056 used.  1329220 avail Mem
Sun Dec 15 23:40:50 -05 2019 top - 23:40:50 up 48,  2 users,  load average: 1.20, 1.24, 1.24
%Cpu0  : 27.0 us,  2.9 sy,  0.0 ni, 65.7 id,  4.2 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu1  : 22.7 us,  3.0 sy,  0.0 ni, 68.7 id,  5.5 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 21.4 us,  2.7 sy,  0.0 ni, 66.4 id,  9.3 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 21.0 us,  2.6 sy,  0.0 ni, 68.3 id,  8.0 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem :  1959456 total,    65180 free,   445784 used,  1448492 buff/cache
KiB Swap:  2007036 total,  1956944 free,    50092 used.  1329532 avail Mem
Sun Dec 15 23:41:20 -05 2019 top - 23:41:20 up 48,  2 users,  load average: 1.12, 1.22, 1.23
%Cpu0  : 27.0 us,  2.9 sy,  0.0 ni, 65.8 id,  4.1 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu1  : 22.6 us,  3.0 sy,  0.0 ni, 68.8 id,  5.5 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 21.5 us,  2.7 sy,  0.0 ni, 66.4 id,  9.3 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 21.1 us,  2.6 sy,  0.0 ni, 68.3 id,  7.9 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem :  1959456 total,    71736 free,   448324 used,  1439396 buff/cache
KiB Swap:  2007036 total,  1956916 free,    50120 used.  1327240 avail Mem
Sun Dec 15 23:41:50 -05 2019 top - 23:41:51 up 49,  2 users,  load average: 1.55, 1.32, 1.27
%Cpu0  : 26.9 us,  2.9 sy,  0.0 ni, 65.9 id,  4.1 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu1  : 22.7 us,  3.0 sy,  0.0 ni, 68.7 id,  5.5 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 21.6 us,  2.7 sy,  0.0 ni, 66.3 id,  9.2 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 21.1 us,  2.6 sy,  0.0 ni, 68.3 id,  7.8 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem :  1959456 total,    81320 free,   448052 used,  1430084 buff/cache
KiB Swap:  2007036 total,  1956864 free,    50172 used.  1327568 avail Mem
Sun Dec 15 23:42:21 -05 2019 top - 23:42:21 up 49,  2 users,  load average: 1.53, 1.34, 1.27
%Cpu0  : 27.1 us,  2.9 sy,  0.0 ni, 65.7 id,  4.1 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu1  : 22.7 us,  3.0 sy,  0.0 ni, 68.8 id,  5.4 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 21.6 us,  2.7 sy,  0.0 ni, 66.4 id,  9.1 wa,  0.0 hi,  0.2 si,  0.0 st
```

```
%Cpu3  : 21.1 us,  2.6 sy,  0.0 ni, 68.4 id,  7.8 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem :  1959456 total,    72300 free,    447204 used,   1439952 buff/cache
KiB Swap:  2007036 total,  1956824 free,    50212 used.   1328464 avail Mem
Sun Dec 15 23:42:51 -05 2019 top - 23:42:51 up 50,  2 users,  load average: 1.44, 1.34, 1.27
%Cpu0  : 27.2 us,  2.9 sy,  0.0 ni, 65.7 id,  4.0 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu1  : 22.7 us,  3.0 sy,  0.0 ni, 68.8 id,  5.4 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 21.6 us,  2.7 sy,  0.0 ni, 66.4 id,  9.0 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 21.1 us,  2.6 sy,  0.0 ni, 68.5 id,  7.7 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem :  1959456 total,    81524 free,    446764 used,   1431168 buff/cache
KiB Swap:  2007036 total,  1956808 free,    50228 used.   1328896 avail Mem
Sun Dec 15 23:43:21 -05 2019 top - 23:43:21 up 50,  2 users,  load average: 1.63, 1.39, 1.29
%Cpu0  : 27.2 us,  2.9 sy,  0.0 ni, 65.6 id,  4.0 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu1  : 22.7 us,  3.0 sy,  0.0 ni, 68.8 id,  5.3 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 21.7 us,  2.7 sy,  0.0 ni, 66.4 id,  9.0 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 21.1 us,  2.6 sy,  0.0 ni, 68.5 id,  7.6 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem :  1959456 total,    75836 free,    447984 used,   1435636 buff/cache
KiB Swap:  2007036 total,  1956792 free,    50244 used.   1327608 avail Mem
Sun Dec 15 23:43:51 -05 2019 top - 23:43:51 up 51,  2 users,  load average: 1.38, 1.35, 1.28
%Cpu0  : 27.3 us,  2.9 sy,  0.0 ni, 65.6 id,  4.0 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu1  : 22.6 us,  3.0 sy,  0.0 ni, 69.0 id,  5.3 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 21.8 us,  2.7 sy,  0.0 ni, 66.4 id,  8.9 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 21.1 us,  2.6 sy,  0.0 ni, 68.5 id,  7.6 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem :  1959456 total,    66028 free,    446988 used,   1446440 buff/cache
KiB Swap:  2007036 total,  1956768 free,    50268 used.   1328280 avail Mem
Sun Dec 15 23:44:22 -05 2019 top - 23:44:22 up 51,  2 users,  load average: 1.31, 1.33, 1.28
%Cpu0  : 27.3 us,  2.9 sy,  0.0 ni, 65.6 id,  4.0 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu1  : 22.6 us,  3.0 sy,  0.0 ni, 69.0 id,  5.3 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 21.8 us,  2.7 sy,  0.0 ni, 66.5 id,  8.8 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 21.2 us,  2.6 sy,  0.0 ni, 68.5 id,  7.5 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem :  1959456 total,    72384 free,    449068 used,   1438004 buff/cache
KiB Swap:  2007036 total,  1956752 free,    50284 used.   1326456 avail Mem
Sun Dec 15 23:44:52 -05 2019 top - 23:44:52 up 52,  2 users,  load average: 1.31, 1.33, 1.28
%Cpu0  : 27.3 us,  2.9 sy,  0.0 ni, 65.6 id,  3.9 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu1  : 22.7 us,  3.0 sy,  0.0 ni, 68.9 id,  5.2 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 21.8 us,  2.7 sy,  0.0 ni, 66.6 id,  8.7 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 21.2 us,  2.6 sy,  0.0 ni, 68.6 id,  7.5 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem :  1959456 total,    80800 free,    448704 used,   1429952 buff/cache
KiB Swap:  2007036 total,  1956716 free,    50320 used.   1326732 avail Mem
Sun Dec 15 23:45:22 -05 2019 top - 23:45:22 up 52,  2 users,  load average: 1.30, 1.33, 1.28
%Cpu0  : 27.3 us,  2.9 sy,  0.0 ni, 65.6 id,  3.9 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu1  : 22.8 us,  3.0 sy,  0.0 ni, 68.9 id,  5.2 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 21.9 us,  2.7 sy,  0.0 ni, 66.5 id,  8.7 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 21.2 us,  2.6 sy,  0.0 ni, 68.6 id,  7.4 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem :  1959456 total,    68120 free,    451336 used,   1440000 buff/cache
KiB Swap:  2007036 total,  1956648 free,    50388 used.   1324156 avail Mem
Sun Dec 15 23:45:52 -05 2019 top - 23:45:52 up 53,  2 users,  load average: 1.18, 1.30, 1.27
%Cpu0  : 27.3 us,  2.9 sy,  0.0 ni, 65.7 id,  3.9 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu1  : 22.8 us,  3.0 sy,  0.0 ni, 68.9 id,  5.2 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 21.9 us,  2.7 sy,  0.0 ni, 66.6 id,  8.6 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 21.3 us,  2.6 sy,  0.0 ni, 68.5 id,  7.4 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem :  1959456 total,    75368 free,    450776 used,   1433312 buff/cache
KiB Swap:  2007036 total,  1956604 free,    50432 used.   1324856 avail Mem
Sun Dec 15 23:46:22 -05 2019 top - 23:46:22 up 53,  2 users,  load average: 1.11, 1.27, 1.26
%Cpu0  : 27.3 us,  2.9 sy,  0.0 ni, 65.7 id,  3.9 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu1  : 22.8 us,  3.0 sy,  0.0 ni, 69.0 id,  5.1 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 22.0 us,  2.7 sy,  0.0 ni, 66.6 id,  8.6 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 21.3 us,  2.6 sy,  0.0 ni, 68.5 id,  7.3 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  1959456 total,    64668 free,    449488 used,   1445300 buff/cache
```

```
KiB Swap:  2007036 total,  1956576 free,    50460 used.  1325836 avail Mem
Sun Dec 15 23:46:53 -05 2019 top - 23:46:53 up 54,  2 users,  load average: 1.27, 1.29, 1.27
%Cpu0  : 27.1 us,  2.9 sy,  0.0 ni, 65.8 id,  3.9 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu1  : 22.7 us,  3.0 sy,  0.0 ni, 69.0 id,  5.1 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 22.2 us,  2.7 sy,  0.0 ni, 66.4 id,  8.5 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 21.3 us,  2.6 sy,  0.0 ni, 68.6 id,  7.3 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  1959456 total,    70680 free,   451228 used.  1437548 buff/cache
KiB Swap:  2007036 total,  1956540 free,    50496 used.  1324168 avail Mem
Sun Dec 15 23:47:23 -05 2019 top - 23:47:23 up 54,  2 users,  load average: 1.22, 1.27, 1.26
%Cpu0  : 27.1 us,  2.9 sy,  0.0 ni, 65.9 id,  3.8 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu1  : 22.8 us,  3.0 sy,  0.0 ni, 68.9 id,  5.1 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 22.3 us,  2.7 sy,  0.0 ni, 66.4 id,  8.4 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 21.3 us,  2.6 sy,  0.0 ni, 68.7 id,  7.2 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  1959456 total,    66428 free,   468900 used.  1424128 buff/cache
KiB Swap:  2007036 total,  1956500 free,    50536 used.  1306504 avail Mem
Sun Dec 15 23:47:53 -05 2019 top - 23:47:53 up 55,  2 users,  load average: 1.30, 1.29, 1.27
%Cpu0  : 27.1 us,  2.9 sy,  0.0 ni, 65.9 id,  3.8 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu1  : 22.8 us,  3.0 sy,  0.0 ni, 69.0 id,  5.1 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 22.3 us,  2.7 sy,  0.0 ni, 66.4 id,  8.4 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 21.4 us,  2.7 sy,  0.0 ni, 68.7 id,  7.1 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  1959456 total,    66876 free,   451392 used.  1441188 buff/cache
KiB Swap:  2007036 total,  1956484 free,    50552 used.  1324256 avail Mem
Sun Dec 15 23:48:23 -05 2019 top - 23:48:23 up 55,  2 users,  load average: 1.41, 1.31, 1.28
%Cpu0  : 27.1 us,  2.9 sy,  0.0 ni, 65.9 id,  3.8 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu1  : 22.7 us,  3.0 sy,  0.0 ni, 69.0 id,  5.0 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 22.4 us,  2.7 sy,  0.0 ni, 66.4 id,  8.3 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 21.5 us,  2.7 sy,  0.0 ni, 68.6 id,  7.1 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  1959456 total,    73900 free,   450916 used.  1434640 buff/cache
KiB Swap:  2007036 total,  1956440 free,    50596 used.  1324500 avail Mem
Sun Dec 15 23:48:53 -05 2019 top - 23:48:53 up 56,  2 users,  load average: 1.24, 1.28, 1.27
%Cpu0  : 27.0 us,  2.9 sy,  0.0 ni, 66.0 id,  3.8 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu1  : 22.8 us,  3.0 sy,  0.0 ni, 69.0 id,  5.0 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 22.5 us,  2.7 sy,  0.0 ni, 66.4 id,  8.2 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 21.5 us,  2.7 sy,  0.0 ni, 68.7 id,  7.0 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  1959456 total,    79852 free,   451544 used.  1428060 buff/cache
KiB Swap:  2007036 total,  1956388 free,    50648 used.  1323952 avail Mem
Sun Dec 15 23:49:24 -05 2019 top - 23:49:24 up 56,  2 users,  load average: 1.15, 1.25, 1.26
%Cpu0  : 27.1 us,  2.9 sy,  0.0 ni, 66.0 id,  3.8 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu1  : 23.0 us,  3.0 sy,  0.0 ni, 68.9 id,  5.0 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 22.4 us,  2.8 sy,  0.0 ni, 66.5 id,  8.2 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 21.4 us,  2.7 sy,  0.0 ni, 68.7 id,  7.0 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  1959456 total,    66740 free,   454752 used.  1437964 buff/cache
KiB Swap:  2007036 total,  1956352 free,    50684 used.  1320504 avail Mem
Sun Dec 15 23:49:54 -05 2019 top - 23:49:54 up 57,  2 users,  load average: 1.17, 1.24, 1.25
%Cpu0  : 27.1 us,  2.9 sy,  0.0 ni, 66.0 id,  3.7 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu1  : 23.1 us,  3.0 sy,  0.0 ni, 68.8 id,  4.9 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 22.4 us,  2.8 sy,  0.0 ni, 66.5 id,  8.1 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 21.4 us,  2.7 sy,  0.0 ni, 68.8 id,  7.0 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  1959456 total,    73992 free,   453000 used.  1432464 buff/cache
KiB Swap:  2007036 total,  1956316 free,    50720 used.  1322416 avail Mem
Sun Dec 15 23:50:24 -05 2019 top - 23:50:24 up 57,  2 users,  load average: 1.26, 1.27, 1.26
%Cpu0  : 27.1 us,  2.9 sy,  0.0 ni, 66.0 id,  3.7 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu1  : 23.1 us,  3.0 sy,  0.0 ni, 68.8 id,  4.9 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 22.5 us,  2.8 sy,  0.0 ni, 66.5 id,  8.1 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 21.4 us,  2.7 sy,  0.0 ni, 68.8 id,  6.9 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  1959456 total,    78388 free,   454296 used.  1426772 buff/cache
KiB Swap:  2007036 total,  1956300 free,    50736 used.  1321152 avail Mem
Sun Dec 15 23:50:54 -05 2019 top - 23:50:54 up 58,  2 users,  load average: 1.16, 1.24, 1.25
```

```
%Cpu0  : 27.1 us,  2.9 sy,  0.0 ni, 66.1 id,  3.7 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu1  : 23.3 us,  3.0 sy,  0.0 ni, 68.7 id,  4.9 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 22.5 us,  2.8 sy,  0.0 ni, 66.6 id,  8.0 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 21.4 us,  2.7 sy,  0.0 ni, 68.9 id,  6.9 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  1959456 total,    71820 free,   453848 used,  1433788 buff/cache
KiB Swap:  2007036 total,  1956820 free,    50216 used.  1321596 avail Mem
```

B.2.   Adquisición datos LattePanda

Prueba sin carga

Anexos/panda_sin_carga.txt

```
Sat Dec 14 17:17:46 CST 2019 top - 17:17:46 up  3:05,  2 users,  load average: 0.00, 0.00, 0.05
%Cpu0  : 15.4 us,  6.7 sy,  0.0 ni, 75.5 id,  1.9 wa,  0.0 hi,  0.5 si,  0.0 st
%Cpu1  : 14.8 us,  6.3 sy,  0.0 ni, 77.6 id,  1.1 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 14.0 us,  6.5 sy,  0.0 ni, 77.5 id,  1.8 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 13.8 us,  6.5 sy,  0.0 ni, 77.8 id,  1.8 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,  3195988 free,   126028 used,   644308 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3528028 avail Mem
Sat Dec 14 17:18:16 CST 2019 top - 17:18:16 up  3:05,  2 users,  load average: 0.00, 0.00, 0.05
%Cpu0  : 15.4 us,  6.7 sy,  0.0 ni, 75.5 id,  1.9 wa,  0.0 hi,  0.5 si,  0.0 st
%Cpu1  : 14.8 us,  6.3 sy,  0.0 ni, 77.7 id,  1.1 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 14.0 us,  6.5 sy,  0.0 ni, 77.5 id,  1.8 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 13.7 us,  6.4 sy,  0.0 ni, 77.8 id,  1.8 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,  3196360 free,   125628 used,   644336 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3528480 avail Mem
Sat Dec 14 17:18:46 CST 2019 top - 17:18:46 up  3:06,  2 users,  load average: 0.00, 0.00, 0.05
%Cpu0  : 15.4 us,  6.7 sy,  0.0 ni, 75.6 id,  1.9 wa,  0.0 hi,  0.5 si,  0.0 st
%Cpu1  : 14.7 us,  6.2 sy,  0.0 ni, 77.8 id,  1.1 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 14.0 us,  6.5 sy,  0.0 ni, 77.6 id,  1.8 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 13.7 us,  6.4 sy,  0.0 ni, 77.9 id,  1.8 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,  3195988 free,   125992 used,   644344 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3528116 avail Mem
Sat Dec 14 17:19:16 CST 2019 top - 17:19:17 up  3:06,  2 users,  load average: 0.00, 0.00, 0.05
%Cpu0  : 15.3 us,  6.7 sy,  0.0 ni, 75.7 id,  1.9 wa,  0.0 hi,  0.5 si,  0.0 st
%Cpu1  : 14.7 us,  6.2 sy,  0.0 ni, 77.8 id,  1.1 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 13.9 us,  6.5 sy,  0.0 ni, 77.6 id,  1.8 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 13.6 us,  6.4 sy,  0.0 ni, 77.9 id,  1.8 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,  3196112 free,   125860 used,   644352 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3528252 avail Mem
Sat Dec 14 17:19:47 CST 2019 top - 17:19:47 up  3:07,  2 users,  load average: 0.00, 0.00, 0.04
%Cpu0  : 15.3 us,  6.7 sy,  0.0 ni, 75.7 id,  1.9 wa,  0.0 hi,  0.5 si,  0.0 st
%Cpu1  : 14.7 us,  6.2 sy,  0.0 ni, 77.9 id,  1.1 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 13.9 us,  6.5 sy,  0.0 ni, 77.7 id,  1.8 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 13.6 us,  6.4 sy,  0.0 ni, 78.0 id,  1.8 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,  3195988 free,   125976 used,   644360 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3528140 avail Mem
Sat Dec 14 17:20:17 CST 2019 top - 17:20:17 up  3:07,  2 users,  load average: 0.00, 0.00, 0.04
%Cpu0  : 15.2 us,  6.6 sy,  0.0 ni, 75.8 id,  1.9 wa,  0.0 hi,  0.5 si,  0.0 st
%Cpu1  : 14.6 us,  6.2 sy,  0.0 ni, 77.9 id,  1.1 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 13.8 us,  6.4 sy,  0.0 ni, 77.8 id,  1.7 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 13.6 us,  6.4 sy,  0.0 ni, 78.1 id,  1.8 wa,  0.0 hi,  0.2 si,  0.0 st
```

```
KiB Mem :  3966324 total,  3195864 free,   126092 used,   644368 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3528016 avail Mem
Sat Dec 14 17:20:47 CST 2019 top - 17:20:47 up  3:08,  2 users,  load average: 0.00, 0.00, 0.04
%Cpu0  : 15.2 us,  6.6 sy,  0.0 ni, 75.9 id,  1.9 wa,  0.0 hi,  0.5 si,  0.0 st
%Cpu1  : 14.6 us,  6.2 sy,  0.0 ni, 78.0 id,  1.1 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 13.8 us,  6.4 sy,  0.0 ni, 77.8 id,  1.7 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 13.5 us,  6.3 sy,  0.0 ni, 78.1 id,  1.8 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,  3195864 free,   126072 used,   644388 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3528024 avail Mem
Sat Dec 14 17:21:17 CST 2019 top - 17:21:18 up  3:08,  2 users,  load average: 0.00, 0.00, 0.03
%Cpu0  : 15.1 us,  6.6 sy,  0.0 ni, 75.9 id,  1.9 wa,  0.0 hi,  0.5 si,  0.0 st
%Cpu1  : 14.5 us,  6.2 sy,  0.0 ni, 78.0 id,  1.1 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 13.8 us,  6.4 sy,  0.0 ni, 77.9 id,  1.7 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 13.5 us,  6.3 sy,  0.0 ni, 78.2 id,  1.8 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,  3195988 free,   125940 used,   644396 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3528156 avail Mem
Sat Dec 14 17:21:48 CST 2019 top - 17:21:48 up  3:09,  2 users,  load average: 0.00, 0.00, 0.03
%Cpu0  : 15.1 us,  6.6 sy,  0.0 ni, 76.0 id,  1.9 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 14.5 us,  6.1 sy,  0.0 ni, 78.1 id,  1.1 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 13.7 us,  6.4 sy,  0.0 ni, 77.9 id,  1.7 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 13.5 us,  6.3 sy,  0.0 ni, 78.2 id,  1.8 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,  3195864 free,   126036 used,   644424 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3528052 avail Mem
Sat Dec 14 17:22:18 CST 2019 top - 17:22:18 up  3:09,  2 users,  load average: 0.00, 0.00, 0.03
%Cpu0  : 15.1 us,  6.6 sy,  0.0 ni, 76.1 id,  1.9 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 14.5 us,  6.1 sy,  0.0 ni, 78.2 id,  1.1 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 13.7 us,  6.4 sy,  0.0 ni, 78.0 id,  1.7 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 13.4 us,  6.3 sy,  0.0 ni, 78.3 id,  1.8 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,  3195740 free,   126152 used,   644432 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3527928 avail Mem
Sat Dec 14 17:22:48 CST 2019 top - 17:22:48 up  3:10,  2 users,  load average: 0.00, 0.00, 0.02
%Cpu0  : 15.0 us,  6.5 sy,  0.0 ni, 76.1 id,  1.8 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 14.4 us,  6.1 sy,  0.0 ni, 78.2 id,  1.1 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 13.7 us,  6.4 sy,  0.0 ni, 78.1 id,  1.7 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 13.4 us,  6.3 sy,  0.0 ni, 78.4 id,  1.8 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,  3195988 free,   125880 used,   644456 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3528192 avail Mem
Sat Dec 14 17:23:18 CST 2019 top - 17:23:18 up  3:10,  2 users,  load average: 0.00, 0.00, 0.02
%Cpu0  : 15.0 us,  6.5 sy,  0.0 ni, 76.2 id,  1.8 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 14.4 us,  6.1 sy,  0.0 ni, 78.3 id,  1.1 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 13.6 us,  6.3 sy,  0.0 ni, 78.1 id,  1.7 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 13.4 us,  6.3 sy,  0.0 ni, 78.4 id,  1.8 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,  3195740 free,   126188 used,   644396 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3527944 avail Mem
Sat Dec 14 17:23:48 CST 2019 top - 17:23:49 up  3:11,  2 users,  load average: 0.00, 0.00, 0.02
%Cpu0  : 14.9 us,  6.5 sy,  0.0 ni, 76.3 id,  1.8 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 14.3 us,  6.1 sy,  0.0 ni, 78.3 id,  1.1 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 13.6 us,  6.3 sy,  0.0 ni, 78.2 id,  1.7 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 13.3 us,  6.2 sy,  0.0 ni, 78.5 id,  1.8 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,  3195740 free,   126164 used,   644420 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3527960 avail Mem
Sat Dec 14 17:24:19 CST 2019 top - 17:24:19 up  3:11,  2 users,  load average: 0.00, 0.00, 0.02
%Cpu0  : 14.9 us,  6.5 sy,  0.0 ni, 76.3 id,  1.8 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 14.3 us,  6.1 sy,  0.0 ni, 78.4 id,  1.1 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 13.5 us,  6.3 sy,  0.0 ni, 78.2 id,  1.7 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 13.3 us,  6.2 sy,  0.0 ni, 78.5 id,  1.8 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,  3195864 free,   126032 used,   644428 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3528084 avail Mem
```

```
Sat Dec 14 17:24:49 CST 2019 top - 17:24:49 up  3:12,  2 users,  load average: 0.00, 0.00, 0.01
%Cpu0  : 14.9 us,  6.5 sy,  0.0 ni, 76.4 id,  1.8 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 14.3 us,  6.0 sy,  0.0 ni, 78.5 id,  1.1 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 13.5 us,  6.3 sy,  0.0 ni, 78.3 id,  1.7 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 13.2 us,  6.2 sy,  0.0 ni, 78.6 id,  1.8 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,  3195740 free,   126132 used,   644452 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3527968 avail Mem
Sat Dec 14 17:25:19 CST 2019 top - 17:25:19 up  3:12,  2 users,  load average: 0.00, 0.00, 0.01
%Cpu0  : 14.8 us,  6.5 sy,  0.0 ni, 76.4 id,  1.8 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 14.2 us,  6.0 sy,  0.0 ni, 78.5 id,  1.1 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 13.5 us,  6.3 sy,  0.0 ni, 78.4 id,  1.7 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 13.2 us,  6.2 sy,  0.0 ni, 78.6 id,  1.8 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,  3195616 free,   126244 used,   644464 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3527860 avail Mem
Sat Dec 14 17:25:49 CST 2019 top - 17:25:49 up  3:13,  2 users,  load average: 0.00, 0.00, 0.01
%Cpu0  : 14.8 us,  6.4 sy,  0.0 ni, 76.5 id,  1.8 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 14.2 us,  6.0 sy,  0.0 ni, 78.6 id,  1.1 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 13.4 us,  6.3 sy,  0.0 ni, 78.4 id,  1.7 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 13.2 us,  6.2 sy,  0.0 ni, 78.7 id,  1.8 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,  3195740 free,   126096 used,   644488 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3527988 avail Mem
Sat Dec 14 17:26:19 CST 2019 top - 17:26:20 up  3:13,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  : 14.8 us,  6.4 sy,  0.0 ni, 76.6 id,  1.8 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 14.2 us,  6.0 sy,  0.0 ni, 78.6 id,  1.1 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 13.4 us,  6.2 sy,  0.0 ni, 78.5 id,  1.7 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 13.1 us,  6.2 sy,  0.0 ni, 78.7 id,  1.8 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,  3195864 free,   125964 used,   644496 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3528124 avail Mem
Sat Dec 14 17:26:50 CST 2019 top - 17:26:50 up  3:14,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  : 14.7 us,  6.4 sy,  0.0 ni, 76.6 id,  1.8 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 14.1 us,  6.0 sy,  0.0 ni, 78.7 id,  1.1 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 13.4 us,  6.2 sy,  0.0 ni, 78.5 id,  1.7 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 13.1 us,  6.1 sy,  0.0 ni, 78.8 id,  1.8 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,  3196112 free,   125840 used,   644372 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3528384 avail Mem
Sat Dec 14 17:27:20 CST 2019 top - 17:27:20 up  3:14,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  : 14.7 us,  6.4 sy,  0.0 ni, 76.7 id,  1.8 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 14.1 us,  6.0 sy,  0.0 ni, 78.7 id,  1.1 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 13.3 us,  6.2 sy,  0.0 ni, 78.6 id,  1.7 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 13.1 us,  6.1 sy,  0.0 ni, 78.9 id,  1.8 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,  3196236 free,   125708 used,   644380 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3528508 avail Mem
Sat Dec 14 17:27:50 CST 2019 top - 17:27:50 up  3:15,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  : 14.6 us,  6.4 sy,  0.0 ni, 76.7 id,  1.8 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 14.0 us,  6.0 sy,  0.0 ni, 78.8 id,  1.1 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 13.3 us,  6.2 sy,  0.0 ni, 78.6 id,  1.7 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 13.0 us,  6.1 sy,  0.0 ni, 78.9 id,  1.7 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,  3196112 free,   125820 used,   644392 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3528392 avail Mem
Sat Dec 14 17:28:20 CST 2019 top - 17:28:21 up  3:15,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  : 14.6 us,  6.4 sy,  0.0 ni, 76.8 id,  1.8 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 14.0 us,  5.9 sy,  0.0 ni, 78.8 id,  1.1 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 13.3 us,  6.2 sy,  0.0 ni, 78.7 id,  1.7 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 13.0 us,  6.1 sy,  0.0 ni, 79.0 id,  1.7 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,  3196236 free,   125688 used,   644400 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3528528 avail Mem
Sat Dec 14 17:28:51 CST 2019 top - 17:28:51 up  3:16,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  : 14.6 us,  6.3 sy,  0.0 ni, 76.9 id,  1.8 wa,  0.0 hi,  0.4 si,  0.0 st
```

```
%Cpu1  : 14.0 us,  5.9 sy,  0.0 ni, 78.9 id,  1.1 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 13.2 us,  6.2 sy,  0.0 ni, 78.7 id,  1.7 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 13.0 us,  6.1 sy,  0.0 ni, 79.0 id,  1.7 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,  3195988 free,   125916 used,   644420 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3528296 avail Mem
Sat Dec 14 17:29:21 CST 2019 top - 17:29:21 up  3:16,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  : 14.5 us,  6.3 sy,  0.0 ni, 76.9 id,  1.8 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 13.9 us,  5.9 sy,  0.0 ni, 78.9 id,  1.1 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 13.2 us,  6.1 sy,  0.0 ni, 78.8 id,  1.7 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 12.9 us,  6.1 sy,  0.0 ni, 79.1 id,  1.7 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,  3195988 free,   125908 used,   644428 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3528304 avail Mem
Sat Dec 14 17:29:51 CST 2019 top - 17:29:51 up  3:17,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  : 14.5 us,  6.3 sy,  0.0 ni, 77.0 id,  1.8 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 13.9 us,  5.9 sy,  0.0 ni, 79.0 id,  1.1 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 13.2 us,  6.1 sy,  0.0 ni, 78.9 id,  1.7 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 12.9 us,  6.1 sy,  0.0 ni, 79.1 id,  1.7 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,  3195616 free,   126252 used,   644456 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3527940 avail Mem
Sat Dec 14 17:30:21 CST 2019 top - 17:30:21 up  3:17,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  : 14.4 us,  6.3 sy,  0.0 ni, 77.0 id,  1.8 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 13.9 us,  5.9 sy,  0.0 ni, 79.1 id,  1.1 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 13.1 us,  6.1 sy,  0.0 ni, 78.9 id,  1.7 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 12.9 us,  6.0 sy,  0.0 ni, 79.2 id,  1.7 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,  3195740 free,   126120 used,   644464 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3528064 avail Mem
Sat Dec 14 17:30:51 CST 2019 top - 17:30:52 up  3:18,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  : 14.4 us,  6.3 sy,  0.0 ni, 77.1 id,  1.8 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 13.8 us,  5.9 sy,  0.0 ni, 79.1 id,  1.1 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 13.1 us,  6.1 sy,  0.0 ni, 79.0 id,  1.7 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 12.8 us,  6.0 sy,  0.0 ni, 79.2 id,  1.7 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,  3195864 free,   125988 used,   644472 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3528204 avail Mem
Sat Dec 14 17:31:22 CST 2019 top - 17:31:22 up  3:18,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  : 14.4 us,  6.3 sy,  0.0 ni, 77.2 id,  1.8 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 13.8 us,  5.8 sy,  0.0 ni, 79.2 id,  1.1 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 13.1 us,  6.1 sy,  0.0 ni, 79.0 id,  1.6 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 12.8 us,  6.0 sy,  0.0 ni, 79.3 id,  1.7 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,  3196112 free,   125732 used,   644480 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3528452 avail Mem
Sat Dec 14 17:31:52 CST 2019 top - 17:31:52 up  3:19,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  : 14.3 us,  6.2 sy,  0.0 ni, 77.2 id,  1.8 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 13.8 us,  5.8 sy,  0.0 ni, 79.2 id,  1.1 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 13.0 us,  6.1 sy,  0.0 ni, 79.1 id,  1.6 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 12.8 us,  6.0 sy,  0.0 ni, 79.3 id,  1.7 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,  3195988 free,   125848 used,   644488 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3528336 avail Mem
Sat Dec 14 17:32:22 CST 2019 top - 17:32:22 up  3:19,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  : 14.3 us,  6.2 sy,  0.0 ni, 77.3 id,  1.8 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 13.7 us,  5.8 sy,  0.0 ni, 79.3 id,  1.0 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 13.0 us,  6.1 sy,  0.0 ni, 79.1 id,  1.6 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 12.7 us,  6.0 sy,  0.0 ni, 79.4 id,  1.7 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,  3196112 free,   125712 used,   644500 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3528480 avail Mem
Sat Dec 14 17:32:52 CST 2019 top - 17:32:52 up  3:20,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  : 14.3 us,  6.2 sy,  0.0 ni, 77.3 id,  1.8 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 13.7 us,  5.8 sy,  0.0 ni, 79.3 id,  1.0 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 13.0 us,  6.0 sy,  0.0 ni, 79.2 id,  1.6 wa,  0.0 hi,  0.2 si,  0.0 st
```

```
%Cpu3  : 12.7 us,  6.0 sy,  0.0 ni, 79.4 id,  1.7 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,  3196236 free,    125580 used,    644508 buff/cache
KiB Swap:  4116476 total,  4116476 free,         0 used.  3528604 avail Mem
Sat Dec 14 17:33:22 CST 2019 top - 17:33:23 up  3:20,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  : 14.2 us,  6.2 sy,  0.0 ni, 77.4 id,  1.7 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 13.7 us,  5.8 sy,  0.0 ni, 79.4 id,  1.0 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 12.9 us,  6.0 sy,  0.0 ni, 79.2 id,  1.6 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 12.7 us,  5.9 sy,  0.0 ni, 79.5 id,  1.7 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,  3196484 free,    125324 used,    644516 buff/cache
KiB Swap:  4116476 total,  4116476 free,         0 used.  3528860 avail Mem
Sat Dec 14 17:33:53 CST 2019 top - 17:33:53 up  3:21,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  : 14.2 us,  6.2 sy,  0.0 ni, 77.5 id,  1.7 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 13.6 us,  5.8 sy,  0.0 ni, 79.4 id,  1.0 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 12.9 us,  6.0 sy,  0.0 ni, 79.3 id,  1.6 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 12.6 us,  5.9 sy,  0.0 ni, 79.5 id,  1.7 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,  3196236 free,    125564 used,    644524 buff/cache
KiB Swap:  4116476 total,  4116476 free,         0 used.  3528628 avail Mem
Sat Dec 14 17:34:23 CST 2019 top - 17:34:23 up  3:21,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  : 14.2 us,  6.2 sy,  0.0 ni, 77.5 id,  1.7 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 13.6 us,  5.8 sy,  0.0 ni, 79.5 id,  1.0 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 12.9 us,  6.0 sy,  0.0 ni, 79.3 id,  1.6 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 12.6 us,  5.9 sy,  0.0 ni, 79.6 id,  1.7 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,  3196112 free,    125680 used,    644532 buff/cache
KiB Swap:  4116476 total,  4116476 free,         0 used.  3528504 avail Mem
Sat Dec 14 17:34:53 CST 2019 top - 17:34:53 up  3:22,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  : 14.1 us,  6.2 sy,  0.0 ni, 77.6 id,  1.7 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 13.6 us,  5.7 sy,  0.0 ni, 79.5 id,  1.0 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 12.8 us,  6.0 sy,  0.0 ni, 79.4 id,  1.6 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 12.6 us,  5.9 sy,  0.0 ni, 79.6 id,  1.7 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,  3195988 free,    125784 used,    644552 buff/cache
KiB Swap:  4116476 total,  4116476 free,         0 used.  3528388 avail Mem
Sat Dec 14 17:35:23 CST 2019 top - 17:35:23 up  3:22,  2 users,  load average: 0.07, 0.02, 0.00
%Cpu0  : 14.1 us,  6.1 sy,  0.0 ni, 77.6 id,  1.7 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 13.5 us,  5.7 sy,  0.0 ni, 79.6 id,  1.0 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 12.8 us,  6.0 sy,  0.0 ni, 79.4 id,  1.6 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 12.6 us,  5.9 sy,  0.0 ni, 79.7 id,  1.7 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,  3195740 free,    126024 used,    644560 buff/cache
KiB Swap:  4116476 total,  4116476 free,         0 used.  3528148 avail Mem
Sat Dec 14 17:35:53 CST 2019 top - 17:35:54 up  3:23,  2 users,  load average: 0.04, 0.01, 0.00
%Cpu0  : 14.1 us,  6.1 sy,  0.0 ni, 77.7 id,  1.7 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 13.5 us,  5.7 sy,  0.0 ni, 79.6 id,  1.0 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 12.8 us,  5.9 sy,  0.0 ni, 79.5 id,  1.6 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 12.5 us,  5.9 sy,  0.0 ni, 79.7 id,  1.7 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,  3195616 free,    126112 used,    644596 buff/cache
KiB Swap:  4116476 total,  4116476 free,         0 used.  3528032 avail Mem
Sat Dec 14 17:36:24 CST 2019 top - 17:36:24 up  3:23,  2 users,  load average: 0.02, 0.01, 0.00
%Cpu0  : 14.0 us,  6.1 sy,  0.0 ni, 77.7 id,  1.7 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 13.5 us,  5.7 sy,  0.0 ni, 79.7 id,  1.0 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 12.7 us,  5.9 sy,  0.0 ni, 79.5 id,  1.6 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 12.5 us,  5.9 sy,  0.0 ni, 79.8 id,  1.7 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,  3195616 free,    126100 used,    644608 buff/cache
KiB Swap:  4116476 total,  4116476 free,         0 used.  3528048 avail Mem
Sat Dec 14 17:36:54 CST 2019 top - 17:36:54 up  3:24,  2 users,  load average: 0.01, 0.01, 0.00
%Cpu0  : 14.0 us,  6.1 sy,  0.0 ni, 77.8 id,  1.7 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 13.4 us,  5.7 sy,  0.0 ni, 79.7 id,  1.0 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 12.7 us,  5.9 sy,  0.0 ni, 79.6 id,  1.6 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 12.5 us,  5.8 sy,  0.0 ni, 79.8 id,  1.7 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,  3195864 free,    125828 used,    644632 buff/cache
```

```
KiB Swap:  4116476 total,  4116476 free,        0 used.  3528308 avail Mem
Sat Dec 14 17:37:24 CST 2019 top - 17:37:24 up  3:24,  2 users,  load average: 0.01, 0.00, 0.00
%Cpu0  : 13.9 us,  6.1 sy,  0.0 ni, 77.8 id,  1.7 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 13.4 us,  5.7 sy,  0.0 ni, 79.8 id,  1.0 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 12.7 us,  5.9 sy,  0.0 ni, 79.6 id,  1.6 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 12.4 us,  5.8 sy,  0.0 ni, 79.9 id,  1.7 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,  3195492 free,   126192 used,   644640 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3527936 avail Mem
Sat Dec 14 17:37:54 CST 2019 top - 17:37:55 up  3:25,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  : 13.9 us,  6.1 sy,  0.0 ni, 77.9 id,  1.7 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 13.4 us,  5.7 sy,  0.0 ni, 79.8 id,  1.0 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 12.6 us,  5.9 sy,  0.0 ni, 79.7 id,  1.6 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 12.4 us,  5.8 sy,  0.0 ni, 79.9 id,  1.7 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,  3195740 free,   125920 used,   644664 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3528200 avail Mem
Sat Dec 14 17:38:25 CST 2019 top - 17:38:25 up  3:25,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  : 13.9 us,  6.1 sy,  0.0 ni, 77.9 id,  1.7 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 13.3 us,  5.6 sy,  0.0 ni, 79.9 id,  1.0 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 12.6 us,  5.9 sy,  0.0 ni, 79.7 id,  1.6 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 12.4 us,  5.8 sy,  0.0 ni, 80.0 id,  1.7 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,  3195740 free,   125912 used,   644672 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3528208 avail Mem
Sat Dec 14 17:38:55 CST 2019 top - 17:38:55 up  3:26,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  : 13.8 us,  6.0 sy,  0.0 ni, 78.0 id,  1.7 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 13.3 us,  5.6 sy,  0.0 ni, 79.9 id,  1.0 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 12.6 us,  5.9 sy,  0.0 ni, 79.8 id,  1.6 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 12.3 us,  5.8 sy,  0.0 ni, 80.0 id,  1.7 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,  3195492 free,   126152 used,   644680 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3527968 avail Mem
Sat Dec 14 17:39:25 CST 2019 top - 17:39:25 up  3:26,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  : 13.8 us,  6.0 sy,  0.0 ni, 78.1 id,  1.7 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 13.3 us,  5.6 sy,  0.0 ni, 80.0 id,  1.0 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 12.6 us,  5.8 sy,  0.0 ni, 79.8 id,  1.6 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 12.3 us,  5.8 sy,  0.0 ni, 80.1 id,  1.7 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,  3195740 free,   125876 used,   644708 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3528216 avail Mem
Sat Dec 14 17:39:55 CST 2019 top - 17:39:55 up  3:27,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  : 13.8 us,  6.0 sy,  0.0 ni, 78.1 id,  1.7 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 13.2 us,  5.6 sy,  0.0 ni, 80.0 id,  1.0 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 12.5 us,  5.8 sy,  0.0 ni, 79.9 id,  1.6 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 12.3 us,  5.8 sy,  0.0 ni, 80.1 id,  1.6 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,  3195740 free,   125856 used,   644728 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3528228 avail Mem
Sat Dec 14 17:40:25 CST 2019 top - 17:40:26 up  3:27,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  : 13.7 us,  6.0 sy,  0.0 ni, 78.2 id,  1.7 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 13.2 us,  5.6 sy,  0.0 ni, 80.1 id,  1.0 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 12.5 us,  5.8 sy,  0.0 ni, 79.9 id,  1.6 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 12.2 us,  5.7 sy,  0.0 ni, 80.2 id,  1.6 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,  3195740 free,   125872 used,   644712 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3528236 avail Mem
Sat Dec 14 17:40:56 CST 2019 top - 17:40:56 up  3:28,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  : 13.7 us,  6.0 sy,  0.0 ni, 78.2 id,  1.7 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 13.2 us,  5.6 sy,  0.0 ni, 80.1 id,  1.0 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 12.5 us,  5.8 sy,  0.0 ni, 80.0 id,  1.6 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 12.2 us,  5.7 sy,  0.0 ni, 80.2 id,  1.6 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,  3195864 free,   125740 used,   644720 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3528368 avail Mem
Sat Dec 14 17:41:26 CST 2019 top - 17:41:26 up  3:28,  2 users,  load average: 0.00, 0.00, 0.00
```

```
%Cpu0  : 13.7 us,  6.0 sy,  0.0 ni, 78.3 id,  1.7 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 13.1 us,  5.6 sy,  0.0 ni, 80.2 id,  1.0 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 12.4 us,  5.8 sy,  0.0 ni, 80.0 id,  1.6 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 12.2 us,  5.7 sy,  0.0 ni, 80.3 id,  1.6 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,  3195244 free,   126336 used,   644744 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3527756 avail Mem
Sat Dec 14 17:41:56 CST 2019 top - 17:41:56 up  3:29,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  : 13.6 us,  5.9 sy,  0.0 ni, 78.3 id,  1.7 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 13.1 us,  5.6 sy,  0.0 ni, 80.2 id,  1.0 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 12.4 us,  5.8 sy,  0.0 ni, 80.1 id,  1.6 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 12.2 us,  5.7 sy,  0.0 ni, 80.3 id,  1.6 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,  3195244 free,   126328 used,   644752 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3527772 avail Mem
Sat Dec 14 17:42:26 CST 2019 top - 17:42:26 up  3:29,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  : 13.6 us,  5.9 sy,  0.0 ni, 78.4 id,  1.7 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 13.1 us,  5.5 sy,  0.0 ni, 80.3 id,  1.0 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 12.4 us,  5.8 sy,  0.0 ni, 80.1 id,  1.6 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 12.1 us,  5.7 sy,  0.0 ni, 80.4 id,  1.6 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,  3195616 free,   125936 used,   644772 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3528144 avail Mem
Sat Dec 14 17:42:56 CST 2019 top - 17:42:57 up  3:30,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  : 13.6 us,  5.9 sy,  0.0 ni, 78.4 id,  1.7 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 13.0 us,  5.5 sy,  0.0 ni, 80.3 id,  1.0 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 12.3 us,  5.7 sy,  0.0 ni, 80.2 id,  1.6 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 12.1 us,  5.7 sy,  0.0 ni, 80.4 id,  1.6 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,  3195244 free,   126300 used,   644780 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3527780 avail Mem
Sat Dec 14 17:43:27 CST 2019 top - 17:43:27 up  3:30,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  : 13.5 us,  5.9 sy,  0.0 ni, 78.5 id,  1.7 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 13.0 us,  5.5 sy,  0.0 ni, 80.4 id,  1.0 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 12.3 us,  5.7 sy,  0.0 ni, 80.2 id,  1.6 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 12.1 us,  5.7 sy,  0.0 ni, 80.5 id,  1.6 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,  3195368 free,   126144 used,   644812 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3527924 avail Mem
Sat Dec 14 17:43:57 CST 2019 top - 17:43:57 up  3:31,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  : 13.5 us,  5.9 sy,  0.0 ni, 78.5 id,  1.7 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 13.0 us,  5.5 sy,  0.0 ni, 80.4 id,  1.0 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 12.3 us,  5.7 sy,  0.0 ni, 80.3 id,  1.6 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 12.0 us,  5.7 sy,  0.0 ni, 80.5 id,  1.6 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,  3195368 free,   126136 used,   644820 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3527924 avail Mem
Sat Dec 14 17:44:27 CST 2019 top - 17:44:27 up  3:31,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  : 13.5 us,  5.9 sy,  0.0 ni, 78.6 id,  1.7 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 12.9 us,  5.5 sy,  0.0 ni, 80.5 id,  1.0 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 12.3 us,  5.7 sy,  0.0 ni, 80.3 id,  1.5 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 12.0 us,  5.6 sy,  0.0 ni, 80.6 id,  1.6 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,  3195616 free,   125876 used,   644832 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3528180 avail Mem
Sat Dec 14 17:44:57 CST 2019 top - 17:44:58 up  3:32,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  : 13.4 us,  5.9 sy,  0.0 ni, 78.6 id,  1.7 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 12.9 us,  5.5 sy,  0.0 ni, 80.5 id,  1.0 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 12.2 us,  5.7 sy,  0.0 ni, 80.4 id,  1.5 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 12.0 us,  5.6 sy,  0.0 ni, 80.6 id,  1.6 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,  3195368 free,   126112 used,   644844 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3527948 avail Mem
Sat Dec 14 17:45:28 CST 2019 top - 17:45:28 up  3:32,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  : 13.4 us,  5.9 sy,  0.0 ni, 78.7 id,  1.7 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 12.9 us,  5.5 sy,  0.0 ni, 80.5 id,  1.0 wa,  0.0 hi,  0.1 si,  0.0 st
```

```
%Cpu2  : 12.2 us,  5.7 sy,  0.0 ni, 80.4 id,  1.5 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 12.0 us,  5.6 sy,  0.0 ni, 80.7 id,  1.6 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,  3195368 free,   126084 used,   644872 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3527948 avail Mem
Sat Dec 14 17:45:58 CST 2019 top - 17:45:58 up  3:33,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  : 13.4 us,  5.8 sy,  0.0 ni, 78.7 id,  1.6 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 12.8 us,  5.4 sy,  0.0 ni, 80.6 id,  1.0 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 12.2 us,  5.7 sy,  0.0 ni, 80.5 id,  1.5 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 11.9 us,  5.6 sy,  0.0 ni, 80.7 id,  1.6 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,  3195492 free,   125952 used,   644880 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3528088 avail Mem
Sat Dec 14 17:46:28 CST 2019 top - 17:46:28 up  3:33,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  : 13.4 us,  5.8 sy,  0.0 ni, 78.8 id,  1.6 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 12.8 us,  5.4 sy,  0.0 ni, 80.6 id,  1.0 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 12.1 us,  5.7 sy,  0.0 ni, 80.5 id,  1.5 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 11.9 us,  5.6 sy,  0.0 ni, 80.8 id,  1.6 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,  3195616 free,   125804 used,   644904 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3528220 avail Mem
Sat Dec 14 17:46:58 CST 2019 top - 17:46:58 up  3:34,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  : 13.3 us,  5.8 sy,  0.0 ni, 78.8 id,  1.6 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 12.8 us,  5.4 sy,  0.0 ni, 80.7 id,  1.0 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 12.1 us,  5.6 sy,  0.0 ni, 80.5 id,  1.5 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 11.9 us,  5.6 sy,  0.0 ni, 80.8 id,  1.6 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,  3195368 free,   126036 used,   644920 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3527976 avail Mem
Sat Dec 14 17:47:28 CST 2019 top - 17:47:29 up  3:34,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  : 13.3 us,  5.8 sy,  0.0 ni, 78.9 id,  1.6 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 12.8 us,  5.4 sy,  0.0 ni, 80.7 id,  1.0 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 12.1 us,  5.6 sy,  0.0 ni, 80.6 id,  1.5 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 11.8 us,  5.6 sy,  0.0 ni, 80.8 id,  1.6 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,  3195120 free,   126268 used,   644936 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3527736 avail Mem
Sat Dec 14 17:47:59 CST 2019 top - 17:47:59 up  3:35,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  : 13.3 us,  5.8 sy,  0.0 ni, 78.9 id,  1.6 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 12.7 us,  5.4 sy,  0.0 ni, 80.8 id,  1.0 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 12.1 us,  5.6 sy,  0.0 ni, 80.6 id,  1.5 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 11.8 us,  5.5 sy,  0.0 ni, 80.9 id,  1.6 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,  3194996 free,   126384 used,   644944 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3527620 avail Mem
Sat Dec 14 17:48:29 CST 2019 top - 17:48:29 up  3:35,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  : 13.2 us,  5.8 sy,  0.0 ni, 79.0 id,  1.6 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 12.7 us,  5.4 sy,  0.0 ni, 80.8 id,  1.0 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 12.0 us,  5.6 sy,  0.0 ni, 80.7 id,  1.5 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 11.8 us,  5.5 sy,  0.0 ni, 80.9 id,  1.6 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,  3195368 free,   126004 used,   644952 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3528008 avail Mem
Sat Dec 14 17:48:59 CST 2019 top - 17:48:59 up  3:36,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  : 13.2 us,  5.8 sy,  0.0 ni, 79.0 id,  1.6 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 12.7 us,  5.4 sy,  0.0 ni, 80.9 id,  1.0 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 12.0 us,  5.6 sy,  0.0 ni, 80.7 id,  1.5 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 11.8 us,  5.5 sy,  0.0 ni, 81.0 id,  1.6 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,  3195368 free,   125996 used,   644960 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3528008 avail Mem
Sat Dec 14 17:49:29 CST 2019 top - 17:49:29 up  3:36,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  : 13.2 us,  5.7 sy,  0.0 ni, 79.1 id,  1.6 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 12.6 us,  5.4 sy,  0.0 ni, 80.9 id,  1.0 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 12.0 us,  5.6 sy,  0.0 ni, 80.8 id,  1.5 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 11.7 us,  5.5 sy,  0.0 ni, 81.0 id,  1.6 wa,  0.0 hi,  0.2 si,  0.0 st
```

```
KiB Mem :  3966324 total,  3195492 free,   125988 used,   644844 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3528140 avail Mem
Sat Dec 14 17:49:59 CST 2019 top - 17:50:00 up  3:37,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  : 13.1 us,  5.7 sy,  0.0 ni, 79.1 id,  1.6 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 12.6 us,  5.3 sy,  0.0 ni, 81.0 id,  1.0 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 11.9 us,  5.6 sy,  0.0 ni, 80.8 id,  1.5 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 11.7 us,  5.5 sy,  0.0 ni, 81.1 id,  1.6 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,  3195492 free,   125980 used,   644852 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3528148 avail Mem
Sat Dec 14 17:50:30 CST 2019 top - 17:50:30 up  3:37,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  : 13.1 us,  5.7 sy,  0.0 ni, 79.2 id,  1.6 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 12.6 us,  5.3 sy,  0.0 ni, 81.0 id,  1.0 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 11.9 us,  5.6 sy,  0.0 ni, 80.9 id,  1.5 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 11.7 us,  5.5 sy,  0.0 ni, 81.1 id,  1.6 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,  3195368 free,   126088 used,   644868 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3528044 avail Mem
Sat Dec 14 17:51:00 CST 2019 top - 17:51:00 up  3:38,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  : 13.1 us,  5.7 sy,  0.0 ni, 79.2 id,  1.6 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 12.6 us,  5.3 sy,  0.0 ni, 81.0 id,  1.0 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 11.9 us,  5.5 sy,  0.0 ni, 80.9 id,  1.5 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 11.7 us,  5.5 sy,  0.0 ni, 81.2 id,  1.6 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,  3195368 free,   126080 used,   644876 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3528044 avail Mem
Sat Dec 14 17:51:30 CST 2019 top - 17:51:30 up  3:38,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  : 13.0 us,  5.7 sy,  0.0 ni, 79.3 id,  1.6 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 12.5 us,  5.3 sy,  0.0 ni, 81.1 id,  1.0 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 11.9 us,  5.5 sy,  0.0 ni, 80.9 id,  1.5 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 11.6 us,  5.5 sy,  0.0 ni, 81.2 id,  1.6 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,  3195244 free,   126188 used,   644892 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3527928 avail Mem
Sat Dec 14 17:52:00 CST 2019 top - 17:52:00 up  3:39,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  : 13.0 us,  5.7 sy,  0.0 ni, 79.3 id,  1.6 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 12.5 us,  5.3 sy,  0.0 ni, 81.1 id,  1.0 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 11.8 us,  5.5 sy,  0.0 ni, 81.0 id,  1.5 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 11.6 us,  5.4 sy,  0.0 ni, 81.2 id,  1.6 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,  3194996 free,   126428 used,   644900 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3527688 avail Mem
Sat Dec 14 17:52:31 CST 2019 top - 17:52:31 up  3:39,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  : 13.0 us,  5.7 sy,  0.0 ni, 79.4 id,  1.6 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 12.5 us,  5.3 sy,  0.0 ni, 81.2 id,  1.0 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 11.8 us,  5.5 sy,  0.0 ni, 81.0 id,  1.5 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 11.6 us,  5.4 sy,  0.0 ni, 81.3 id,  1.6 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,  3195120 free,   126280 used,   644924 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3527820 avail Mem
Sat Dec 14 17:53:01 CST 2019 top - 17:53:01 up  3:40,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  : 13.0 us,  5.6 sy,  0.0 ni, 79.4 id,  1.6 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 12.4 us,  5.3 sy,  0.0 ni, 81.2 id,  1.0 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 11.8 us,  5.5 sy,  0.0 ni, 81.1 id,  1.5 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 11.5 us,  5.4 sy,  0.0 ni, 81.3 id,  1.5 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,  3195368 free,   126024 used,   644932 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3528076 avail Mem
Sat Dec 14 17:53:31 CST 2019 top - 17:53:31 up  3:40,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  : 12.9 us,  5.6 sy,  0.0 ni, 79.5 id,  1.6 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 12.4 us,  5.3 sy,  0.0 ni, 81.3 id,  0.9 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 11.8 us,  5.5 sy,  0.0 ni, 81.1 id,  1.5 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 11.5 us,  5.4 sy,  0.0 ni, 81.4 id,  1.5 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,  3194996 free,   126372 used,   644956 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3527712 avail Mem
```

```
Sat Dec 14 17:54:01 CST 2019 top - 17:54:01 up  3:41,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  : 12.9 us,  5.6 sy,  0.0 ni, 79.5 id,  1.6 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 12.4 us,  5.3 sy,  0.0 ni, 81.3 id,  0.9 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 11.7 us,  5.5 sy,  0.0 ni, 81.2 id,  1.5 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 11.5 us,  5.4 sy,  0.0 ni, 81.4 id,  1.5 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,  3195120 free,   126240 used,   644964 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3527844 avail Mem
Sat Dec 14 17:54:31 CST 2019 top - 17:54:32 up  3:41,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  : 12.9 us,  5.6 sy,  0.0 ni, 79.6 id,  1.6 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 12.4 us,  5.2 sy,  0.0 ni, 81.3 id,  0.9 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 11.7 us,  5.5 sy,  0.0 ni, 81.2 id,  1.5 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 11.5 us,  5.4 sy,  0.0 ni, 81.5 id,  1.5 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,  3195368 free,   125964 used,   644992 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3528112 avail Mem
Sat Dec 14 17:55:02 CST 2019 top - 17:55:02 up  3:42,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  : 12.8 us,  5.6 sy,  0.0 ni, 79.6 id,  1.6 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 12.3 us,  5.2 sy,  0.0 ni, 81.4 id,  0.9 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 11.7 us,  5.4 sy,  0.0 ni, 81.3 id,  1.5 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 11.4 us,  5.4 sy,  0.0 ni, 81.5 id,  1.5 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,  3195368 free,   125956 used,   645000 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3528112 avail Mem
Sat Dec 14 17:55:32 CST 2019 top - 17:55:32 up  3:42,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  : 12.8 us,  5.6 sy,  0.0 ni, 79.7 id,  1.6 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 12.3 us,  5.2 sy,  0.0 ni, 81.4 id,  0.9 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 11.6 us,  5.4 sy,  0.0 ni, 81.3 id,  1.5 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 11.4 us,  5.4 sy,  0.0 ni, 81.5 id,  1.5 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,  3195368 free,   125932 used,   645024 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3528128 avail Mem
Sat Dec 14 17:56:02 CST 2019 top - 17:56:02 up  3:43,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  : 12.8 us,  5.6 sy,  0.0 ni, 79.7 id,  1.6 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 12.3 us,  5.2 sy,  0.0 ni, 81.5 id,  0.9 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 11.6 us,  5.4 sy,  0.0 ni, 81.3 id,  1.5 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 11.4 us,  5.3 sy,  0.0 ni, 81.6 id,  1.5 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,  3194996 free,   126296 used,   645032 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3527760 avail Mem
Sat Dec 14 17:56:32 CST 2019 top - 17:56:32 up  3:43,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  : 12.7 us,  5.6 sy,  0.0 ni, 79.7 id,  1.6 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 12.2 us,  5.2 sy,  0.0 ni, 81.5 id,  0.9 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 11.6 us,  5.4 sy,  0.0 ni, 81.4 id,  1.5 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 11.4 us,  5.3 sy,  0.0 ni, 81.6 id,  1.5 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,  3195244 free,   126008 used,   645072 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3528016 avail Mem
Sat Dec 14 17:57:02 CST 2019 top - 17:57:03 up  3:44,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  : 12.7 us,  5.5 sy,  0.0 ni, 79.8 id,  1.6 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 12.2 us,  5.2 sy,  0.0 ni, 81.6 id,  0.9 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 11.6 us,  5.4 sy,  0.0 ni, 81.4 id,  1.5 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 11.3 us,  5.3 sy,  0.0 ni, 81.7 id,  1.5 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,  3194996 free,   126248 used,   645080 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3527772 avail Mem
Sat Dec 14 17:57:33 CST 2019 top - 17:57:33 up  3:44,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  : 12.7 us,  5.5 sy,  0.0 ni, 79.8 id,  1.6 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 12.2 us,  5.2 sy,  0.0 ni, 81.6 id,  0.9 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 11.5 us,  5.4 sy,  0.0 ni, 81.5 id,  1.5 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 11.3 us,  5.3 sy,  0.0 ni, 81.7 id,  1.5 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,  3195244 free,   126100 used,   644980 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3528036 avail Mem
```

Prueba con carga

Anexos/panda_con_carga.txt

```
Sun Dec 15 00:34:42 CST 2019 top - 00:34:42 up 3,  2 users,  load average: 0.05, 0.08, 0.03
%Cpu0  :  0.8 us,  6.1 sy,  0.0 ni, 92.3 id,  0.8 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu1  :  0.7 us,  4.7 sy,  0.0 ni, 93.5 id,  1.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.9 us,  1.7 sy,  0.0 ni, 96.3 id,  1.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.8 us,  1.6 sy,  0.0 ni, 96.5 id,  1.0 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  3966328 total,  3413480 free,   120460 used,   432388 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3577372 avail Mem
Sun Dec 15 00:35:12 CST 2019 top - 00:35:13 up 4,  2 users,  load average: 0.37, 0.15, 0.06
%Cpu0  :  1.5 us,  6.0 sy,  0.0 ni, 91.4 id,  1.0 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu1  :  1.2 us,  4.5 sy,  0.0 ni, 93.2 id,  1.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  1.4 us,  1.8 sy,  0.0 ni, 95.7 id,  1.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  2.9 us,  1.9 sy,  0.0 ni, 94.2 id,  1.0 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  3966328 total,  3070696 free,   149400 used,   746232 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3536300 avail Mem
Sun Dec 15 00:35:43 CST 2019 top - 00:35:43 up 4,  2 users,  load average: 0.73, 0.25, 0.09
%Cpu0  :  3.7 us,  5.7 sy,  0.0 ni, 89.6 id,  1.0 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu1  :  3.2 us,  4.3 sy,  0.0 ni, 91.5 id,  1.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  1.4 us,  1.8 sy,  0.0 ni, 94.2 id,  2.6 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  3.4 us,  2.1 sy,  0.0 ni, 91.2 id,  3.3 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  3966328 total,  2766172 free,   407324 used,   792832 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3274680 avail Mem
Sun Dec 15 00:36:13 CST 2019 top - 00:36:13 up 5,  2 users,  load average: 1.23, 0.42, 0.15
%Cpu0  : 10.3 us,  5.2 sy,  0.0 ni, 83.5 id,  0.9 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu1  :  5.6 us,  4.0 sy,  0.0 ni, 89.5 id,  0.9 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  1.4 us,  1.8 sy,  0.0 ni, 88.7 id,  8.1 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  :  3.1 us,  2.0 sy,  0.0 ni, 88.5 id,  6.4 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  3966328 total,  2664340 free,   407624 used,   894364 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3273424 avail Mem
Sun Dec 15 00:36:43 CST 2019 top - 00:36:43 up 5,  2 users,  load average: 1.54, 0.57, 0.21
%Cpu0  : 15.6 us,  4.9 sy,  0.0 ni, 78.6 id,  0.8 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu1  :  7.6 us,  3.7 sy,  0.0 ni, 87.8 id,  0.8 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  1.3 us,  1.7 sy,  0.0 ni, 85.3 id, 11.7 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  :  2.9 us,  1.9 sy,  0.0 ni, 85.2 id, 10.0 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  3966328 total,  2558800 free,   411244 used,   996284 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3268892 avail Mem
Sun Dec 15 00:37:13 CST 2019 top - 00:37:13 up 6,  2 users,  load average: 1.72, 0.71, 0.27
%Cpu0  : 16.8 us,  4.6 sy,  0.0 ni, 77.8 id,  0.8 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu1  : 12.7 us,  3.6 sy,  0.0 ni, 83.0 id,  0.8 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  1.3 us,  1.7 sy,  0.0 ni, 81.3 id, 15.7 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  :  2.7 us,  1.8 sy,  0.0 ni, 83.5 id, 12.0 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  3966328 total,  2458504 free,   410744 used,  1097080 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3268440 avail Mem
Sun Dec 15 00:37:43 CST 2019 top - 00:37:43 up 6,  2 users,  load average: 1.90, 0.85, 0.33
%Cpu0  : 22.4 us,  4.3 sy,  0.0 ni, 72.6 id,  0.7 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 12.3 us,  3.3 sy,  0.0 ni, 83.7 id,  0.7 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  1.2 us,  1.7 sy,  0.0 ni, 79.2 id, 17.8 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  :  2.6 us,  1.8 sy,  0.0 ni, 80.6 id, 15.0 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  3966328 total,  2355024 free,   412920 used,  1198384 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3265272 avail Mem
Sun Dec 15 00:38:13 CST 2019 top - 00:38:14 up 7,  2 users,  load average: 1.94, 0.96, 0.39
%Cpu0  : 27.7 us,  4.1 sy,  0.0 ni, 67.5 id,  0.7 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 11.5 us,  3.1 sy,  0.0 ni, 84.8 id,  0.6 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  1.2 us,  1.7 sy,  0.0 ni, 76.5 id, 20.5 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  :  2.5 us,  1.8 sy,  0.0 ni, 79.0 id, 16.7 wa,  0.0 hi,  0.0 si,  0.0 st
```

```
KiB Mem :  3966328 total,  2253068 free,   414120 used,  1299140 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3263272 avail Mem
Sun Dec 15 00:38:44 CST 2019 top - 00:38:44 up 7,  2 users,  load average: 1.97, 1.06, 0.44
%Cpu0  : 32.4 us,  3.9 sy,  0.0 ni, 63.1 id,  0.6 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 10.7 us,  2.9 sy,  0.0 ni, 85.8 id,  0.6 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  1.2 us,  1.7 sy,  0.0 ni, 74.1 id, 22.9 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  :  2.4 us,  1.7 sy,  0.0 ni, 77.7 id, 18.1 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  3966328 total,  2151012 free,   414796 used,  1400520 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3261484 avail Mem
Sun Dec 15 00:39:14 CST 2019 top - 00:39:14 up 8,  2 users,  load average: 2.04, 1.17, 0.50
%Cpu0  : 35.9 us,  3.7 sy,  0.0 ni, 59.8 id,  0.6 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 10.1 us,  2.7 sy,  0.0 ni, 86.6 id,  0.6 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  1.5 us,  1.7 sy,  0.0 ni, 72.2 id, 24.5 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  :  2.6 us,  1.7 sy,  0.0 ni, 75.7 id, 20.0 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  3966328 total,  2048676 free,   415804 used,  1501848 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3259348 avail Mem
Sun Dec 15 00:39:44 CST 2019 top - 00:39:44 up 8,  2 users,  load average: 2.02, 1.25, 0.55
%Cpu0  : 34.1 us,  3.6 sy,  0.0 ni, 59.7 id,  2.6 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  9.6 us,  2.7 sy,  0.0 ni, 86.9 id,  0.8 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  6.9 us,  1.7 sy,  0.0 ni, 68.2 id, 23.0 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  :  2.4 us,  1.6 sy,  0.0 ni, 76.4 id, 19.6 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  3966328 total,  1947492 free,   416548 used,  1602288 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3257732 avail Mem
Sun Dec 15 00:40:14 CST 2019 top - 00:40:14 up 9,  2 users,  load average: 2.01, 1.32, 0.59
%Cpu0  : 33.3 us,  3.5 sy,  0.0 ni, 57.7 id,  5.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  9.1 us,  2.6 sy,  0.0 ni, 87.1 id,  1.2 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  8.0 us,  1.6 sy,  0.0 ni, 68.4 id, 21.8 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  :  5.3 us,  1.6 sy,  0.0 ni, 74.6 id, 18.5 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  3966328 total,  1844572 free,   417416 used,  1704340 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3255884 avail Mem
Sun Dec 15 00:40:44 CST 2019 top - 00:40:45 up 9,  2 users,  load average: 2.01, 1.39, 0.64
%Cpu0  : 31.7 us,  3.4 sy,  0.0 ni, 57.5 id,  7.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  8.7 us,  2.6 sy,  0.0 ni, 87.2 id,  1.5 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  8.0 us,  1.6 sy,  0.0 ni, 69.7 id, 20.6 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  :  9.8 us,  1.6 sy,  0.0 ni, 71.1 id, 17.5 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  3966328 total,  1743512 free,   418116 used,  1804700 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3254224 avail Mem
Sun Dec 15 00:41:15 CST 2019 top - 00:41:15 up 10,  2 users,  load average: 2.00, 1.45, 0.68
%Cpu0  : 30.2 us,  3.3 sy,  0.0 ni, 57.1 id,  9.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  8.3 us,  2.6 sy,  0.0 ni, 87.2 id,  1.9 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  7.6 us,  1.5 sy,  0.0 ni, 71.2 id, 19.6 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  : 14.2 us,  1.6 sy,  0.0 ni, 67.5 id, 16.6 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  3966328 total,  1643252 free,   419296 used,  1903780 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3252096 avail Mem
Sun Dec 15 00:41:45 CST 2019 top - 00:41:45 up 10,  2 users,  load average: 2.00, 1.50, 0.73
%Cpu0  : 28.9 us,  3.3 sy,  0.0 ni, 56.9 id, 10.9 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu1  :  8.0 us,  2.6 sy,  0.0 ni, 87.2 id,  2.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  7.2 us,  1.4 sy,  0.0 ni, 72.5 id, 18.7 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  : 18.2 us,  1.6 sy,  0.0 ni, 64.4 id, 15.9 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  3966328 total,  1540832 free,   420476 used,  2005020 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3249968 avail Mem
Sun Dec 15 00:42:15 CST 2019 top - 00:42:15 up 11,  2 users,  load average: 2.00, 1.55, 0.77
%Cpu0  : 27.7 us,  3.2 sy,  0.0 ni, 57.2 id, 11.9 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu1  :  7.7 us,  2.6 sy,  0.0 ni, 86.8 id,  2.9 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  6.9 us,  1.4 sy,  0.0 ni, 73.8 id, 17.9 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  : 21.8 us,  1.6 sy,  0.0 ni, 61.5 id, 15.1 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  3966328 total,  1439808 free,   421032 used,  2105488 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3248436 avail Mem
```

```
Sun Dec 15 00:42:45 CST 2019 top - 00:42:45 up 11,  2 users,  load average: 2.00, 1.60, 0.81
%Cpu0  : 26.6 us,  3.2 sy,  0.0 ni, 57.3 id, 12.9 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu1  :  7.4 us,  2.5 sy,  0.0 ni, 86.6 id,  3.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  6.6 us,  1.3 sy,  0.0 ni, 74.9 id, 17.1 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  : 25.1 us,  1.6 sy,  0.0 ni, 58.8 id, 14.5 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  3966328 total,  1338148 free,   422028 used,  2206152 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3246488 avail Mem
Sun Dec 15 00:43:15 CST 2019 top - 00:43:16 up 12,  2 users,  load average: 2.00, 1.64, 0.85
%Cpu0  : 25.6 us,  3.2 sy,  0.0 ni, 57.4 id, 13.8 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu1  :  7.2 us,  2.6 sy,  0.0 ni, 86.4 id,  3.8 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  6.3 us,  1.3 sy,  0.0 ni, 75.9 id, 16.4 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  : 28.1 us,  1.6 sy,  0.0 ni, 56.4 id, 13.9 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  3966328 total,  1237016 free,   422804 used,  2306508 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3244776 avail Mem
Sun Dec 15 00:43:46 CST 2019 top - 00:43:46 up 12,  2 users,  load average: 1.85, 1.64, 0.88
%Cpu0  : 24.6 us,  3.1 sy,  0.0 ni, 58.2 id, 14.0 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu1  :  7.0 us,  2.6 sy,  0.0 ni, 86.3 id,  4.2 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  6.1 us,  1.2 sy,  0.0 ni, 76.8 id, 15.7 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  : 29.5 us,  1.6 sy,  0.0 ni, 55.6 id, 13.3 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  3966328 total,  1287028 free,   272764 used,  2406536 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3394024 avail Mem
Sun Dec 15 00:44:16 CST 2019 top - 00:44:16 up 13,  2 users,  load average: 1.17, 1.50, 0.85
%Cpu0  : 23.7 us,  3.0 sy,  0.0 ni, 59.4 id, 13.8 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu1  :  6.7 us,  2.5 sy,  0.0 ni, 86.7 id,  4.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  5.9 us,  1.2 sy,  0.0 ni, 77.7 id, 15.1 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  : 28.4 us,  1.5 sy,  0.0 ni, 57.2 id, 12.8 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  3966328 total,  1421196 free,   130488 used,  2414644 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3540852 avail Mem
Sun Dec 15 00:44:46 CST 2019 top - 00:44:46 up 13,  1 user,  load average: 0.71, 1.35, 0.82
%Cpu0  : 22.8 us,  2.9 sy,  0.0 ni, 60.9 id, 13.3 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu1  :  6.5 us,  2.4 sy,  0.0 ni, 87.2 id,  3.9 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  5.7 us,  1.2 sy,  0.0 ni, 78.5 id, 14.6 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  : 27.3 us,  1.5 sy,  0.0 ni, 58.8 id, 12.4 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  3966328 total,  1423108 free,   128476 used,  2414744 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3542808 avail Mem
Sun Dec 15 00:47:46 CST 2019 top - 00:47:46 up 1,  1 user,  load average: 0.17, 0.08, 0.03
%Cpu0  :  1.4 us, 15.6 sy,  0.0 ni, 80.9 id,  2.0 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu1  :  2.1 us, 12.6 sy,  0.0 ni, 83.6 id,  1.7 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  2.2 us,  5.0 sy,  0.0 ni, 90.8 id,  2.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  1.8 us,  4.2 sy,  0.0 ni, 91.5 id,  2.5 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  3966324 total,  3415516 free,   119472 used,   431336 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3578876 avail Mem
Sun Dec 15 00:48:16 CST 2019 top - 00:48:17 up 1,  2 users,  load average: 0.10, 0.07, 0.02
%Cpu0  :  1.2 us, 11.5 sy,  0.0 ni, 85.7 id,  1.6 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu1  :  1.7 us,  9.2 sy,  0.0 ni, 87.8 id,  1.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  1.8 us,  3.8 sy,  0.0 ni, 92.9 id,  1.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  1.5 us,  3.2 sy,  0.0 ni, 93.4 id,  1.8 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  3966324 total,  3410960 free,   123404 used,   431960 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3575044 avail Mem
Sun Dec 15 00:48:47 CST 2019 top - 00:48:47 up 2,  2 users,  load average: 0.57, 0.18, 0.06
%Cpu0  :  6.9 us, 10.1 sy,  0.0 ni, 81.3 id,  1.7 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu1  :  3.1 us,  8.2 sy,  0.0 ni, 87.6 id,  1.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  2.1 us,  3.8 sy,  0.0 ni, 87.3 id,  6.8 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  :  2.8 us,  3.3 sy,  0.0 ni, 89.4 id,  4.4 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  3966324 total,  2777524 free,   405636 used,   783164 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3279216 avail Mem
Sun Dec 15 00:49:17 CST 2019 top - 00:49:17 up 2,  2 users,  load average: 1.13, 0.35, 0.12
%Cpu0  : 23.1 us,  8.5 sy,  0.0 ni, 66.9 id,  1.4 wa,  0.0 hi,  0.1 si,  0.0 st
```

```
%Cpu1  :  2.6 us,  6.8 sy,  0.0 ni, 89.6 id,  1.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  1.8 us,  3.4 sy,  0.0 ni, 81.3 id, 13.4 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  :  2.5 us,  3.0 sy,  0.0 ni, 81.8 id, 12.7 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  3966324 total,  2672304 free,   409200 used,   884820 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3274592 avail Mem
Sun Dec 15 00:49:47 CST 2019 top - 00:49:47 up 3,  2 users,  load average: 1.47, 0.51, 0.18
%Cpu0  : 27.2 us,  7.3 sy,  0.0 ni, 64.2 id,  1.2 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu1  :  2.2 us,  5.8 sy,  0.0 ni, 91.1 id,  0.8 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  1.7 us,  3.2 sy,  0.0 ni, 73.4 id, 21.7 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  :  9.5 us,  2.7 sy,  0.0 ni, 72.8 id, 15.0 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  3966324 total,  2568936 free,   410744 used,   986644 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3272296 avail Mem
Sun Dec 15 00:50:17 CST 2019 top - 00:50:17 up 3,  2 users,  load average: 1.68, 0.66, 0.24
%Cpu0  : 36.6 us,  6.5 sy,  0.0 ni, 55.8 id,  1.0 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu1  :  1.9 us,  5.1 sy,  0.0 ni, 92.3 id,  0.7 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  1.6 us,  3.0 sy,  0.0 ni, 71.8 id, 23.5 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  :  8.4 us,  2.6 sy,  0.0 ni, 68.1 id, 21.0 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  3966324 total,  2468140 free,   410764 used,  1087420 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3271300 avail Mem
Sun Dec 15 00:50:47 CST 2019 top - 00:50:48 up 4,  2 users,  load average: 1.81, 0.79, 0.30
%Cpu0  : 35.0 us,  6.0 sy,  0.0 ni, 56.3 id,  2.7 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu1  :  1.8 us,  4.7 sy,  0.0 ni, 91.6 id,  1.8 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  1.4 us,  2.7 sy,  0.0 ni, 72.5 id, 23.2 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  : 16.4 us,  2.5 sy,  0.0 ni, 61.1 id, 19.9 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  3966324 total,  2364744 free,   412460 used,  1189120 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3268440 avail Mem
Sun Dec 15 00:51:18 CST 2019 top - 00:51:18 up 4,  2 users,  load average: 1.89, 0.90, 0.36
%Cpu0  : 31.6 us,  5.6 sy,  0.0 ni, 55.9 id,  6.9 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu1  :  1.8 us,  4.5 sy,  0.0 ni, 90.9 id,  2.8 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  1.3 us,  2.5 sy,  0.0 ni, 75.3 id, 20.8 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  : 25.0 us,  2.4 sy,  0.0 ni, 54.7 id, 17.9 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  3966324 total,  2262756 free,   413704 used,  1289864 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3266280 avail Mem
Sun Dec 15 00:51:48 CST 2019 top - 00:51:48 up 5,  2 users,  load average: 1.93, 1.01, 0.41
%Cpu0  : 29.5 us,  5.1 sy,  0.0 ni, 56.5 id,  8.8 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu1  :  1.7 us,  4.3 sy,  0.0 ni, 90.2 id,  3.7 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  5.5 us,  2.3 sy,  0.0 ni, 73.2 id, 18.9 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  : 26.9 us,  2.3 sy,  0.0 ni, 54.6 id, 16.2 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  3966324 total,  2160132 free,   414848 used,  1391344 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3264260 avail Mem
Sun Dec 15 00:52:18 CST 2019 top - 00:52:18 up 5,  2 users,  load average: 1.96, 1.11, 0.46
%Cpu0  : 27.1 us,  4.9 sy,  0.0 ni, 54.6 id, 13.4 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu1  :  2.1 us,  4.1 sy,  0.0 ni, 89.7 id,  4.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 13.1 us,  2.2 sy,  0.0 ni, 67.3 id, 17.2 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  : 24.6 us,  2.2 sy,  0.0 ni, 58.5 id, 14.8 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  3966324 total,  2057808 free,   415916 used,  1492600 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3262172 avail Mem
Sun Dec 15 00:52:48 CST 2019 top - 00:52:48 up 6,  2 users,  load average: 1.98, 1.19, 0.51
%Cpu0  : 25.1 us,  4.7 sy,  0.0 ni, 54.4 id, 15.7 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu1  :  2.0 us,  4.0 sy,  0.0 ni, 89.3 id,  4.7 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 19.9 us,  2.2 sy,  0.0 ni, 62.0 id, 15.9 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  : 22.6 us,  2.0 sy,  0.0 ni, 61.7 id, 13.6 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  3966324 total,  1957120 free,   416120 used,  1593084 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3261016 avail Mem
Sun Dec 15 00:53:18 CST 2019 top - 00:53:18 up 6,  2 users,  load average: 1.99, 1.27, 0.56
%Cpu0  : 23.4 us,  4.4 sy,  0.0 ni, 55.5 id, 16.6 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu1  :  2.0 us,  3.9 sy,  0.0 ni, 88.7 id,  5.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 21.2 us,  2.1 sy,  0.0 ni, 61.9 id, 14.7 wa,  0.0 hi,  0.1 si,  0.0 st
```

```
%Cpu3  : 25.4 us,  2.0 sy,  0.0 ni, 60.0 id, 12.6 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  3966324 total,  1853956 free,   417436 used,  1694932 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3258616 avail Mem
Sun Dec 15 00:53:49 CST 2019 top - 00:53:49 up 7,  2 users,  load average: 2.07, 1.36, 0.61
%Cpu0  : 21.9 us,  4.3 sy,  0.0 ni, 56.0 id, 17.7 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu1  :  2.0 us,  3.8 sy,  0.0 ni, 88.1 id,  6.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 19.8 us,  2.0 sy,  0.0 ni, 64.5 id, 13.7 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 30.4 us,  1.9 sy,  0.0 ni, 55.9 id, 11.8 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  3966324 total,  1752808 free,   418356 used,  1795160 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3256816 avail Mem
Sun Dec 15 00:54:19 CST 2019 top - 00:54:19 up 7,  2 users,  load average: 2.11, 1.44, 0.66
%Cpu0  : 20.6 us,  4.1 sy,  0.0 ni, 55.7 id, 19.4 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu1  :  1.9 us,  3.7 sy,  0.0 ni, 87.6 id,  6.7 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 18.5 us,  1.9 sy,  0.0 ni, 66.8 id, 12.8 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 34.7 us,  1.9 sy,  0.0 ni, 52.3 id, 11.0 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  3966324 total,  1653032 free,   417700 used,  1895592 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3256716 avail Mem
Sun Dec 15 00:54:49 CST 2019 top - 00:54:49 up 8,  2 users,  load average: 2.06, 1.49, 0.71
%Cpu0  : 19.5 us,  4.0 sy,  0.0 ni, 56.3 id, 20.1 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu1  :  1.9 us,  3.7 sy,  0.0 ni, 87.4 id,  7.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 17.4 us,  1.8 sy,  0.0 ni, 67.4 id, 13.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 38.6 us,  1.9 sy,  0.0 ni, 49.2 id, 10.3 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  3966324 total,  1550564 free,   419416 used,  1996344 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3253812 avail Mem
Sun Dec 15 00:55:19 CST 2019 top - 00:55:19 up 8,  2 users,  load average: 2.09, 1.56, 0.76
%Cpu0  : 18.5 us,  3.9 sy,  0.0 ni, 56.4 id, 21.1 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu1  :  1.9 us,  3.6 sy,  0.0 ni, 87.0 id,  7.5 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 16.4 us,  1.7 sy,  0.0 ni, 69.3 id, 12.6 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 41.9 us,  1.9 sy,  0.0 ni, 46.4 id,  9.8 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  3966324 total,  1449788 free,   420324 used,  2096212 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3252120 avail Mem
Sun Dec 15 00:55:49 CST 2019 top - 00:55:49 up 9,  2 users,  load average: 2.06, 1.60, 0.80
%Cpu0  : 17.5 us,  3.9 sy,  0.0 ni, 57.2 id, 21.3 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu1  :  1.9 us,  3.6 sy,  0.0 ni, 86.5 id,  8.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 15.5 us,  1.6 sy,  0.0 ni, 70.9 id, 12.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 45.0 us,  1.9 sy,  0.0 ni, 43.9 id,  9.2 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  3966324 total,  1347880 free,   421328 used,  2197116 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3249992 avail Mem
Sun Dec 15 00:56:19 CST 2019 top - 00:56:20 up 9,  2 users,  load average: 2.10, 1.66, 0.84
%Cpu0  : 16.7 us,  3.8 sy,  0.0 ni, 57.6 id, 21.8 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu1  :  1.8 us,  3.5 sy,  0.0 ni, 86.1 id,  8.5 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 14.7 us,  1.5 sy,  0.0 ni, 72.4 id, 11.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 47.7 us,  1.9 sy,  0.0 ni, 41.7 id,  8.8 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  3966324 total,  1246732 free,   422104 used,  2297488 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3248228 avail Mem
Sun Dec 15 00:56:50 CST 2019 top - 00:56:50 up 10,  2 users,  load average: 2.06, 1.69, 0.88
%Cpu0  : 16.0 us,  3.7 sy,  0.0 ni, 57.8 id, 22.4 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu1  :  1.8 us,  3.5 sy,  0.0 ni, 85.9 id,  8.8 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 14.0 us,  1.4 sy,  0.0 ni, 73.7 id, 10.8 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 50.1 us,  1.9 sy,  0.0 ni, 39.7 id,  8.3 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  3966324 total,  1144948 free,   423492 used,  2397884 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3246032 avail Mem
Sun Dec 15 00:57:20 CST 2019 top - 00:57:20 up 10,  2 users,  load average: 2.04, 1.72, 0.92
%Cpu0  : 15.3 us,  3.6 sy,  0.0 ni, 57.2 id, 23.8 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu1  :  1.8 us,  3.4 sy,  0.0 ni, 85.9 id,  8.9 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 13.4 us,  1.4 sy,  0.0 ni, 74.9 id, 10.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 52.3 us,  1.8 sy,  0.0 ni, 37.9 id,  7.9 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  3966324 total,  1043112 free,   423696 used,  2499516 buff/cache
```

```
KiB Swap:  4116476 total,  4116476 free,        0 used.  3244348 avail Mem
Sun Dec 15 00:57:50 CST 2019 top - 00:57:50 up 11,  2 users,  load average: 2.09, 1.77, 0.96
%Cpu0  : 14.7 us,  3.6 sy,  0.0 ni, 57.0 id, 24.7 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu1  :  1.8 us,  3.4 sy,  0.0 ni, 85.8 id,  9.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 12.8 us,  1.3 sy,  0.0 ni, 76.0 id,  9.9 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 54.4 us,  1.8 sy,  0.0 ni, 36.2 id,  7.6 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  3966324 total,   942992 free,   423896 used,  2599436 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3243344 avail Mem
Sun Dec 15 00:58:20 CST 2019 top - 00:58:20 up 11,  2 users,  load average: 2.05, 1.79, 0.99
%Cpu0  : 17.5 us,  3.5 sy,  0.0 ni, 54.5 id, 24.4 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu1  :  2.5 us,  3.3 sy,  0.0 ni, 84.3 id,  9.9 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 12.3 us,  1.3 sy,  0.0 ni, 77.0 id,  9.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 52.1 us,  1.8 sy,  0.0 ni, 38.9 id,  7.3 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  3966324 total,   842448 free,   423960 used,  2699916 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3242244 avail Mem
Sun Dec 15 00:58:50 CST 2019 top - 00:58:51 up 12,  2 users,  load average: 2.03, 1.81, 1.03
%Cpu0  : 20.9 us,  3.4 sy,  0.0 ni, 52.2 id, 23.3 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu1  :  2.4 us,  3.3 sy,  0.0 ni, 84.7 id,  9.6 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 11.8 us,  1.3 sy,  0.0 ni, 75.5 id, 11.4 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 50.0 us,  1.7 sy,  0.0 ni, 40.0 id,  8.3 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  3966324 total,   741564 free,   424280 used,  2800480 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3240820 avail Mem
Sun Dec 15 00:59:21 CST 2019 top - 00:59:21 up 12,  2 users,  load average: 2.02, 1.83, 1.06
%Cpu0  : 22.9 us,  3.3 sy,  0.0 ni, 51.2 id, 22.4 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu1  :  3.4 us,  3.2 sy,  0.0 ni, 84.1 id,  9.2 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 11.4 us,  1.3 sy,  0.0 ni, 73.5 id, 13.8 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 48.1 us,  1.7 sy,  0.0 ni, 41.4 id,  8.9 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  3966324 total,   641068 free,   425556 used,  2899700 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3238724 avail Mem
Sun Dec 15 00:59:51 CST 2019 top - 00:59:51 up 13,  3 users,  load average: 2.01, 1.85, 1.09
%Cpu0  : 24.8 us,  3.2 sy,  0.0 ni, 50.3 id, 21.5 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu1  :  4.3 us,  3.1 sy,  0.0 ni, 83.7 id,  8.9 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 11.0 us,  1.3 sy,  0.0 ni, 72.5 id, 15.2 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  : 46.4 us,  1.7 sy,  0.0 ni, 41.8 id, 10.2 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  3966324 total,   537172 free,   428680 used,  3000472 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3234368 avail Mem
Sun Dec 15 01:00:21 CST 2019 top - 01:00:21 up 13,  3 users,  load average: 2.07, 1.88, 1.13
%Cpu0  : 26.3 us,  3.2 sy,  0.0 ni, 49.6 id, 20.8 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu1  :  4.6 us,  3.1 sy,  0.0 ni, 83.7 id,  8.6 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 10.9 us,  1.3 sy,  0.0 ni, 71.9 id, 15.7 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  : 45.3 us,  1.7 sy,  0.0 ni, 42.4 id, 10.6 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  3966324 total,   116236 free,   489856 used,  3360232 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3173264 avail Mem
Sun Dec 15 01:00:51 CST 2019 top - 01:00:52 up 14,  3 users,  load average: 1.79, 1.83, 1.14
%Cpu0  : 26.2 us,  3.3 sy,  0.0 ni, 50.4 id, 20.1 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu1  :  5.5 us,  3.1 sy,  0.0 ni, 83.0 id,  8.3 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 11.6 us,  1.4 sy,  0.0 ni, 71.7 id, 15.2 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  : 44.6 us,  1.8 sy,  0.0 ni, 43.4 id, 10.2 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  3966324 total,   114796 free,   514472 used,  3337056 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3149808 avail Mem
Sun Dec 15 01:01:22 CST 2019 top - 01:01:22 up 14,  3 users,  load average: 1.48, 1.75, 1.13
%Cpu0  : 26.1 us,  3.3 sy,  0.0 ni, 51.0 id, 19.4 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu1  :  6.2 us,  3.2 sy,  0.0 ni, 82.6 id,  8.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 11.9 us,  1.6 sy,  0.0 ni, 71.7 id, 14.7 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  : 44.2 us,  1.9 sy,  0.0 ni, 43.9 id,  9.9 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  3966324 total,   105008 free,   516108 used,  3345208 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3148064 avail Mem
Sun Dec 15 01:01:52 CST 2019 top - 01:01:52 up 15,  3 users,  load average: 1.29, 1.68, 1.12
```

```
%Cpu0  : 26.3 us,  3.4 sy,  0.0 ni, 51.4 id, 18.8 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu1  :  6.7 us,  3.3 sy,  0.0 ni, 82.3 id,  7.8 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 12.2 us,  1.7 sy,  0.0 ni, 71.7 id, 14.3 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  : 43.9 us,  2.0 sy,  0.0 ni, 44.4 id,  9.6 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  3966324 total,   112380 free,   516656 used,  3337288 buff/cache
KiB Swap:  4116476 total,  4116476 free,        0 used.  3147284 avail Mem
Sun Dec 15 01:02:22 CST 2019 top - 01:02:22 up 15,  3 users,  load average: 1.31, 1.64, 1.13
%Cpu0  : 26.3 us,  3.4 sy,  0.0 ni, 51.9 id, 18.2 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu1  :  7.2 us,  3.3 sy,  0.0 ni, 81.9 id,  7.5 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 12.8 us,  1.7 sy,  0.0 ni, 71.5 id, 13.9 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  : 43.3 us,  2.0 sy,  0.0 ni, 45.3 id,  9.4 wa,  0.0 hi,  0.0 si,  0.0 st
KiB Mem :  3966324 total,   125532 free,   531340 used,  3309452 buff/cache
KiB Swap:  4116476 total,  4115964 free,      512 used.  3131876 avail Mem
Sun Dec 15 01:02:52 CST 2019 top - 01:02:52 up 16,  3 users,  load average: 1.19, 1.58, 1.12
%Cpu0  : 26.3 us,  3.5 sy,  0.0 ni, 52.4 id, 17.7 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu1  :  7.9 us,  3.3 sy,  0.0 ni, 81.4 id,  7.3 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 13.0 us,  1.8 sy,  0.0 ni, 71.5 id, 13.5 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  : 42.8 us,  2.1 sy,  0.0 ni, 45.9 id,  9.1 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem :  3966324 total,   115120 free,   517088 used,  3334116 buff/cache
KiB Swap:  4116476 total,  4115452 free,     1024 used.  3145360 avail Mem
Sun Dec 15 01:03:22 CST 2019 top - 01:03:23 up 16,  3 users,  load average: 1.23, 1.56, 1.13
%Cpu0  : 26.3 us,  3.5 sy,  0.0 ni, 52.8 id, 17.2 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu1  :  8.3 us,  3.4 sy,  0.0 ni, 81.1 id,  7.1 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 13.6 us,  1.9 sy,  0.0 ni, 71.2 id, 13.2 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu3  : 42.3 us,  2.2 sy,  0.0 ni, 46.6 id,  8.9 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem :  3966324 total,   111088 free,   518344 used,  3336892 buff/cache
KiB Swap:  4116476 total,  4115452 free,     1024 used.  3143596 avail Mem
Sun Dec 15 01:03:53 CST 2019 top - 01:03:53 up 17,  3 users,  load average: 1.14, 1.50, 1.12
%Cpu0  : 26.4 us,  3.6 sy,  0.0 ni, 53.2 id, 16.7 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu1  :  9.0 us,  3.4 sy,  0.0 ni, 80.6 id,  6.9 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 14.0 us,  2.0 sy,  0.0 ni, 71.0 id, 12.8 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 41.6 us,  2.2 sy,  0.0 ni, 47.4 id,  8.6 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem :  3966324 total,   111516 free,   517312 used,  3337496 buff/cache
KiB Swap:  4116476 total,  4115452 free,     1024 used.  3144036 avail Mem
Sun Dec 15 01:04:23 CST 2019 top - 01:04:23 up 17,  3 users,  load average: 1.40, 1.53, 1.15
%Cpu0  : 26.2 us,  3.6 sy,  0.0 ni, 53.7 id, 16.3 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu1  :  9.6 us,  3.5 sy,  0.0 ni, 80.2 id,  6.7 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 14.3 us,  2.0 sy,  0.0 ni, 71.0 id, 12.5 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 41.3 us,  2.3 sy,  0.0 ni, 48.0 id,  8.4 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem :  3966324 total,   123872 free,   518228 used,  3324224 buff/cache
KiB Swap:  4116476 total,  4115452 free,     1024 used.  3142264 avail Mem
Sun Dec 15 01:04:53 CST 2019 top - 01:04:53 up 18,  3 users,  load average: 1.71, 1.60, 1.18
%Cpu0  : 26.2 us,  3.6 sy,  0.0 ni, 54.1 id, 15.8 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu1  : 10.4 us,  3.5 sy,  0.0 ni, 79.6 id,  6.5 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 14.6 us,  2.1 sy,  0.0 ni, 71.0 id, 12.2 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 40.7 us,  2.4 sy,  0.0 ni, 48.6 id,  8.2 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem :  3966324 total,   112928 free,   519112 used,  3334284 buff/cache
KiB Swap:  4116476 total,  4114940 free,     1536 used.  3140948 avail Mem
Sun Dec 15 01:05:23 CST 2019 top - 01:05:23 up 18,  3 users,  load average: 1.54, 1.57, 1.18
%Cpu0  : 26.1 us,  3.7 sy,  0.0 ni, 54.5 id, 15.4 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu1  : 10.9 us,  3.5 sy,  0.0 ni, 79.2 id,  6.3 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 14.9 us,  2.2 sy,  0.0 ni, 70.9 id, 11.9 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 40.3 us,  2.4 sy,  0.0 ni, 49.1 id,  8.0 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem :  3966324 total,   114648 free,   518684 used,  3332992 buff/cache
KiB Swap:  4116476 total,  4114940 free,     1536 used.  3140624 avail Mem
Sun Dec 15 01:05:53 CST 2019 top - 01:05:54 up 19,  3 users,  load average: 1.33, 1.51, 1.18
%Cpu0  : 26.4 us,  3.7 sy,  0.0 ni, 54.6 id, 15.1 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu1  : 11.3 us,  3.6 sy,  0.0 ni, 78.8 id,  6.2 wa,  0.0 hi,  0.1 si,  0.0 st
```

```
%Cpu2  : 14.9 us,  2.3 sy,  0.0 ni, 71.0 id, 11.6 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 39.9 us,  2.5 sy,  0.0 ni, 49.7 id,  7.8 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem :  3966324 total,   108256 free,   520400 used,  3337668 buff/cache
KiB Swap:  4116476 total,  4114940 free,     1536 used.  3138484 avail Mem
Sun Dec 15 01:06:24 CST 2019 top - 01:06:24 up 19,  3 users,  load average: 1.20, 1.46, 1.17
%Cpu0  : 26.1 us,  3.7 sy,  0.0 ni, 55.2 id, 14.7 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu1  : 12.0 us,  3.6 sy,  0.0 ni, 78.3 id,  6.0 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 15.3 us,  2.3 sy,  0.0 ni, 70.8 id, 11.3 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 39.5 us,  2.5 sy,  0.0 ni, 50.2 id,  7.7 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem :  3966324 total,   124064 free,   539560 used,  3302700 buff/cache
KiB Swap:  4116476 total,  4114940 free,     1536 used.  3118584 avail Mem
Sun Dec 15 01:06:54 CST 2019 top - 01:06:54 up 20,  3 users,  load average: 1.12, 1.42, 1.17
%Cpu0  : 26.1 us,  3.8 sy,  0.0 ni, 55.5 id, 14.4 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu1  : 12.3 us,  3.6 sy,  0.0 ni, 78.1 id,  5.9 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 15.7 us,  2.4 sy,  0.0 ni, 70.6 id, 11.1 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 39.1 us,  2.6 sy,  0.0 ni, 50.7 id,  7.5 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem :  3966324 total,   110680 free,   522308 used,  3333336 buff/cache
KiB Swap:  4116476 total,  4114940 free,     1536 used.  3135148 avail Mem
Sun Dec 15 01:07:24 CST 2019 top - 01:07:24 up 20,  3 users,  load average: 1.07, 1.38, 1.16
%Cpu0  : 26.2 us,  3.8 sy,  0.0 ni, 55.7 id, 14.1 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu1  : 12.6 us,  3.6 sy,  0.0 ni, 77.9 id,  5.7 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 16.1 us,  2.4 sy,  0.0 ni, 70.4 id, 10.8 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 38.7 us,  2.6 sy,  0.0 ni, 51.2 id,  7.4 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem :  3966324 total,   111904 free,   519096 used,  3335324 buff/cache
KiB Swap:  4116476 total,  4114940 free,     1536 used.  3137672 avail Mem
Sun Dec 15 01:07:54 CST 2019 top - 01:07:55 up 21,  3 users,  load average: 1.40, 1.42, 1.18
%Cpu0  : 26.1 us,  3.8 sy,  0.0 ni, 56.1 id, 13.7 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu1  : 13.1 us,  3.7 sy,  0.0 ni, 77.5 id,  5.6 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 16.4 us,  2.5 sy,  0.0 ni, 70.3 id, 10.6 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 38.3 us,  2.7 sy,  0.0 ni, 51.7 id,  7.2 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem :  3966324 total,   113476 free,   520792 used,  3332056 buff/cache
KiB Swap:  4116476 total,  4114940 free,     1536 used.  3135272 avail Mem
Sun Dec 15 01:08:25 CST 2019 top - 01:08:25 up 21,  3 users,  load average: 1.41, 1.43, 1.19
%Cpu0  : 26.2 us,  3.8 sy,  0.0 ni, 56.3 id, 13.5 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu1  : 13.4 us,  3.7 sy,  0.0 ni, 77.4 id,  5.5 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 16.6 us,  2.5 sy,  0.0 ni, 70.3 id, 10.4 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 38.0 us,  2.7 sy,  0.0 ni, 52.1 id,  7.1 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem :  3966324 total,   104804 free,   539764 used,  3321756 buff/cache
KiB Swap:  4116476 total,  4114940 free,     1536 used.  3115324 avail Mem
Sun Dec 15 01:08:55 CST 2019 top - 01:08:55 up 22,  3 users,  load average: 1.50, 1.45, 1.20
%Cpu0  : 26.2 us,  3.9 sy,  0.0 ni, 56.5 id, 13.2 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu1  : 13.8 us,  3.7 sy,  0.0 ni, 77.1 id,  5.4 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 16.8 us,  2.6 sy,  0.0 ni, 70.3 id, 10.2 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 37.7 us,  2.8 sy,  0.0 ni, 52.5 id,  7.0 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem :  3966324 total,   105584 free,   525644 used,  3335096 buff/cache
KiB Swap:  4116476 total,  4114940 free,     1536 used.  3129456 avail Mem
Sun Dec 15 01:09:25 CST 2019 top - 01:09:25 up 22,  3 users,  load average: 1.30, 1.40, 1.20
%Cpu0  : 26.4 us,  3.9 sy,  0.0 ni, 56.5 id, 12.9 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu1  : 14.1 us,  3.7 sy,  0.0 ni, 76.9 id,  5.2 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 17.0 us,  2.6 sy,  0.0 ni, 70.2 id, 10.0 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 37.3 us,  2.8 sy,  0.0 ni, 52.9 id,  6.8 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem :  3966324 total,   112200 free,   525668 used,  3328456 buff/cache
KiB Swap:  4116476 total,  4114940 free,     1536 used.  3129372 avail Mem
Sun Dec 15 01:09:55 CST 2019 top - 01:09:55 up 23,  3 users,  load average: 1.31, 1.40, 1.20
%Cpu0  : 26.6 us,  3.9 sy,  0.0 ni, 56.7 id, 12.6 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu1  : 14.3 us,  3.7 sy,  0.0 ni, 76.7 id,  5.1 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 17.1 us,  2.7 sy,  0.0 ni, 70.2 id,  9.8 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 36.9 us,  2.9 sy,  0.0 ni, 53.3 id,  6.7 wa,  0.0 hi,  0.1 si,  0.0 st
```

```
KiB Mem :  3966324 total,   113892 free,   524156 used,  3328276 buff/cache
KiB Swap:  4116476 total,  4114940 free,     1536 used.  3130500 avail Mem
Sun Dec 15 01:10:25 CST 2019 top - 01:10:26 up 24,  3 users,  load average: 1.24, 1.37, 1.20
%Cpu0  : 26.9 us,  3.8 sy,  0.0 ni, 56.7 id, 12.4 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu1  : 15.0 us,  3.7 sy,  0.0 ni, 76.2 id,  5.0 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 17.0 us,  2.7 sy,  0.0 ni, 70.5 id,  9.6 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 36.3 us,  2.8 sy,  0.0 ni, 54.1 id,  6.6 wa,  0.0 hi,  0.1 si,  0.0 st
KiB Mem :  3966324 total,   128900 free,   502124 used,  3335300 buff/cache
KiB Swap:  4116476 total,  4114940 free,     1536 used.  3152328 avail Mem
Sun Dec 15 01:10:56 CST 2019 top - 01:10:56 up 24,  3 users,  load average: 1.42, 1.41, 1.21
%Cpu0  : 26.7 us,  3.9 sy,  0.0 ni, 57.0 id, 12.1 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu1  : 15.4 us,  3.7 sy,  0.0 ni, 75.9 id,  4.9 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 17.2 us,  2.7 sy,  0.0 ni, 70.4 id,  9.4 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 36.1 us,  2.9 sy,  0.0 ni, 54.4 id,  6.5 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   112812 free,   523648 used,  3329864 buff/cache
KiB Swap:  4116476 total,  4114940 free,     1536 used.  3130096 avail Mem
Sun Dec 15 01:11:26 CST 2019 top - 01:11:26 up 25,  3 users,  load average: 1.25, 1.37, 1.21
%Cpu0  : 26.6 us,  3.9 sy,  0.0 ni, 57.3 id, 11.9 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu1  : 15.5 us,  3.7 sy,  0.0 ni, 75.8 id,  4.8 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 17.5 us,  2.8 sy,  0.0 ni, 70.3 id,  9.2 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 35.9 us,  2.9 sy,  0.0 ni, 54.7 id,  6.4 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   117748 free,   523768 used,  3324808 buff/cache
KiB Swap:  4116476 total,  4114940 free,     1536 used.  3129592 avail Mem
Sun Dec 15 01:11:56 CST 2019 top - 01:11:56 up 25,  3 users,  load average: 1.20, 1.35, 1.20
%Cpu0  : 26.8 us,  3.9 sy,  0.0 ni, 57.3 id, 11.7 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu1  : 16.0 us,  3.7 sy,  0.0 ni, 75.4 id,  4.7 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 17.4 us,  2.8 sy,  0.0 ni, 70.5 id,  9.1 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 35.6 us,  3.0 sy,  0.0 ni, 55.0 id,  6.3 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   125440 free,   525228 used,  3315656 buff/cache
KiB Swap:  4116476 total,  4114940 free,     1536 used.  3128060 avail Mem
Sun Dec 15 01:12:26 CST 2019 top - 01:12:26 up 26,  3 users,  load average: 1.18, 1.33, 1.20
%Cpu0  : 27.0 us,  3.9 sy,  0.0 ni, 57.4 id, 11.5 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu1  : 16.2 us,  3.7 sy,  0.0 ni, 75.4 id,  4.6 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 17.5 us,  2.8 sy,  0.0 ni, 70.6 id,  8.9 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu3  : 35.3 us,  2.9 sy,  0.0 ni, 55.4 id,  6.1 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   150080 free,   496928 used,  3319316 buff/cache
KiB Swap:  4116476 total,  4114940 free,     1536 used.  3156628 avail Mem
Sun Dec 15 01:12:56 CST 2019 top - 01:12:57 up 26,  3 users,  load average: 1.23, 1.33, 1.20
%Cpu0  : 27.0 us,  3.9 sy,  0.0 ni, 57.6 id, 11.3 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu1  : 16.3 us,  3.7 sy,  0.0 ni, 75.4 id,  4.6 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 17.5 us,  2.8 sy,  0.0 ni, 70.6 id,  8.8 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 35.3 us,  2.9 sy,  0.0 ni, 55.5 id,  6.0 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   113160 free,   523500 used,  3329664 buff/cache
KiB Swap:  4116476 total,  4114940 free,     1536 used.  3129640 avail Mem
Sun Dec 15 01:13:27 CST 2019 top - 01:13:27 up 27,  3 users,  load average: 1.29, 1.33, 1.20
%Cpu0  : 27.0 us,  3.9 sy,  0.0 ni, 57.7 id, 11.1 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu1  : 16.5 us,  3.7 sy,  0.0 ni, 75.2 id,  4.5 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 17.6 us,  2.8 sy,  0.0 ni, 70.7 id,  8.6 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 35.2 us,  3.0 sy,  0.0 ni, 55.7 id,  5.9 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   104768 free,   526464 used,  3335092 buff/cache
KiB Swap:  4116476 total,  4114940 free,     1536 used.  3126560 avail Mem
Sun Dec 15 01:13:57 CST 2019 top - 01:13:57 up 27,  3 users,  load average: 1.39, 1.34, 1.21
%Cpu0  : 27.0 us,  3.9 sy,  0.0 ni, 57.9 id, 10.9 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu1  : 16.6 us,  3.7 sy,  0.0 ni, 75.1 id,  4.4 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 17.8 us,  2.9 sy,  0.0 ni, 70.6 id,  8.5 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 35.1 us,  3.0 sy,  0.0 ni, 55.9 id,  5.8 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   109416 free,   528224 used,  3328684 buff/cache
KiB Swap:  4116476 total,  4114940 free,     1536 used.  3124844 avail Mem
```

```
Sun Dec 15 01:14:27 CST 2019 top - 01:14:27 up 28,  3 users,  load average: 1.23, 1.31, 1.20
%Cpu0  : 26.8 us,  3.9 sy,  0.0 ni, 58.3 id, 10.7 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu1  : 16.7 us,  3.7 sy,  0.0 ni, 75.2 id,  4.3 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 18.3 us,  2.9 sy,  0.0 ni, 70.2 id,  8.3 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 34.8 us,  3.0 sy,  0.0 ni, 56.3 id,  5.7 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   156280 free,   497632 used,  3312412 buff/cache
KiB Swap:  4116476 total,  4114940 free,     1536 used.  3155660 avail Mem
Sun Dec 15 01:14:57 CST 2019 top - 01:14:57 up 28,  3 users,  load average: 1.26, 1.31, 1.21
%Cpu0  : 26.8 us,  3.9 sy,  0.0 ni, 58.5 id, 10.5 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu1  : 16.9 us,  3.7 sy,  0.0 ni, 75.1 id,  4.2 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 18.5 us,  2.9 sy,  0.0 ni, 70.1 id,  8.2 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 34.6 us,  3.0 sy,  0.0 ni, 56.6 id,  5.7 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   111356 free,   528428 used,  3326540 buff/cache
KiB Swap:  4116476 total,  4114940 free,     1536 used.  3124816 avail Mem
Sun Dec 15 01:15:27 CST 2019 top - 01:15:28 up 29,  3 users,  load average: 1.16, 1.28, 1.20
%Cpu0  : 27.0 us,  3.9 sy,  0.0 ni, 58.5 id, 10.4 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu1  : 17.1 us,  3.7 sy,  0.0 ni, 74.9 id,  4.2 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 18.5 us,  2.9 sy,  0.0 ni, 70.2 id,  8.1 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 34.3 us,  3.0 sy,  0.0 ni, 56.9 id,  5.6 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   106488 free,   527264 used,  3332572 buff/cache
KiB Swap:  4116476 total,  4114940 free,     1536 used.  3125776 avail Mem
Sun Dec 15 01:15:58 CST 2019 top - 01:15:58 up 29,  3 users,  load average: 1.15, 1.27, 1.19
%Cpu0  : 26.9 us,  3.9 sy,  0.0 ni, 58.7 id, 10.2 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu1  : 17.2 us,  3.7 sy,  0.0 ni, 74.8 id,  4.1 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 18.7 us,  3.0 sy,  0.0 ni, 70.1 id,  8.0 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 34.3 us,  3.1 sy,  0.0 ni, 57.0 id,  5.5 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   107328 free,   526816 used,  3332180 buff/cache
KiB Swap:  4116476 total,  4114940 free,     1536 used.  3126372 avail Mem
Sun Dec 15 01:16:28 CST 2019 top - 01:16:28 up 30,  3 users,  load average: 1.31, 1.29, 1.20
%Cpu0  : 27.0 us,  3.9 sy,  0.0 ni, 58.7 id, 10.1 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu1  : 17.5 us,  3.7 sy,  0.0 ni, 74.6 id,  4.0 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 18.8 us,  3.0 sy,  0.0 ni, 70.1 id,  7.8 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 34.0 us,  3.1 sy,  0.0 ni, 57.4 id,  5.4 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   148548 free,   536180 used,  3281596 buff/cache
KiB Swap:  4116476 total,  4114940 free,     1536 used.  3116852 avail Mem
Sun Dec 15 01:16:58 CST 2019 top - 01:16:58 up 30,  3 users,  load average: 1.49, 1.34, 1.22
%Cpu0  : 27.0 us,  3.9 sy,  0.0 ni, 58.9 id,  9.9 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu1  : 17.6 us,  3.7 sy,  0.0 ni, 74.5 id,  4.0 wa,  0.0 hi,  0.1 si,  0.0 st
%Cpu2  : 18.9 us,  3.0 sy,  0.0 ni, 70.1 id,  7.7 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 33.9 us,  3.1 sy,  0.0 ni, 57.5 id,  5.3 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   126096 free,   530788 used,  3309440 buff/cache
KiB Swap:  4116476 total,  4114940 free,     1536 used.  3122544 avail Mem
Sun Dec 15 01:17:28 CST 2019 top - 01:17:28 up 31,  3 users,  load average: 1.30, 1.31, 1.21
%Cpu0  : 27.0 us,  3.9 sy,  0.0 ni, 59.0 id,  9.8 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu1  : 17.9 us,  3.7 sy,  0.0 ni, 74.3 id,  3.9 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 19.0 us,  3.0 sy,  0.0 ni, 70.1 id,  7.6 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 33.7 us,  3.1 sy,  0.0 ni, 57.8 id,  5.3 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   108400 free,   531240 used,  3326684 buff/cache
KiB Swap:  4116476 total,  4114940 free,     1536 used.  3121908 avail Mem
Sun Dec 15 01:17:58 CST 2019 top - 01:17:59 up 31,  3 users,  load average: 1.18, 1.28, 1.20
%Cpu0  : 27.2 us,  3.9 sy,  0.0 ni, 59.0 id,  9.6 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu1  : 17.9 us,  3.8 sy,  0.0 ni, 74.4 id,  3.9 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 19.1 us,  3.1 sy,  0.0 ni, 70.0 id,  7.5 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 33.5 us,  3.2 sy,  0.0 ni, 57.9 id,  5.2 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   106104 free,   531972 used,  3328248 buff/cache
KiB Swap:  4116476 total,  4114940 free,     1536 used.  3121268 avail Mem
Sun Dec 15 01:18:29 CST 2019 top - 01:18:29 up 32,  3 users,  load average: 1.11, 1.25, 1.20
%Cpu0  : 27.5 us,  3.9 sy,  0.0 ni, 58.8 id,  9.5 wa,  0.0 hi,  0.3 si,  0.0 st
```

```
%Cpu1  : 18.0 us,  3.7 sy,  0.0 ni, 74.3 id,  3.8 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 19.1 us,  3.1 sy,  0.0 ni, 70.2 id,  7.4 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 33.2 us,  3.1 sy,  0.0 ni, 58.4 id,  5.1 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   142192 free,   498332 used,  3325800 buff/cache
KiB Swap:  4116476 total,  4114940 free,     1536 used.  3155088 avail Mem
Sun Dec 15 01:18:59 CST 2019 top - 01:18:59 up 32,  3 users,  load average: 1.17, 1.26, 1.20
%Cpu0  : 27.5 us,  3.9 sy,  0.0 ni, 59.0 id,  9.3 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu1  : 18.2 us,  3.7 sy,  0.0 ni, 74.1 id,  3.7 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 19.2 us,  3.1 sy,  0.0 ni, 70.1 id,  7.3 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 33.0 us,  3.2 sy,  0.0 ni, 58.6 id,  5.1 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   116636 free,   532716 used,  3316972 buff/cache
KiB Swap:  4116476 total,  4114940 free,     1536 used.  3120396 avail Mem
Sun Dec 15 01:19:29 CST 2019 top - 01:19:29 up 33,  3 users,  load average: 1.67, 1.39, 1.25
%Cpu0  : 27.4 us,  3.9 sy,  0.0 ni, 59.1 id,  9.2 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu1  : 18.5 us,  3.8 sy,  0.0 ni, 73.9 id,  3.7 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 19.3 us,  3.1 sy,  0.0 ni, 70.1 id,  7.2 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 32.8 us,  3.2 sy,  0.0 ni, 58.8 id,  5.0 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   111288 free,   532008 used,  3323028 buff/cache
KiB Swap:  4116476 total,  4114940 free,     1536 used.  3121200 avail Mem
Sun Dec 15 01:19:59 CST 2019 top - 01:19:59 up 33,  3 users,  load average: 1.46, 1.36, 1.24
%Cpu0  : 27.5 us,  3.9 sy,  0.0 ni, 59.2 id,  9.1 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu1  : 18.6 us,  3.8 sy,  0.0 ni, 73.8 id,  3.6 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 19.3 us,  3.2 sy,  0.0 ni, 70.1 id,  7.1 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 32.7 us,  3.2 sy,  0.0 ni, 58.9 id,  4.9 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   104460 free,   531644 used,  3330220 buff/cache
KiB Swap:  4116476 total,  4114940 free,     1536 used.  3121440 avail Mem
Sun Dec 15 01:20:29 CST 2019 top - 01:20:30 up 34,  3 users,  load average: 1.63, 1.41, 1.26
%Cpu0  : 27.6 us,  3.9 sy,  0.0 ni, 59.2 id,  9.0 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu1  : 18.6 us,  3.8 sy,  0.0 ni, 73.9 id,  3.6 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 19.4 us,  3.2 sy,  0.0 ni, 70.1 id,  7.0 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 32.6 us,  3.3 sy,  0.0 ni, 59.1 id,  4.9 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   132904 free,   533500 used,  3299920 buff/cache
KiB Swap:  4116476 total,  4114940 free,     1536 used.  3119740 avail Mem
Sun Dec 15 01:21:00 CST 2019 top - 01:21:00 up 34,  3 users,  load average: 1.38, 1.37, 1.25
%Cpu0  : 27.5 us,  4.0 sy,  0.0 ni, 59.4 id,  8.8 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu1  : 18.7 us,  3.8 sy,  0.0 ni, 73.8 id,  3.5 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 19.5 us,  3.2 sy,  0.0 ni, 70.1 id,  6.9 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 32.6 us,  3.3 sy,  0.0 ni, 59.1 id,  4.8 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   121212 free,   533268 used,  3311844 buff/cache
KiB Swap:  4116476 total,  4114940 free,     1536 used.  3120192 avail Mem
Sun Dec 15 01:21:30 CST 2019 top - 01:21:30 up 35,  3 users,  load average: 1.43, 1.38, 1.26
%Cpu0  : 27.6 us,  4.0 sy,  0.0 ni, 59.4 id,  8.7 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu1  : 18.7 us,  3.8 sy,  0.0 ni, 73.8 id,  3.5 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 19.6 us,  3.2 sy,  0.0 ni, 70.1 id,  6.9 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 32.5 us,  3.3 sy,  0.0 ni, 59.2 id,  4.8 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   112836 free,   534156 used,  3319332 buff/cache
KiB Swap:  4116476 total,  4114940 free,     1536 used.  3118996 avail Mem
Sun Dec 15 01:22:00 CST 2019 top - 01:22:00 up 35,  3 users,  load average: 1.32, 1.36, 1.26
%Cpu0  : 27.5 us,  4.0 sy,  0.0 ni, 59.6 id,  8.6 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu1  : 18.8 us,  3.8 sy,  0.0 ni, 73.8 id,  3.4 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 19.6 us,  3.2 sy,  0.0 ni, 70.1 id,  6.8 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 32.6 us,  3.3 sy,  0.0 ni, 59.2 id,  4.7 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   115320 free,   534468 used,  3316536 buff/cache
KiB Swap:  4116476 total,  4114940 free,     1536 used.  3119088 avail Mem
Sun Dec 15 01:22:30 CST 2019 top - 01:22:30 up 36,  3 users,  load average: 1.25, 1.34, 1.26
%Cpu0  : 27.2 us,  4.0 sy,  0.0 ni, 60.0 id,  8.5 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu1  : 19.1 us,  3.8 sy,  0.0 ni, 73.6 id,  3.4 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 19.8 us,  3.2 sy,  0.0 ni, 70.0 id,  6.7 wa,  0.0 hi,  0.3 si,  0.0 st
```

```
%Cpu3  : 32.6 us,  3.2 sy,  0.0 ni, 59.3 id,  4.6 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   129744 free,   511816 used,  3324764 buff/cache
KiB Swap:  4116476 total,  4114940 free,     1536 used.  3141712 avail Mem
Sun Dec 15 01:23:00 CST 2019 top - 01:23:01 up 36,  3 users,  load average: 1.15, 1.31, 1.25
%Cpu0  : 27.0 us,  3.9 sy,  0.0 ni, 60.3 id,  8.4 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu1  : 19.0 us,  3.8 sy,  0.0 ni, 73.7 id,  3.3 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 20.0 us,  3.2 sy,  0.0 ni, 70.0 id,  6.6 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 32.7 us,  3.2 sy,  0.0 ni, 59.3 id,  4.6 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   111528 free,   525696 used,  3329100 buff/cache
KiB Swap:  4116476 total,  4114940 free,     1536 used.  3127792 avail Mem
Sun Dec 15 01:23:31 CST 2019 top - 01:23:31 up 37,  3 users,  load average: 1.15, 1.29, 1.24
%Cpu0  : 27.1 us,  3.9 sy,  0.0 ni, 60.4 id,  8.3 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu1  : 19.1 us,  3.8 sy,  0.0 ni, 73.7 id,  3.3 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 20.0 us,  3.2 sy,  0.0 ni, 69.9 id,  6.5 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 32.6 us,  3.3 sy,  0.0 ni, 59.4 id,  4.5 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   106844 free,   535084 used,  3324396 buff/cache
KiB Swap:  4116476 total,  4114940 free,     1536 used.  3118060 avail Mem
Sun Dec 15 01:24:01 CST 2019 top - 01:24:01 up 37,  3 users,  load average: 1.31, 1.31, 1.25
%Cpu0  : 27.0 us,  4.0 sy,  0.0 ni, 60.5 id,  8.2 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu1  : 19.1 us,  3.8 sy,  0.0 ni, 73.6 id,  3.3 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 20.1 us,  3.2 sy,  0.0 ni, 69.9 id,  6.5 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 32.6 us,  3.3 sy,  0.0 ni, 59.4 id,  4.5 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   109040 free,   537412 used,  3319872 buff/cache
KiB Swap:  4116476 total,  4114940 free,     1536 used.  3115892 avail Mem
Sun Dec 15 01:24:31 CST 2019 top - 01:24:31 up 38,  3 users,  load average: 1.24, 1.30, 1.25
%Cpu0  : 26.9 us,  4.0 sy,  0.0 ni, 60.7 id,  8.1 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu1  : 19.0 us,  3.8 sy,  0.0 ni, 73.8 id,  3.2 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 20.3 us,  3.2 sy,  0.0 ni, 69.8 id,  6.4 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 32.7 us,  3.3 sy,  0.0 ni, 59.4 id,  4.4 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   108648 free,   524072 used,  3333604 buff/cache
KiB Swap:  4116476 total,  4114428 free,     2048 used.  3129232 avail Mem
Sun Dec 15 01:25:01 CST 2019 top - 01:25:01 up 38,  3 users,  load average: 1.47, 1.35, 1.27
%Cpu0  : 26.8 us,  4.0 sy,  0.0 ni, 60.9 id,  8.0 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu1  : 19.1 us,  3.8 sy,  0.0 ni, 73.7 id,  3.2 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 20.5 us,  3.3 sy,  0.0 ni, 69.7 id,  6.3 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 32.6 us,  3.3 sy,  0.0 ni, 59.5 id,  4.4 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   124924 free,   535624 used,  3305776 buff/cache
KiB Swap:  4116476 total,  4113916 free,     2560 used.  3117456 avail Mem
Sun Dec 15 01:25:31 CST 2019 top - 01:25:32 up 39,  3 users,  load average: 1.44, 1.35, 1.27
%Cpu0  : 26.8 us,  4.0 sy,  0.0 ni, 61.0 id,  7.9 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu1  : 19.2 us,  3.8 sy,  0.0 ni, 73.7 id,  3.1 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 20.6 us,  3.3 sy,  0.0 ni, 69.6 id,  6.2 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 32.6 us,  3.3 sy,  0.0 ni, 59.6 id,  4.3 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   109528 free,   535656 used,  3321140 buff/cache
KiB Swap:  4116476 total,  4113916 free,     2560 used.  3117824 avail Mem
Sun Dec 15 01:26:02 CST 2019 top - 01:26:02 up 39,  3 users,  load average: 1.66, 1.41, 1.29
%Cpu0  : 26.8 us,  4.0 sy,  0.0 ni, 61.0 id,  7.8 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu1  : 19.3 us,  3.8 sy,  0.0 ni, 73.6 id,  3.1 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 20.6 us,  3.3 sy,  0.0 ni, 69.6 id,  6.2 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 32.6 us,  3.3 sy,  0.0 ni, 59.6 id,  4.3 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   113356 free,   534640 used,  3318328 buff/cache
KiB Swap:  4116476 total,  4113916 free,     2560 used.  3118800 avail Mem
Sun Dec 15 01:26:32 CST 2019 top - 01:26:32 up 40,  3 users,  load average: 1.47, 1.39, 1.29
%Cpu0  : 26.8 us,  4.0 sy,  0.0 ni, 61.1 id,  7.7 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu1  : 19.5 us,  3.8 sy,  0.0 ni, 73.5 id,  3.1 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 20.6 us,  3.3 sy,  0.0 ni, 69.7 id,  6.1 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 32.4 us,  3.3 sy,  0.0 ni, 59.8 id,  4.3 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   113420 free,   534536 used,  3318368 buff/cache
```

```
KiB Swap:  4116476 total,  4113916 free,     2560 used.  3118632 avail Mem
Sun Dec 15 01:27:02 CST 2019 top - 01:27:02 up 40,  3 users,  load average: 1.28, 1.35, 1.28
%Cpu0  : 26.8 us,  4.0 sy,  0.0 ni, 61.2 id,  7.6 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu1  : 19.5 us,  3.9 sy,  0.0 ni, 73.4 id,  3.0 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 20.7 us,  3.4 sy,  0.0 ni, 69.6 id,  6.0 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 32.4 us,  3.4 sy,  0.0 ni, 59.8 id,  4.2 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   116900 free,   537572 used,  3311852 buff/cache
KiB Swap:  4116476 total,  4113916 free,     2560 used.  3115788 avail Mem
Sun Dec 15 01:27:32 CST 2019 top - 01:27:32 up 41,  3 users,  load average: 1.62, 1.41, 1.30
%Cpu0  : 26.9 us,  4.0 sy,  0.0 ni, 61.2 id,  7.6 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 19.6 us,  3.9 sy,  0.0 ni, 73.4 id,  3.0 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 20.6 us,  3.4 sy,  0.0 ni, 69.7 id,  6.0 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 32.4 us,  3.4 sy,  0.0 ni, 59.8 id,  4.2 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   114852 free,   563080 used,  3288392 buff/cache
KiB Swap:  4116476 total,  4113916 free,     2560 used.  3090184 avail Mem
Sun Dec 15 01:28:02 CST 2019 top - 01:28:03 up 41,  3 users,  load average: 1.79, 1.48, 1.33
%Cpu0  : 26.9 us,  4.0 sy,  0.0 ni, 61.2 id,  7.5 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 19.7 us,  3.9 sy,  0.0 ni, 73.3 id,  3.0 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 20.7 us,  3.4 sy,  0.0 ni, 69.7 id,  5.9 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 32.3 us,  3.4 sy,  0.0 ni, 60.0 id,  4.1 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   112484 free,   537428 used,  3316412 buff/cache
KiB Swap:  4116476 total,  4113404 free,     3072 used.  3115884 avail Mem
Sun Dec 15 01:28:33 CST 2019 top - 01:28:33 up 42,  3 users,  load average: 1.48, 1.43, 1.31
%Cpu0  : 26.8 us,  4.0 sy,  0.0 ni, 61.5 id,  7.4 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 19.6 us,  3.9 sy,  0.0 ni, 73.4 id,  2.9 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 21.0 us,  3.4 sy,  0.0 ni, 69.4 id,  5.9 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 32.2 us,  3.4 sy,  0.0 ni, 60.1 id,  4.1 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   114184 free,   538620 used,  3313520 buff/cache
KiB Swap:  4116476 total,  4113404 free,     3072 used.  3114872 avail Mem
Sun Dec 15 01:29:03 CST 2019 top - 01:29:03 up 42,  3 users,  load average: 1.43, 1.42, 1.31
%Cpu0  : 26.8 us,  4.0 sy,  0.0 ni, 61.6 id,  7.3 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 19.7 us,  3.9 sy,  0.0 ni, 73.4 id,  2.9 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 21.1 us,  3.4 sy,  0.0 ni, 69.4 id,  5.8 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 32.1 us,  3.4 sy,  0.0 ni, 60.1 id,  4.1 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   138704 free,   543612 used,  3284008 buff/cache
KiB Swap:  4116476 total,  4113404 free,     3072 used.  3110040 avail Mem
Sun Dec 15 01:29:33 CST 2019 top - 01:29:33 up 43,  3 users,  load average: 1.48, 1.44, 1.32
%Cpu0  : 26.8 us,  4.0 sy,  0.0 ni, 61.6 id,  7.2 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 19.8 us,  3.9 sy,  0.0 ni, 73.3 id,  2.9 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 21.1 us,  3.4 sy,  0.0 ni, 69.4 id,  5.8 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 32.2 us,  3.4 sy,  0.0 ni, 60.2 id,  4.1 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   123116 free,   539136 used,  3304072 buff/cache
KiB Swap:  4116476 total,  4113148 free,     3328 used.  3114232 avail Mem
Sun Dec 15 01:30:03 CST 2019 top - 01:30:03 up 43,  3 users,  load average: 1.29, 1.40, 1.31
%Cpu0  : 26.7 us,  4.0 sy,  0.0 ni, 61.7 id,  7.2 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 19.9 us,  3.9 sy,  0.0 ni, 73.2 id,  2.8 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 21.2 us,  3.4 sy,  0.0 ni, 69.3 id,  5.7 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 32.1 us,  3.4 sy,  0.0 ni, 60.3 id,  4.0 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   107964 free,   539700 used,  3318660 buff/cache
KiB Swap:  4116476 total,  4113148 free,     3328 used.  3113820 avail Mem
Sun Dec 15 01:30:33 CST 2019 top - 01:30:34 up 44,  3 users,  load average: 1.31, 1.39, 1.31
%Cpu0  : 26.7 us,  4.0 sy,  0.0 ni, 61.8 id,  7.1 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 19.9 us,  3.9 sy,  0.0 ni, 73.2 id,  2.8 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 21.3 us,  3.4 sy,  0.0 ni, 69.3 id,  5.6 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 32.0 us,  3.4 sy,  0.0 ni, 60.5 id,  4.0 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   104364 free,   520904 used,  3341056 buff/cache
KiB Swap:  4116476 total,  4112636 free,     3840 used.  3132340 avail Mem
Sun Dec 15 01:31:04 CST 2019 top - 01:31:04 up 44,  3 users,  load average: 1.41, 1.40, 1.32
```

```
%Cpu0  : 26.7 us,  4.0 sy,  0.0 ni, 61.9 id,  7.0 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 20.0 us,  3.9 sy,  0.0 ni, 73.2 id,  2.8 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 21.4 us,  3.4 sy,  0.0 ni, 69.3 id,  5.6 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 31.9 us,  3.4 sy,  0.0 ni, 60.5 id,  3.9 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   142956 free,   539144 used,  3284224 buff/cache
KiB Swap:  4116476 total,  4112380 free,     4096 used.  3114284 avail Mem
Sun Dec 15 01:31:34 CST 2019 top - 01:31:34 up 45,  3 users,  load average: 1.40, 1.40, 1.32
%Cpu0  : 26.6 us,  4.0 sy,  0.0 ni, 62.1 id,  7.0 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 20.0 us,  3.9 sy,  0.0 ni, 73.2 id,  2.7 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 21.5 us,  3.4 sy,  0.0 ni, 69.2 id,  5.5 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 32.0 us,  3.4 sy,  0.0 ni, 60.5 id,  3.9 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   109776 free,   537520 used,  3319028 buff/cache
KiB Swap:  4116476 total,  4112124 free,     4352 used.  3115880 avail Mem
Sun Dec 15 01:32:04 CST 2019 top - 01:32:04 up 45,  3 users,  load average: 1.39, 1.39, 1.32
%Cpu0  : 26.5 us,  4.0 sy,  0.0 ni, 62.2 id,  6.9 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 20.1 us,  3.9 sy,  0.0 ni, 73.1 id,  2.7 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 21.6 us,  3.5 sy,  0.0 ni, 69.1 id,  5.5 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 31.9 us,  3.4 sy,  0.0 ni, 60.6 id,  3.9 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   113764 free,   539216 used,  3313344 buff/cache
KiB Swap:  4116476 total,  4112124 free,     4352 used.  3114192 avail Mem
Sun Dec 15 01:32:34 CST 2019 top - 01:32:34 up 46,  3 users,  load average: 1.46, 1.40, 1.32
%Cpu0  : 26.5 us,  4.1 sy,  0.0 ni, 62.3 id,  6.8 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 20.3 us,  3.9 sy,  0.0 ni, 73.0 id,  2.7 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 21.7 us,  3.5 sy,  0.0 ni, 69.1 id,  5.4 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 31.8 us,  3.4 sy,  0.0 ni, 60.7 id,  3.8 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   119376 free,   538288 used,  3308660 buff/cache
KiB Swap:  4116476 total,  4111868 free,     4608 used.  3115072 avail Mem
Sun Dec 15 01:33:04 CST 2019 top - 01:33:05 up 46,  3 users,  load average: 1.39, 1.39, 1.32
%Cpu0  : 26.5 us,  4.1 sy,  0.0 ni, 62.3 id,  6.8 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 20.3 us,  3.9 sy,  0.0 ni, 72.9 id,  2.6 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 21.7 us,  3.5 sy,  0.0 ni, 69.1 id,  5.4 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 31.7 us,  3.4 sy,  0.0 ni, 60.8 id,  3.8 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   125632 free,   538448 used,  3302244 buff/cache
KiB Swap:  4116476 total,  4111356 free,     5120 used.  3115016 avail Mem
Sun Dec 15 01:33:35 CST 2019 top - 01:33:35 up 47,  3 users,  load average: 1.24, 1.35, 1.31
%Cpu0  : 26.5 us,  4.1 sy,  0.0 ni, 62.3 id,  6.7 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 20.4 us,  3.9 sy,  0.0 ni, 72.9 id,  2.6 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 21.7 us,  3.5 sy,  0.0 ni, 69.2 id,  5.3 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 31.7 us,  3.4 sy,  0.0 ni, 60.9 id,  3.8 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   125432 free,   538712 used,  3302180 buff/cache
KiB Swap:  4116476 total,  4111100 free,     5376 used.  3114832 avail Mem
Sun Dec 15 01:34:05 CST 2019 top - 01:34:05 up 47,  3 users,  load average: 1.14, 1.32, 1.30
%Cpu0  : 26.6 us,  4.1 sy,  0.0 ni, 62.3 id,  6.6 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 20.5 us,  3.9 sy,  0.0 ni, 72.8 id,  2.6 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 21.7 us,  3.5 sy,  0.0 ni, 69.2 id,  5.3 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 31.6 us,  3.5 sy,  0.0 ni, 61.0 id,  3.7 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   113360 free,   539768 used,  3313196 buff/cache
KiB Swap:  4116476 total,  4111100 free,     5376 used.  3113880 avail Mem
Sun Dec 15 01:34:35 CST 2019 top - 01:34:35 up 48,  3 users,  load average: 1.48, 1.39, 1.32
%Cpu0  : 26.7 us,  4.1 sy,  0.0 ni, 62.3 id,  6.6 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 20.6 us,  3.9 sy,  0.0 ni, 72.7 id,  2.6 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 21.7 us,  3.5 sy,  0.0 ni, 69.2 id,  5.3 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 31.5 us,  3.5 sy,  0.0 ni, 61.1 id,  3.7 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   118924 free,   538420 used,  3308980 buff/cache
KiB Swap:  4116476 total,  4110588 free,     5888 used.  3114952 avail Mem
Sun Dec 15 01:35:05 CST 2019 top - 01:35:05 up 48,  3 users,  load average: 1.29, 1.35, 1.31
%Cpu0  : 26.7 us,  4.1 sy,  0.0 ni, 62.3 id,  6.5 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 20.6 us,  3.9 sy,  0.0 ni, 72.7 id,  2.5 wa,  0.0 hi,  0.2 si,  0.0 st
```

```
%Cpu2  : 21.8 us,  3.5 sy,  0.0 ni, 69.1 id,  5.2 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 31.4 us,  3.5 sy,  0.0 ni, 61.2 id,  3.7 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   111376 free,   537752 used,  3317196 buff/cache
KiB Swap:  4116476 total,  4110076 free,     6400 used.  3115744 avail Mem
Sun Dec 15 01:35:36 CST 2019 top - 01:35:36 up 49,  3 users,  load average: 1.23, 1.33, 1.31
%Cpu0  : 26.7 us,  4.1 sy,  0.0 ni, 62.4 id,  6.5 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 20.7 us,  3.9 sy,  0.0 ni, 72.6 id,  2.5 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 21.9 us,  3.5 sy,  0.0 ni, 69.1 id,  5.2 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 31.3 us,  3.5 sy,  0.0 ni, 61.3 id,  3.7 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   105660 free,   538088 used,  3322576 buff/cache
KiB Swap:  4116476 total,  4109820 free,     6656 used.  3115596 avail Mem
Sun Dec 15 01:36:06 CST 2019 top - 01:36:06 up 49,  3 users,  load average: 1.52, 1.38, 1.32
%Cpu0  : 26.6 us,  4.1 sy,  0.0 ni, 62.5 id,  6.4 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 20.8 us,  4.0 sy,  0.0 ni, 72.5 id,  2.5 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 21.9 us,  3.6 sy,  0.0 ni, 69.1 id,  5.1 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 31.3 us,  3.5 sy,  0.0 ni, 61.3 id,  3.6 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   106268 free,   537624 used,  3322432 buff/cache
KiB Swap:  4116476 total,  4109564 free,     6912 used.  3115764 avail Mem
Sun Dec 15 01:36:36 CST 2019 top - 01:36:36 up 50,  3 users,  load average: 1.32, 1.34, 1.31
%Cpu0  : 26.5 us,  4.1 sy,  0.0 ni, 62.6 id,  6.4 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 20.9 us,  4.0 sy,  0.0 ni, 72.5 id,  2.5 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 22.0 us,  3.6 sy,  0.0 ni, 69.0 id,  5.1 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 31.3 us,  3.5 sy,  0.0 ni, 61.3 id,  3.6 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   103336 free,   541172 used,  3321816 buff/cache
KiB Swap:  4116476 total,  4109564 free,     6912 used.  3112144 avail Mem
Sun Dec 15 01:37:06 CST 2019 top - 01:37:06 up 50,  3 users,  load average: 1.19, 1.31, 1.30
%Cpu0  : 26.5 us,  4.1 sy,  0.0 ni, 62.7 id,  6.3 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 21.0 us,  4.0 sy,  0.0 ni, 72.4 id,  2.4 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 22.0 us,  3.6 sy,  0.0 ni, 69.1 id,  5.0 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 31.3 us,  3.5 sy,  0.0 ni, 61.4 id,  3.6 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   114804 free,   539888 used,  3311632 buff/cache
KiB Swap:  4116476 total,  4108796 free,     7680 used.  3113668 avail Mem
Sun Dec 15 01:37:36 CST 2019 top - 01:37:36 up 51,  3 users,  load average: 1.26, 1.31, 1.30
%Cpu0  : 26.4 us,  4.1 sy,  0.0 ni, 62.8 id,  6.2 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 21.0 us,  4.0 sy,  0.0 ni, 72.4 id,  2.4 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 22.1 us,  3.6 sy,  0.0 ni, 69.0 id,  5.0 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 31.3 us,  3.5 sy,  0.0 ni, 61.4 id,  3.5 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   112996 free,   540828 used,  3312500 buff/cache
KiB Swap:  4116476 total,  4108284 free,     8192 used.  3112740 avail Mem
Sun Dec 15 01:38:06 CST 2019 top - 01:38:07 up 51,  3 users,  load average: 1.40, 1.34, 1.31
%Cpu0  : 26.4 us,  4.1 sy,  0.0 ni, 62.9 id,  6.2 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 21.1 us,  4.0 sy,  0.0 ni, 72.4 id,  2.4 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 22.1 us,  3.6 sy,  0.0 ni, 69.0 id,  5.0 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 31.2 us,  3.5 sy,  0.0 ni, 61.5 id,  3.5 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   113644 free,   542096 used,  3310584 buff/cache
KiB Swap:  4116476 total,  4107772 free,     8704 used.  3111496 avail Mem
Sun Dec 15 01:38:37 CST 2019 top - 01:38:37 up 52,  3 users,  load average: 1.31, 1.33, 1.30
%Cpu0  : 26.4 us,  4.1 sy,  0.0 ni, 62.9 id,  6.1 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 21.0 us,  4.0 sy,  0.0 ni, 72.4 id,  2.4 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 22.2 us,  3.6 sy,  0.0 ni, 68.9 id,  4.9 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 31.2 us,  3.6 sy,  0.0 ni, 61.5 id,  3.5 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   113100 free,   538328 used,  3314896 buff/cache
KiB Swap:  4116476 total,  4107516 free,     8960 used.  3115252 avail Mem
Sun Dec 15 01:39:07 CST 2019 top - 01:39:07 up 52,  3 users,  load average: 1.32, 1.33, 1.30
%Cpu0  : 26.4 us,  4.1 sy,  0.0 ni, 63.0 id,  6.1 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 21.2 us,  4.0 sy,  0.0 ni, 72.3 id,  2.4 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 22.2 us,  3.6 sy,  0.0 ni, 69.0 id,  4.9 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 31.1 us,  3.6 sy,  0.0 ni, 61.6 id,  3.5 wa,  0.0 hi,  0.2 si,  0.0 st
```

```
KiB Mem :  3966324 total,   116480 free,    543128 used,  3306716 buff/cache
KiB Swap: 4116476 total,  4107004 free,      9472 used.  3110216 avail Mem
Sun Dec 15 01:39:37 CST 2019 top - 01:39:37 up 53,  3 users,  load average: 1.34, 1.33, 1.30
%Cpu0  : 26.5 us,  4.1 sy,  0.0 ni, 63.0 id,  6.0 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 21.3 us,  4.0 sy,  0.0 ni, 72.1 id,  2.3 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 22.1 us,  3.6 sy,  0.0 ni, 69.0 id,  4.9 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 31.0 us,  3.6 sy,  0.0 ni, 61.7 id,  3.5 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   110556 free,    537852 used,  3317916 buff/cache
KiB Swap: 4116476 total,  4106748 free,      9728 used.  3115680 avail Mem
Sun Dec 15 01:40:07 CST 2019 top - 01:40:07 up 53,  3 users,  load average: 1.34, 1.33, 1.30
%Cpu0  : 26.5 us,  4.1 sy,  0.0 ni, 63.0 id,  6.0 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 21.3 us,  4.0 sy,  0.0 ni, 72.1 id,  2.3 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 22.2 us,  3.7 sy,  0.0 ni, 69.0 id,  4.8 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 31.0 us,  3.6 sy,  0.0 ni, 61.8 id,  3.4 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   107328 free,    539076 used,  3319920 buff/cache
KiB Swap: 4116476 total,  4106236 free,     10240 used.  3114404 avail Mem
Sun Dec 15 01:40:37 CST 2019 top - 01:40:38 up 54,  3 users,  load average: 1.21, 1.29, 1.29
%Cpu0  : 26.6 us,  4.1 sy,  0.0 ni, 63.0 id,  5.9 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 21.5 us,  4.0 sy,  0.0 ni, 72.0 id,  2.3 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 22.2 us,  3.7 sy,  0.0 ni, 69.0 id,  4.8 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 30.8 us,  3.6 sy,  0.0 ni, 61.9 id,  3.4 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   111332 free,    553348 used,  3301644 buff/cache
KiB Swap: 4116476 total,  4105980 free,     10496 used.  3100424 avail Mem
Sun Dec 15 01:41:08 CST 2019 top - 01:41:08 up 54,  3 users,  load average: 1.48, 1.35, 1.31
%Cpu0  : 26.5 us,  4.1 sy,  0.0 ni, 63.0 id,  5.9 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 21.5 us,  4.0 sy,  0.0 ni, 72.0 id,  2.3 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 22.3 us,  3.7 sy,  0.0 ni, 68.9 id,  4.8 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 30.7 us,  3.6 sy,  0.0 ni, 62.0 id,  3.4 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   126524 free,    540712 used,  3299088 buff/cache
KiB Swap: 4116476 total,  4105468 free,     11008 used.  3112828 avail Mem
Sun Dec 15 01:41:38 CST 2019 top - 01:41:38 up 55,  3 users,  load average: 1.57, 1.38, 1.32
%Cpu0  : 26.5 us,  4.1 sy,  0.0 ni, 63.1 id,  5.9 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 21.6 us,  4.0 sy,  0.0 ni, 71.9 id,  2.3 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 22.3 us,  3.7 sy,  0.0 ni, 68.9 id,  4.7 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 30.7 us,  3.6 sy,  0.0 ni, 62.0 id,  3.4 wa,  0.0 hi,  0.3 si,  0.0 st
KiB Mem :  3966324 total,   112364 free,    540568 used,  3313392 buff/cache
KiB Swap: 4116476 total,  4105468 free,     11008 used.  3112980 avail Mem
Sun Dec 15 01:42:08 CST 2019 top - 01:42:08 up 55,  3 users,  load average: 1.38, 1.35, 1.31
%Cpu0  : 26.5 us,  4.1 sy,  0.0 ni, 63.2 id,  5.8 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 21.6 us,  4.0 sy,  0.0 ni, 71.9 id,  2.2 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 22.4 us,  3.7 sy,  0.0 ni, 68.9 id,  4.7 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 30.7 us,  3.6 sy,  0.0 ni, 62.1 id,  3.4 wa,  0.0 hi,  0.3 si,  0.0 st
KiB Mem :  3966324 total,   234588 free,    410124 used,  3321612 buff/cache
KiB Swap: 4116476 total,  4104956 free,     11520 used.  3243544 avail Mem
Sun Dec 15 01:42:38 CST 2019 top - 01:42:38 up 56,  3 users,  load average: 1.23, 1.32, 1.30
%Cpu0  : 26.5 us,  4.1 sy,  0.0 ni, 63.2 id,  5.8 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 21.7 us,  4.0 sy,  0.0 ni, 71.9 id,  2.2 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 22.3 us,  3.7 sy,  0.0 ni, 69.1 id,  4.6 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 30.7 us,  3.6 sy,  0.0 ni, 62.1 id,  3.3 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   235024 free,    409668 used,  3321632 buff/cache
KiB Swap: 4116476 total,  4104956 free,     11520 used.  3244044 avail Mem
Sun Dec 15 01:43:08 CST 2019 top - 01:43:09 up 56,  3 users,  load average: 1.20, 1.30, 1.29
%Cpu0  : 26.3 us,  4.1 sy,  0.0 ni, 63.5 id,  5.7 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 21.5 us,  3.9 sy,  0.0 ni, 72.1 id,  2.2 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 22.7 us,  3.6 sy,  0.0 ni, 68.8 id,  4.6 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 30.7 us,  3.6 sy,  0.0 ni, 62.1 id,  3.3 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   235024 free,    409636 used,  3321664 buff/cache
KiB Swap: 4116476 total,  4104956 free,     11520 used.  3244072 avail Mem
```

```
Sun Dec 15 01:43:39 CST 2019 top - 01:43:39 up 57,  3 users,  load average: 1.12, 1.27, 1.28
%Cpu0  : 26.1 us,  4.0 sy,  0.0 ni, 63.8 id,  5.7 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 21.3 us,  3.9 sy,  0.0 ni, 72.4 id,  2.2 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 22.9 us,  3.6 sy,  0.0 ni, 68.7 id,  4.6 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 30.9 us,  3.5 sy,  0.0 ni, 62.0 id,  3.3 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   234528 free,   410092 used,  3321704 buff/cache
KiB Swap:  4116476 total,  4104956 free,    11520 used.  3243616 avail Mem
Sun Dec 15 01:44:09 CST 2019 top - 01:44:09 up 57,  3 users,  load average: 1.14, 1.26, 1.28
%Cpu0  : 26.0 us,  4.0 sy,  0.0 ni, 64.0 id,  5.6 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 21.2 us,  3.9 sy,  0.0 ni, 72.5 id,  2.2 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 23.4 us,  3.6 sy,  0.0 ni, 68.2 id,  4.5 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 30.7 us,  3.5 sy,  0.0 ni, 62.4 id,  3.2 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   234528 free,   410044 used,  3321752 buff/cache
KiB Swap:  4116476 total,  4104956 free,    11520 used.  3243652 avail Mem
Sun Dec 15 01:44:39 CST 2019 top - 01:44:39 up 58,  3 users,  load average: 1.08, 1.23, 1.27
%Cpu0  : 25.8 us,  4.0 sy,  0.0 ni, 64.3 id,  5.6 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 21.2 us,  3.8 sy,  0.0 ni, 72.6 id,  2.1 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 23.6 us,  3.5 sy,  0.0 ni, 68.0 id,  4.5 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 30.6 us,  3.5 sy,  0.0 ni, 62.5 id,  3.2 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   234528 free,   409776 used,  3322020 buff/cache
KiB Swap:  4116476 total,  4104956 free,    11520 used.  3243932 avail Mem
Sun Dec 15 01:45:09 CST 2019 top - 01:45:09 up 58,  3 users,  load average: 1.05, 1.21, 1.26
%Cpu0  : 25.8 us,  4.0 sy,  0.0 ni, 64.3 id,  5.5 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 21.4 us,  3.8 sy,  0.0 ni, 72.5 id,  2.1 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 23.6 us,  3.5 sy,  0.0 ni, 68.1 id,  4.4 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 30.4 us,  3.5 sy,  0.0 ni, 62.7 id,  3.2 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   234152 free,   409988 used,  3322184 buff/cache
KiB Swap:  4116476 total,  4104956 free,    11520 used.  3243588 avail Mem
Sun Dec 15 01:45:40 CST 2019 top - 01:45:40 up 59,  3 users,  load average: 1.18, 1.22, 1.26
%Cpu0  : 25.8 us,  3.9 sy,  0.0 ni, 64.4 id,  5.5 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 21.6 us,  3.8 sy,  0.0 ni, 72.3 id,  2.1 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 23.5 us,  3.5 sy,  0.0 ni, 68.3 id,  4.4 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 30.2 us,  3.4 sy,  0.0 ni, 63.0 id,  3.2 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   233780 free,   410288 used,  3322256 buff/cache
KiB Swap:  4116476 total,  4104956 free,    11520 used.  3243280 avail Mem
Sun Dec 15 01:46:10 CST 2019 top - 01:46:10 up 59,  3 users,  load average: 1.11, 1.20, 1.25
%Cpu0  : 25.7 us,  3.9 sy,  0.0 ni, 64.6 id,  5.4 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 21.6 us,  3.8 sy,  0.0 ni, 72.4 id,  2.1 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 23.6 us,  3.5 sy,  0.0 ni, 68.3 id,  4.4 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 30.3 us,  3.4 sy,  0.0 ni, 62.9 id,  3.1 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   234028 free,   409984 used,  3322312 buff/cache
KiB Swap:  4116476 total,  4104956 free,    11520 used.  3243568 avail Mem
Sun Dec 15 01:46:40 CST 2019 top - 01:46:40 up  1:00,  3 users,  load average: 1.06, 1.18, 1.24
%Cpu0  : 25.8 us,  3.9 sy,  0.0 ni, 64.6 id,  5.4 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 21.6 us,  3.7 sy,  0.0 ni, 72.4 id,  2.1 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 23.5 us,  3.4 sy,  0.0 ni, 68.4 id,  4.3 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 30.3 us,  3.4 sy,  0.0 ni, 63.0 id,  3.1 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   234152 free,   409876 used,  3322296 buff/cache
KiB Swap:  4116476 total,  4104956 free,    11520 used.  3243744 avail Mem
Sun Dec 15 01:47:10 CST 2019 top - 01:47:10 up  1:00,  3 users,  load average: 1.04, 1.16, 1.23
%Cpu0  : 25.7 us,  3.8 sy,  0.0 ni, 64.8 id,  5.3 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 21.6 us,  3.7 sy,  0.0 ni, 72.4 id,  2.1 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 23.6 us,  3.4 sy,  0.0 ni, 68.4 id,  4.3 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 30.3 us,  3.4 sy,  0.0 ni, 63.0 id,  3.1 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   234152 free,   409812 used,  3322360 buff/cache
KiB Swap:  4116476 total,  4104956 free,    11520 used.  3243796 avail Mem
Sun Dec 15 01:47:40 CST 2019 top - 01:47:41 up  1:01,  3 users,  load average: 1.02, 1.14, 1.22
%Cpu0  : 25.8 us,  3.8 sy,  0.0 ni, 64.8 id,  5.3 wa,  0.0 hi,  0.4 si,  0.0 st
```

```
%Cpu1  : 21.7 us,  3.7 sy,  0.0 ni, 72.4 id,  2.0 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 23.6 us,  3.4 sy,  0.0 ni, 68.5 id,  4.3 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 30.1 us,  3.3 sy,  0.0 ni, 63.2 id,  3.1 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   234012 free,   409644 used,  3322668 buff/cache
KiB Swap:  4116476 total,  4104956 free,    11520 used.  3244008 avail Mem
Sun Dec 15 01:48:11 CST 2019 top - 01:48:11 up  1:01,  3 users,  load average: 1.01, 1.13, 1.22
%Cpu0  : 25.7 us,  3.8 sy,  0.0 ni, 65.0 id,  5.2 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 21.7 us,  3.6 sy,  0.0 ni, 72.5 id,  2.0 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 23.7 us,  3.3 sy,  0.0 ni, 68.4 id,  4.2 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 30.2 us,  3.3 sy,  0.0 ni, 63.3 id,  3.0 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   233516 free,   410092 used,  3322716 buff/cache
KiB Swap:  4116476 total,  4104956 free,    11520 used.  3243556 avail Mem
Sun Dec 15 01:48:41 CST 2019 top - 01:48:41 up  1:02,  3 users,  load average: 1.17, 1.15, 1.22
%Cpu0  : 25.9 us,  3.7 sy,  0.0 ni, 64.8 id,  5.2 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 21.6 us,  3.6 sy,  0.0 ni, 72.5 id,  2.0 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 23.7 us,  3.3 sy,  0.0 ni, 68.5 id,  4.2 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 30.0 us,  3.3 sy,  0.0 ni, 63.5 id,  3.0 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   233516 free,   410000 used,  3322808 buff/cache
KiB Swap:  4116476 total,  4104956 free,    11520 used.  3243600 avail Mem
Sun Dec 15 01:49:11 CST 2019 top - 01:49:11 up  1:02,  3 users,  load average: 1.10, 1.13, 1.21
%Cpu0  : 26.1 us,  3.7 sy,  0.0 ni, 64.7 id,  5.2 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 21.8 us,  3.6 sy,  0.0 ni, 72.4 id,  2.0 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 23.5 us,  3.3 sy,  0.0 ni, 68.7 id,  4.2 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 29.8 us,  3.3 sy,  0.0 ni, 63.7 id,  3.0 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   233888 free,   409560 used,  3322876 buff/cache
KiB Swap:  4116476 total,  4104956 free,    11520 used.  3244012 avail Mem
Sun Dec 15 01:49:41 CST 2019 top - 01:49:41 up  1:03,  3 users,  load average: 0.99, 1.10, 1.20
%Cpu0  : 26.3 us,  3.7 sy,  0.0 ni, 64.5 id,  5.1 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 21.8 us,  3.6 sy,  0.0 ni, 72.5 id,  2.0 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 23.4 us,  3.3 sy,  0.0 ni, 68.9 id,  4.1 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 29.7 us,  3.2 sy,  0.0 ni, 63.9 id,  3.0 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   233020 free,   410380 used,  3322924 buff/cache
KiB Swap:  4116476 total,  4104956 free,    11520 used.  3243192 avail Mem
Sun Dec 15 01:50:11 CST 2019 top - 01:50:12 up  1:03,  3 users,  load average: 1.00, 1.09, 1.19
%Cpu0  : 26.2 us,  3.7 sy,  0.0 ni, 64.7 id,  5.1 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 21.8 us,  3.5 sy,  0.0 ni, 72.5 id,  2.0 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 23.6 us,  3.3 sy,  0.0 ni, 68.7 id,  4.1 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 29.6 us,  3.2 sy,  0.0 ni, 64.0 id,  2.9 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   233020 free,   410312 used,  3322992 buff/cache
KiB Swap:  4116476 total,  4104956 free,    11520 used.  3243256 avail Mem
Sun Dec 15 01:50:42 CST 2019 top - 01:50:42 up  1:04,  3 users,  load average: 1.00, 1.08, 1.18
%Cpu0  : 26.4 us,  3.6 sy,  0.0 ni, 64.6 id,  5.0 wa,  0.0 hi,  0.4 si,  0.0 st
%Cpu1  : 21.8 us,  3.5 sy,  0.0 ni, 72.6 id,  2.0 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 23.6 us,  3.2 sy,  0.0 ni, 68.8 id,  4.1 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 29.5 us,  3.2 sy,  0.0 ni, 64.2 id,  2.9 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   233144 free,   410128 used,  3323052 buff/cache
KiB Swap:  4116476 total,  4104956 free,    11520 used.  3243428 avail Mem
Sun Dec 15 01:51:12 CST 2019 top - 01:51:12 up  1:04,  3 users,  load average: 1.00, 1.07, 1.17
%Cpu0  : 26.3 us,  3.6 sy,  0.0 ni, 64.7 id,  5.0 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu1  : 21.6 us,  3.5 sy,  0.0 ni, 72.8 id,  1.9 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 23.6 us,  3.2 sy,  0.0 ni, 68.9 id,  4.0 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 29.7 us,  3.2 sy,  0.0 ni, 64.0 id,  2.9 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   233020 free,   410208 used,  3323096 buff/cache
KiB Swap:  4116476 total,  4104956 free,    11520 used.  3243348 avail Mem
Sun Dec 15 01:51:42 CST 2019 top - 01:51:42 up  1:05,  3 users,  load average: 1.00, 1.06, 1.17
%Cpu0  : 26.3 us,  3.6 sy,  0.0 ni, 64.8 id,  5.0 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu1  : 21.8 us,  3.5 sy,  0.0 ni, 72.6 id,  1.9 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 23.5 us,  3.2 sy,  0.0 ni, 69.0 id,  4.0 wa,  0.0 hi,  0.3 si,  0.0 st
```

```
%Cpu3  : 29.6 us,  3.1 sy,  0.0 ni, 64.2 id,  2.9 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   233268 free,   409908 used,  3323148 buff/cache
KiB Swap:  4116476 total,  4104956 free,    11520 used.  3243640 avail Mem
Sun Dec 15 01:52:12 CST 2019 top - 01:52:12 up  1:05,  3 users,  load average: 1.00, 1.06, 1.16
%Cpu0  : 26.6 us,  3.6 sy,  0.0 ni, 64.6 id,  4.9 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu1  : 21.9 us,  3.4 sy,  0.0 ni, 72.6 id,  1.9 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 23.4 us,  3.2 sy,  0.0 ni, 69.2 id,  4.0 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 29.4 us,  3.1 sy,  0.0 ni, 64.4 id,  2.8 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   233020 free,   410044 used,  3323260 buff/cache
KiB Swap:  4116476 total,  4104956 free,    11520 used.  3243448 avail Mem
Sun Dec 15 01:52:42 CST 2019 top - 01:52:43 up  1:06,  3 users,  load average: 1.05, 1.06, 1.16
%Cpu0  : 26.5 us,  3.5 sy,  0.0 ni, 64.7 id,  4.9 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu1  : 21.7 us,  3.4 sy,  0.0 ni, 72.8 id,  1.9 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 23.5 us,  3.1 sy,  0.0 ni, 69.1 id,  3.9 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 29.5 us,  3.1 sy,  0.0 ni, 64.4 id,  2.8 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   232772 free,   410264 used,  3323288 buff/cache
KiB Swap:  4116476 total,  4104956 free,    11520 used.  3243244 avail Mem
Sun Dec 15 01:53:13 CST 2019 top - 01:53:13 up  1:06,  3 users,  load average: 1.03, 1.06, 1.16
%Cpu0  : 26.4 us,  3.5 sy,  0.0 ni, 64.9 id,  4.8 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu1  : 21.6 us,  3.4 sy,  0.0 ni, 72.9 id,  1.9 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 23.8 us,  3.1 sy,  0.0 ni, 68.9 id,  3.9 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 29.5 us,  3.1 sy,  0.0 ni, 64.5 id,  2.8 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   232648 free,   410344 used,  3323332 buff/cache
KiB Swap:  4116476 total,  4104956 free,    11520 used.  3243164 avail Mem
Sun Dec 15 01:53:43 CST 2019 top - 01:53:43 up  1:07,  3 users,  load average: 1.02, 1.05, 1.15
%Cpu0  : 26.5 us,  3.5 sy,  0.0 ni, 64.9 id,  4.8 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu1  : 21.7 us,  3.4 sy,  0.0 ni, 72.9 id,  1.9 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 23.7 us,  3.1 sy,  0.0 ni, 69.0 id,  3.9 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 29.3 us,  3.1 sy,  0.0 ni, 64.6 id,  2.8 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   232896 free,   410052 used,  3323376 buff/cache
KiB Swap:  4116476 total,  4104956 free,    11520 used.  3243484 avail Mem
Sun Dec 15 01:54:13 CST 2019 top - 01:54:13 up  1:07,  3 users,  load average: 1.01, 1.04, 1.14
%Cpu0  : 26.5 us,  3.5 sy,  0.0 ni, 65.0 id,  4.8 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu1  : 21.8 us,  3.3 sy,  0.0 ni, 72.8 id,  1.9 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 23.6 us,  3.1 sy,  0.0 ni, 69.2 id,  3.9 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 29.3 us,  3.0 sy,  0.0 ni, 64.7 id,  2.8 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   232648 free,   410248 used,  3323428 buff/cache
KiB Swap:  4116476 total,  4104956 free,    11520 used.  3243264 avail Mem
Sun Dec 15 01:54:43 CST 2019 top - 01:54:43 up  1:08,  3 users,  load average: 1.00, 1.04, 1.14
%Cpu0  : 26.8 us,  3.4 sy,  0.0 ni, 64.7 id,  4.7 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu1  : 21.8 us,  3.3 sy,  0.0 ni, 72.8 id,  1.8 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 23.6 us,  3.1 sy,  0.0 ni, 69.3 id,  3.8 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 29.1 us,  3.0 sy,  0.0 ni, 64.9 id,  2.7 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   232524 free,   410268 used,  3323532 buff/cache
KiB Swap:  4116476 total,  4104956 free,    11520 used.  3243216 avail Mem
Sun Dec 15 01:55:13 CST 2019 top - 01:55:14 up  1:08,  3 users,  load average: 1.06, 1.05, 1.14
%Cpu0  : 27.0 us,  3.4 sy,  0.0 ni, 64.6 id,  4.7 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu1  : 21.9 us,  3.3 sy,  0.0 ni, 72.8 id,  1.8 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 23.5 us,  3.0 sy,  0.0 ni, 69.4 id,  3.8 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 28.9 us,  3.0 sy,  0.0 ni, 65.2 id,  2.7 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   232276 free,   410496 used,  3323552 buff/cache
KiB Swap:  4116476 total,  4104956 free,    11520 used.  3243012 avail Mem
Sun Dec 15 01:55:44 CST 2019 top - 01:55:44 up  1:09,  3 users,  load average: 1.04, 1.04, 1.13
%Cpu0  : 27.1 us,  3.4 sy,  0.0 ni, 64.6 id,  4.7 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu1  : 22.1 us,  3.3 sy,  0.0 ni, 72.6 id,  1.8 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 23.3 us,  3.0 sy,  0.0 ni, 69.6 id,  3.8 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 28.7 us,  3.0 sy,  0.0 ni, 65.4 id,  2.7 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   232772 free,   409968 used,  3323584 buff/cache
```

```
KiB Swap:  4116476 total,  4104956 free,    11520 used.  3243556 avail Mem
Sun Dec 15 01:56:14 CST 2019 top - 01:56:14 up  1:09,  3 users,  load average: 1.02, 1.04, 1.13
%Cpu0  : 27.2 us,  3.4 sy,  0.0 ni, 64.4 id,  4.6 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu1  : 22.3 us,  3.3 sy,  0.0 ni, 72.5 id,  1.8 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 23.2 us,  3.0 sy,  0.0 ni, 69.8 id,  3.7 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 28.5 us,  3.0 sy,  0.0 ni, 65.6 id,  2.7 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   232648 free,   410048 used,  3323628 buff/cache
KiB Swap:  4116476 total,  4104956 free,    11520 used.  3243464 avail Mem
Sun Dec 15 01:56:44 CST 2019 top - 01:56:44 up  1:10,  3 users,  load average: 1.01, 1.03, 1.12
%Cpu0  : 27.4 us,  3.3 sy,  0.0 ni, 64.3 id,  4.6 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu1  : 22.4 us,  3.2 sy,  0.0 ni, 72.4 id,  1.8 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 23.0 us,  3.0 sy,  0.0 ni, 70.0 id,  3.7 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 28.4 us,  2.9 sy,  0.0 ni, 65.8 id,  2.7 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   232400 free,   410248 used,  3323676 buff/cache
KiB Swap:  4116476 total,  4104956 free,    11520 used.  3243256 avail Mem
Sun Dec 15 01:57:14 CST 2019 top - 01:57:14 up  1:10,  3 users,  load average: 1.01, 1.03, 1.11
%Cpu0  : 27.5 us,  3.3 sy,  0.0 ni, 64.3 id,  4.6 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu1  : 22.7 us,  3.2 sy,  0.0 ni, 72.2 id,  1.8 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 22.9 us,  3.0 sy,  0.0 ni, 70.2 id,  3.7 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 28.2 us,  2.9 sy,  0.0 ni, 66.0 id,  2.6 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   232400 free,   410192 used,  3323732 buff/cache
KiB Swap:  4116476 total,  4104956 free,    11520 used.  3243320 avail Mem
Sun Dec 15 01:57:44 CST 2019 top - 01:57:45 up  1:11,  3 users,  load average: 1.13, 1.06, 1.12
%Cpu0  : 27.6 us,  3.3 sy,  0.0 ni, 64.2 id,  4.5 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu1  : 22.7 us,  3.2 sy,  0.0 ni, 72.1 id,  1.8 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 22.8 us,  2.9 sy,  0.0 ni, 70.3 id,  3.7 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 28.1 us,  2.9 sy,  0.0 ni, 66.2 id,  2.6 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   232524 free,   410008 used,  3323792 buff/cache
KiB Swap:  4116476 total,  4104956 free,    11520 used.  3243496 avail Mem
Sun Dec 15 01:58:15 CST 2019 top - 01:58:15 up  1:11,  3 users,  load average: 1.08, 1.05, 1.11
%Cpu0  : 27.5 us,  3.3 sy,  0.0 ni, 64.4 id,  4.5 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu1  : 22.8 us,  3.2 sy,  0.0 ni, 72.1 id,  1.8 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 22.9 us,  2.9 sy,  0.0 ni, 70.3 id,  3.6 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 28.1 us,  2.9 sy,  0.0 ni, 66.2 id,  2.6 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   232276 free,   410164 used,  3323884 buff/cache
KiB Swap:  4116476 total,  4104956 free,    11520 used.  3243304 avail Mem
Sun Dec 15 01:58:45 CST 2019 top - 01:58:45 up  1:12,  3 users,  load average: 1.29, 1.09, 1.12
%Cpu0  : 27.3 us,  3.3 sy,  0.0 ni, 64.6 id,  4.5 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu1  : 22.7 us,  3.1 sy,  0.0 ni, 72.3 id,  1.7 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 23.0 us,  2.9 sy,  0.0 ni, 70.2 id,  3.6 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 28.2 us,  2.9 sy,  0.0 ni, 66.1 id,  2.6 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   231656 free,   410716 used,  3323952 buff/cache
KiB Swap:  4116476 total,  4104956 free,    11520 used.  3242724 avail Mem
Sun Dec 15 01:59:15 CST 2019 top - 01:59:15 up  1:12,  3 users,  load average: 1.36, 1.13, 1.13
%Cpu0  : 27.2 us,  3.2 sy,  0.0 ni, 64.8 id,  4.4 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu1  : 22.6 us,  3.1 sy,  0.0 ni, 72.3 id,  1.7 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 23.1 us,  2.9 sy,  0.0 ni, 70.1 id,  3.6 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 28.3 us,  2.8 sy,  0.0 ni, 66.1 id,  2.6 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   231780 free,   410608 used,  3323936 buff/cache
KiB Swap:  4116476 total,  4104956 free,    11520 used.  3242900 avail Mem
Sun Dec 15 01:59:45 CST 2019 top - 01:59:45 up  1:13,  3 users,  load average: 1.22, 1.12, 1.13
%Cpu0  : 27.1 us,  3.2 sy,  0.0 ni, 64.9 id,  4.4 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu1  : 22.6 us,  3.1 sy,  0.0 ni, 72.5 id,  1.7 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 23.3 us,  2.9 sy,  0.0 ni, 70.0 id,  3.6 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 28.3 us,  2.8 sy,  0.0 ni, 66.1 id,  2.6 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   231532 free,   410796 used,  3323996 buff/cache
KiB Swap:  4116476 total,  4104956 free,    11520 used.  3242720 avail Mem
Sun Dec 15 02:00:15 CST 2019 top - 02:00:16 up  1:13,  3 users,  load average: 1.24, 1.14, 1.13
```

```
%Cpu0  : 27.0 us,  3.2 sy,  0.0 ni, 65.1 id,  4.4 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu1  : 22.5 us,  3.1 sy,  0.0 ni, 72.6 id,  1.7 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 23.4 us,  2.8 sy,  0.0 ni, 70.0 id,  3.5 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 28.4 us,  2.8 sy,  0.0 ni, 66.1 id,  2.5 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   231532 free,   410756 used,  3324036 buff/cache
KiB Swap:  4116476 total,  4104956 free,    11520 used.  3242732 avail Mem
Sun Dec 15 02:00:46 CST 2019 top - 02:00:46 up  1:14,  3 users,  load average: 1.28, 1.15, 1.14
%Cpu0  : 27.0 us,  3.2 sy,  0.0 ni, 65.2 id,  4.4 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu1  : 22.4 us,  3.1 sy,  0.0 ni, 72.6 id,  1.7 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 23.5 us,  2.8 sy,  0.0 ni, 69.9 id,  3.5 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 28.4 us,  2.8 sy,  0.0 ni, 66.1 id,  2.5 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   231656 free,   410560 used,  3324108 buff/cache
KiB Swap:  4116476 total,  4104956 free,    11520 used.  3242940 avail Mem
Sun Dec 15 02:01:16 CST 2019 top - 02:01:16 up  1:14,  3 users,  load average: 1.17, 1.14, 1.13
%Cpu0  : 27.1 us,  3.2 sy,  0.0 ni, 65.1 id,  4.3 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu1  : 22.4 us,  3.1 sy,  0.0 ni, 72.7 id,  1.7 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 23.5 us,  2.8 sy,  0.0 ni, 70.0 id,  3.5 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 28.3 us,  2.8 sy,  0.0 ni, 66.2 id,  2.5 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   231656 free,   410488 used,  3324180 buff/cache
KiB Swap:  4116476 total,  4104956 free,    11520 used.  3242980 avail Mem
Sun Dec 15 02:01:46 CST 2019 top - 02:01:46 up  1:15,  3 users,  load average: 1.10, 1.12, 1.13
%Cpu0  : 27.0 us,  3.1 sy,  0.0 ni, 65.2 id,  4.3 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu1  : 22.5 us,  3.0 sy,  0.0 ni, 72.7 id,  1.7 wa,  0.0 hi,  0.2 si,  0.0 st
%Cpu2  : 23.6 us,  2.8 sy,  0.0 ni, 69.9 id,  3.5 wa,  0.0 hi,  0.3 si,  0.0 st
%Cpu3  : 28.2 us,  2.8 sy,  0.0 ni, 66.4 id,  2.5 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  3966324 total,   231532 free,   410568 used,  3324224 buff/cache
KiB Swap:  4116476 total,  4104956 free,    11520 used.  3242912 avail Mem
```

B.3.   Adquisición datos Raspberry Pi 4 Model B

Prueba sin carga

Anexos/raspi4_sin_carga.txt

```
Thu 19 Dec 03:14:02 GMT 2019 top - 03:14:02 up 4,  2 users,  load average: 0.15, 0.06, 0.01
%Cpu0  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.0 us, 16.7 sy,  0.0 ni, 83.3 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3580.3 free,    136.6 used,    189.2 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3626.7 avail Mem
Thu 19 Dec 03:14:33 GMT 2019 top - 03:14:33 up 5,  2 users,  load average: 0.09, 0.05, 0.01
%Cpu0  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 15.8 us,  5.3 sy,  0.0 ni, 78.9 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.0 us,  5.0 sy,  0.0 ni, 95.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3579.6 free,    137.1 used,    189.3 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3626.1 avail Mem
Thu 19 Dec 03:15:03 GMT 2019 top - 03:15:03 up 5,  2 users,  load average: 0.05, 0.05, 0.01
%Cpu0  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.0 us, 21.1 sy,  0.0 ni, 78.9 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
```

```
MiB Mem :   3906.0 total,   3579.3 free,    137.4 used,    189.3 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3625.8 avail Mem
Thu 19 Dec 03:15:33 GMT 2019 top - 03:15:33 up 6,  2 users,  load average: 0.03, 0.04, 0.01
%Cpu0  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 10.5 us, 10.5 sy,  0.0 ni, 78.9 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3579.8 free,    136.9 used,    189.3 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3626.3 avail Mem
Thu 19 Dec 03:16:03 GMT 2019 top - 03:16:03 up 6,  2 users,  load average: 0.02, 0.04, 0.00
%Cpu0  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.0 us, 21.1 sy,  0.0 ni, 78.9 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3579.8 free,    136.9 used,    189.3 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3626.3 avail Mem
Thu 19 Dec 03:16:33 GMT 2019 top - 03:16:34 up 7,  2 users,  load average: 0.09, 0.05, 0.01
%Cpu0  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.0 us, 21.1 sy,  0.0 ni, 78.9 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3579.9 free,    136.8 used,    189.4 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3626.5 avail Mem
Thu 19 Dec 03:17:04 GMT 2019 top - 03:17:04 up 7,  2 users,  load average: 0.05, 0.04, 0.00
%Cpu0  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  5.6 us, 11.1 sy,  0.0 ni, 83.3 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3578.2 free,    138.3 used,    189.5 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3624.8 avail Mem
Thu 19 Dec 03:17:34 GMT 2019 top - 03:17:34 up 8,  2 users,  load average: 0.10, 0.05, 0.01
%Cpu0  : 10.5 us,  0.0 sy,  0.0 ni, 89.5 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  5.6 us,  0.0 sy,  0.0 ni, 94.4 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.0 us, 25.0 sy,  0.0 ni, 75.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3564.8 free,    138.0 used,    203.2 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3624.3 avail Mem
Thu 19 Dec 03:18:04 GMT 2019 top - 03:18:04 up 8,  2 users,  load average: 0.06, 0.05, 0.00
%Cpu0  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 10.5 us,  0.0 sy,  0.0 ni, 89.5 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 15.8 us, 10.5 sy,  0.0 ni, 73.7 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3563.3 free,    139.4 used,    203.3 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3622.9 avail Mem
Thu 19 Dec 03:18:34 GMT 2019 top - 03:18:35 up 9,  2 users,  load average: 0.03, 0.04, 0.00
%Cpu0  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 10.5 us, 10.5 sy,  0.0 ni, 78.9 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3556.9 free,    137.8 used,    211.4 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3624.4 avail Mem
Thu 19 Dec 03:19:05 GMT 2019 top - 03:19:05 up 9,  2 users,  load average: 0.08, 0.05, 0.00
%Cpu0  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  5.3 us, 15.8 sy,  0.0 ni, 78.9 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3414.1 free,    183.2 used,    308.7 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3577.9 avail Mem
```

```
Thu 19 Dec 03:19:35 GMT 2019 top - 03:19:35 up 10,  2 users,  load average: 0.05, 0.05, 0.00
%Cpu0  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  5.6 us, 16.7 sy,  0.0 ni, 77.8 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3413.9 free,    183.4 used,    308.8 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3577.7 avail Mem
Thu 19 Dec 03:20:05 GMT 2019 top - 03:20:05 up 10,  2 users,  load average: 0.03, 0.04, 0.00
%Cpu0  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  5.3 us, 15.8 sy,  0.0 ni, 78.9 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3413.5 free,    183.8 used,    308.8 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3577.3 avail Mem
Thu 19 Dec 03:20:35 GMT 2019 top - 03:20:35 up 11,  2 users,  load average: 0.02, 0.03, 0.00
%Cpu0  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.0 us, 21.1 sy,  0.0 ni, 78.9 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3413.5 free,    183.8 used,    308.8 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3577.3 avail Mem
Thu 19 Dec 03:21:06 GMT 2019 top - 03:21:06 up 11,  2 users,  load average: 0.01, 0.03, 0.00
%Cpu0  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 15.8 us,  5.3 sy,  0.0 ni, 78.9 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3413.6 free,    183.6 used,    308.8 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3577.4 avail Mem
Thu 19 Dec 03:21:36 GMT 2019 top - 03:21:36 up 12,  2 users,  load average: 0.00, 0.03, 0.00
%Cpu0  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  5.6 us, 11.1 sy,  0.0 ni, 83.3 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3413.5 free,    183.8 used,    308.8 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3577.3 avail Mem
Thu 19 Dec 03:22:06 GMT 2019 top - 03:22:06 up 12,  2 users,  load average: 0.05, 0.04, 0.00
%Cpu0  :  0.0 us,  0.0 sy,  0.0 ni, 94.7 id,  0.0 wa,  0.0 hi,  5.3 si,  0.0 st
%Cpu1  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  5.3 us, 15.8 sy,  0.0 ni, 78.9 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3455.8 free,    136.9 used,    313.3 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3624.2 avail Mem
Thu 19 Dec 03:22:36 GMT 2019 top - 03:22:36 up 13,  2 users,  load average: 0.18, 0.07, 0.01
%Cpu0  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  5.3 us, 15.8 sy,  0.0 ni, 78.9 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3455.6 free,    137.1 used,    313.3 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3623.9 avail Mem
Thu 19 Dec 03:23:06 GMT 2019 top - 03:23:07 up 13,  2 users,  load average: 0.10, 0.06, 0.01
%Cpu0  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  5.3 us, 15.8 sy,  0.0 ni, 78.9 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3455.4 free,    137.4 used,    313.3 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3623.7 avail Mem
Thu 19 Dec 03:23:37 GMT 2019 top - 03:23:37 up 14,  2 users,  load average: 0.06, 0.05, 0.01
%Cpu0  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
```

```
%Cpu1  : 10.5 us, 10.5 sy,  0.0 ni, 78.9 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.0 us,  0.0 sy,  0.0 ni,100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.0 us,  0.0 sy,  0.0 ni,100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3455.8 free,    137.0 used,    313.3 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3624.1 avail Mem
Thu 19 Dec 03:24:07 GMT 2019 top - 03:24:07 up 14,  2 users,  load average: 0.04, 0.05, 0.00
%Cpu0  :  5.3 us,  0.0 sy,  0.0 ni, 94.7 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  5.3 us,  0.0 sy,  0.0 ni, 94.7 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.0 us, 16.7 sy,  0.0 ni, 83.3 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.0 us,  0.0 sy,  0.0 ni,100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3456.1 free,    136.6 used,    313.3 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3624.5 avail Mem
Thu 19 Dec 03:24:37 GMT 2019 top - 03:24:37 up 15,  2 users,  load average: 0.02, 0.04, 0.00
%Cpu0  :  0.0 us,  0.0 sy,  0.0 ni,100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.0 us,  0.0 sy,  0.0 ni,100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.0 us,  0.0 sy,  0.0 ni,100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  5.6 us, 11.1 sy,  0.0 ni, 83.3 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3456.4 free,    136.3 used,    313.3 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3624.8 avail Mem
Thu 19 Dec 03:25:07 GMT 2019 top - 03:25:08 up 15,  2 users,  load average: 0.01, 0.03, 0.00
%Cpu0  :  0.0 us,  0.0 sy,  0.0 ni,100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  5.3 us,  0.0 sy,  0.0 ni, 94.7 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  5.3 us, 15.8 sy,  0.0 ni, 78.9 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.0 us,  0.0 sy,  0.0 ni,100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3455.8 free,    136.1 used,    314.1 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3624.9 avail Mem
Thu 19 Dec 03:25:38 GMT 2019 top - 03:25:38 up 16,  2 users,  load average: 0.01, 0.03, 0.00
%Cpu0  :  0.0 us,  0.0 sy,  0.0 ni,100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.0 us,  0.0 sy,  0.0 ni,100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  5.3 us, 15.8 sy,  0.0 ni, 78.9 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.0 us,  0.0 sy,  0.0 ni,100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3455.7 free,    136.2 used,    314.2 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3624.8 avail Mem
Thu 19 Dec 03:26:08 GMT 2019 top - 03:26:08 up 16,  2 users,  load average: 0.00, 0.03, 0.00
%Cpu0  :  0.0 us,  0.0 sy,  0.0 ni,100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.0 us, 22.2 sy,  0.0 ni, 77.8 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.0 us,  0.0 sy,  0.0 ni,100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.0 us,  0.0 sy,  0.0 ni,100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3455.5 free,    136.3 used,    314.2 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3624.6 avail Mem
Thu 19 Dec 03:26:38 GMT 2019 top - 03:26:38 up 17,  2 users,  load average: 0.00, 0.02, 0.00
%Cpu0  :  0.0 us,  0.0 sy,  0.0 ni,100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.0 us,  0.0 sy,  0.0 ni,100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 15.8 us,  5.3 sy,  0.0 ni, 78.9 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.0 us,  0.0 sy,  0.0 ni,100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3455.6 free,    136.2 used,    314.2 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3624.8 avail Mem
Thu 19 Dec 03:27:08 GMT 2019 top - 03:27:08 up 17,  2 users,  load average: 0.00, 0.02, 0.00
%Cpu0  :  0.0 us,  5.3 sy,  0.0 ni, 94.7 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.0 us,  0.0 sy,  0.0 ni,100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 10.5 us, 10.5 sy,  0.0 ni, 78.9 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  5.3 us,  0.0 sy,  0.0 ni, 94.7 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3455.5 free,    136.3 used,    314.2 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3624.7 avail Mem
Thu 19 Dec 03:27:39 GMT 2019 top - 03:27:39 up 18,  2 users,  load average: 0.00, 0.02, 0.00
%Cpu0  :  0.0 us, 21.1 sy,  0.0 ni, 78.9 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.0 us,  0.0 sy,  0.0 ni,100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  5.0 us,  0.0 sy,  0.0 ni, 95.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
```

```
%Cpu3  :  0.0 us,  0.0 sy,  0.0 ni,100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3455.6 free,    136.2 used,    314.2 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3624.8 avail Mem
Thu 19 Dec 03:28:09 GMT 2019 top - 03:28:09 up 18,  2 users,  load average: 0.00, 0.01, 0.00
%Cpu0  :  0.0 us,  0.0 sy,  0.0 ni,100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.0 us,  0.0 sy,  0.0 ni,100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.0 us,  0.0 sy,  0.0 ni,100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 11.8 us,  5.9 sy,  0.0 ni, 82.4 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3455.1 free,    136.7 used,    314.2 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3624.3 avail Mem
Thu 19 Dec 03:28:39 GMT 2019 top - 03:28:39 up 19,  2 users,  load average: 0.00, 0.01, 0.00
%Cpu0  :  0.0 us,  0.0 sy,  0.0 ni,100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.0 us, 16.7 sy,  0.0 ni, 83.3 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.0 us,  0.0 sy,  0.0 ni,100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.0 us,  0.0 sy,  0.0 ni,100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3455.0 free,    136.8 used,    314.2 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3624.2 avail Mem
Thu 19 Dec 03:29:09 GMT 2019 top - 03:29:09 up 19,  2 users,  load average: 0.00, 0.01, 0.00
%Cpu0  :  0.0 us,  0.0 sy,  0.0 ni,100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.0 us,  0.0 sy,  0.0 ni,100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.0 us, 16.7 sy,  0.0 ni, 83.3 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.0 us,  0.0 sy,  0.0 ni,100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3455.0 free,    136.8 used,    314.2 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3624.2 avail Mem
Thu 19 Dec 03:29:39 GMT 2019 top - 03:29:40 up 20,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.0 us,  0.0 sy,  0.0 ni,100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.0 us,  0.0 sy,  0.0 ni,100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.0 us,  0.0 sy,  0.0 ni,100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  5.6 us, 11.1 sy,  0.0 ni, 83.3 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3455.1 free,    136.7 used,    314.2 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3624.3 avail Mem
Thu 19 Dec 03:30:10 GMT 2019 top - 03:30:10 up 20,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  5.6 us, 11.1 sy,  0.0 ni, 83.3 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.0 us,  0.0 sy,  0.0 ni,100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.0 us,  0.0 sy,  0.0 ni,100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.0 us,  0.0 sy,  0.0 ni,100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3454.6 free,    137.2 used,    314.3 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3623.8 avail Mem
Thu 19 Dec 03:30:40 GMT 2019 top - 03:30:40 up 21,  2 users,  load average: 0.07, 0.02, 0.00
%Cpu0  :  0.0 us,  0.0 sy,  0.0 ni,100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.0 us,  0.0 sy,  0.0 ni,100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 11.1 us,  5.6 sy,  0.0 ni, 83.3 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.0 us,  0.0 sy,  0.0 ni,100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3455.5 free,    136.3 used,    314.3 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3624.7 avail Mem
Thu 19 Dec 03:31:10 GMT 2019 top - 03:31:10 up 21,  2 users,  load average: 0.13, 0.04, 0.01
%Cpu0  :  0.0 us,  5.3 sy,  0.0 ni, 94.7 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 10.5 us, 10.5 sy,  0.0 ni, 78.9 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.0 us,  0.0 sy,  0.0 ni,100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.0 us,  0.0 sy,  0.0 ni,100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3454.8 free,    136.9 used,    314.3 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3624.1 avail Mem
Thu 19 Dec 03:31:40 GMT 2019 top - 03:31:41 up 22,  2 users,  load average: 0.08, 0.04, 0.01
%Cpu0  :  0.0 us,  0.0 sy,  0.0 ni,100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.0 us,  0.0 sy,  0.0 ni,100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.0 us, 21.1 sy,  0.0 ni, 78.9 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.0 us,  0.0 sy,  0.0 ni,100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3455.1 free,    136.7 used,    314.3 buff/cache
```

```
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3624.3 avail Mem
Thu 19 Dec 03:32:11 GMT 2019 top - 03:32:11 up 22,  2 users,  load average: 0.05, 0.03, 0.01
%Cpu0  :  5.3 us, 15.8 sy,  0.0 ni, 78.9 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3455.3 free,    136.4 used,    314.3 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3624.5 avail Mem
Thu 19 Dec 03:32:41 GMT 2019 top - 03:32:41 up 23,  2 users,  load average: 0.03, 0.03, 0.00
%Cpu0  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  5.6 us, 16.7 sy,  0.0 ni, 77.8 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3455.1 free,    136.6 used,    314.3 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3624.3 avail Mem
Thu 19 Dec 03:33:11 GMT 2019 top - 03:33:11 up 23,  2 users,  load average: 0.02, 0.02, 0.00
%Cpu0  :  5.6 us, 11.1 sy,  0.0 ni, 83.3 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3455.0 free,    136.8 used,    314.3 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3624.2 avail Mem
Thu 19 Dec 03:33:41 GMT 2019 top - 03:33:41 up 24,  2 users,  load average: 0.01, 0.02, 0.00
%Cpu0  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.0 us, 17.6 sy,  0.0 ni, 82.4 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3455.2 free,    136.5 used,    314.3 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3624.5 avail Mem
Thu 19 Dec 03:34:12 GMT 2019 top - 03:34:12 up 24,  2 users,  load average: 0.00, 0.02, 0.00
%Cpu0  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  5.6 us, 11.1 sy,  0.0 ni, 83.3 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3455.6 free,    136.1 used,    314.3 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3624.9 avail Mem
Thu 19 Dec 03:34:42 GMT 2019 top - 03:34:42 up 25,  2 users,  load average: 0.00, 0.02, 0.00
%Cpu0  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  5.6 us, 11.1 sy,  0.0 ni, 83.3 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3455.7 free,    136.0 used,    314.3 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3625.0 avail Mem
Thu 19 Dec 03:35:12 GMT 2019 top - 03:35:12 up 25,  2 users,  load average: 0.00, 0.01, 0.00
%Cpu0  : 11.1 us,  5.6 sy,  0.0 ni, 83.3 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3455.5 free,    136.2 used,    314.4 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3624.8 avail Mem
Thu 19 Dec 03:35:42 GMT 2019 top - 03:35:42 up 26,  2 users,  load average: 0.00, 0.01, 0.00
%Cpu0  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 10.5 us, 10.5 sy,  0.0 ni, 78.9 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3455.2 free,    136.5 used,    314.4 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3624.5 avail Mem
Thu 19 Dec 03:36:12 GMT 2019 top - 03:36:13 up 26,  2 users,  load average: 0.00, 0.01, 0.00
```

```
%Cpu0  : 15.8 us,  5.3 sy,  0.0 ni, 78.9 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3454.9 free,    136.8 used,    314.4 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3624.2 avail Mem
Thu 19 Dec 03:36:43 GMT 2019 top - 03:36:43 up 27,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  5.3 us, 15.8 sy,  0.0 ni, 78.9 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3455.1 free,    136.6 used,    314.4 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3624.4 avail Mem
Thu 19 Dec 03:37:13 GMT 2019 top - 03:37:13 up 27,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  : 10.5 us, 10.5 sy,  0.0 ni, 78.9 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3455.3 free,    136.3 used,    314.4 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3624.7 avail Mem
Thu 19 Dec 03:37:43 GMT 2019 top - 03:37:43 up 28,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.0 us, 21.1 sy,  0.0 ni, 78.9 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3455.0 free,    136.7 used,    314.4 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3624.3 avail Mem
Thu 19 Dec 03:38:13 GMT 2019 top - 03:38:14 up 28,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  5.6 us, 16.7 sy,  0.0 ni, 77.8 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3455.2 free,    136.4 used,    314.4 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3624.6 avail Mem
Thu 19 Dec 03:38:44 GMT 2019 top - 03:38:44 up 29,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  5.3 us, 15.8 sy,  0.0 ni, 78.9 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3455.5 free,    136.2 used,    314.4 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3624.8 avail Mem
Thu 19 Dec 03:39:14 GMT 2019 top - 03:39:14 up 29,  2 users,  load average: 0.05, 0.01, 0.00
%Cpu0  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  5.3 us, 15.8 sy,  0.0 ni, 78.9 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3454.7 free,    136.9 used,    314.4 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3624.1 avail Mem
Thu 19 Dec 03:39:44 GMT 2019 top - 03:39:44 up 30,  2 users,  load average: 0.03, 0.01, 0.00
%Cpu0  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.0 us, 16.7 sy,  0.0 ni, 83.3 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3454.8 free,    136.8 used,    314.4 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3624.2 avail Mem
Thu 19 Dec 03:40:14 GMT 2019 top - 03:40:14 up 30,  2 users,  load average: 0.02, 0.01, 0.00
%Cpu0  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.0 us, 16.7 sy,  0.0 ni, 83.3 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
```

```
%Cpu2  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3455.4 free,    136.1 used,    314.5 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3624.8 avail Mem
Thu 19 Dec 03:40:45 GMT 2019 top - 03:40:45 up 31,  2 users,  load average: 0.01, 0.01, 0.00
%Cpu0  :  0.0 us, 21.1 sy,  0.0 ni, 78.9 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3454.9 free,    136.6 used,    314.5 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3624.3 avail Mem
Thu 19 Dec 03:41:15 GMT 2019 top - 03:41:15 up 31,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  5.3 us, 15.8 sy,  0.0 ni, 78.9 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3455.0 free,    136.6 used,    314.5 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3624.4 avail Mem
Thu 19 Dec 03:41:45 GMT 2019 top - 03:41:45 up 32,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  5.0 us, 20.0 sy,  0.0 ni, 75.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3455.3 free,    136.2 used,    314.5 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3624.7 avail Mem
Thu 19 Dec 03:42:15 GMT 2019 top - 03:42:15 up 32,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  : 10.5 us, 10.5 sy,  0.0 ni, 78.9 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.0 us,  5.0 sy,  0.0 ni, 95.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  5.3 us,  0.0 sy,  0.0 ni, 94.7 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3455.1 free,    136.5 used,    314.5 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3624.5 avail Mem
Thu 19 Dec 03:42:45 GMT 2019 top - 03:42:46 up 33,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 21.1 us,  0.0 sy,  0.0 ni, 78.9 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3455.3 free,    136.2 used,    314.5 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3624.7 avail Mem
Thu 19 Dec 03:43:16 GMT 2019 top - 03:43:16 up 33,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  5.3 us, 15.8 sy,  0.0 ni, 78.9 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3455.3 free,    136.2 used,    314.5 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3624.8 avail Mem
Thu 19 Dec 03:43:46 GMT 2019 top - 03:43:46 up 34,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.0 us,  5.3 sy,  0.0 ni, 94.7 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  5.6 us, 16.7 sy,  0.0 ni, 77.8 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.0 us,  5.3 sy,  0.0 ni, 94.7 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.0 us,  5.3 sy,  0.0 ni, 94.7 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3454.8 free,    136.7 used,    314.5 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3624.3 avail Mem
Thu 19 Dec 03:44:16 GMT 2019 top - 03:44:16 up 34,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.0 us, 11.8 sy,  0.0 ni, 88.2 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
```

```
MiB Mem :   3906.0 total,   3454.4 free,    137.1 used,    314.5 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3623.9 avail Mem
Thu 19 Dec 03:44:46 GMT 2019 top - 03:44:47 up 35,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 10.5 us, 10.5 sy,  0.0 ni,  78.9 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3455.4 free,    136.1 used,    314.5 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3624.9 avail Mem
Thu 19 Dec 03:45:17 GMT 2019 top - 03:45:17 up 35,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  5.6 us, 16.7 sy,  0.0 ni,  77.8 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3455.3 free,    136.2 used,    314.5 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3624.8 avail Mem
Thu 19 Dec 03:45:47 GMT 2019 top - 03:45:47 up 36,  2 users,  load average: 0.00, 0.00, 0.00
%Cpu0  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  5.3 us, 15.8 sy,  0.0 ni,  78.9 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3455.1 free,    136.4 used,    314.6 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3624.6 avail Mem
Thu 19 Dec 03:46:17 GMT 2019 top - 03:46:17 up 36,  2 users,  load average: 0.37, 0.08, 0.03
%Cpu0  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.0 us, 22.2 sy,  0.0 ni,  77.8 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3454.6 free,    136.9 used,    314.6 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3624.1 avail Mem
Thu 19 Dec 03:46:47 GMT 2019 top - 03:46:47 up 37,  2 users,  load average: 0.22, 0.07, 0.02
%Cpu0  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 10.5 us, 10.5 sy,  0.0 ni,  78.9 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3454.8 free,    136.6 used,    314.6 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3624.3 avail Mem
Thu 19 Dec 03:47:18 GMT 2019 top - 03:47:18 up 37,  2 users,  load average: 0.19, 0.08, 0.03
%Cpu0  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  5.6 us, 11.1 sy,  0.0 ni,  83.3 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3454.6 free,    136.9 used,    314.6 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3624.1 avail Mem
Thu 19 Dec 03:47:48 GMT 2019 top - 03:47:48 up 38,  2 users,  load average: 0.18, 0.09, 0.03
%Cpu0  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 16.7 us,  0.0 sy,  0.0 ni,  83.3 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3454.9 free,    136.5 used,    314.6 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3624.5 avail Mem
Thu 19 Dec 03:48:18 GMT 2019 top - 03:48:18 up 38,  2 users,  load average: 0.11, 0.08, 0.03
%Cpu0  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  5.3 us, 15.8 sy,  0.0 ni,  78.9 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3454.2 free,    137.2 used,    314.6 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3623.7 avail Mem
```

```
Thu 19 Dec 03:48:48 GMT 2019 top - 03:48:48 up 39,  2 users,  load average: 0.06, 0.07, 0.02
%Cpu0  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 10.5 us, 10.5 sy,  0.0 ni, 78.9 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :  3906.0 total,  3454.5 free,   137.0 used,   314.6 buff/cache
MiB Swap:   100.0 total,   100.0 free,     0.0 used.  3624.0 avail Mem
Thu 19 Dec 03:49:18 GMT 2019 top - 03:49:19 up 39,  2 users,  load average: 0.04, 0.06, 0.02
%Cpu0  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 15.8 us,  5.3 sy,  0.0 ni, 78.9 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :  3906.0 total,  3454.8 free,   136.6 used,   314.6 buff/cache
MiB Swap:   100.0 total,   100.0 free,     0.0 used.  3624.4 avail Mem
Thu 19 Dec 03:49:49 GMT 2019 top - 03:49:49 up 40,  2 users,  load average: 0.02, 0.05, 0.02
%Cpu0  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  5.3 us, 15.8 sy,  0.0 ni, 78.9 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :  3906.0 total,  3454.9 free,   136.5 used,   314.6 buff/cache
MiB Swap:   100.0 total,   100.0 free,     0.0 used.  3624.5 avail Mem
Thu 19 Dec 03:50:19 GMT 2019 top - 03:50:19 up 40,  2 users,  load average: 0.01, 0.05, 0.01
%Cpu0  :  0.0 us,  5.6 sy,  0.0 ni, 94.4 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.0 us,  5.3 sy,  0.0 ni, 94.7 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 10.5 us, 10.5 sy,  0.0 ni, 78.9 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :  3906.0 total,  3454.7 free,   136.7 used,   314.6 buff/cache
MiB Swap:   100.0 total,   100.0 free,     0.0 used.  3624.2 avail Mem
Thu 19 Dec 03:50:49 GMT 2019 top - 03:50:49 up 41,  2 users,  load average: 0.01, 0.04, 0.01
%Cpu0  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 10.5 us, 10.5 sy,  0.0 ni, 78.9 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  5.0 us,  0.0 sy,  0.0 ni, 95.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  5.3 us,  0.0 sy,  0.0 ni, 94.7 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :  3906.0 total,  3454.5 free,   136.9 used,   314.6 buff/cache
MiB Swap:   100.0 total,   100.0 free,     0.0 used.  3624.1 avail Mem
Thu 19 Dec 03:51:19 GMT 2019 top - 03:51:20 up 41,  2 users,  load average: 0.00, 0.04, 0.01
%Cpu0  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 15.8 us,  5.3 sy,  0.0 ni, 78.9 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :  3906.0 total,  3454.3 free,   137.1 used,   314.7 buff/cache
MiB Swap:   100.0 total,   100.0 free,     0.0 used.  3623.9 avail Mem
Thu 19 Dec 03:51:50 GMT 2019 top - 03:51:50 up 42,  2 users,  load average: 0.00, 0.03, 0.01
%Cpu0  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  5.3 us, 15.8 sy,  0.0 ni, 78.9 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :  3906.0 total,  3454.4 free,   137.0 used,   314.7 buff/cache
MiB Swap:   100.0 total,   100.0 free,     0.0 used.  3624.0 avail Mem
Thu 19 Dec 03:52:20 GMT 2019 top - 03:52:20 up 42,  2 users,  load average: 0.00, 0.03, 0.00
%Cpu0  :  5.3 us, 15.8 sy,  0.0 ni, 78.9 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :  3906.0 total,  3454.9 free,   136.4 used,   314.7 buff/cache
MiB Swap:   100.0 total,   100.0 free,     0.0 used.  3624.5 avail Mem
Thu 19 Dec 03:52:50 GMT 2019 top - 03:52:50 up 43,  2 users,  load average: 0.00, 0.02, 0.00
%Cpu0  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
```

```
%Cpu1  :  5.6 us, 16.7 sy,  0.0 ni, 77.8 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3454.9 free,    136.5 used,    314.7 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3624.5 avail Mem
Thu 19 Dec 03:53:20 GMT 2019 top - 03:53:20 up 43,  2 users,  load average: 0.00, 0.02, 0.00
%Cpu0  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  5.6 us, 11.1 sy,  0.0 ni, 83.3 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3454.8 free,    136.6 used,    314.7 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3624.4 avail Mem
Thu 19 Dec 03:53:51 GMT 2019 top - 03:53:51 up 44,  2 users,  load average: 0.00, 0.02, 0.00
%Cpu0  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.0 us, 16.7 sy,  0.0 ni, 83.3 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3454.8 free,    136.6 used,    314.7 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3624.4 avail Mem
```

Prueba con carga

```
Anexos/raspi4_con_carga.txt
```

```
Thu 19 Dec 06:11:07 GMT 2019 top - 06:11:07 up 3,  2 users,  load average: 0.15, 0.10, 0.04
%Cpu0  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 10.0 us, 20.0 sy,  0.0 ni, 70.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.0 us,  5.6 sy,  0.0 ni, 94.4 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  5.3 us,  5.3 sy,  0.0 ni, 89.5 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3594.4 free,    138.8 used,    172.8 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3640.3 avail Mem
Thu 19 Dec 06:11:37 GMT 2019 top - 06:11:38 up 4,  2 users,  load average: 0.09, 0.09, 0.04
%Cpu0  :  5.3 us, 15.8 sy,  0.0 ni, 78.9 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3594.1 free,    139.0 used,    172.9 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3640.1 avail Mem
Thu 19 Dec 06:12:08 GMT 2019 top - 06:12:08 up 4,  2 users,  load average: 0.05, 0.08, 0.03
%Cpu0  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  :  5.3 us, 15.8 sy,  0.0 ni, 78.9 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3592.2 free,    139.7 used,    174.1 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3639.3 avail Mem
Thu 19 Dec 06:12:38 GMT 2019 top - 06:12:38 up 5,  2 users,  load average: 0.89, 0.27, 0.10
%Cpu0  : 70.0 us, 30.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 93.8 us,  6.2 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 60.0 us, 40.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 45.5 us, 36.4 sy,  0.0 ni, 18.2 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3194.7 free,    288.8 used,    422.5 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3486.8 avail Mem
Thu 19 Dec 06:13:08 GMT 2019 top - 06:13:08 up 5,  2 users,  load average: 2.11, 0.63, 0.22
%Cpu0  : 23.1 us, 76.9 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
```

```
%Cpu1  : 100.0 us,  0.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 27.3 us, 72.7 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 25.0 us, 66.7 sy,  0.0 ni,  8.3 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3167.0 free,    290.0 used,    449.1 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3485.1 avail Mem
Thu 19 Dec 06:13:38 GMT 2019 top - 06:13:38 up 6,  2 users,  load average: 3.00, 0.98, 0.35
%Cpu0  : 25.0 us, 75.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 100.0 us,  0.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 50.0 us, 50.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 36.4 us, 63.6 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3138.9 free,    291.5 used,    475.6 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3483.0 avail Mem
Thu 19 Dec 06:14:08 GMT 2019 top - 06:14:09 up 6,  2 users,  load average: 3.59, 1.32, 0.49
%Cpu0  : 30.8 us, 69.2 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 100.0 us,  0.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 66.7 us, 33.3 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 22.2 us, 77.8 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3111.9 free,    291.9 used,    502.2 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3482.0 avail Mem
Thu 19 Dec 06:14:39 GMT 2019 top - 06:14:39 up 7,  2 users,  load average: 3.82, 1.59, 0.61
%Cpu0  : 46.2 us, 53.8 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 94.1 us,  5.9 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 41.7 us, 58.3 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 15.4 us, 46.2 sy,  0.0 ni, 38.5 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3085.6 free,    292.1 used,    528.3 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3481.5 avail Mem
Thu 19 Dec 06:15:09 GMT 2019 top - 06:15:09 up 7,  2 users,  load average: 3.98, 1.84, 0.72
%Cpu0  : 61.5 us, 38.5 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 38.5 us, 61.5 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 94.4 us,  5.6 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 54.5 us, 45.5 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3058.3 free,    292.9 used,    554.9 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3480.2 avail Mem
Thu 19 Dec 06:15:39 GMT 2019 top - 06:15:39 up 8,  2 users,  load average: 4.29, 2.13, 0.85
%Cpu0  : 33.3 us, 66.7 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 100.0 us,  0.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 57.1 us, 42.9 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 62.5 us, 37.5 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   2997.8 free,    294.1 used,    614.1 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3478.3 avail Mem
Thu 19 Dec 06:16:09 GMT 2019 top - 06:16:10 up 8,  2 users,  load average: 4.56, 2.40, 0.99
%Cpu0  : 100.0 us,  0.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 58.3 us, 41.7 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 35.7 us, 64.3 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 16.7 us, 83.3 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   2971.3 free,    294.2 used,    640.5 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3477.6 avail Mem
Thu 19 Dec 06:16:40 GMT 2019 top - 06:16:40 up 9,  2 users,  load average: 4.80, 2.67, 1.12
%Cpu0  : 100.0 us,  0.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 58.3 us, 41.7 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 77.8 us, 22.2 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 30.0 us, 70.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   2944.5 free,    294.6 used,    666.9 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3476.7 avail Mem
Thu 19 Dec 06:17:10 GMT 2019 top - 06:17:10 up 9,  2 users,  load average: 4.56, 2.81, 1.22
%Cpu0  : 100.0 us,  0.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 50.0 us, 50.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 62.5 us, 37.5 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
```

```
%Cpu3  : 25.0 us, 75.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   2915.6 free,    296.7 used,    693.7 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3474.0 avail Mem
Thu 19 Dec 06:17:40 GMT 2019 top - 06:17:40 up 10,  2 users,  load average: 4.48, 2.96, 1.32
%Cpu0  : 50.0 us, 50.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 70.0 us, 30.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 100.0 us,  0.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 63.6 us, 36.4 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   2889.4 free,    296.9 used,    719.8 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3473.5 avail Mem
Thu 19 Dec 06:18:10 GMT 2019 top - 06:18:11 up 10,  2 users,  load average: 4.40, 3.09, 1.42
%Cpu0  : 100.0 us,  0.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 54.5 us, 27.3 sy,  0.0 ni, 18.2 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 54.5 us, 45.5 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 58.3 us, 41.7 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   2862.3 free,    297.3 used,    746.4 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3472.5 avail Mem
Thu 19 Dec 06:18:41 GMT 2019 top - 06:18:41 up 11,  2 users,  load average: 4.29, 3.19, 1.50
%Cpu0  : 40.0 us, 60.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 60.0 us, 40.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 100.0 us,  0.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 78.6 us, 21.4 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   2835.7 free,    297.8 used,    772.5 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3471.4 avail Mem
Thu 19 Dec 06:19:11 GMT 2019 top - 06:19:11 up 12,  2 users,  load average: 4.62, 3.37, 1.62
%Cpu0  : 50.0 us, 50.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 30.8 us, 69.2 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 100.0 us,  0.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 53.3 us, 46.7 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   2809.0 free,    298.2 used,    798.8 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3470.5 avail Mem
Thu 19 Dec 06:19:41 GMT 2019 top - 06:19:41 up 12,  2 users,  load average: 4.63, 3.50, 1.72
%Cpu0  : 63.6 us, 36.4 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 46.7 us, 53.3 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 94.4 us,  5.6 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 40.0 us, 60.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   2781.3 free,    299.2 used,    825.5 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3469.0 avail Mem
Thu 19 Dec 06:20:11 GMT 2019 top - 06:20:11 up 13,  2 users,  load average: 4.60, 3.59, 1.81
%Cpu0  : 36.4 us, 63.6 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 58.3 us, 41.7 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 100.0 us,  0.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 33.3 us, 50.0 sy,  0.0 ni, 16.7 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   2754.6 free,    299.5 used,    851.9 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3468.3 avail Mem
Thu 19 Dec 06:20:41 GMT 2019 top - 06:20:42 up 13,  2 users,  load average: 4.43, 3.65, 1.88
%Cpu0  : 33.3 us, 66.7 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 100.0 us,  0.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 50.0 us, 30.0 sy,  0.0 ni, 20.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 36.4 us, 63.6 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   2727.4 free,    300.3 used,    878.4 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3467.0 avail Mem
Thu 19 Dec 06:21:12 GMT 2019 top - 06:21:12 up 14,  2 users,  load average: 4.52, 3.75, 1.97
%Cpu0  : 83.3 us, 16.7 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 89.5 us, 10.5 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 37.5 us, 62.5 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 33.3 us, 66.7 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   2700.8 free,    300.6 used,    904.6 buff/cache
```

```
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3466.2 avail Mem
Thu 19 Dec 06:21:42 GMT 2019 top - 06:21:42 up 14,  2 users,  load average: 4.39, 3.79, 2.04
%Cpu0  : 20.0 us, 80.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 58.3 us, 41.7 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 41.7 us, 58.3 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 94.4 us,  5.6 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :  3906.0 total,  2674.8 free,    300.2 used,    931.1 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3466.0 avail Mem
Thu 19 Dec 06:22:12 GMT 2019 top - 06:22:12 up 15,  2 users,  load average: 4.11, 3.78, 2.10
%Cpu0  : 77.8 us, 22.2 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 30.0 us, 70.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 100.0 us,  0.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 41.7 us, 58.3 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :  3906.0 total,  2647.3 free,    301.2 used,    957.6 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3464.4 avail Mem
Thu 19 Dec 06:22:42 GMT 2019 top - 06:22:43 up 15,  2 users,  load average: 4.23, 3.83, 2.17
%Cpu0  : 66.7 us, 33.3 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 41.7 us, 58.3 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 100.0 us,  0.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 57.1 us, 42.9 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :  3906.0 total,  2619.9 free,    302.0 used,    984.1 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3463.2 avail Mem
Thu 19 Dec 06:23:13 GMT 2019 top - 06:23:13 up 16,  2 users,  load average: 4.16, 3.85, 2.24
%Cpu0  : 72.7 us, 27.3 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 26.3 us, 52.6 sy,  0.0 ni, 21.1 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 85.0 us, 15.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 78.6 us, 21.4 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :  3906.0 total,  2592.8 free,    302.5 used,   1010.7 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3462.1 avail Mem
Thu 19 Dec 06:23:43 GMT 2019 top - 06:23:43 up 16,  2 users,  load average: 4.10, 3.86, 2.29
%Cpu0  : 50.0 us, 50.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 100.0 us,  0.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 41.7 us, 58.3 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 50.0 us, 50.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :  3906.0 total,  2565.7 free,    303.5 used,   1036.8 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3460.8 avail Mem
Thu 19 Dec 06:24:13 GMT 2019 top - 06:24:13 up 17,  2 users,  load average: 4.61, 3.99, 2.38
%Cpu0  : 83.3 us, 16.7 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 22.2 us, 77.8 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 41.7 us, 58.3 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 45.5 us, 54.5 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :  3906.0 total,  2047.0 free,    384.1 used,   1475.0 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3379.6 avail Mem
Thu 19 Dec 06:24:43 GMT 2019 top - 06:24:44 up 17,  2 users,  load average: 4.11, 3.92, 2.41
%Cpu0  : 100.0 us,  0.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 63.6 us, 36.4 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 46.7 us, 40.0 sy,  0.0 ni, 13.3 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 35.7 us, 64.3 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :  3906.0 total,  1224.0 free,    417.3 used,   2264.8 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3346.2 avail Mem
Thu 19 Dec 06:25:14 GMT 2019 top - 06:25:14 up 18,  2 users,  load average: 4.22, 3.97, 2.48
%Cpu0  : 28.6 us, 57.1 sy,  0.0 ni,  7.1 id,  0.0 wa,  0.0 hi,  7.1 si,  0.0 st
%Cpu1  : 25.0 us, 58.3 sy,  0.0 ni, 16.7 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 55.6 us, 44.4 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 93.3 us,  0.0 sy,  0.0 ni,  6.7 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :  3906.0 total,   417.8 free,    428.4 used,   3059.8 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3334.6 avail Mem
Thu 19 Dec 06:25:44 GMT 2019 top - 06:25:44 up 18,  2 users,  load average: 3.94, 3.92, 2.51
```

```
%Cpu0  : 30.8 us, 69.2 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 46.7 us, 53.3 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 81.8 us,  9.1 sy,  0.0 ni,  9.1 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 36.4 us, 40.9 sy,  0.0 ni, 22.7 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,    274.1 free,    429.1 used,   3202.9 buff/cache
MiB Swap:    100.0 total,     99.7 free,      0.2 used.   3334.7 avail Mem
Thu 19 Dec 06:26:14 GMT 2019 top - 06:26:14 up 19,  2 users,  load average: 3.87, 3.90, 2.55
%Cpu0  : 100.0 us,  0.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 20.0 us, 50.0 sy,  0.0 ni, 30.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 63.6 us, 27.3 sy,  0.0 ni,  9.1 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 70.0 us, 30.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,    265.1 free,    419.9 used,   3221.0 buff/cache
MiB Swap:    100.0 total,     99.2 free,      0.8 used.   3343.9 avail Mem
Thu 19 Dec 06:26:44 GMT 2019 top - 06:26:45 up 19,  2 users,  load average: 3.76, 3.88, 2.59
%Cpu0  : 100.0 us,  0.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 44.4 us, 55.6 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 18.2 us, 81.8 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 22.2 us, 77.8 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,    270.6 free,    429.0 used,   3206.4 buff/cache
MiB Swap:    100.0 total,     99.0 free,      1.0 used.   3334.4 avail Mem
Thu 19 Dec 06:27:15 GMT 2019 top - 06:27:15 up 20,  2 users,  load average: 3.83, 3.89, 2.63
%Cpu0  : 30.0 us, 40.0 sy,  0.0 ni, 30.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 100.0 us,  0.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 46.2 us, 53.8 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 40.0 us, 60.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,    282.0 free,    427.1 used,   3196.9 buff/cache
MiB Swap:    100.0 total,     98.7 free,      1.2 used.   3336.3 avail Mem
Thu 19 Dec 06:27:45 GMT 2019 top - 06:27:45 up 20,  2 users,  load average: 4.08, 3.92, 2.68
%Cpu0  : 66.7 us, 33.3 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 12.5 us, 87.5 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 35.3 us,  5.9 sy,  0.0 ni, 58.8 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 64.7 us,  5.9 sy,  0.0 ni, 29.4 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,    272.8 free,    428.6 used,   3204.6 buff/cache
MiB Swap:    100.0 total,     98.2 free,      1.8 used.   3334.8 avail Mem
Thu 19 Dec 06:28:15 GMT 2019 top - 06:28:15 up 21,  2 users,  load average: 4.06, 3.93, 2.73
%Cpu0  : 61.5 us, 23.1 sy,  0.0 ni, 15.4 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 50.0 us, 50.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 57.1 us, 35.7 sy,  0.0 ni,  7.1 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 100.0 us,  0.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,    272.0 free,    425.3 used,   3208.8 buff/cache
MiB Swap:    100.0 total,     98.0 free,      2.0 used.   3337.7 avail Mem
Thu 19 Dec 06:28:45 GMT 2019 top - 06:28:45 up 21,  2 users,  load average: 3.68, 3.86, 2.74
%Cpu0  : 27.8 us, 61.1 sy,  0.0 ni, 11.1 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 73.3 us, 20.0 sy,  0.0 ni,  6.7 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 55.6 us, 44.4 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 57.1 us, 28.6 sy,  0.0 ni, 14.3 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,    297.6 free,    428.1 used,   3180.4 buff/cache
MiB Swap:    100.0 total,     97.7 free,      2.2 used.   3335.1 avail Mem
Thu 19 Dec 06:42:14 GMT 2019 top - 06:42:14 up 3,  2 users,  load average: 0.14, 0.11, 0.04
%Cpu0  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 10.0 us, 15.0 sy,  0.0 ni, 75.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3596.3 free,    136.1 used,    173.7 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3643.0 avail Mem
Thu 19 Dec 06:42:44 GMT 2019 top - 06:42:44 up 3,  2 users,  load average: 1.73, 0.49, 0.17
%Cpu0  : 100.0 us,  0.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 63.6 us, 27.3 sy,  0.0 ni,  9.1 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
```

```
%Cpu2  : 70.0 us, 30.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 46.2 us, 53.8 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3191.4 free,    286.4 used,    428.3 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3489.1 avail Mem
Thu 19 Dec 06:43:14 GMT 2019 top - 06:43:14 up 4,  2 users,  load average: 2.84, 0.87, 0.31
%Cpu0  : 100.0 us,  0.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 44.4 us, 55.6 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 58.3 us, 41.7 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 41.7 us, 58.3 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3163.1 free,    288.0 used,    454.9 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3487.1 avail Mem
Thu 19 Dec 06:43:44 GMT 2019 top - 06:43:45 up 4,  2 users,  load average: 3.55, 1.24, 0.45
%Cpu0  : 70.0 us, 30.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 50.0 us, 50.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 53.8 us, 46.2 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 100.0 us,  0.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3135.5 free,    288.8 used,    481.7 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3485.7 avail Mem
Thu 19 Dec 06:44:15 GMT 2019 top - 06:44:15 up 5,  2 users,  load average: 3.92, 1.55, 0.58
%Cpu0  : 41.7 us, 58.3 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 77.8 us, 22.2 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 57.1 us, 42.9 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 100.0 us,  0.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3108.7 free,    289.2 used,    508.2 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3484.9 avail Mem
Thu 19 Dec 06:44:45 GMT 2019 top - 06:44:45 up 5,  2 users,  load average: 4.22, 1.85, 0.71
%Cpu0  : 37.5 us, 62.5 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 22.2 us, 77.8 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.0 us, 11.8 sy,  0.0 ni, 88.2 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 70.0 us, 30.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3178.5 free,    188.2 used,    539.4 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3585.1 avail Mem
Thu 19 Dec 06:45:15 GMT 2019 top - 06:45:15 up 6,  2 users,  load average: 2.96, 1.78, 0.72
%Cpu0  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 11.1 us,  5.6 sy,  0.0 ni, 83.3 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  0.0 us,  0.0 sy,  0.0 ni, 100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3216.0 free,    138.6 used,    551.4 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3634.7 avail Mem
Thu 19 Dec 06:45:45 GMT 2019 top - 06:45:46 up 6,  2 users,  load average: 2.18, 1.69, 0.73
%Cpu0  : 64.3 us, 35.7 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 100.0 us,  0.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 50.0 us, 50.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 53.8 us, 46.2 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3058.4 free,    291.4 used,    556.2 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3481.8 avail Mem
Thu 19 Dec 06:46:16 GMT 2019 top - 06:46:16 up 7,  2 users,  load average: 3.28, 2.00, 0.86
%Cpu0  : 45.5 us, 54.5 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 58.3 us, 41.7 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 46.2 us, 53.8 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 94.4 us,  5.6 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   3030.8 free,    292.3 used,    583.0 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3480.2 avail Mem
Thu 19 Dec 06:46:46 GMT 2019 top - 06:46:46 up 7,  2 users,  load average: 3.60, 2.20, 0.97
%Cpu0  : 50.0 us, 33.3 sy,  0.0 ni, 16.7 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 62.5 us, 37.5 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 100.0 us,  0.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 66.7 us, 33.3 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
```

```
MiB Mem :   3906.0 total,    3003.2 free,     293.5 used,     609.4 buff/cache
MiB Swap:    100.0 total,     100.0 free,       0.0 used.    3478.7 avail Mem
Thu 19 Dec 06:47:16 GMT 2019 top - 06:47:16 up 8,  2 users,  load average: 3.83, 2.41, 1.08
%Cpu0  : 75.0 us, 25.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 27.3 us, 63.6 sy,  0.0 ni,  0.0 id,  9.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 100.0 us,  0.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 71.4 us, 28.6 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,    2975.6 free,     294.7 used,     635.7 buff/cache
MiB Swap:    100.0 total,     100.0 free,       0.0 used.    3476.9 avail Mem
Thu 19 Dec 06:47:46 GMT 2019 top - 06:47:46 up 8,  2 users,  load average: 4.21, 2.64, 1.20
%Cpu0  : 50.0 us, 50.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 30.0 us, 70.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 100.0 us,  0.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 18.2 us, 72.7 sy,  0.0 ni,  9.1 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,    2948.7 free,     294.6 used,     662.7 buff/cache
MiB Swap:    100.0 total,     100.0 free,       0.0 used.    3476.5 avail Mem
Thu 19 Dec 06:48:16 GMT 2019 top - 06:48:17 up 9,  2 users,  load average: 4.16, 2.77, 1.29
%Cpu0  : 63.6 us, 27.3 sy,  0.0 ni,  0.0 id,  9.1 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 54.5 us, 45.5 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 100.0 us,  0.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 50.0 us, 50.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,    2921.3 free,     295.7 used,     689.0 buff/cache
MiB Swap:    100.0 total,     100.0 free,       0.0 used.    3474.9 avail Mem
Thu 19 Dec 06:48:47 GMT 2019 top - 06:48:47 up 9,  2 users,  load average: 4.29, 2.94, 1.39
%Cpu0  : 58.3 us, 41.7 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 63.6 us, 36.4 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 88.9 us, 11.1 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 72.7 us, 27.3 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,    2894.5 free,     296.3 used,     715.2 buff/cache
MiB Swap:    100.0 total,     100.0 free,       0.0 used.    3473.9 avail Mem
Thu 19 Dec 06:49:17 GMT 2019 top - 06:49:17 up 10,  2 users,  load average: 4.48, 3.13, 1.52
%Cpu0  : 57.1 us, 42.9 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 60.0 us, 40.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 100.0 us,  0.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 58.8 us, 41.2 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,    2867.9 free,     296.6 used,     741.6 buff/cache
MiB Swap:    100.0 total,     100.0 free,       0.0 used.    3473.0 avail Mem
Thu 19 Dec 06:49:47 GMT 2019 top - 06:49:47 up 10,  2 users,  load average: 4.36, 3.23, 1.60
%Cpu0  : 50.0 us, 50.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 75.0 us, 25.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 100.0 us,  0.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 42.9 us, 57.1 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,    2841.3 free,     296.9 used,     767.8 buff/cache
MiB Swap:    100.0 total,     100.0 free,       0.0 used.    3472.1 avail Mem
Thu 19 Dec 06:50:17 GMT 2019 top - 06:50:18 up 11,  2 users,  load average: 4.32, 3.33, 1.68
%Cpu0  : 41.7 us, 58.3 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 28.6 us, 71.4 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 94.1 us,  5.9 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 63.6 us, 36.4 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,    2813.8 free,     297.9 used,     794.3 buff/cache
MiB Swap:    100.0 total,     100.0 free,       0.0 used.    3470.6 avail Mem
Thu 19 Dec 06:50:48 GMT 2019 top - 06:50:48 up 11,  2 users,  load average: 4.26, 3.41, 1.77
%Cpu0  : 60.0 us, 40.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 33.3 us, 13.3 sy,  0.0 ni, 53.3 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 100.0 us,  0.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 33.3 us, 66.7 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,    2786.9 free,     298.4 used,     820.7 buff/cache
MiB Swap:    100.0 total,     100.0 free,       0.0 used.    3469.7 avail Mem
```

```
Thu 19 Dec 06:51:18 GMT 2019 top - 06:51:18 up 12,  2 users,  load average: 4.61, 3.58, 1.87
%Cpu0  : 36.4 us, 63.6 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 33.3 us, 66.7 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 94.4 us,  5.6 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 30.8 us, 69.2 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   2760.0 free,    299.1 used,    847.0 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3468.5 avail Mem
Thu 19 Dec 06:51:48 GMT 2019 top - 06:51:48 up 12,  2 users,  load average: 4.23, 3.58, 1.93
%Cpu0  : 46.7 us, 46.7 sy,  0.0 ni,  0.0 id,  6.7 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 46.2 us, 53.8 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 100.0 us,  0.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 50.0 us, 50.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   2733.2 free,    299.4 used,    873.5 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3467.7 avail Mem
Thu 19 Dec 06:52:18 GMT 2019 top - 06:52:19 up 13,  2 users,  load average: 4.12, 3.62, 2.00
%Cpu0  : 42.9 us, 35.7 sy,  0.0 ni, 21.4 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 46.7 us, 53.3 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 94.4 us,  5.6 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 90.9 us,  9.1 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   2705.6 free,    300.7 used,    899.8 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3465.9 avail Mem
Thu 19 Dec 06:52:49 GMT 2019 top - 06:52:49 up 13,  2 users,  load average: 4.11, 3.68, 2.07
%Cpu0  : 94.4 us,  5.6 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 61.5 us, 38.5 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 62.5 us, 37.5 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 50.0 us, 50.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   2679.3 free,    301.2 used,    925.5 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3465.0 avail Mem
Thu 19 Dec 06:53:19 GMT 2019 top - 06:53:19 up 14,  2 users,  load average: 4.06, 3.71, 2.13
%Cpu0  : 100.0 us,  0.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 58.3 us, 41.7 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 54.5 us, 45.5 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 44.4 us, 55.6 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   2651.9 free,    302.0 used,    952.2 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3463.6 avail Mem
Thu 19 Dec 06:53:49 GMT 2019 top - 06:53:49 up 14,  2 users,  load average: 4.29, 3.80, 2.21
%Cpu0  : 100.0 us,  0.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 30.0 us, 70.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 62.5 us, 37.5 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 45.5 us, 54.5 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   2625.3 free,    302.6 used,    978.2 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3462.5 avail Mem
Thu 19 Dec 06:54:19 GMT 2019 top - 06:54:20 up 15,  2 users,  load average: 4.43, 3.88, 2.29
%Cpu0  : 80.0 us, 20.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 50.0 us, 50.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 58.8 us, 41.2 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 30.0 us, 70.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   2598.1 free,    303.4 used,   1004.5 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3461.3 avail Mem
Thu 19 Dec 06:54:50 GMT 2019 top - 06:54:50 up 15,  2 users,  load average: 4.22, 3.89, 2.35
%Cpu0  : 20.0 us, 80.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 58.3 us, 41.7 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 33.3 us, 66.7 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 100.0 us,  0.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   2143.4 free,    412.4 used,   1350.2 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3351.9 avail Mem
Thu 19 Dec 06:55:20 GMT 2019 top - 06:55:20 up 16,  2 users,  load average: 3.84, 3.83, 2.38
%Cpu0  : 41.7 us, 58.3 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
```

```
%Cpu1  : 25.0 us, 58.3 sy,  0.0 ni, 16.7 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 44.4 us, 55.6 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 93.3 us,  6.7 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,   1344.7 free,    421.9 used,   2139.4 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3341.9 avail Mem
Thu 19 Dec 06:55:50 GMT 2019 top - 06:55:50 up 16,  2 users,  load average: 3.67, 3.78, 2.41
%Cpu0  : 70.6 us, 23.5 sy,  0.0 ni,  5.9 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 20.0 us, 60.0 sy,  0.0 ni, 20.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 22.2 us, 77.8 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 46.2 us, 53.8 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,    554.1 free,    422.4 used,   2929.5 buff/cache
MiB Swap:    100.0 total,    100.0 free,      0.0 used.   3340.9 avail Mem
Thu 19 Dec 06:56:20 GMT 2019 top - 06:56:20 up 17,  2 users,  load average: 3.64, 3.77, 2.45
%Cpu0  : 95.0 us,  0.0 sy,  0.0 ni,  5.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 50.0 us, 50.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 50.0 us, 50.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 33.3 us, 50.0 sy,  0.0 ni, 16.7 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,    292.8 free,    423.9 used,   3189.3 buff/cache
MiB Swap:    100.0 total,     99.7 free,      0.2 used.   3339.8 avail Mem
Thu 19 Dec 06:56:51 GMT 2019 top - 06:56:51 up 17,  2 users,  load average: 3.66, 3.76, 2.49
%Cpu0  : 66.7 us, 33.3 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 18.8 us, 56.2 sy,  0.0 ni, 25.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 52.9 us, 41.2 sy,  0.0 ni,  5.9 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 100.0 us,  0.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,    285.2 free,    417.9 used,   3202.9 buff/cache
MiB Swap:    100.0 total,     99.5 free,      0.5 used.   3346.4 avail Mem
Thu 19 Dec 06:57:21 GMT 2019 top - 06:57:21 up 18,  2 users,  load average: 3.43, 3.70, 2.51
%Cpu0  : 57.1 us, 35.7 sy,  0.0 ni,  7.1 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 95.2 us,  0.0 sy,  0.0 ni,  4.8 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 41.7 us, 58.3 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 53.3 us, 46.7 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,    303.1 free,    426.4 used,   3176.6 buff/cache
MiB Swap:    100.0 total,     99.0 free,      1.0 used.   3337.6 avail Mem
Thu 19 Dec 06:57:51 GMT 2019 top - 06:57:51 up 19,  2 users,  load average: 3.51, 3.70, 2.55
%Cpu0  : 15.8 us, 31.6 sy,  0.0 ni, 52.6 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 21.4 us, 78.6 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 94.4 us,  0.0 sy,  0.0 ni,  5.6 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 57.1 us, 42.9 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,    273.5 free,    427.8 used,   3204.7 buff/cache
MiB Swap:    100.0 total,     98.5 free,      1.5 used.   3336.0 avail Mem
Thu 19 Dec 06:58:21 GMT 2019 top - 06:58:22 up 19,  2 users,  load average: 3.46, 3.68, 2.58
%Cpu0  : 61.5 us, 38.5 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 100.0 us,  0.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 23.1 us, 76.9 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 55.6 us, 44.4 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,    264.8 free,    424.6 used,   3216.7 buff/cache
MiB Swap:    100.0 total,     98.0 free,      2.0 used.   3339.1 avail Mem
Thu 19 Dec 06:58:52 GMT 2019 top - 06:58:52 up 20,  2 users,  load average: 3.89, 3.77, 2.65
%Cpu0  : 100.0 us,  0.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 66.7 us, 33.3 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 16.7 us, 83.3 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 41.2 us, 58.8 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,    300.2 free,    430.3 used,   3175.5 buff/cache
MiB Swap:    100.0 total,     97.7 free,      2.2 used.   3333.3 avail Mem
Thu 19 Dec 06:59:22 GMT 2019 top - 06:59:22 up 20,  2 users,  load average: 3.68, 3.73, 2.67
%Cpu0  : 66.7 us, 33.3 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 76.5 us, 17.6 sy,  0.0 ni,  5.9 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 54.5 us, 27.3 sy,  0.0 ni, 18.2 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
```

```
%Cpu3  : 75.0 us, 25.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,     291.4 free,     427.8 used,    3186.9 buff/cache
MiB Swap:    100.0 total,      97.0 free,       3.0 used.    3335.9 avail Mem
Thu 19 Dec 06:59:52 GMT 2019 top - 06:59:52 up 21,  2 users,  load average: 3.69, 3.72, 2.70
%Cpu0  : 66.7 us, 33.3 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 25.0 us, 75.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 41.2 us, 23.5 sy,  0.0 ni, 35.3 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 68.8 us, 18.8 sy,  0.0 ni, 12.5 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,     274.8 free,     427.4 used,    3203.9 buff/cache
MiB Swap:    100.0 total,      95.7 free,       4.2 used.    3336.2 avail Mem
Thu 19 Dec 07:00:22 GMT 2019 top - 07:00:23 up 21,  2 users,  load average: 3.99, 3.80, 2.76
%Cpu0  : 25.0 us, 37.5 sy,  0.0 ni, 31.2 id,  6.2 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 100.0 us,  0.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 40.0 us, 60.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 63.6 us, 36.4 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,     265.5 free,     424.8 used,    3215.7 buff/cache
MiB Swap:    100.0 total,      95.0 free,       5.0 used.    3338.7 avail Mem
Thu 19 Dec 07:00:53 GMT 2019 top - 07:00:53 up 22,  2 users,  load average: 4.17, 3.86, 2.82
%Cpu0  : 36.4 us, 63.6 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 100.0 us,  0.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 50.0 us, 50.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 21.4 us, 78.6 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,     289.3 free,     427.5 used,    3189.2 buff/cache
MiB Swap:    100.0 total,      94.2 free,       5.8 used.    3336.2 avail Mem
Thu 19 Dec 07:01:23 GMT 2019 top - 07:01:23 up 22,  2 users,  load average: 3.78, 3.80, 2.83
%Cpu0  : 57.1 us, 42.9 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 25.0 us, 33.3 sy,  0.0 ni, 41.7 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 100.0 us,  0.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 25.0 us, 50.0 sy,  0.0 ni, 25.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,     291.3 free,     425.8 used,    3189.0 buff/cache
MiB Swap:    100.0 total,      93.5 free,       6.5 used.    3337.8 avail Mem
Thu 19 Dec 07:01:53 GMT 2019 top - 07:01:53 up 23,  2 users,  load average: 3.91, 3.82, 2.87
%Cpu0  : 42.9 us, 50.0 sy,  0.0 ni,  7.1 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 75.0 us, 25.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 25.0 us, 56.2 sy,  0.0 ni, 18.8 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 88.9 us,  5.6 sy,  0.0 ni,  5.6 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,     301.2 free,     426.0 used,    3178.9 buff/cache
MiB Swap:    100.0 total,      93.0 free,       7.0 used.    3337.6 avail Mem
Thu 19 Dec 07:02:23 GMT 2019 top - 07:02:23 up 23,  2 users,  load average: 4.12, 3.88, 2.92
%Cpu0  : 100.0 us,  0.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 33.3 us, 60.0 sy,  0.0 ni,  6.7 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 26.7 us, 53.3 sy,  0.0 ni, 20.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 28.6 us, 42.9 sy,  0.0 ni, 28.6 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,     278.2 free,     425.8 used,    3202.1 buff/cache
MiB Swap:    100.0 total,      92.7 free,       7.2 used.    3337.7 avail Mem
Thu 19 Dec 07:02:54 GMT 2019 top - 07:02:54 up 24,  2 users,  load average: 3.95, 3.86, 2.95
%Cpu0  : 60.0 us, 40.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 100.0 us,  0.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 63.6 us, 36.4 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  :  8.3 us, 91.7 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,     284.9 free,     429.7 used,    3191.4 buff/cache
MiB Swap:    100.0 total,      92.2 free,       7.8 used.    3333.8 avail Mem
Thu 19 Dec 07:03:24 GMT 2019 top - 07:03:24 up 24,  2 users,  load average: 3.92, 3.88, 2.99
%Cpu0  : 33.3 us, 33.3 sy,  0.0 ni, 33.3 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 13.3 us, 86.7 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 60.0 us, 40.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 100.0 us,  0.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,     267.7 free,     430.0 used,    3208.4 buff/cache
```

```
MiB Swap:    100.0 total,     91.7 free,      8.2 used.   3333.4 avail Mem
Thu 19 Dec 07:03:54 GMT 2019 top - 07:03:54 up 25,  2 users,  load average: 3.41, 3.76, 2.98
%Cpu0  : 95.0 us,  5.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 57.1 us, 42.9 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 18.2 us, 81.8 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 73.3 us, 26.7 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,    303.0 free,    428.5 used,   3174.6 buff/cache
MiB Swap:    100.0 total,     91.7 free,      8.2 used.   3335.0 avail Mem
Thu 19 Dec 07:04:24 GMT 2019 top - 07:04:24 up 25,  2 users,  load average: 3.57, 3.77, 3.01
%Cpu0  : 33.3 us, 66.7 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 50.0 us, 50.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 94.1 us,  5.9 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 54.5 us, 45.5 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,    284.8 free,    425.1 used,   3196.2 buff/cache
MiB Swap:    100.0 total,     91.5 free,      8.5 used.   3338.4 avail Mem
Thu 19 Dec 07:04:54 GMT 2019 top - 07:04:55 up 26,  2 users,  load average: 3.53, 3.74, 3.02
%Cpu0  : 50.0 us, 40.0 sy,  0.0 ni, 10.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 46.7 us, 33.3 sy,  0.0 ni, 20.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 33.3 us, 66.7 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 88.9 us, 11.1 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,    372.7 free,    331.2 used,   3202.2 buff/cache
MiB Swap:    100.0 total,     91.2 free,      8.8 used.   3432.0 avail Mem
Thu 19 Dec 07:05:25 GMT 2019 top - 07:05:25 up 26,  2 users,  load average: 3.75, 3.78, 3.06
%Cpu0  : 100.0 us,  0.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 33.3 us, 66.7 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 38.5 us, 61.5 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 31.2 us, 62.5 sy,  0.0 ni,  6.2 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,    295.3 free,    427.4 used,   3183.4 buff/cache
MiB Swap:    100.0 total,     90.7 free,      9.2 used.   3335.7 avail Mem
Thu 19 Dec 07:05:55 GMT 2019 top - 07:05:55 up 27,  2 users,  load average: 3.44, 3.70, 3.05
%Cpu0  : 92.9 us,  7.1 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 55.6 us, 44.4 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 20.0 us, 73.3 sy,  0.0 ni,  6.7 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 60.0 us, 40.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,    290.0 free,    426.9 used,   3189.1 buff/cache
MiB Swap:    100.0 total,     90.0 free,     10.0 used.   3336.3 avail Mem
Thu 19 Dec 07:06:25 GMT 2019 top - 07:06:25 up 27,  2 users,  load average: 3.55, 3.70, 3.07
%Cpu0  : 85.0 us,  5.0 sy,  0.0 ni, 10.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 40.0 us, 60.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 63.6 us, 36.4 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 33.3 us, 66.7 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,    292.3 free,    428.6 used,   3185.1 buff/cache
MiB Swap:    100.0 total,     89.5 free,     10.5 used.   3334.1 avail Mem
Thu 19 Dec 07:06:55 GMT 2019 top - 07:06:56 up 28,  2 users,  load average: 3.69, 3.72, 3.10
%Cpu0  : 30.0 us, 70.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 50.0 us, 50.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 100.0 us,  0.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 25.0 us, 75.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,    298.5 free,    402.1 used,   3205.5 buff/cache
MiB Swap:    100.0 total,     89.2 free,     10.8 used.   3360.7 avail Mem
Thu 19 Dec 07:07:26 GMT 2019 top - 07:07:26 up 28,  2 users,  load average: 3.32, 3.63, 3.09
%Cpu0  : 100.0 us,  0.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 27.3 us, 72.7 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  9.1 us, 63.6 sy,  0.0 ni, 27.3 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 46.2 us, 53.8 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,    267.4 free,    418.6 used,   3220.0 buff/cache
MiB Swap:    100.0 total,     88.7 free,     11.2 used.   3344.0 avail Mem
Thu 19 Dec 07:07:56 GMT 2019 top - 07:07:56 up 29,  2 users,  load average: 3.82, 3.71, 3.13
```

```
%Cpu0  : 13.3 us, 53.3 sy,  0.0 ni, 33.3 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 90.0 us,  5.0 sy,  0.0 ni,  5.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 58.8 us, 29.4 sy,  0.0 ni, 11.8 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 25.0 us, 75.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,    273.6 free,    428.9 used,   3203.5 buff/cache
MiB Swap:    100.0 total,     88.2 free,     11.8 used.   3333.8 avail Mem
Thu 19 Dec 07:08:26 GMT 2019 top - 07:08:26 up 29,  2 users,  load average: 3.59, 3.68, 3.14
%Cpu0  : 41.7 us, 58.3 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 63.6 us, 36.4 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 100.0 us,  0.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 33.3 us, 50.0 sy,  0.0 ni, 16.7 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,    269.8 free,    427.2 used,   3209.0 buff/cache
MiB Swap:    100.0 total,     88.0 free,     12.0 used.   3335.6 avail Mem
Thu 19 Dec 07:08:56 GMT 2019 top - 07:08:57 up 30,  2 users,  load average: 3.58, 3.66, 3.15
%Cpu0  : 58.3 us, 41.7 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 70.0 us, 30.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 57.1 us, 42.9 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 100.0 us,  0.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,    306.8 free,    406.2 used,   3193.0 buff/cache
MiB Swap:    100.0 total,     88.0 free,     12.0 used.   3356.7 avail Mem
Thu 19 Dec 07:09:27 GMT 2019 top - 07:09:27 up 30,  2 users,  load average: 3.57, 3.65, 3.16
%Cpu0  : 20.0 us, 80.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 100.0 us,  0.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 45.5 us, 54.5 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 71.4 us, 28.6 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,    266.7 free,    419.9 used,   3219.4 buff/cache
MiB Swap:    100.0 total,     87.7 free,     12.2 used.   3342.9 avail Mem
Thu 19 Dec 07:09:57 GMT 2019 top - 07:09:57 up 31,  2 users,  load average: 3.55, 3.63, 3.18
%Cpu0  : 100.0 us,  0.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 23.5 us, 35.3 sy,  0.0 ni, 41.2 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 18.2 us, 81.8 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 30.0 us, 70.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,    284.4 free,    424.0 used,   3197.6 buff/cache
MiB Swap:    100.0 total,     87.5 free,     12.5 used.   3339.1 avail Mem
Thu 19 Dec 07:10:27 GMT 2019 top - 07:10:27 up 31,  2 users,  load average: 3.38, 3.59, 3.18
%Cpu0  : 46.2 us, 53.8 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 94.4 us,  5.6 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 37.5 us, 62.5 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 13.3 us, 40.0 sy,  0.0 ni, 46.7 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,    298.2 free,    424.9 used,   3182.9 buff/cache
MiB Swap:    100.0 total,     87.2 free,     12.8 used.   3338.3 avail Mem
Thu 19 Dec 07:10:57 GMT 2019 top - 07:10:58 up 32,  2 users,  load average: 3.67, 3.64, 3.21
%Cpu0  : 13.3 us, 33.3 sy,  0.0 ni, 53.3 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 50.0 us, 50.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 53.3 us, 46.7 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 80.0 us,  6.7 sy,  0.0 ni, 13.3 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,    270.1 free,    432.2 used,   3203.7 buff/cache
MiB Swap:    100.0 total,     87.2 free,     12.8 used.   3330.8 avail Mem
Thu 19 Dec 07:11:28 GMT 2019 top - 07:11:28 up 32,  2 users,  load average: 3.55, 3.61, 3.21
%Cpu0  : 70.0 us, 30.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 100.0 us,  0.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 35.7 us, 64.3 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 55.6 us, 44.4 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,    271.2 free,    432.2 used,   3202.6 buff/cache
MiB Swap:    100.0 total,     87.2 free,     12.8 used.   3331.0 avail Mem
Thu 19 Dec 07:11:58 GMT 2019 top - 07:11:58 up 33,  2 users,  load average: 3.38, 3.57, 3.21
%Cpu0  : 72.2 us, 11.1 sy,  0.0 ni, 16.7 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 50.0 us, 41.7 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  8.3 si,  0.0 st
```

```
%Cpu2  : 50.0 us, 50.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 50.0 us, 50.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,    288.9 free,    425.2 used,   3191.9 buff/cache
MiB Swap:    100.0 total,     87.2 free,     12.8 used.   3338.1 avail Mem
Thu 19 Dec 07:12:28 GMT 2019 top - 07:12:28 up 33,  2 users,  load average: 3.54, 3.58, 3.22
%Cpu0  : 53.8 us, 38.5 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  7.7 si,  0.0 st
%Cpu1  : 64.3 us, 35.7 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 50.0 us, 50.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 100.0 us,  0.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,    269.4 free,    430.4 used,   3206.2 buff/cache
MiB Swap:    100.0 total,     87.2 free,     12.8 used.   3332.7 avail Mem
Thu 19 Dec 07:12:58 GMT 2019 top - 07:12:59 up 34,  2 users,  load average: 3.50, 3.57, 3.23
%Cpu0  : 100.0 us,  0.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 33.3 us, 44.4 sy,  0.0 ni, 22.2 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 37.5 us, 62.5 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 45.5 us, 54.5 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,    323.4 free,    381.6 used,   3201.1 buff/cache
MiB Swap:    100.0 total,     87.2 free,     12.8 used.   3381.7 avail Mem
Thu 19 Dec 07:13:29 GMT 2019 top - 07:13:29 up 34,  2 users,  load average: 3.50, 3.57, 3.24
%Cpu0  : 44.4 us, 55.6 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 53.3 us, 33.3 sy,  0.0 ni, 13.3 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 100.0 us,  0.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 42.9 us, 57.1 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,    266.8 free,    420.4 used,   3218.9 buff/cache
MiB Swap:    100.0 total,     87.0 free,     13.0 used.   3342.6 avail Mem
Thu 19 Dec 07:13:59 GMT 2019 top - 07:13:59 up 35,  2 users,  load average: 3.81, 3.64, 3.28
%Cpu0  : 100.0 us,  0.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 63.6 us, 36.4 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 30.8 us, 69.2 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 38.5 us, 61.5 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,    286.0 free,    428.8 used,   3191.2 buff/cache
MiB Swap:    100.0 total,     87.0 free,     13.0 used.   3334.5 avail Mem
Thu 19 Dec 07:14:29 GMT 2019 top - 07:14:29 up 35,  2 users,  load average: 3.68, 3.63, 3.28
%Cpu0  : 57.1 us, 42.9 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 61.5 us, 38.5 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 88.2 us,  5.9 sy,  0.0 ni,  5.9 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 33.3 us, 66.7 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,    280.2 free,    433.3 used,   3192.6 buff/cache
MiB Swap:    100.0 total,     86.7 free,     13.2 used.   3330.1 avail Mem
Thu 19 Dec 07:14:59 GMT 2019 top - 07:14:59 up 36,  2 users,  load average: 4.15, 3.76, 3.34
%Cpu0  : 20.0 us, 60.0 sy,  0.0 ni, 20.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 36.4 us, 63.6 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 82.4 us, 11.8 sy,  0.0 ni,  5.9 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 63.6 us, 27.3 sy,  0.0 ni,  9.1 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,    310.4 free,    432.7 used,   3162.9 buff/cache
MiB Swap:    100.0 total,     86.5 free,     13.5 used.   3330.9 avail Mem
Thu 19 Dec 07:15:30 GMT 2019 top - 07:15:30 up 36,  2 users,  load average: 3.87, 3.73, 3.34
%Cpu0  : 30.8 us, 69.2 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 30.8 us, 69.2 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 50.0 us, 50.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 94.7 us,  5.3 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,    281.7 free,    423.4 used,   3200.9 buff/cache
MiB Swap:    100.0 total,     86.2 free,     13.8 used.   3340.1 avail Mem
Thu 19 Dec 07:16:00 GMT 2019 top - 07:16:00 up 37,  2 users,  load average: 3.60, 3.68, 3.34
%Cpu0  : 44.4 us, 55.6 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 23.1 us, 53.8 sy,  0.0 ni, 23.1 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 27.3 us, 72.7 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 88.2 us, 11.8 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
```

```
MiB Mem :   3906.0 total,    263.3 free,    426.7 used,   3216.1 buff/cache
MiB Swap:    100.0 total,     86.0 free,     14.0 used.   3336.9 avail Mem
Thu 19 Dec 07:16:30 GMT 2019 top - 07:16:30 up 37,  2 users,  load average: 3.80, 3.72, 3.36
%Cpu0  : 25.0 us, 56.2 sy,  0.0 ni, 18.8 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 36.8 us, 47.4 sy,  0.0 ni, 15.8 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 85.7 us,  0.0 sy,  0.0 ni, 14.3 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 25.0 us, 75.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,    282.7 free,    432.0 used,   3191.3 buff/cache
MiB Swap:    100.0 total,     85.7 free,     14.2 used.   3331.4 avail Mem
Thu 19 Dec 07:17:00 GMT 2019 top - 07:17:01 up 38,  2 users,  load average: 3.81, 3.74, 3.38
%Cpu0  : 40.0 us, 60.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 41.7 us, 58.3 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 95.0 us,  5.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 66.7 us, 33.3 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,    295.7 free,    409.9 used,   3200.5 buff/cache
MiB Swap:    100.0 total,     85.7 free,     14.2 used.   3353.7 avail Mem
Thu 19 Dec 07:17:31 GMT 2019 top - 07:17:31 up 38,  2 users,  load average: 3.62, 3.70, 3.38
%Cpu0  : 13.3 us, 46.7 sy,  0.0 ni, 40.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 41.7 us, 58.3 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 100.0 us,  0.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 38.5 us, 61.5 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,    268.7 free,    405.7 used,   3231.6 buff/cache
MiB Swap:    100.0 total,     85.7 free,     14.2 used.   3357.8 avail Mem
Thu 19 Dec 07:18:01 GMT 2019 top - 07:18:01 up 39,  2 users,  load average: 3.63, 3.70, 3.39
%Cpu0  : 68.8 us, 31.2 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 100.0 us,  0.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 45.5 us, 54.5 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 50.0 us, 50.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,    265.0 free,    423.3 used,   3217.7 buff/cache
MiB Swap:    100.0 total,     85.5 free,     14.5 used.   3340.3 avail Mem
Thu 19 Dec 07:18:31 GMT 2019 top - 07:18:31 up 39,  2 users,  load average: 3.71, 3.71, 3.40
%Cpu0  : 50.0 us, 50.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 52.9 us, 29.4 sy,  0.0 ni, 17.6 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 64.3 us, 35.7 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 60.0 us, 40.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,    302.4 free,    424.3 used,   3179.4 buff/cache
MiB Swap:    100.0 total,     85.2 free,     14.8 used.   3339.4 avail Mem
Thu 19 Dec 07:19:01 GMT 2019 top - 07:19:01 up 40,  2 users,  load average: 3.63, 3.69, 3.41
%Cpu0  : 47.1 us, 52.9 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 55.6 us, 44.4 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 16.7 us, 58.3 sy,  0.0 ni, 25.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 100.0 us,  0.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,    301.6 free,    395.0 used,   3209.4 buff/cache
MiB Swap:    100.0 total,     85.0 free,     15.0 used.   3368.5 avail Mem
Thu 19 Dec 07:19:32 GMT 2019 top - 07:19:32 up 40,  2 users,  load average: 3.50, 3.66, 3.40
%Cpu0  : 46.7 us, 40.0 sy,  0.0 ni, 13.3 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 45.5 us, 54.5 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 93.8 us,  0.0 sy,  0.0 ni,  6.2 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 40.0 us, 60.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,    300.2 free,    436.0 used,   3169.8 buff/cache
MiB Swap:    100.0 total,     84.7 free,     15.2 used.   3327.8 avail Mem
Thu 19 Dec 07:20:02 GMT 2019 top - 07:20:02 up 41,  2 users,  load average: 4.03, 3.77, 3.45
%Cpu0  : 27.3 us, 72.7 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 100.0 us,  0.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 58.3 us, 33.3 sy,  0.0 ni,  8.3 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 23.1 us, 53.8 sy,  0.0 ni, 23.1 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,    264.5 free,    432.9 used,   3208.7 buff/cache
MiB Swap:    100.0 total,     84.2 free,     15.8 used.   3331.0 avail Mem
```

```
Thu 19 Dec 07:20:32 GMT 2019 top - 07:20:32 up 41,  2 users,  load average: 3.85, 3.75, 3.45
%Cpu0  : 93.8 us,  0.0 sy,  0.0 ni,  6.2 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 40.0 us, 60.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 33.3 us, 50.0 sy,  0.0 ni, 16.7 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 38.5 us, 46.2 sy,  0.0 ni, 15.4 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,    303.4 free,    433.9 used,   3168.7 buff/cache
MiB Swap:    100.0 total,     83.7 free,     16.2 used.   3330.1 avail Mem
Thu 19 Dec 07:21:02 GMT 2019 top - 07:21:02 up 42,  2 users,  load average: 3.60, 3.69, 3.45
%Cpu0  : 28.6 us, 50.0 sy,  0.0 ni, 21.4 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 33.3 us, 66.7 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 18.8 us, 31.2 sy,  0.0 ni, 50.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 89.5 us,  5.3 sy,  0.0 ni,  5.3 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,    278.5 free,    428.2 used,   3199.3 buff/cache
MiB Swap:    100.0 total,     83.5 free,     16.5 used.   3335.6 avail Mem
Thu 19 Dec 07:21:33 GMT 2019 top - 07:21:33 up 42,  2 users,  load average: 3.97, 3.77, 3.48
%Cpu0  : 100.0 us,  0.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 41.7 us, 58.3 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 36.4 us, 63.6 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 70.0 us, 30.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,    268.2 free,    429.2 used,   3208.7 buff/cache
MiB Swap:    100.0 total,     82.7 free,     17.2 used.   3334.8 avail Mem
Thu 19 Dec 07:22:03 GMT 2019 top - 07:22:03 up 43,  2 users,  load average: 3.68, 3.73, 3.47
%Cpu0  : 66.7 us, 33.3 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 50.0 us, 43.8 sy,  0.0 ni,  6.2 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 53.8 us, 46.2 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 62.5 us, 18.8 sy,  0.0 ni, 12.5 id,  6.2 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,    275.5 free,    436.2 used,   3194.4 buff/cache
MiB Swap:    100.0 total,     82.2 free,     17.8 used.   3327.9 avail Mem
Thu 19 Dec 07:22:33 GMT 2019 top - 07:22:33 up 43,  2 users,  load average: 3.69, 3.72, 3.48
%Cpu0  : 16.7 us, 83.3 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 100.0 us,  0.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 33.3 us, 66.7 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 54.5 us, 45.5 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,    273.0 free,    432.6 used,   3200.5 buff/cache
MiB Swap:    100.0 total,     81.5 free,     18.5 used.   3331.5 avail Mem
Thu 19 Dec 07:23:03 GMT 2019 top - 07:23:03 up 44,  2 users,  load average: 3.78, 3.73, 3.49
%Cpu0  : 27.3 us, 63.6 sy,  0.0 ni,  9.1 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 86.7 us, 13.3 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 66.7 us, 33.3 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 54.5 us, 27.3 sy,  0.0 ni, 18.2 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,    261.3 free,    432.6 used,   3212.1 buff/cache
MiB Swap:    100.0 total,     81.0 free,     19.0 used.   3331.3 avail Mem
Thu 19 Dec 07:23:33 GMT 2019 top - 07:23:34 up 44,  2 users,  load average: 4.07, 3.82, 3.53
%Cpu0  : 53.8 us, 30.8 sy,  0.0 ni, 15.4 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 42.9 us, 50.0 sy,  0.0 ni,  7.1 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 50.0 us, 50.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 100.0 us,  0.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,    275.8 free,    436.8 used,   3193.4 buff/cache
MiB Swap:    100.0 total,     80.2 free,     19.8 used.   3327.3 avail Mem
Thu 19 Dec 07:24:04 GMT 2019 top - 07:24:04 up 45,  2 users,  load average: 3.99, 3.82, 3.54
%Cpu0  : 30.0 us, 50.0 sy,  0.0 ni, 20.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 41.7 us, 41.7 sy,  0.0 ni, 16.7 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 77.8 us, 11.1 sy,  0.0 ni, 11.1 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 60.0 us, 40.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,    280.7 free,    435.7 used,   3189.6 buff/cache
MiB Swap:    100.0 total,     79.7 free,     20.2 used.   3328.4 avail Mem
Thu 19 Dec 07:24:34 GMT 2019 top - 07:24:34 up 45,  2 users,  load average: 3.87, 3.81, 3.55
%Cpu0  : 41.2 us, 41.2 sy,  0.0 ni, 17.6 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
```

```
%Cpu1  : 23.1 us, 76.9 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 58.3 us, 41.7 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 47.4 us,  5.3 sy,  0.0 ni, 42.1 id,  0.0 wa,  0.0 hi,  5.3 si,  0.0 st
MiB Mem :   3906.0 total,    272.6 free,    430.0 used,   3203.5 buff/cache
MiB Swap:    100.0 total,     79.0 free,     21.0 used.   3334.2 avail Mem
Thu 19 Dec 07:25:04 GMT 2019 top - 07:25:04 up 46,  2 users,  load average: 3.62, 3.75, 3.54
%Cpu0  : 61.5 us, 38.5 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 62.5 us, 31.2 sy,  0.0 ni,  6.2 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 50.0 us, 50.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 77.8 us, 16.7 sy,  0.0 ni,  5.6 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,    298.0 free,    395.7 used,   3212.3 buff/cache
MiB Swap:    100.0 total,     78.7 free,     21.2 used.   3368.5 avail Mem
Thu 19 Dec 07:25:34 GMT 2019 top - 07:25:35 up 46,  2 users,  load average: 3.64, 3.74, 3.54
%Cpu0  : 35.7 us, 50.0 sy,  0.0 ni, 14.3 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 100.0 us,  0.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 55.6 us, 44.4 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 38.5 us, 61.5 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,    282.2 free,    424.4 used,   3199.4 buff/cache
MiB Swap:    100.0 total,     78.0 free,     22.0 used.   3339.8 avail Mem
Thu 19 Dec 07:26:05 GMT 2019 top - 07:26:05 up 47,  2 users,  load average: 4.14, 3.87, 3.59
%Cpu0  : 88.9 us,  0.0 sy,  0.0 ni, 11.1 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 57.1 us, 42.9 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 53.8 us, 46.2 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 10.5 us, 26.3 sy,  0.0 ni, 57.9 id,  5.3 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,    276.7 free,    428.4 used,   3200.9 buff/cache
MiB Swap:    100.0 total,     77.2 free,     22.8 used.   3335.9 avail Mem
Thu 19 Dec 07:26:35 GMT 2019 top - 07:26:35 up 47,  2 users,  load average: 3.78, 3.82, 3.58
%Cpu0  : 44.4 us, 55.6 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 100.0 us,  0.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 28.6 us, 42.9 sy,  0.0 ni, 28.6 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 46.2 us, 53.8 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,    301.0 free,    431.3 used,   3173.8 buff/cache
MiB Swap:    100.0 total,     76.5 free,     23.5 used.   3333.4 avail Mem
Thu 19 Dec 07:27:05 GMT 2019 top - 07:27:05 up 48,  2 users,  load average: 3.72, 3.80, 3.59
%Cpu0  : 100.0 us,  0.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 23.1 us, 76.9 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 16.7 us, 58.3 sy,  0.0 ni, 25.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 41.7 us, 50.0 sy,  0.0 ni,  8.3 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,    269.8 free,    430.7 used,   3205.6 buff/cache
MiB Swap:    100.0 total,     75.7 free,     24.2 used.   3333.9 avail Mem
Thu 19 Dec 07:27:35 GMT 2019 top - 07:27:36 up 48,  2 users,  load average: 3.87, 3.82, 3.60
%Cpu0  : 58.3 us, 41.7 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 33.3 us, 66.7 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 94.4 us,  0.0 sy,  0.0 ni,  5.6 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 33.3 us, 66.7 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,    270.6 free,    432.4 used,   3203.0 buff/cache
MiB Swap:    100.0 total,     75.0 free,     25.0 used.   3332.4 avail Mem
Thu 19 Dec 07:28:06 GMT 2019 top - 07:28:06 up 49,  2 users,  load average: 3.64, 3.78, 3.59
%Cpu0  : 58.3 us, 41.7 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 58.3 us, 41.7 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 55.6 us, 44.4 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 73.7 us, 21.1 sy,  0.0 ni,  0.0 id,  5.3 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,    305.3 free,    428.2 used,   3172.5 buff/cache
MiB Swap:    100.0 total,     74.5 free,     25.5 used.   3336.5 avail Mem
Thu 19 Dec 07:28:36 GMT 2019 top - 07:28:36 up 49,  2 users,  load average: 3.85, 3.81, 3.61
%Cpu0  : 27.3 us, 72.7 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 53.3 us, 46.7 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 37.5 us, 50.0 sy,  0.0 ni, 12.5 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
```

```
%Cpu3  : 100.0 us,   0.0 sy,   0.0 ni,   0.0 id,   0.0 wa,   0.0 hi,   0.0 si,   0.0 st
MiB Mem :    3906.0 total,     268.5 free,     428.6 used,    3209.0 buff/cache
MiB Swap:     100.0 total,      73.7 free,      26.2 used.    3336.2 avail Mem
Thu 19 Dec 07:29:06 GMT 2019 top - 07:29:06 up 50,  2 users,  load average: 3.64, 3.77, 3.60
%Cpu0  :  94.4 us,   5.6 sy,   0.0 ni,   0.0 id,   0.0 wa,   0.0 hi,   0.0 si,   0.0 st
%Cpu1  :  45.5 us,  54.5 sy,   0.0 ni,   0.0 id,   0.0 wa,   0.0 hi,   0.0 si,   0.0 st
%Cpu2  :  54.5 us,  45.5 sy,   0.0 ni,   0.0 id,   0.0 wa,   0.0 hi,   0.0 si,   0.0 st
%Cpu3  :  28.6 us,  42.9 sy,   0.0 ni,  28.6 id,   0.0 wa,   0.0 hi,   0.0 si,   0.0 st
MiB Mem :    3906.0 total,     281.2 free,     430.3 used,    3194.5 buff/cache
MiB Swap:     100.0 total,      73.0 free,      27.0 used.    3334.2 avail Mem
Thu 19 Dec 07:29:36 GMT 2019 top - 07:29:37 up 50,  2 users,  load average: 3.57, 3.74, 3.60
%Cpu0  :  82.4 us,   5.9 sy,   0.0 ni,  11.8 id,   0.0 wa,   0.0 hi,   0.0 si,   0.0 st
%Cpu1  :  38.9 us,  61.1 sy,   0.0 ni,   0.0 id,   0.0 wa,   0.0 hi,   0.0 si,   0.0 st
%Cpu2  :   5.3 us,  36.8 sy,   0.0 ni,  52.6 id,   5.3 wa,   0.0 hi,   0.0 si,   0.0 st
%Cpu3  :  44.4 us,  55.6 sy,   0.0 ni,   0.0 id,   0.0 wa,   0.0 hi,   0.0 si,   0.0 st
MiB Mem :    3906.0 total,     297.7 free,     429.5 used,    3178.9 buff/cache
MiB Swap:     100.0 total,      72.2 free,      27.8 used.    3335.2 avail Mem
Thu 19 Dec 07:30:07 GMT 2019 top - 07:30:07 up 51,  2 users,  load average: 3.53, 3.72, 3.60
%Cpu0  :  63.6 us,  36.4 sy,   0.0 ni,   0.0 id,   0.0 wa,   0.0 hi,   0.0 si,   0.0 st
%Cpu1  :  33.3 us,  66.7 sy,   0.0 ni,   0.0 id,   0.0 wa,   0.0 hi,   0.0 si,   0.0 st
%Cpu2  :  36.4 us,  45.5 sy,   0.0 ni,  18.2 id,   0.0 wa,   0.0 hi,   0.0 si,   0.0 st
%Cpu3  : 100.0 us,   0.0 sy,   0.0 ni,   0.0 id,   0.0 wa,   0.0 hi,   0.0 si,   0.0 st
MiB Mem :    3906.0 total,     277.0 free,     427.5 used,    3201.5 buff/cache
MiB Swap:     100.0 total,      71.7 free,      28.2 used.    3337.1 avail Mem
Thu 19 Dec 07:30:37 GMT 2019 top - 07:30:37 up 51,  2 users,  load average: 3.50, 3.68, 3.59
%Cpu0  :  27.3 us,  72.7 sy,   0.0 ni,   0.0 id,   0.0 wa,   0.0 hi,   0.0 si,   0.0 st
%Cpu1  :  36.4 us,  63.6 sy,   0.0 ni,   0.0 id,   0.0 wa,   0.0 hi,   0.0 si,   0.0 st
%Cpu2  :  54.5 us,  36.4 sy,   0.0 ni,   9.1 id,   0.0 wa,   0.0 hi,   0.0 si,   0.0 st
%Cpu3  : 100.0 us,   0.0 sy,   0.0 ni,   0.0 id,   0.0 wa,   0.0 hi,   0.0 si,   0.0 st
MiB Mem :    3906.0 total,     287.8 free,     431.2 used,    3187.1 buff/cache
MiB Swap:     100.0 total,      71.0 free,      29.0 used.    3333.5 avail Mem
Thu 19 Dec 07:31:07 GMT 2019 top - 07:31:07 up 52,  2 users,  load average: 3.41, 3.64, 3.58
%Cpu0  :  82.4 us,   0.0 sy,   0.0 ni,  17.6 id,   0.0 wa,   0.0 hi,   0.0 si,   0.0 st
%Cpu1  :  60.0 us,  40.0 sy,   0.0 ni,   0.0 id,   0.0 wa,   0.0 hi,   0.0 si,   0.0 st
%Cpu2  :  54.5 us,  45.5 sy,   0.0 ni,   0.0 id,   0.0 wa,   0.0 hi,   0.0 si,   0.0 st
%Cpu3  :  10.0 us,  80.0 sy,   0.0 ni,  10.0 id,   0.0 wa,   0.0 hi,   0.0 si,   0.0 st
MiB Mem :    3906.0 total,     263.7 free,     431.0 used,    3211.4 buff/cache
MiB Swap:     100.0 total,      70.5 free,      29.5 used.    3333.5 avail Mem
Thu 19 Dec 07:31:37 GMT 2019 top - 07:31:38 up 52,  2 users,  load average: 4.08, 3.78, 3.63
%Cpu0  :  93.8 us,   6.2 sy,   0.0 ni,   0.0 id,   0.0 wa,   0.0 hi,   0.0 si,   0.0 st
%Cpu1  :  53.8 us,  46.2 sy,   0.0 ni,   0.0 id,   0.0 wa,   0.0 hi,   0.0 si,   0.0 st
%Cpu2  :  41.7 us,  41.7 sy,   0.0 ni,  16.7 id,   0.0 wa,   0.0 hi,   0.0 si,   0.0 st
%Cpu3  :  35.3 us,  47.1 sy,   0.0 ni,  17.6 id,   0.0 wa,   0.0 hi,   0.0 si,   0.0 st
MiB Mem :    3906.0 total,     298.8 free,     421.2 used,    3186.1 buff/cache
MiB Swap:     100.0 total,      70.0 free,      30.0 used.    3343.4 avail Mem
Thu 19 Dec 07:32:08 GMT 2019 top - 07:32:08 up 53,  2 users,  load average: 3.84, 3.76, 3.62
%Cpu0  :  30.0 us,  70.0 sy,   0.0 ni,   0.0 id,   0.0 wa,   0.0 hi,   0.0 si,   0.0 st
%Cpu1  :   6.7 us,  53.3 sy,   0.0 ni,  40.0 id,   0.0 wa,   0.0 hi,   0.0 si,   0.0 st
%Cpu2  :  42.9 us,  57.1 sy,   0.0 ni,   0.0 id,   0.0 wa,   0.0 hi,   0.0 si,   0.0 st
%Cpu3  : 100.0 us,   0.0 sy,   0.0 ni,   0.0 id,   0.0 wa,   0.0 hi,   0.0 si,   0.0 st
MiB Mem :    3906.0 total,     270.2 free,     424.4 used,    3211.5 buff/cache
MiB Swap:     100.0 total,      69.7 free,      30.2 used.    3340.2 avail Mem
Thu 19 Dec 07:32:38 GMT 2019 top - 07:32:38 up 53,  2 users,  load average: 3.53, 3.68, 3.60
%Cpu0  :  13.3 us,  33.3 sy,   0.0 ni,  53.3 id,   0.0 wa,   0.0 hi,   0.0 si,   0.0 st
%Cpu1  :  33.3 us,  55.6 sy,   0.0 ni,  11.1 id,   0.0 wa,   0.0 hi,   0.0 si,   0.0 st
%Cpu2  :  87.5 us,   6.2 sy,   0.0 ni,   6.2 id,   0.0 wa,   0.0 hi,   0.0 si,   0.0 st
%Cpu3  :  16.7 us,  77.8 sy,   0.0 ni,   5.6 id,   0.0 wa,   0.0 hi,   0.0 si,   0.0 st
MiB Mem :    3906.0 total,     284.2 free,     429.2 used,    3192.6 buff/cache
```

```
MiB Swap:    100.0 total,      69.2 free,      30.8 used.   3335.5 avail Mem
Thu 19 Dec 07:33:08 GMT 2019 top - 07:33:08 up 54,  2 users,  load average: 3.11, 3.57, 3.57
%Cpu0  : 60.0 us, 40.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 89.5 us,  5.3 sy,  0.0 ni,  5.3 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 63.6 us, 18.2 sy,  0.0 ni, 18.2 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 60.0 us, 33.3 sy,  0.0 ni,  6.7 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,     270.4 free,     427.7 used,   3207.9 buff/cache
MiB Swap:    100.0 total,      69.0 free,      31.0 used.   3336.9 avail Mem
Thu 19 Dec 07:33:38 GMT 2019 top - 07:33:39 up 54,  2 users,  load average: 3.20, 3.55, 3.56
%Cpu0  : 100.0 us,  0.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 53.3 us, 46.7 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 52.9 us, 35.3 sy,  0.0 ni, 11.8 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 41.7 us, 58.3 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,     303.4 free,     428.8 used,   3173.9 buff/cache
MiB Swap:    100.0 total,      68.7 free,      31.2 used.   3335.7 avail Mem
Thu 19 Dec 07:34:09 GMT 2019 top - 07:34:09 up 55,  2 users,  load average: 3.53, 3.59, 3.57
%Cpu0  : 94.4 us,  5.6 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 58.3 us, 41.7 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 54.5 us, 45.5 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 11.8 us, 11.8 sy,  0.0 ni, 76.5 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,     303.8 free,     426.6 used,   3175.7 buff/cache
MiB Swap:    100.0 total,      68.7 free,      31.2 used.   3338.0 avail Mem
Thu 19 Dec 07:34:39 GMT 2019 top - 07:34:39 up 55,  2 users,  load average: 3.73, 3.63, 3.59
%Cpu0  : 50.0 us, 50.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 94.1 us,  5.9 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 50.0 us, 50.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 54.5 us, 45.5 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,     291.7 free,     427.2 used,   3187.2 buff/cache
MiB Swap:    100.0 total,      68.7 free,      31.2 used.   3337.5 avail Mem
Thu 19 Dec 07:35:09 GMT 2019 top - 07:35:09 up 56,  2 users,  load average: 3.68, 3.63, 3.59
%Cpu0  : 58.3 us, 33.3 sy,  0.0 ni,  8.3 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 58.3 us, 41.7 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 83.3 us, 11.1 sy,  0.0 ni,  5.6 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 25.0 us, 66.7 sy,  0.0 ni,  8.3 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,     280.7 free,     431.4 used,   3194.0 buff/cache
MiB Swap:    100.0 total,      68.5 free,      31.5 used.   3333.1 avail Mem
Thu 19 Dec 07:35:39 GMT 2019 top - 07:35:39 up 56,  2 users,  load average: 3.67, 3.64, 3.59
%Cpu0  : 50.0 us, 50.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 36.4 us, 63.6 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 18.2 us, 54.5 sy,  0.0 ni, 27.3 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 100.0 us,  0.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,     286.3 free,     428.9 used,   3190.9 buff/cache
MiB Swap:    100.0 total,      68.2 free,      31.8 used.   3335.4 avail Mem
Thu 19 Dec 07:36:10 GMT 2019 top - 07:36:10 up 57,  2 users,  load average: 3.41, 3.58, 3.57
%Cpu0  : 33.3 us, 66.7 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 80.0 us, 20.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  : 50.0 us, 50.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 88.9 us,  5.6 sy,  0.0 ni,  5.6 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,     306.6 free,     424.7 used,   3174.7 buff/cache
MiB Swap:    100.0 total,      68.2 free,      31.8 used.   3339.6 avail Mem
Thu 19 Dec 07:36:40 GMT 2019 top - 07:36:40 up 57,  2 users,  load average: 3.37, 3.55, 3.56
%Cpu0  : 36.4 us, 63.6 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu1  : 66.7 us, 33.3 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu2  :  0.0 us, 16.7 sy,  0.0 ni, 83.3 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
%Cpu3  : 100.0 us,  0.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3906.0 total,     439.4 free,     276.9 used,   3189.7 buff/cache
MiB Swap:    100.0 total,      69.5 free,      30.5 used.   3487.6 avail Mem
```

C.   Modificación BIOS LattePanda

Este anexo describe el proceso de modificación del BIOS para la tarjeta LattePan-
da. Este proceso es necesario para evitar bloqueos del Kernel o del propio sistema
operativo debido a conflictos con los periféricos o el SoC. Para realizar la actualiza-
ción es necesario seguir los siguientes pasos [20]:

- Verificar que la versión del Hardware sea la S70CR200. Como se muestra en la
  Figura 6-1.

Figura 6-1: Versión del hardware LattePanda.

- Descargar la versión de BIOS con soporte a múltiples sistemas operativos de:
  `https://github.com/LattePandaTeam/LattePanda-Win10-Software/blob/`
  `master/Bios/LattePanda%20V1.2%20for%20CR200%20Z8350%20only/BIOS%20for%`
  `20Ubuntu/DF-BI-7-S70CR200-CC34E-004-I_LINUX.zip`

- Asegurar que el formato de la USB corresponda a FAT32.

- Descomprimir el contenido del archivo descargado y pegarlo en la USB.

- Insertar la USB en la tarjeta LattePanda y encender el sistema.

- Espere mientras la actualización automática de la BIOS finaliza y muestra
  nuevamente el texto "fs1:>" en pantalla.

- Desconectar la USB y reiniciar el sistema presionando la combinación de teclas
  "Ctrl+Alt+Supr".

Nota importante: "Tenga en cuenta que esta es una versión beta de la BIOS que aún se está sometiendo a pruebas finales antes de su lanzamiento oficial. Esta versión es **solo de prueba**, así que se debe confirmar con los fabricantes antes de volver a actualizar la BIOS. Actualizar la BIOS sin notificar, puede dejar su placa en un estado sin retorno y anular su garantía."[20].

Una vez instalado el sistema operativo Ubuntu se recomienda instalar el Kernel experimental con versión 4.12.0-rc1. Este puede descargarse de `https://github.com/mopplayer/lattepanda-mainline-4.11` la misma pagina contiene las instrucciones de como realizar la instalación.