



## Viewing Server Properties

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## Viewing Server Utilization

### Procedure

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**Step 1** In the Navigation pane, click the **Chassis** menu.

**Step 2** In the **Chassis** menu, click **Summary**.

The **Summary** node provides information on **Chassis Properties**, **Chassis status**, **Cisco IMC Information**, **Power Utilization** and **Server Utilization**.

Real-time monitoring of CPU, memory, and I/O utilization in the system is provided in terms of **Compute Usage Per Second (CUPS)** . It is independent of the OS and does not consume CPU resources.

Cisco servers monitor the following sensors:

Platform CUPS Sensor - Provides the Computation, Memory, and I/O resource utilization value in the form of a platform CUPS Index.

Core CUPS Sensor - Provides the computation utilization value.

Memory CUPS Sensor - Provides the memory utilization value.

IO CUPS Sensor - Provides the I/O resource utilization value.

**Note** CUPS sensors are hardware level sensors and the values will not match the values from OS based tools.

These utilization values are obtained by querying the data from a set of dedicated, sideband telemetry counters provided by the platform ingredients (CPU and chipset). These counters are called **Resource Monitoring Counters (RMCs)**.

**RMCs** provide the real-time information pertaining to the three main domains of platform resources – CPU, memory, and I/O. The utilization information for each of these domains is obtained by aggregating the individual counters at a resource instance level.

**Step 3** In the **Server Utilization** area, review the following information:

Name	Description
<b>Overall Utilization (%)</b>	Measured as CUPS Index. This is a composite metric used to provide quick high level assessment of Platform Utilization. The CUPS Index is thus a measure of the compute headroom available on the server. Hence, if the system has a large CUPS Index, then there is limited headroom to place additional workload on that system. As the resource consumption decreases, the system's CUPS Index decreases. A low CUPS Index indicates that there is a large amount of compute headroom and the server is a prime target for receiving new workloads or having the workload migrated off and the server being put into a lower power state in order to reduce power consumption. Such workload monitoring can then be applied throughout the data center to provide a high-level and holistic view of the datacenter's workload.
<b>CPU Utilization (%)</b>	CPU RMC provides CPU utilization metrics. These are individual CPU core counters which are aggregated to provide the cumulative utilization of all the cores in the package.
<b>Memory Utilization (%)</b>	Memory RMC provides memory utilization metrics. These are individual counters to measure memory traffic occurring at each memory channel or memory controller instance. These are then aggregated to measure the cumulative memory traffic across all the memory channels in the package.
<b>IO Utilization (%)</b>	IO RMC provides IO utilization metrics. These are individual counters, one per root port in the PCI Express Root Complex to measure PCI Express traffic emanating from or directed to that root port and the segment below. These counters are then aggregated to measure PCI express traffic for all PCI Express segments emanating from the package. The PCI Express Root Port represents a PCI segment and is hence is the single central component that carries the entire traffic generated by that segment.

# Viewing CPU Properties

## Procedure

- Step 1** In the **Navigation** pane, click the **Chassis** menu.
- Step 2** In the **Chassis** menu, click **Inventory**.
- Step 3** In the **Inventory** pane, click the **CPUs** tab.
- Step 4** Review the following information for each CPU:

Name	Description
<b>Socket Name</b> field	The socket in which the CPU is installed.
<b>Vendor</b> field	The vendor for the CPU.
<b>Status</b> field	The status of the CPU.
<b>Family</b> field	The family to which this CPU belongs.
<b>Version</b> field	The version information of the CPU.
<b>Speed</b> field	The CPU speed, in megahertz.
<b>Number of Cores</b> field	The number of cores in the CPU.
<b>Signature</b> field	The signature information for the CPU.
<b>Number of Threads</b> field	The maximum number of threads that the CPU can process concurrently.

# Viewing Memory Properties

## Procedure

- Step 1** In the **Navigation** pane, click the **Chassis** menu.
- Step 2** In the **Chassis** menu, click **Inventory**.
- Step 3** In the **Inventory** pane, click the **Memory** tab.
- Step 4** In the **Memory Summary** area, review the following summary information about memory:

Name	Description
<b>Memory Speed</b> field	The memory speed, in megahertz.
<b>Total Memory</b> field	The total amount of memory available on the server if all DIMMs are fully functional.

Name	Description
<b>Effective Memory</b> field	<p>The actual amount of memory currently available to the server.</p> <p>When a server has Intel® Optane™ DC persistent memory modules the effective memory is calculated as follows:</p> <ul style="list-style-type: none"> <li>• <b>Memory mode or Mixed mode</b>—It is an approximate sum of all the DCPMM memory.</li> </ul> <p><b>Note</b> Memory and Mixed modes are available only on some servers.</p> <ul style="list-style-type: none"> <li>• <b>Appdirect mode</b>—It is an approximate sum of all the DCPMM memory and the DRAMs memory.</li> </ul>
<b>Redundant Memory</b> field	The amount of memory used for redundant storage.
<b>Failed Memory</b> field	The amount of memory that is currently failing, in megabytes.
<b>Ignored Memory</b> field	The amount of memory currently not available for use, in megabytes.
<b>Number of Ignored DIMMs</b> field	The number of DIMMs that the server cannot access.
<b>Number of Failed DIMMs</b> field	The number of DIMMs that have failed and cannot be used.
<b>Memory RAS Possible</b> field	Details about the RAS memory configuration that the server supports.
<b>Memory Configuration</b> field	<p>The current memory configuration. This can be one of the following:</p> <ul style="list-style-type: none"> <li>• <b>Maximum Performance</b>—The system automatically optimizes the memory performance.</li> <li>• <b>Mirroring</b>—The server maintains two identical copies of the data in memory. This option effectively halves the available memory on the server, as one half is automatically reserved for mirrored copy.</li> <li>• <b>Lockstep</b>—If the DIMM pairs in the server have an identical type, size, and organization and are populated across the SMI channels, you can enable lockstep mode to minimize memory access latency and provide better performance.</li> </ul>
<b>DIMM location diagram</b>	Displays the DIMM or memory layout for the current server.

**Step 5** In the **DIMM Black Listing** area, view the overall status of a DIMM and also enable DIMM black listing.

Name	Description
<b>Overall DIMM Status</b> field	<p>The overall status of a DIMM. This can be one of the following:</p> <ul style="list-style-type: none"> <li>• <b>Good</b>—The DIMM status is available.</li> <li>• <b>Severe Fault</b>—The DIMM status when uncorrectable ECC errors are present.</li> </ul>

Name	Description
<b>Enable DIMM Black List</b> checkbox	Check this option to enable DIMM black listing.

**Step 6** In the **Memory Details** table, review the following detailed information about each DIMM:

**Tip** Click a column header to sort the table rows, according to the entries in that column.

Name	Description
<b>Name</b> column	The name of the DIMM slot in which the memory module is installed.
<b>Capacity</b> column	The size of the DIMM.
<b>Channel Speed</b> column	The clock speed of the memory channel, in megahertz.
<b>Channel Type</b> column	The type of memory channel.
<b>Memory Type Detail</b> column	The type of memory used in the device.
<b>Bank Locator</b> column	The location of the DIMM within the memory bank.
<b>Manufacturer</b> column	The vendor ID of the manufacturer. This can be one of the following: <ul style="list-style-type: none"> <li>• <b>0x2C00</b>—Micron Technology, Inc.</li> <li>• <b>0x5105</b>—Qimonda AG i. In.</li> <li>• <b>0x802C</b>—Micron Technology, Inc.</li> <li>• <b>0x80AD</b>—Hynix Semiconductor Inc.</li> <li>• <b>0x80CE</b>—Samsung Electronics, Inc.</li> <li>• <b>0x8551</b>—Qimonda AG i. In.</li> <li>• <b>0xAD00</b>—Hynix Semiconductor Inc.</li> <li>• <b>0xCE00</b>—Samsung Electronics, Inc.</li> </ul>
<b>Serial Number</b> column	The serial number of the DIMM.
<b>Asset Tag</b> column	The asset tag associated with the DIMM, if any.
<b>Part Number</b> column	The part number for the DIMM assigned by the vendor.
<b>Visibility</b> column	Whether the DIMM is available to the server.
<b>Operability</b> column	Whether the DIMM is currently operating correctly.
<b>Data Width</b> column	The amount of data the DIMM supports, in bits.

# Viewing PCI Adapter Properties

## Before you begin

The server must be powered on, or the properties will not display.

## Procedure

- Step 1** In the **Navigation** pane, click the **Chassis** menu.
- Step 2** In the **Chassis** menu, click **Inventory**.
- Step 3** In the **Inventory** pane, click the **PCI Adapters** tab.
- Step 4** In the **PCI Adapters** area, review the following information for the installed PCI adapters:

Name	Description
Slot ID column	The slot in which the adapter resides.
Product Name column	The name of the adapter.
Option ROM Status column	Indicates the Option ROM status. This can be one of the following: <ul style="list-style-type: none"><li>• Loaded—Data is available in the card.</li><li>• Unloaded—Data is not available in the card.</li><li>• Load Error—Card is present and Option ROM is enabled. But Option ROM failed to load due to an error in the card.</li></ul>
Firmware Version column	The firmware versions of the adapters. <b>Note</b> The firmware versions are displayed only for adapters that provide versions through the standard UEFI interface. For example, Intel LOM and Emulex Adapters.
Vendor ID column	The adapter ID assigned by the vendor.
Sub Vendor ID column	The secondary adapter ID assigned by the vendor.
Device ID column	The device ID assigned by the vendor.
Sub Device ID column	The secondary device ID assigned by the vendor.

# Viewing Storage Properties

## Before you begin

The server must be powered on, or the properties will not display.

## Procedure

- Step 1** In the **Navigation** pane, click the **Compute** menu.
- Step 2** In the **Compute** menu, select a server.
- Step 3** In the work pane, click the **Inventory** tab.
- Step 4** In the **Storage** tab, review the following information:

Name	Description
<b>Controller</b> field	PCIe slot in which the controller drive is located.
<b>PCI Slot</b> field	The name of the PCIe slot in which the controller drive is located.
<b>Product Name</b> field	Name of the controller.
<b>Serial Number</b> field	The serial number of the storage controller.
<b>Firmware Package Build</b> field	The active firmware package version number.
<b>Product ID</b> field	Product ID of the controller.
<b>Battery Status</b> field	Status of the battery.
<b>Cache Memory Size</b> field	The size of the cache memory, in megabytes.
<b>Health</b> field	The health of the controller.

# Viewing TPM Properties

## Procedure

- Step 1** In the **Navigation** pane, click the **Chassis** menu.
- Step 2** In the **Chassis** menu, click **Inventory**.
- Step 3** In the **Inventory** pane, click the **TPM** tab
- Step 4** Review the following information:

Name	Description
<b>Version</b> field	The TPM version. This field displays <b>NA</b> if the TPM version details are not available.
<b>Presence</b> field	<p>Presence of the TPM module on the host server.</p> <ul style="list-style-type: none"> <li>• <b>Equipped</b>—The TPM is present on the host server.</li> <li>• <b>Empty</b>—The TPM does not exist on the host server.</li> </ul>
<b>Model</b> field	The model number of the TPM. This field displays <b>NA</b> if the TPM does not exist on the host server.
<b>Enabled Status</b> field	<p>Whether or not the TPM is enabled.</p> <ul style="list-style-type: none"> <li>• <b>Enabled</b>—The TPM is enabled.</li> <li>• <b>Disabled</b>—The TPM is disabled.</li> <li>• <b>Unknown</b>—The TPM does not exist on the host server.</li> </ul>
<b>Vendor</b> field	The name of the TPM vendor. This field displays <b>NA</b> if the TPM does not exist on the host server.
<b>Active Status</b> field	<p>Activation status of the TPM.</p> <ul style="list-style-type: none"> <li>• <b>Activated</b>—The TPM is activated.</li> <li>• <b>Deactivated</b>—The TPM is deactivated.</li> <li>• <b>Unknown</b>—The TPM does not exist on the host server.</li> </ul> <p><b>Note</b> In some C-series servers that have installed TPM version 2.0, <b>Active Status</b> is displayed as <b>NA</b>.</p>
<b>Serial</b> field	The serial number of the TPM. This field displays <b>NA</b> if the TPM does not exist on the host server.
<b>Ownership</b> field	<p>The ownership status of TPM.</p> <ul style="list-style-type: none"> <li>• <b>Owned</b>—The TPM is owned.</li> <li>• <b>Unowned</b>—The TPM is unowned.</li> <li>• <b>Unknown</b>—The TPM does not exist on the host server.</li> </ul> <p><b>Note</b> In some C-series servers that have installed TPM version 2.0, <b>Ownership</b> status is displayed as <b>NA</b>.</p>
<b>Revision</b> field	Revision number of the TPM. This field displays <b>NA</b> if the TPM does not exist on the host server.
<b>Firmware Version</b> field	Details of the firmware version.



# Viewing a PID Catalog

## Procedure

- Step 1** In the **Navigation** pane, click the **Compute** tab.
- Step 2** In the **Compute** working area, click the **PID Catalog** tab.
- Step 3** Review the following summary information about the PID catalog:
- **Activation Status:** The activation status of the PID catalog.
  - **Current Activated Version:** The activated version of the PID catalog.
- Step 4** In the **CPUs** table, review the following information about CPU:

Name	Description
<b>Socket Name</b> column	The socket in which the CPU is installed.
<b>Product ID</b> column	The product ID for the CPU.
<b>Model</b> column	The model number of the CPU

- Step 5** In the **Memory** table, review the following information about memory:

Name	Description
<b>Name</b> column	The name of the memory slot.
<b>Product ID</b> column	The product ID for the memory slot assigned by the vendor.
<b>Vendor ID</b> column	The ID assigned by the vendor.
<b>Capacity</b> column	The size of the memory.
<b>Speed (MHz)</b> column	The memory speed, in megahertz.

- Step 6** In the **PCI Adapters** table, review the following information about PCI adapter:

Name	Description
<b>Slot</b> column	The slot in which the adapter resides.
<b>Product ID</b> column	The product ID for the adapter.
<b>Vendor ID</b> column	The adapter ID assigned by the vendor.
<b>Sub Vendor ID</b> column	The secondary adapter ID assigned by the vendor.
<b>Device ID</b> column	The device ID assigned by the vendor.
<b>Sub Device ID</b> column	The secondary device ID assigned by the vendor.

**Step 7** In the **HDD** table, review the following information about HDD:

Name	Description
<b>Disk</b> column	The disk of the hard drive.
<b>Product ID</b> column	The product ID for the hard drive.
<b>Controller</b> column	The system-defined name of the selected Cisco Flexible Flash controller. This name cannot be changed.
<b>Vendor</b> column	The vendor for the hard drive.
<b>Model</b> column	The model of the hard drive.

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