

# HP Virtualization Performance Viewer

For the Windows® and Linux operating systems

Software Version: 1.20

## Reference Guide: Metric Definition

Document Release Date: December 2013

Software Release Date: December 2013



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# Chapter 1: Introduction

HP Virtualization Performance Viewer (vPV) is a web-based tool that helps you monitor the resources in virtualized and cloud environment. vPV helps you visualize performance data for elements in the context of each other to rapidly analyze bottlenecks. For more information on vPV, visit the vPV home page at <http://www.hp.com/go/vpv>.

## Chapter 2: Metrics

This chapter provides information on metrics. A metric is a measurement that gives an indication of the operational health and performance of a resource. Metric is a parameter or a set of parameters that you can use to monitor and measure the health, performance, and availability of a monitored resource.

vPV provides the following types of metrics:

- ["vCenter Host" below](#)
- ["vCenter Guest" on page 14](#)
- ["vCenter Datacenter" on page 21](#)
- ["vCenter Cluster" on page 23](#)
- ["vCenter Datastore" on page 25](#)
- ["vCenter Respool" on page 26](#)
- ["vCenter VirtualApp" on page 28](#)
- ["vCenter BYVM\\_STORAGE" on page 30](#)

### vCenter Host

The following table lists the metrics included in vCenter Host:

Metric Name	Description
SystemRole	On a Host the metric is HOST. For a logical system the value is GUEST and for a resource pool the value is <b>RESPOOL</b> . For datacenter, this is <b>DATACENTER</b> . For cluster, this is <b>CLUSTER</b> . For datastore, this is <b>DATASTORE</b> .
BelongsToDatacenter	Name of the Datacenter to which this machine belongs.
ClusterName	On a Host and resource pool it is the name of the cluster to which the host belongs to when it is managed by virtual centre. For a logical system the value is NA.
ConnectionState	For a host this metric is the current status of the connection. For logical systems, it indicates whether or not the entity is available for management. It can have values as - <b>Connected</b> , <b>Disconnected</b> or <b>NotResponding</b> . The value is NA for all other entities.

Metric Name	Description
CPUClockSpeed	On a Host and logical system, it is the clock speed of the CPUs in MHz if all of the processors have the same clock speed. For a resource pool the value is NA.
CPUCycleEntlMax	On a Host, logical system and resource pool this value indicates the maximum processor capacity, in MHz, configured for the entity.
CPUCycleEntlMin	On a Host, logical system and resource pool this value indicates the minimum processor capacity, in MHz, configured for the entity.
CPUCycleTotalUsed	On a Host, resource pool and logical system, it is the total time the physical CPUs were utilized during the interval, represented in CPU cycles.
CPUEntlEMin	On a Host, Logical system and resource Pool this metric is NA
CPUEntlMax	On a HOST, for a host, the metric is equivalent to total number of cores on the host. For a resource pool and a logical system, this metrics indicates the maximum CPU units configured for it.
CPUEntlMin	On a HOST, the metric is equivalent to total number of cores on the host. For a resource pool and a logical system, this metrics indicates the guaranteed minimum CPU units configured for it.
CPUEntlUtil	Percentage of entitled processing units (guaranteed processing units allocated to this logical system) consumed by the logical system.
CPUMTEnabled	On a Host, this metric indicates whether the CPU hardware threads are enabled or not for a host while for a resource pool and a logical system the value is not available ("na").
CPUPhysReadyUtil	On a logical system it is the percentage of time, during the interval, that the CPU was in ready state. For a host and resource pool the value is NA.
CPUPhysSysModeUtil	On a Host, the metrics indicates the percentage of time the physical CPUs were in system mode during the interval for the host or logical system.
CPUPhysTotalTime	On a logical system, the value indicates the time spent in seconds on the physical CPU by logical system or host or resource pool.
CPUPhysTotalUtil	On a Host, the value indicates percentage of total time the physical CPUs were utilized by logical system or resource pool.

Metric Name	Description
CPUPhysUserModeUtil	On a Host, the metrics indicates the percentage of time the physical CPUs were in user mode during the interval for the host or logical system.
CPUPhysWaitUtil	On a logical system it is the percentage of time, during the interval, that the virtual CPU was waiting for the IOs to complete. For a host and resource pool the value is NA.
CPUPhyScUtil	This metric indicates the number of CPU units utilized by the logical system.
CPUSharesPrio	This metric indicates the weightage or priority assigned to a Uncapped logical system. This value determines the minimum share of unutilized processing units that this logical system can utilize.
CPUSysModeUtil	On a Host and logical system, this metric indicates the percentage of time the CPU was in system mode during the interval.
CPUTotalUtil	On a logical system the value indicates percentage of total time the logical CPUs were not idle during the interval. For a host, this metric value is same as CPU_PHYS_TOTAL_UTIL.
CPUUnreserved	On a Host, it is the number of CPU cycles that are available for creating a new logical system. For a logical system and resource pool the value is NA.
CPUUserModeUtil	On a Host and logical system, this metric indicates the percentage of time the CPU was in user mode during the interval.
DiskCommandAbortRate	Disk Command Abort Rate for the logical system.
DiskPhysIOByte	On a Host and a logical system, this metric indicates the number of KBs transferred to and from disks during the interval.
DiskPhysIOByteRate	On a Host and a logical system, this metric indicates the average number of KBs per second at which data was transferred to and from disks during the interval.
DiskPhysRead	On a Host and a logical system, this metric indicates the number of physical reads during the interval.
DiskPhysReadByteRate	On a Host and a logical system, this metric indicates the average number of KBs per second at which data was transferred from disks during the interval.
DiskPhysReadRate	On a Host and a logical system, this metric indicates the number of physical reads per second during the interval.

Metric Name	Description
DiskPhysWrite	On a Host and a logical system, this metric indicates the number of physical reads during the interval.
DiskPhysWriteByteRate	On a Host and a logical system, this metric indicates the average number of KBs per second at which data was transferred to disks during the interval.
DiskPhysWriteRate	On a Host and a logical system, this metric indicates the number of physical writes per second during the interval.
DiskQueueDepthPeak	The disk queue depth for the logical system.
DiskReadLatency	Total disk read latency for the logical system.
DiskUtil	On a Host, it is the average percentage of time during the interval (average utilization) that all the disks had IO in progress. For logical system and resource pool the value is NA.
DiskUtilPeak	On a Host, it is the utilization of the busiest disk during the interval. For a logical system and resource pool the value is NA.
DiskWriteLatency	Total disk write latency for this logical system.
GuestToolsStatus	On vMA, for a guest the metric is the current status of guest Integration Tools in the guest operating system, if known. The value is NA for all other entities.
IPAddress	On a Host, this metric indicates the IP Address for a host and a logical system while for a resource pool the value is NA.
LSID	On a Host, this metric is a unique identifier for a host, resource pool and a logical system. The value of the metric may change for an instance across collection intervals.
LSMode	On a HOST, the value is <b>Capped</b> for a host and <b>Uncapped</b> for a logical system. For resource pool, the value is Uncapped or Capped depending on whether the reservation is expandable or not for it.
LSName	On a Host, this metric is a unique identifier for host, resource pool and a logical system.
ParentType	On a System, the metric indicates the type of parent entity. The value is <b>HOST</b> if the parent is a host, <b>RESPOOL</b> if the parent is resource pool. For a host, the value is NA.
LSShared	On a HOST, the value is <b>Dedicated</b> for host, and <b>Shared</b> for logical system and resource pool.
MemActive	On a logical system it is the amount of memory, that is actively used. For a host and resource pool the value is NA.

Metric Name	Description
MemAvail	On a HOST, the amount of physical memory available in the host system (in MBs unless otherwise specified). For a logical system and resource pool the value is NA.
MemBalloonUsed	On a Host, for logical system, it is the amount of memory held by memory control for ballooning. The value is represented in KB. For a host and resource pool the value is NA.
MemBalloonUtil	On a logical system, it is the amount of memory held by memory control for ballooning. It is represented as a percentage of MEM_ENTL. For a host and resource pool value is NA.
MemEntl	On a Host the value is the physical memory available in the system and for a logical system this metric indicates the minimum memory configured while for resource pool the value is NA.
MemEntlMax	On a Host, this metric indicates the maximum amount of memory configured for a resource pool or a logical system. For a host, the value is the amount of physical memory available in the system.
MemEntlMin	On a Host, this metric indicates the reserved amount of memory configured for a host or resource pool or a logical system.
MemEntlUtil	On a Host, or a logical system, the value indicates percentage of entitled memory in use during the interval by it.
MemFree	On a Host and logical system, it is the amount of memory not allocated. For a resource pool the value is na.
MemFreeUtil	The percentage of memory that is free at the end of the interval. For a RP, the value is NA.
MemOverallHealth	On a Host, it is a number that indicates the state of the memory. Low number indicates system is not under memory pressure. For a logical system and resource pool the value is "na". <b>0</b> - High - indicates free memory is available and no memory pressure. <b>1</b> - Soft <b>2</b> - Hard <b>3</b> - Low - indicates there is a pressure for free memory.
MemOverhead	The amount of memory associated with a logical system, that is currently consumed on the host system, due to virtualization.
MemPhys	On a Host, the value is the physical memory available in the system and for a logical system this metric indicates the minimum memory configured.
MemPhysUtil	The percentage of physical memory used during the interval.

Metric Name	Description
MemSharesPrio	The weightage or priority for memory assigned to the logical system. This value influences the share of unutilized physical Memory that the logical system can utilize.
MemSwapUtil	On a logical system, it is the percentage of swap memory utilized with respect to the amount of swap memory available for a logical system. For host and resource pool value is NA.
MemSwapIn	On a logical system the value indicates the amount of memory that is swapped in during the interval. For a host and resource pool the value is NA.
MemSwapOut	On a logical system the value indicates the amount of memory that is swapped in during the interval. For a host and resource pool the value is NA.
MemSwapped	On a Host, logical system and resource pool, this metrics indicates the amount of memory that has been transparently swapped to and from the disk.
MemSwapTarget	On a logical system the value indicates the amount of memory that can be swapped. For a host and resource pool the value is "na".
MemSysUtil	On a Host, it is the amount of physical memory used by the system during the interval. For a logical system and resource pool the value is NA.
MemUnreserved	On a HOST it is the amount of memory, that is unreserved. For a logical system and resource pool the value is "na".
MemUsed	The amount of memory used by the logical system at the end of the interval.
NetByteRate	On a Host, and logical system, it is the sum of data transmitted and received for all the NIC instances of the host and virtual machine. It is represented in KBps. For a resource pool the value is NA.
NetInByte	On a Host and logical system, it is number of bytes, in MB, received during the interval. For a resource pool the value is NA.
NetInPacket	On a Host and logical system, it is the number of successful packets per second, received for all network interfaces during the interval.
NetInPacketRate	On a Host and logical system, it is the number of successful packets, received for all network interfaces during the interval.

Metric Name	Description
NetOutByte	On a Host and logical system, it is number of bytes, in MB, transmitted during the interval. For a resource pool the value is NA.
NetOutPacket	On a Host and logical system, it is the number of successful packets, sent for all network interfaces during the interval.
NetOutPacketRate	The number of successful packets sent through all network interfaces over the cumulative collection time. Successful packets are those that have been processed without errors or collisions. This does not include data for loopback interface.
NetPacketRate	On a Host and logical system, it is the number of successful packets per second, both sent and received, for all network interfaces during the interval.
NumActiveGuests	On a Host, this indicates the number of logical systems hosted in a system that are active. For a logical system and resource pool the value is NA.
NumCPU	The number of virtual CPUs configured for this logical system.
NumCPUCore	On a Host, this metric provides the total number of CPU cores on the system. For a logical system or a resource pool the value is NA.
NumCPUSocket	On a Host, this metric indicates the number of physical CPU sockets on the system. For a logical system or a resource pool the value is NA.
NumDisk	The number of disks configured for this logical system. Only local disk devices and optical devices present on the system are counted in this metric.
NumGuests	On a Host, this indicates the number of logical systems hosted in a system. For a logical system and resource pool the value is NA.
NumNetif	On a Host, the metric is the number of network adapters on the host. For a logical system, the metric is the number of network interfaces configured for the logical system. For a resource pool the metric is NA.
NumSnapshots	For a guest, the metric is the number of snapshots created for the system. The value is NA for all other entities.
ParentUUID	On a Host, the metric indicates the UUID appended to display_name of the parent entity. For a logical system and resource pool this metric could indicate the UUID appended to display_name of a host or resource pool as they can be created under a host or resource pool.

Metric Name	Description
StateChangeTime	For a guest, the metric is the epoch time when the last state change was observed. The value is NA for all other entities.
SystemHostHostName	On a logical system and resource pool, it is the FQDN of the host on which they are hosted. For a host, the value is NA.
SystemHostName	On a Host, for a host and logical system, the metric is the Fully Qualified Domain Name, while for resource pool the value is NA.
SystemName	On a Host, this metric indicates the name of the host or logical system or resource pool.
SystemID	UUID of this logical system. This Id uniquely identifies this logical system across multiple hosts. In VMWare, for a logical system or a host, the value indicates the UUID appended to display_name of the system. For a resource pool the value is hostname of the host where resource pool is hosted followed by the unique id of resource pool.
SystemMachineModel	On a Host, it is the CPU model of the host system. For a logical system and resource pool the value is "na".
SystemOSType	On a Host, the metric can have the following values for host and logical system: <b>ESX/ESXi</b> followed by version or ESX-Serv (applicable only for a host) Linux, Windows, Solaris, Unknown. The value is NA for a resource pool
SystemPath	On a Host, the metric indicates the installation path for host or logical system.
SystemState	On a Host, this metric can have one of the following states for a Host: <b>on, off, unknown</b> . The values for a logical system can be one of the following: <b>on, off, suspended, unknown</b> . The value is NA for a Resource Pool.
SystemUptimeHours	On a Host and logical system the metrics is the time, in hours, since the last system reboot. For a resource pool the value is NA.
SystemUptimeSeconds	On a Host and logical system the metrics is the time, in seconds, since the last system reboot. For a resource pool the value is NA.
SystemVirtType	On a Host, the value of this metric is <b>VMware</b> .
VCIPAddress	On a Host , the metric indicates the IP address of the Virtual Centre that the host is managed by. For a resource pool and logical system the value is NA.
vMotionEnabled	On a Host, this metric indicates whether vMotion is enabled or not. It is NA for other entities.

Metric Name	Description
vmVersion	For a Guest, this metric indicates the version of the Virtual Machine. It is NA for other entities.
CPUReadyTime	Time for which the virtual machine was ready, but could not get scheduled to run on the physical CPU.
CPUCoStopTime	Time the virtual machine is ready to run, but is unable to run due to co-scheduling constraints.
CPUIdleTime	Total time that the CPU spent in an idle state.
CPUWaitTime	Total time that the CPU spent in wait state.
CPUDemandUsed	The amount of CPU resources (MHz) a virtual machine would use if there were no CPU contention or CPU limit.
CPUUsedTime	Total time for which the CPU was used.

## vCenter Guest

The following table lists the metrics included in vCenter Guest:

Metric Name	Description
SystemRole	On a Host the metric is <b>HOST</b> . For a logical system the value is <b>GUEST</b> and for a resource pool the value is <b>RESPOOL</b> . For datacenter, this is <b>DATACENTER</b> . For cluster, this is <b>CLUSTER</b> . For datastore, this is <b>DATASTORE</b> .
BelongsToDatacenter	Name of the Datacenter to which this machine belongs.
ClusterName	On a Host and resource pool it is the name of the cluster to which the host belongs to when it is managed by virtual centre. For a logical system the value is NA.
ConnectionState	For a host this metric is the current status of the connection. For logical systems, it indicates whether or not the entity is available for management. It can have values as - <b>Connected, Disconnected or NotResponding</b> . The value is <b>NA</b> for all other entities.
CPUClockSpeed	On a Host and logical system, it is the clock speed of the CPUs in MHz if all of the processors have the same clock speed. For a resource pool the value is NA.
CPUCycleEntlMax	On a Host, logical system and resource pool this value indicates the maximum processor capacity, in MHz, configured for the entity.
CPUCycleEntlMin	On a Host, logical system and resource pool this value indicates the minimum processor capacity, in MHz, configured for the entity.

Metric Name	Description
CPUCycleTotalUsed	On a Host, resource pool and logical system, it is the total time the physical CPUs were utilized during the interval, represented in CPU cycles.
CPUEntIEMin	On a Host, Logical system and resource Pool this metric is NA
CPUEntIMax	On a HOST, for a host, the metric is equivalent to total number of cores on the host. For a resource pool and a logical system, this metrics indicates the maximum CPU units configured for it.
CPUEntIMin	On a HOST, the metric is equivalent to total number of cores on the host. For a resource pool and a logical system, this metrics indicates the guaranteed minimum CPU units configured for it.
CPUEntIUtil	Percentage of entitled processing units (guaranteed processing units allocated to this logical system) consumed by the logical system.
CPUMTEnabled	On a Host, this metric indicates whether the CPU hardware threads are enabled or not for a host while for a resource pool and a logical system the value is not available("na").
CPUPhysReadyUtil	On a logical system it is the percentage of time, during the interval, that the CPU was in ready state. For a host and resource pool the value is NA.
CPUPhysSysModeUtil	On a Host, the metrics indicates the percentage of time the physical CPUs were in system mode during the interval for the host or logical system.
CPUPhysTotalTime	On a logical system, the value indicates the time spent in seconds on the physical CPU by logical system or host or resource pool.
CPUPhysTotalUtil	On a Host, the value indicates percentage of total time the physical CPUs were utilized by logical system or resource pool.
CPUPhysUserModeUtil	On a Host, the metrics indicates the percentage of time the physical CPUs were in user mode during the interval for the host or logical system.
CPUPhysWaitUtil	On a logical system it is the percentage of time, during the interval, that the virtual CPU was waiting for the IOs to complete. For a host and resource pool the value is NA.
CPUPhyScUtil	This metric indicates the number of CPU units utilized by the logical system.
CPUSharesPrio	This metric indicates the weightage or priority assigned to a Uncapped logical system. This value determines the minimum share of unutilized processing units that this logical system can utilize.

Metric Name	Description
CPUSysModeUtil	On a Host and logical system, this metric indicates the percentage of time the CPU was in system mode during the interval.
CPUTotalUtil	On a logical system the value indicates percentage of total time the logical CPUs were not idle during the interval. For a host, this metric value is same as CPU_PHYS_TOTAL_UTIL.
CPUUnreserved	On a Host, it is the number of CPU cycles that are available for creating a new logical system. For a logical system and resource pool the value is NA.
CPUUserModeUtil	On a Host and logical system, this metric indicates the percentage of time the CPU was in user mode during the interval.
DiskCommandAbortRate	Disk Command Abort Rate for the logical System.
DiskPhysIOByte	On a Host and a logical system, this metric indicates the number of KBs transferred to and from disks during the interval.
DiskPhysIOByteRate	On a Host and a logical system, this metric indicates the average number of KBs per second at which data was transferred to and from disks during the interval.
DiskPhysRead	On a Host and a logical system, this metric indicates the number of physical reads during the interval.
DiskPhysReadByteRate	On a Host and a logical system, this metric indicates the average number of KBs per second at which data was transferred from disks during the interval.
DiskPhysReadRate	On a Host and a logical system, this metric indicates the number of physical reads per second during the interval.
DiskPhysWrite	On a Host and a logical system, this metric indicates the number of physical reads during the interval.
DiskPhysWriteByteRate	On a Host and a logical system, this metric indicates the average number of KBs per second at which data was transferred to disks during the interval.
DiskPhysWriteRate	On a Host and a logical system, this metric indicates the number of physical writes per second during the interval.
DiskQueueDepthPeak	The disk queue depth for this logical system.
DiskReadLatency	Total disk read latency for the logical system.
DiskUtil	On a Host, it is the average percentage of time during the interval (average utilization) that all the disks had IO in progress. For logical system and resource pool the value is NA.

Metric Name	Description
DiskUtilPeak	On a Host, it is the utilization of the busiest disk during the interval. For a logical system and resource pool the value is NA.
DiskWriteLatency	Total disk write latency for this logical system.
GuestToolsStatus	On vMA, for a guest the metric is the current status of guest Integration Tools in the guest operating system, if known. The value is NA for all other entities.
IPAddress	On a Host, this metric indicates the IP Address for a host and a logical system while for a resource pool the value is NA.
LSID	On a Host, this metric is a unique identifier for a host, resource pool and a logical system. The value of this metric may change for an instance across collection intervals.
LSMode	On a HOST, the value is <b>Capped</b> for a host and <b>Uncapped</b> for a logical system. For resource pool, the value is Uncapped or Capped depending on whether the reservation is expandable or not for it.
LSName	On a Host, this metric is a unique identifier for host, resource pool and a logical system.
ParentType	On a System, the metric indicates the type of parent entity. The value is <b>HOST</b> if the parent is a host, <b>RESPOOL</b> if the parent is resource pool. For a host, the value is NA.
LSShared	On a HOST, the value is <b>Dedicated</b> for host, and <b>Shared</b> for logical system and resource pool.
MemActive	On a logical system it is the amount of memory, that is actively used. For a host and resource pool the value is NA.
MemAvail	On a HOST, the amount of physical memory available in the host system (in MBs unless otherwise specified). For a logical system and resource pool the value is NA.
MemBalloonUsed	On a Host, for logical system, it is the amount of memory held by memory control for ballooning. The value is represented in KB. For a host and resource pool the value is NA.
MemBalloonUtil	On a logical system, it is the amount of memory held by memory control for ballooning. It is represented as a percentage of MEM_ENTL. For a host and resource pool value is NA.
MemEntl	On a Host the value is the physical memory available in the system and for a logical system this metric indicates the minimum memory configured while for resource pool the value is NA.

Metric Name	Description
MemEntlMax	On a Host, this metric indicates the maximum amount of memory configured for a resource pool or a logical system. For a host, the value is the amount of physical memory available in the system.
MemEntlMin	On a Host, this metric indicates the reserved amount of memory configured for a host or resource pool or a logical system.
MemEntlUtil	On a Host, or a logical system, the value indicates percentage of entitled memory in use during the interval by it.
MemFree	On a Host and logical system, it is the amount of memory not allocated. For a resource pool the value is "na".
MemFreeUtil	The percentage of memory that is free at the end of the interval. For a resource pool, the value is NA.
MemOverallHealth	On a Host, it is a number that indicates the state of the memory. Low number indicates system is not under memory pressure. For a logical system and resource pool the value is "na". <b>0</b> - High - indicates free memory is available and no memory pressure. <b>1</b> - Soft <b>2</b> - Hard <b>3</b> - Low - indicates there is a pressure for free memory.
MemOverhead	The amount of memory associated with a logical system, that is currently consumed on the host system, due to virtualization.
MemPhys	On a Host, the value is the physical memory available in the system and for a logical system this metric indicates the minimum memory configured.
MemPhysUtil	The percentage of physical memory used during the interval.
MemSharesPrio	The weightage or priority for memory assigned to this logical system. This value influences the share of unutilized physical Memory that this logical system can utilize.
MemSwapUtil	On a logical system, it is the percentage of swap memory utilized with respect to the amount of swap memory available for a logical system. For host and resource pool, the value is NA.
MemSwapIn	On a logical system, the value indicates the amount of memory that is swapped in during the interval. For a host and resource pool, the value is NA.
MemSwapOut	On a logical system, the value indicates the amount of memory that is swapped in during the interval. For a host and resource pool, the value is NA.
MemSwapped	On a Host, logical system, and resource pool, this metric indicates the amount of memory that is transparently swapped to and from the disk.

Metric Name	Description
MemSwapTarget	On a logical system, the value indicates the amount of memory that can be swapped. For a host and resource pool, the value is na.
MemSysUtil	On a Host, it is the amount of physical memory used by the system during the interval. For a logical system and resource pool, the value is NA.
MemUnreserved	On a Host, it is the amount of memory, that is unreserved. For a logical system and resource pool, the value is na.
MemUsed	The amount of memory used by the logical system at the end of the interval.
NetByteRate	On a Host, and logical system, it is the sum of data transmitted and received for all the NIC instances of the host and virtual machine. It is represented in KBps. For a resource pool, the value is NA.
NetInByte	On a Host and logical system, it is the number of bytes, in MB, received during the interval. For a resource pool, the value is NA.
NetInPacket	On a Host and logical system, it is the number of successful packets received per second, for all network interfaces during the interval.
NetInPacketRate	On a Host and logical system, it is the number of successful packets received, for all network interfaces during the interval.
NetOutByte	On a Host and logical system, it is the number of bytes, in MB, transmitted during the interval. For a resource pool, the value is NA.
NetOutPacket	On a Host and logical system, it is the number of successful packets sent, for all network interfaces during the interval.
NetOutPacketRate	The number of successful packets sent through all network interfaces over the cumulative collection time. Successful packets are those that are processed without errors or collisions. This does not include data for loopback interface.
NetPacketRate	On a Host and logical system, it is the number of successful packets sent and received per second, for all network interfaces during the interval.
NumActiveGuests	On a Host, this indicates the number of logical systems hosted in a system, that are active. For a logical system and resource pool, the value is NA.
NumCPU	The number of virtual CPUs configured for this logical system.
NumCPUCore	On a Host, this metric provides the total number of CPU cores on the system. For a logical system or a resource pool, the value is NA.

Metric Name	Description
NumCPUSocket	On a Host, this metric indicates the number of physical cpu sockets on the system. For a logical system or a resource pool the value is NA.
NumDisk	The number of disks configured for this logical system. Only local disk devices and optical devices present on the system are counted in this metric.
NumGuests	On a Host, this indicates the number of logical systems hosted in a system. For a logical system and resource pool, the value is NA.
NumNetif	On a Host, the metric is the number of network adapters on the host. For a logical system, the metric is the number of network interfaces configured for the logical system. For a resource pool, the metric is NA.
NumSnapshots	For a guest, the metric is the number of snapshots created for the system. The value is NA for all other entities.
ParentUUID	On a Host, the metric indicates the UUID appended to display_name of the parent entity. For a logical system and resource pool, this metric could indicate the UUID appended to display_name of a host or resource pool as they can be created under a host or resource pool.
StateChangeTime	For a guest, the metric is the epoch time when the last state change was observed. The value is NA for all other entities.
SystemHostHostName	On a logical system and resource pool, it is the FQDN of the host on which it is hosted. For a host, the value is NA.
SystemHostName	On a Host, for a host and logical system, the metric is the FQDN, while, for resource pool, the value is NA.
SystemName	On a Host, this metric indicates the name of the host, logical system, or resource pool.
SystemID	UUID of this logical system. This Id uniquely identifies the logical system across multiple hosts. In VMWare, for a logical system or a host, the value indicates the UUID appended to display_name of the system. For a resource pool, the value is hostname of the host, where resource pool is hosted followed by the unique id of resource pool.
SystemMachineModel	On a Host, it is the CPU model of the host system. For a logical system and resource pool, the value is na.
SystemOSType	On a Host, the metric can have the following values for host and logical system: ESX/ESXi followed by version or ESX-Serv (applicable only for a host) Linux, Windows, Solaris, Unknown. The value is NA for a resource pool.

Metric Name	Description
SystemPath	On a Host, the metric indicates the installation path for host or logical system.
SystemState	On a Host, this metric can have one of the following states for a Host: <b>on, off, unknown</b> . The values for a logical system can be one of the following: <b>on, off, suspended, unknown</b> . The value is NA for a Resource Pool.
SystemUptimeHours	On a Host and logical system, the metric is the time, in hours, since the last system reboot. For a resource pool, the value is NA.
SystemUptimeSeconds	On a Host and logical system, the metrics is the time, in seconds, since the last system reboot. For a resource pool, the value is NA.
SystemVirtType	On a Host, the value of this metric is VMware Metric Equivalent for VMWare, for Host, Guest, and resource pool, the value is VMWare.
VCIPAddress	On a Host , the metric indicates the IP address of the Virtual Centre that the host is managed by. For a resource pool and logical system, the value is NA.
vMotionEnabled	On a Host, this metric indicates whether vMotion is enabled or not. It is NA for other entities.
vmVersion	For a Guest, this metric indicates the version of the Virtual Machine. It is NA for other entities.
CPUReadyTime	Time for which the virtual machine was ready, but could not get scheduled to run on the physical CPU.
CPUCoStopTime	Time the virtual machine is ready to run, but is unable to run due to co-scheduling constraints
CPUIdleTime	Total time that the CPU spent in Idle state.
CPUWaitTime	Total time that the CPU spent in Wait state.
CPUDemandUsed	The amount of CPU resources (MHz) a virtual machine uses if there is no CPU contention or CPU limit.
CPUUsedTime	Total time for which the CPU was used

## vCenter Datacenter

The following table lists the metrics included in vCenter Datacenter:

Metric Name	Description
SystemRole	On a Host the metric is <b>HOST</b> . For a logical system the value is <b>GUEST</b> and for a resource pool the value is <b>RESPOOL</b> . For datacenter, this is <b>DATACENTER</b> . For cluster, this is <b>CLUSTER</b> . For datastore, this is <b>DATASTORE</b> .
LSName	Unique identifier of the Datacenter.
SystemID	UUID of the datacenter. This is display_name.
ParentUUID	Name of the vCenter to which this datacenter belongs.
SystemName	Name of the Datacenter.
NumHosts	Number of hosts under this Datacenter.
NumGuests	Number of VMs under this datacenter.
SystemVirtType	The value of this metric is <b>VMware</b> .
ParentType	On a System, the metric indicates the type of parent entity. The value is <b>HOST</b> if the parent is a host, <b>RESPOOL</b> if the parent is resource pool.
NumClones	Number of virtual machine clone operations.
NumCreate	Number of virtual machine create operations.
NumDeploy	Number of virtual machine template deploy operations.
NumDestroy	Number of virtual machine delete operations.
NumReconfigure	Number of virtual machine reconfigure operations.
TotalVmMotions	Number of Migrations with VMotion (host change operations for powered-on VMs).
TotalSvMotions	Number of Migrations with Storage VMotion (datastore change operations for powered-on VMs).
NumRegister	Number of Virtual Machine register operations.
NumChangeHostDS	Number of host and datastore change operations for powered-off and suspended Virtual Machines.
NumPowerOff	Number of Virtual Machine power off operations.
NumStandByGuest	Number of Virtual Machine standby guest operations.
NumPowerOn	Number of Virtual Machine power on operations.
NumUnRegister	Number of Virtual Machine unregister operations.
NumChangedDS	Number of datastore change operations for powered-off and suspended Virtual Machines.

Metric Name	Description
NumShutDownGuest	Number of Virtual Machine guest shutdown operations.
NumRebootGuest	Number of Virtual Machine guest reboot operations.
NumChangeHost	Number of host change operations for powered-off and suspended Virtual Machines.
NumReset	Number of Virtual Machine reset operations.
NumSuspend	Number of Virtual Machine suspend operations.
MemPhysUtil	% of Physical Memory Used (MB).
CPUTotalUtil	CPU Total Util
NumActiveGuests	Number of logical systems hosted in the system that are active.
NumResourcePools	Number of resource pools on the datacenter.
NumClusters	Number of clusters on the datacenter

## vCenter Cluster

The following table lists the metrics included in vCenter Cluster:

Metric Name	Description
SystemRole	On a Host the metric is <b>HOST</b> . For a logical system the value is <b>GUEST</b> and for a resource pool the value is <b>RESPOOL</b> . For datacenter, this is <b>DATACENTER</b> . For cluster, this is <b>CLUSTER</b> . For datastore, this is <b>DATASTORE</b> .
SystemName	Name of the cluster.
LSName	Unique identifier of the cluster.
SystemID	UUID of the cluster.
ParentUUID	Name of the datacenter to which this cluster belongs.
Type	Type of the Cluster.
NumHosts	Number of hosts on this cluster.
BelongsToDatacenter	Datacenter to which this cluster belongs.
NumClones	Number of virtual machine clone operations.
NumCreate	Number of virtual machine create operations.

Metric Name	Description
NumDeploy	Number of virtual machine template deploy operations.
NumDestroy	Number of virtual machine delete operations.
NumReconfigure	Number of virtual machine reconfigure operations.
TotalVmMotions	Number of Migrations with VMotion (host change operations for powered-on VMs).
TotalSvMotions	Number of Migrations with Storage VMotion (datastore change operations for powered-on VMs).
CPUEntlUtil	CPU entitlement Utilization.
CPUTotalUtil	Total CPU Utilization.
CPUEffectiveUtil	Utilization of total available CPU resources of all hosts within that cluster.
MemEffectiveUtil	Utilization of total amount of machine memory of all hosts in the cluster that is available for use for virtual machine memory (physical memory for use by the Guest OS) and virtual machine overhead memory.
CPUFailover	VMware high availability number of failures that can be tolerated.
MemPhysUtil	Total Memory Utilization.
MemOverhead	The amount of memory associated with a logical system, that is currently consumed on the host system, due to virtualization.
MemEntlUtil	Memory Entitlement Utilization.
MemBalloonUsed	Amount of memory in KB held by memory control for ballooning.
SystemVirtType	The value of this metric is <b>VMware</b> .
ParentType	On a System, the metric indicates the type of parent entity. The value is <b>HOST</b> if the parent is a host, <b>RESPOOL</b> if the parent is resource pool.
DrsConfigEnabled	Whether DRS is enabled on the Cluster.
DasConfigEnabled	Whether HA is enabled on the Cluster.
NumRegister	Number of Virtual Machine register operations.
NumChangeHostDS	Number of host and datastore change operations for powered-off and suspended Virtual Machines.
NumPowerOff	Number of Virtual Machine power off operations.
NumStandByGuest	Number of Virtual Machine standby guest operations.
NumPowerOn	Number of Virtual Machine power on operations.

Metric Name	Description
NumUnRegister	Number of Virtual Machine unregister operations.
NumChangedDS	Number of datastore change operations for powered-off and suspended Virtual Machines.
NumShutDownGuest	Number of Virtual Machine guest shutdown operations.
NumRebootGuest	Number of Virtual Machine guest reboot operations.
NumChangeHost	Number of host change operations for powered-off and suspended Virtual Machines.
NumReset	Number of Virtual Machine reset operations.
NumSuspend	Number of Virtual Machine suspend operations.
MemUsed	Amount of Physical Memory used in MB.
CPUCycleTotalUsed	Amount of CPU Cycles used in MHz.
NumResourcePools	Number of resource pools on the cluster.

## vCenter Datastore

The following table lists the metrics included in vCenter Datastore:

Metric Name	Description
SystemRole	On a Host the metric is <b>HOST</b> . For a logical system the value is <b>GUEST</b> and for a resource pool the value is <b>RESPOOL</b> . For datacenter, this is <b>DATACENTER</b> . For cluster, this is <b>CLUSTER</b> . For datastore, this is <b>DATASTORE</b> .
SystemName	Name of the Datastore.
SystemID	Id of the Datastore.
Type	Datastore type.
Capacity	Datastore Capacity in MB.
DiskUsed	Datastore Space used in MB.
SharePriority	Shared Priority
IORMEnabled	IORM Enabled
IORMThreshold	IORM Threshold
MountedOn	Display name of the parent of the datastore.

Metric Name	Description
ClusterName	Cluster to which this Datastore belongs.
DiskThroughputUsage	Throughput Usage for the datastore.
DiskThroughputContention	Throughput Contention for the datastore.
ConnectionState	Whether datastore is accessible or not.
ParentUUID	UUID of the host to which this datastore belongs.
LSName	Unique identifier of the datastore.
ParentType	Type of the parent of the datastore.
SystemVirtType	The value of this metric is <b>VMware</b> .
NumReadCommands	Average number of read commands issued per second to the datastore during the collection interval.
NumWriteCommands	Average number of write commands issued per second to the datastore during the collection interval.
NumDiskReads	Number of disk reads during the collection interval.
NumDiskWrites	Number of disk writes during the collection interval.
DiskVMDKUsed	Datastore Space used by Virtual Machine Files in MB.
DiskProvisioned	Amount of storage set-aside for use by a datastore in MB.
DiskSnapshotUsed	Datastore Space used by the virtual machine snapshots in MB.
DiskSwapUsed	Datastore Space used by the swap files in MB.
DiskOthersUsed	Datastore Space used by other files in MB.
BelongsToDatacenter	Datacenter to which this datastore belongs.

## vCenter Respool

The following table lists the metrics included in vCenter Resource Pool:

Metric Name	Description
SystemRole	On a Host the metric is <b>HOST</b> . For a logical system the value is <b>GUEST</b> and for a resource pool the value is <b>RESPOOL</b> . For datacenter, this is <b>DATACENTER</b> . For cluster, this is <b>CLUSTER</b> . For datastore, this is <b>DATASTORE</b> .
SystemName	Display Name of the resource pool
SystemID	This value is name of the Cluster where resource pool is hosted followed by the unique id.
LSName	Unique identifier of the resource pool.
NumGuests	Number of VMs.
CPUEntlMin	The minimum CPU units configured for this resource pool.
CPUEntlMax	The maximum CPU units configured for this resource pool.
CPUEntlUtil	Percentage of entitled processing units consumed by the resource pool.
CPUCycleEntlMin	This value indicates the minimum processor capacity, in MHz, configured for the entity.
CPUCycleEntlMax	This value indicates the maximum processor capacity, in MHz, configured for the entity.
MemEntlMin	The minimum amount of memory configured for the logical system, in MB.
CPUPhyScUtil	Percentage of physical processing units consumed by the resource pool.
MemEntlMax	The maximum amount of memory configured for the logical system, in MB.
MemSharesPrio	The weightage or priority for memory assigned to this logical system.
MemOverhead	The amount of memory associated with a logical system, that is currently consumed on the host system, due to Virtualization.
MemSwapped	This metric indicates the amount of memory that has been transparently swapped to and from the disk.
MemEntlUtil	The amount of memory utilized for the logical system, in MB.
LSMode	This metric indicates whether the CPU entitlement for the resource pool is <b>Capped</b> or <b>Uncapped</b> .
CPUSharesPrio	This value determines the minimum share of unutilized processing units that this logical system can utilize.

Metric Name	Description
CPUPhysTotalTime	Total time in seconds, spent by the logical system on the physical CPUs.
CPUPhysTotalUtil	Percentage of total time the physical CPUs were utilized by this logical system during the interval.
CPUCycleTotalUsed	Total time the physical CPUs were utilized during the interval, represented in CPU cycles.
BelongsToDatacenter	This is the name of the datacenter to which resource pool is part of.
ClusterName	This is the name of the cluster to which resource pool is part of.
HostedOn	This is the name of the ESX host on which resource pool is hosted.
ParentUUID	UUID of the parent of this resource pool
ParentType	Parent type of the resource pool.
SystemVirtType	The value of this metric is <b>VMware</b> .
MemUsed	The amount of memory used at the end of the interval.

## vCenter VirtualApp

The following table lists the metrics included in vCenter Virtual Appliance:

Metric Name	Description
SystemRole	On a Host the metric is <b>HOST</b> . For a logical system the value is <b>GUEST</b> and for a resource pool the value is <b>RESPOOL</b> . For datacenter, this is <b>DATACENTER</b> . For cluster, this is <b>CLUSTER</b> . For datastore, this is <b>DATASTORE</b> . For virtualApp this value is <b>VIRTUALAPP</b> .
SystemName	Display Name of virtualApp.
SystemID	This value is name of the Cluster where virtualApp is hosted followed by the unique id.
LSName	Unique identifier of the virtualApp.
NumGuests	Number of VMs.
CPUEntlMin	The minimum CPU units configured for this virtualApp.
CPUEntlMax	The maximum CPU units configured for this virtualApp.
CPUEntlUtil	Percentage of entitled processing units consumed by the virtualApp.

Metric Name	Description
CPUCycleEntlMin	This value indicates the minimum processor capacity, in MHz, configured for the entity.
CPUCycleEntlMax	This value indicates the maximum processor capacity, in MHz, configured for the entity.
MemEntlMin	The minimum amount of memory configured for the logical system, in MB.
CPUPhyscUtil	Percentage of physical processing units consumed by the virtualApp.
MemEntlMax	The maximum amount of memory configured for the logical system, in MB.
MemSharesPrio	The weightage/priority for memory assigned to this logical system.
MemOverhead	The amount of memory associated with a logical system, that is currently consumed on the host system, due to Virtualization.
MemEntlUtil	The amount of memory utilized for the logical system, in MB.
LSMode	This metric indicates whether the CPU entitlement for the resource pool is <b>Capped</b> or <b>Uncapped</b> .
CPUSharesPrio	This value determines the minimum share of unutilized processing units that this logical system can utilize.
CPUPhysTotalTime	Total time in seconds, spent by the logical system on the physical CPUs.
CPUPhysTotalUtil	Percentage of total time the physical CPUs were utilized by this logical system during the interval.
CPUCycleTotalUsed	Total time the physical CPUs were utilized during the interval, represented in CPU cycles
BelongsToDatacenter	This is the name of the datacenter to which virtualApp is part of.
ClusterName	This is the name of the cluster to which virtualApp is part of.
HostedOn	This is the name of the ESX host on which virtualApp is hosted.
ParentUUID	Uuid of the parent of this virtualApp.
ParentType	Parent type of the virtualApp.
SystemVirtType	The value of this metric is <b>VMware</b> .
MemUsed	The amount of memory used at the end of the interval.

## vCenter BYVM\_STORAGE

The following table lists the metrics included in vCenter BYVM\_Storage:

Metric Name	Description
SystemRole	For a shared datastore, this value is the type of the entity associated with Datastore.
SystemName	For a shared datastore, this value is name of the node.
SystemVirtType	For vmware, this values is <b>VMWARE</b> .
SystemID	UUID of the entity which mounts this datastore.
DatastoreID	UUID of the datastore.
DatastoreName	Name of the datastore.
ParentUUID	UUID of the datastore to which this entity belongs.
ParentType	Type of the parent of the node.
DiskUsed	This is the total space consumed by the virtual machine on the datastore, including the vmdk file, snapshots and other files.
ReadLatency	Total read latency experienced by the entity on this datastore.
WriteLatency	Total write latency experienced by the entity on this datastore.
MaxQueueDepth	MaxQueueDepth
DiskSnapshotUsed	This is the space consumed by the virtual machine snapshot files on the datastore.
DiskVMDKUsed	This is the total space consumed by the virtual machine vmdk files on the datastore.
DiskProvisioned	This is the total space provisioned for the virtual machine on the datastore.
DiskReadRate	Rate of reading from the datastore.
DiskWriteRate	Rate of writing to the datastore.
NumReadCommands	Average number of read commands issued per second to the datastore during the collection interval.
NumWriteCommands	Average number of write commands issued per second to the datastore during the collection interval.

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