

HP Virtualization Performance Viewer

For the Linux operating system

Software Version: 2.01

Sizing Guide

Document Release Date: August 2014

Software Release Date: August 2014



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Chapter 1: Introduction

HP Virtualization Performance Viewer (HP vPV) is a web-based analysis and visualization tool that analyzes performance trends of elements in virtualized environments. It enables virtualization monitoring by providing an overview of the environment, near-real-time and historical data analysis and triaging using an interactive dashboard. It also enables monitoring for cloud and hypervisor environments. HP vPV helps you visualize performance data for elements in the context of each other to rapidly analyze bottlenecks. HP vPV provides performance monitoring, graphing, and reporting in a single interface. For more information on HP vPV, visit the HP vPV home page at <http://www.hp.com/go/vpv>.

This document provides information on the performance tests performed on HP vPV and the results obtained. It also provides the sizing recommendations for optimal performance of the product.

Chapter 2: Performance Tests

The performance testing for HP vPV is performed in various test environments, varying the number of instances being monitored and the number of resources allocated to HP vPV.

Test Results for VMware vCenter

- "For Small Size Environment"
- "For Medium Size Environment"
- "For Large Size Environment"

Test Results for Microsoft Hyper- V

- "Performance Test - Medium Size"
- "Hyper - V (Collector) - Performance Test"

Test Results for VMware vCenter

For Small Size Environment

This section describes the performance test conducted on HP vPV in a small environment. A small environment is a HP vPV setup with approximately 750 node instances.

The following table lists the performance test environment.

Item	Value
Total Instances	750
CPU	2 vCPU
Memory	4 GB
Disk Space	40 GB
HP vPV Installation Type	HP vPV Virtual Appliance
Platform	CentOS 6.5 x64
License Type	Premium License

Data Source Versions

The vCenter versions used to run the tests are 5.0, 5.1, and 5.5.

Scenario

VMware vCenter data sources are added to HP vPV. HP vPV and vCenter servers are in the same subnet and have a total of 750 instances. On an average, 600 to 700 node instances consisting of Guests and ESXi Hosts are always up and running throughout the test duration.

The CPU and memory utilization is observed for the test duration.

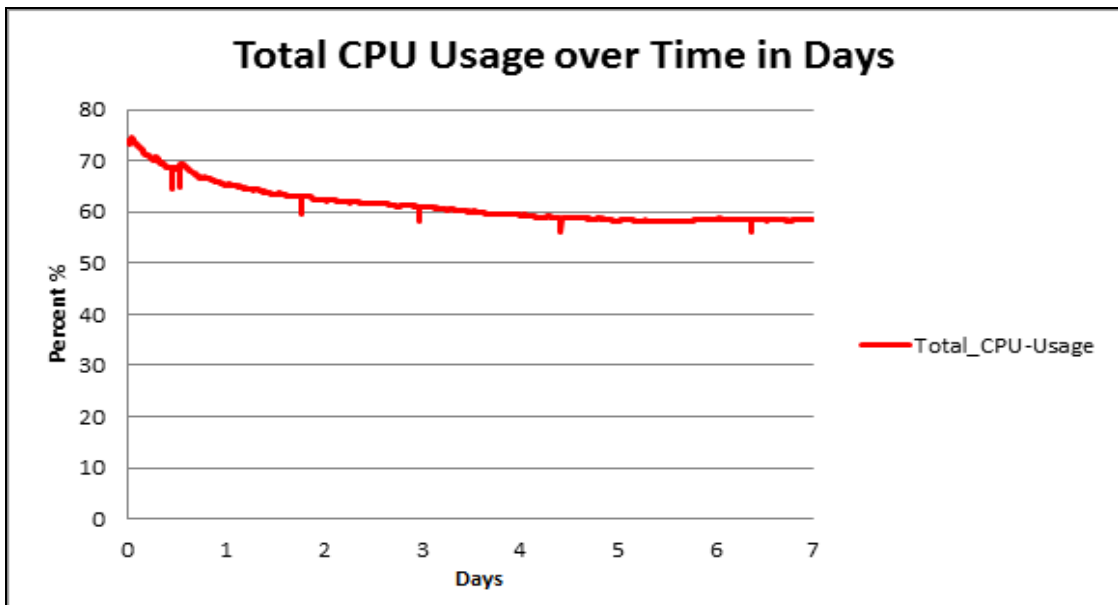
The test results are calculated for seven days at 30 seconds interval.

Results

Following section gives the test results for the scenario.

CPU Utilization

The following graph shows the CPU utilization.

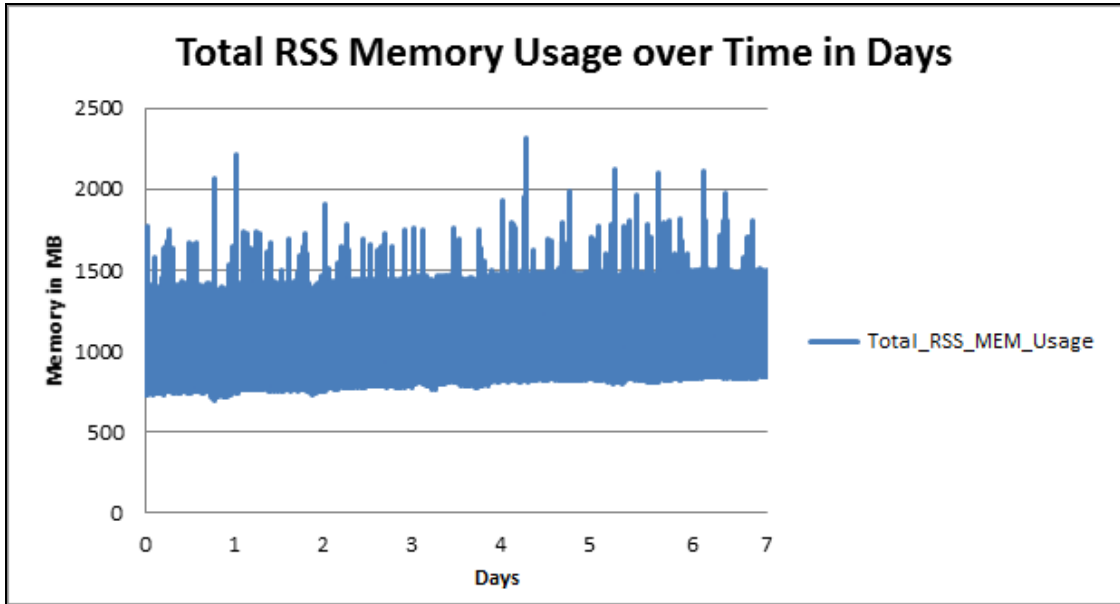


Conclusion

CPU usage is around one vCPU out of two vCPUs assigned for seven days.

Memory Utilization

The following graph shows the memory utilization.



Conclusion

Memory usage is around 2 GB in seven days.

For Medium Size Environment

This section describes the performance test conducted on HP vPV in a medium environment. A medium environment is a HP vPV setup with approximately 2800 node instances.

The following table lists the performance test environment.

Item	Value
Total Instances	2800
CPU	4 vCPU
Memory	16 GB
Disk Space	40 GB
HP vPV Installation Type	HP vPV Virtual Appliance
Platform	CentOS 6.5 x64
License Type	Premium License

Data Source Versions

vCenter version 5.5 is used to run the test.

Scenario

VMware vCenter data sources are added to HP vPV. The vCenters have a total of 2500 active node instances consisting of Guest and Hosts.

The CPU and memory utilization is observed for the test duration.

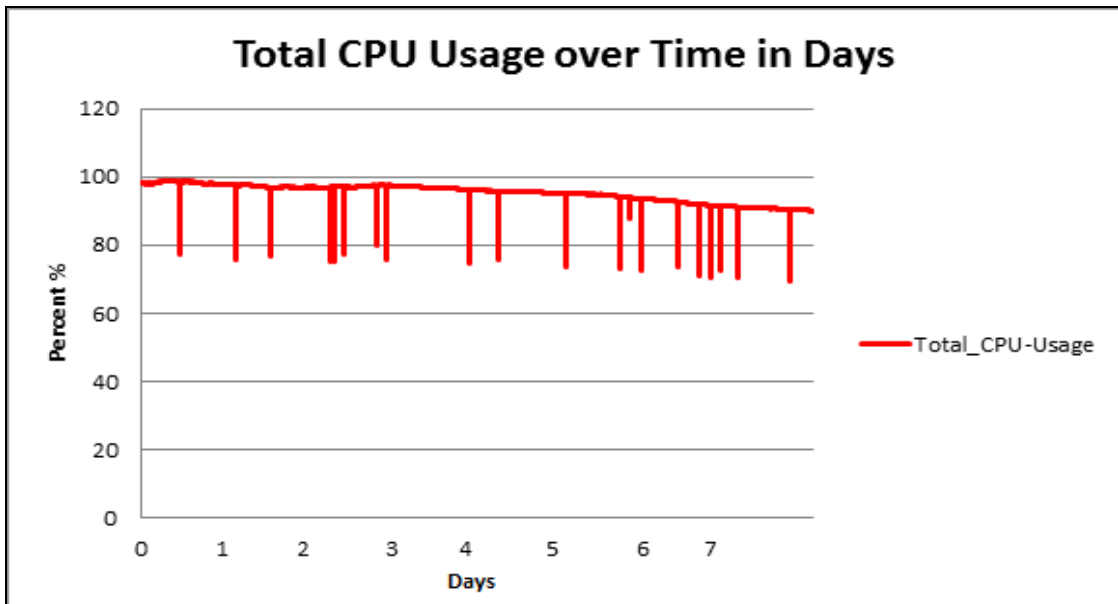
The test results are calculated for seven days at 30 seconds interval.

Results

Following section details the test results for the scenario.

CPU Utilization

The following graph shows the CPU utilization.

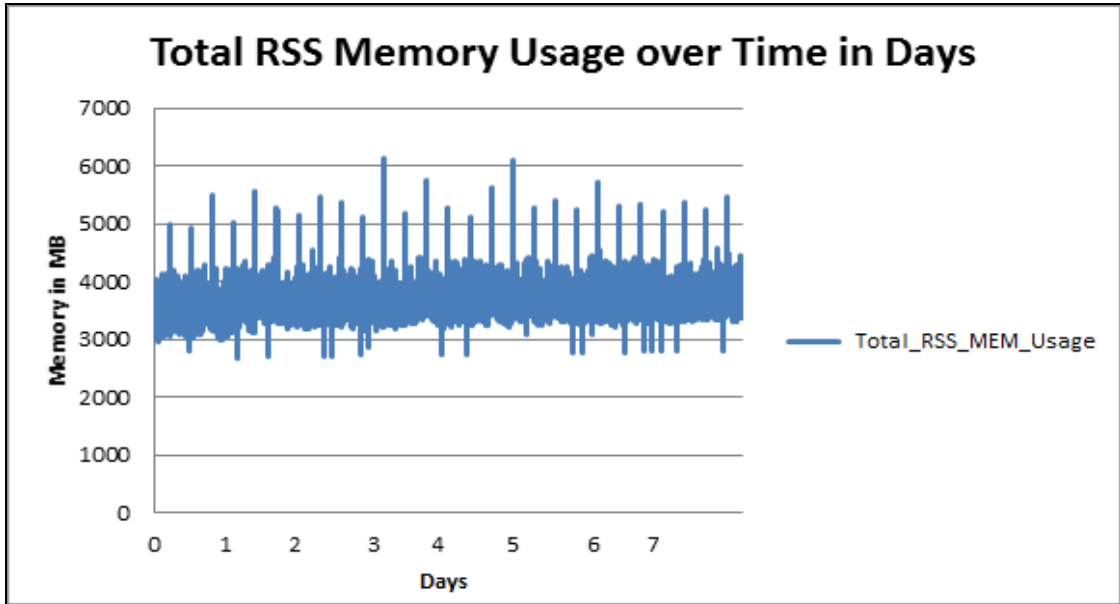


Conclusion

CPU usage is around one vCPU out of four vCPUs for seven days.

Memory Utilization

The following graph shows the memory utilization.



Conclusion

Memory usage is around 5-6 GB in seven days.

For Large Size Environment

This section describes the performance test conducted on HP vPV in a large environment. A large environment is a HP vPV setup with approximately 4250 node instances.

The following table lists the performance test environment.

Item	Value
Total Instances	4250
CPU	6 vCPUs
Memory	24 GB
HP vPV Installation Type	HP vPV Virtual Appliance
Platform	CentOS 6.5 x64
Disk Size	40 GB
License Type	Premium License

Data Source Versions

The vCenter versions used to run the tests are 5.0, 5.1, and 5.5.

Scenario

VMware vCenter data sources are added to HP vPV. HP vPV and vCenter servers are in the same subnet and have a total of 4250 instances. On an average, 3750 - 4000 VMs are always up and running throughout the test duration.

The CPU and memory utilization is observed for the test duration.

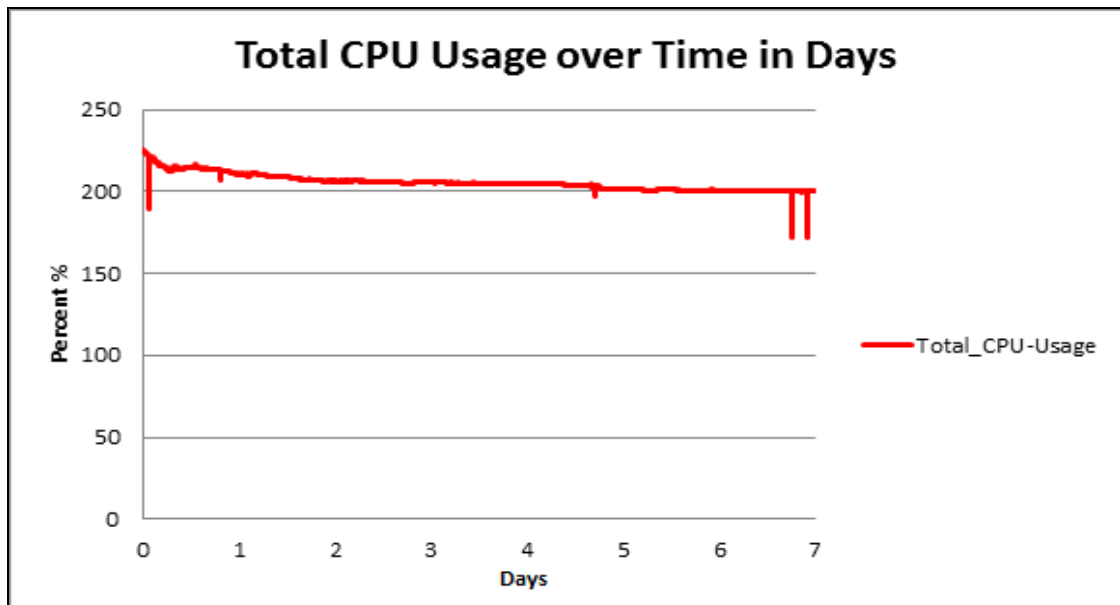
The test results are calculated for 7 days at 30 seconds interval.

Results

Following section details the test results for the scenario.

CPU Utilization

The following graph shows the CPU utilization for the test scenario.

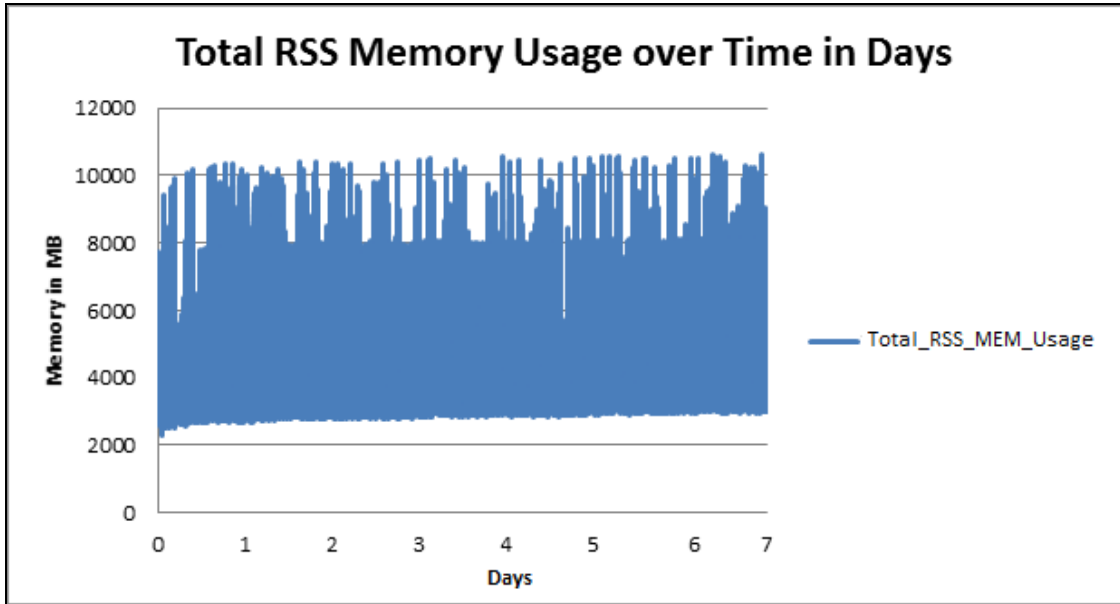


Conclusion

CPU usage is around three vCPU out of six vCPUs for seven days.

Memory Utilization

The following graph shows the memory utilization for the test scenario.



Conclusion

Memory usage is around 10 to 12 GB for seven days.

Microsoft Hyper-V

Performance Test

This section describes the performance test conducted on HP vPV with Hyper-V as the data source.

The following table lists the performance test environment.

Item	Value
Total Instances	255
CPU	4 vCPUs
Memory	16 GB RAM
HP vPV Installation Type	HP vPV Virtual Appliance
Platform	CentOS 6.5 x64
Disk Size	40 GB
License Type	Premium License

Scenario

Five Hyper-V hosts having approximately 50 VMs each are added to HP vPV. 255 instances are running throughout the test duration. The CPU and memory utilization is observed for the test duration.

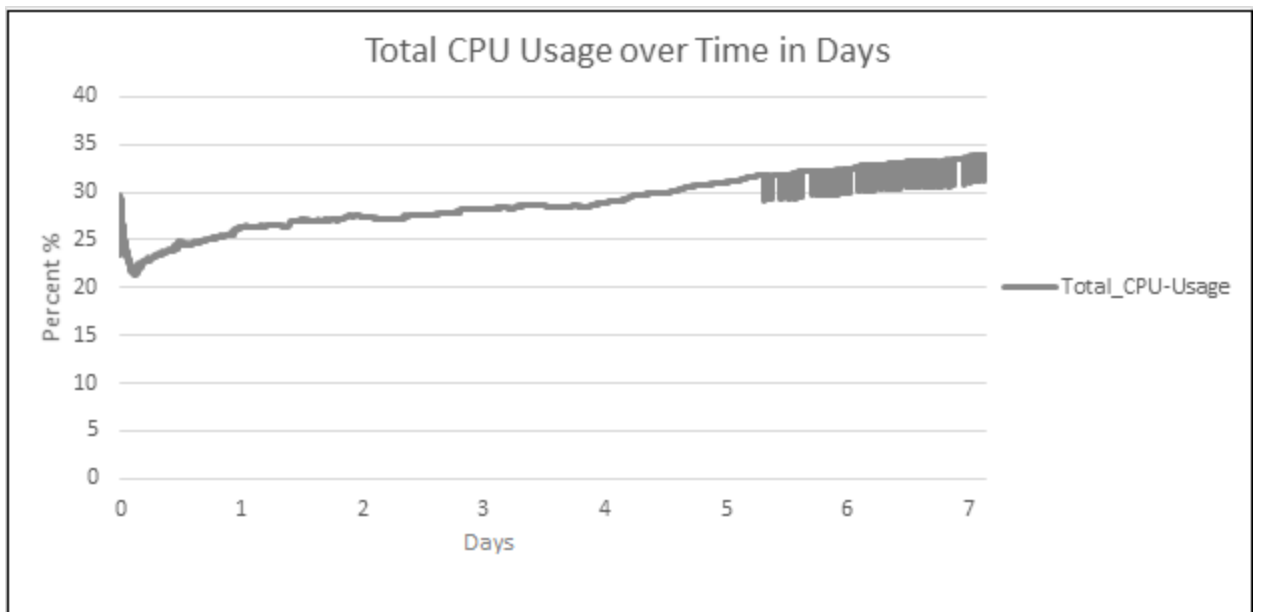
The test results are calculated for 7 days at 30 seconds interval.

Results

Following section details the test results for the scenario.

CPU Utilization

The following graph shows the CPU utilization for the test scenario.

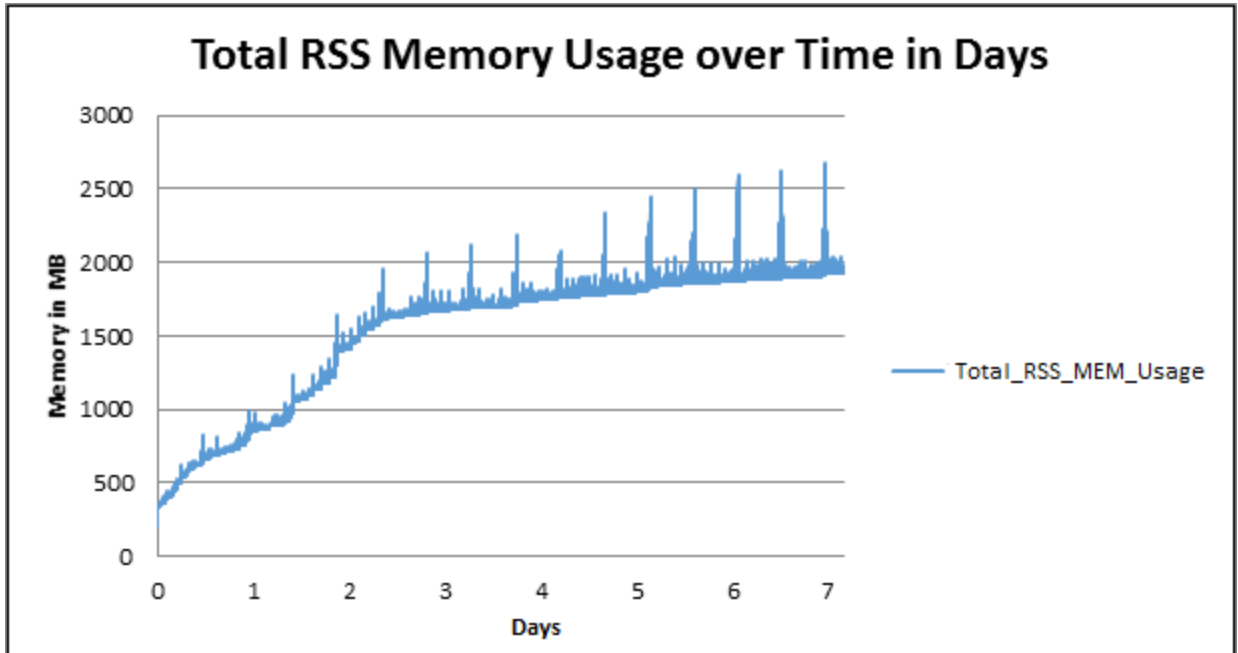


Conclusion

CPU utilization is around 32% of four vCPUs.

Memory Utilization

The following graph shows the memory utilization for the test scenario.



Conclusion

Memory usage is around 1.8 GB in seven days.

Hyper-V (Collector)

Performance Test

This section describes the performance test conducted on the environment where Hyper-V collector is installed.

The following table lists the performance test environment for the Hyper-V collector.

Item	Value
Total Instances	255
CPU	2 vCPUs
Memory	4 GB RAM
HP vPV Installation Type	HP vPV Hyper-V collector
Platform	Windows 2012 R2 x64
Disk Size	40 GB

Scenario

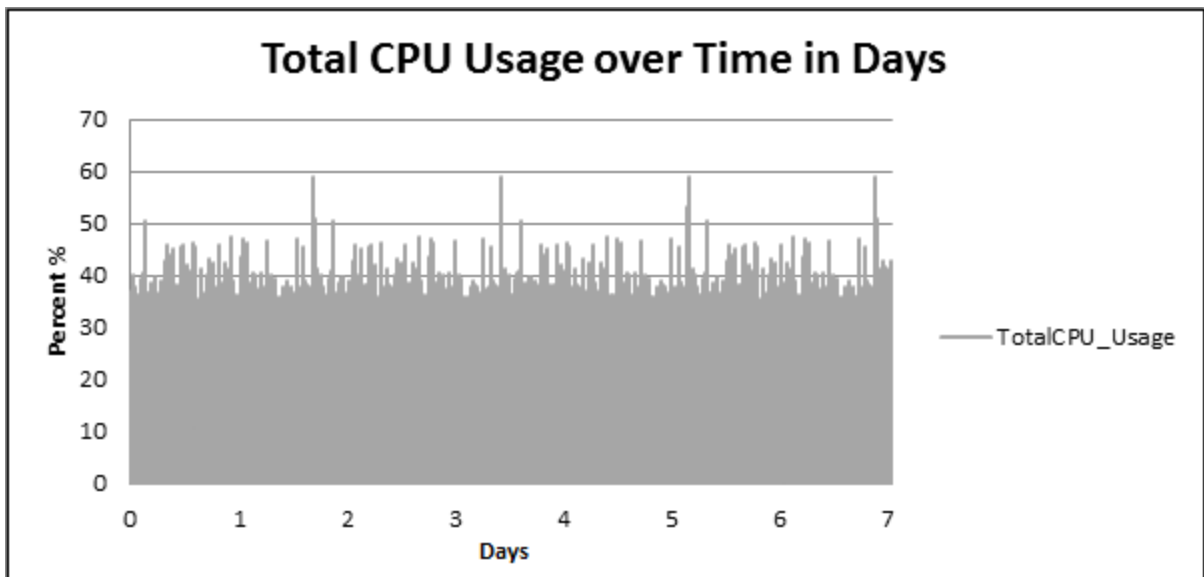
The Hyper-V collector is configured to collect data from five Hyper-V hosts each having approximately 50 VMs. The CPU and memory utilization is observed for the test duration. The test results are calculated for 7 days at 30 seconds interval.

Results

Following section details the test results for the scenario.

CPU Utilization

The following graph shows the CPU utilization of the Hyper-V collector for the test scenario.

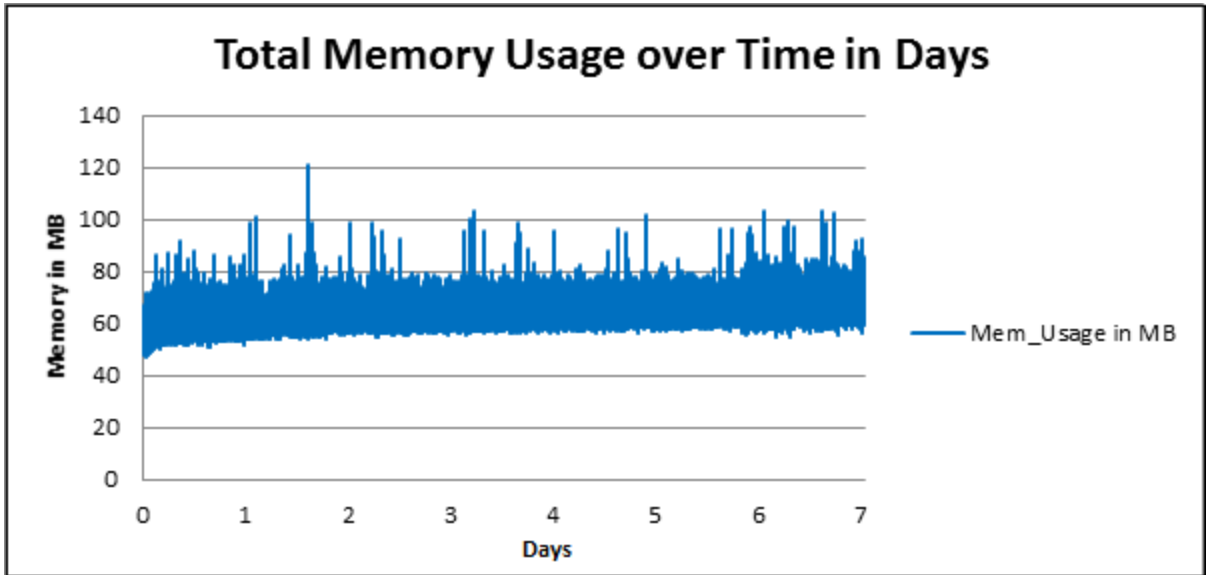


Conclusion

CPU utilization is around 40% of two vCPUs.

Memory Utilization

The following graph shows the memory utilization of the Hyper-V collector for the test scenario.



Conclusion

Memory usage is around 60 MB for seven days.

Chapter 3: Best Practices for Scalability

Based on the test results using HP vPV, following best practices are recommended:

- It is recommended to have a maximum of only 750 instances with Premium License or Express License for a typical setup having 2 CPUs and 4 GB memory.
- It is recommended to select the size of HP vPV VA during the deployment of the HP vPV OVA.
- The following table lists the recommended resource allocation for vPV Virtual Appliance monitoring different number of instances.

Resource Allocation Table for vPV VA						
Sizing Configuration	Number of VM instances	vCPUs - 2.792 GHz per vCPU	RAM in GB	Disk in GB	Network Usage in Mega bits per second	License Type
Large Size	3500 - 6000	6	24	40	4-5	Premium or Express
Medium Size	1000 - 3500	4	16	40	3-4	Premium or Express
Small Size	Up to 1000	2	4	40	1-2	Premium or Express

Note: Instance count includes the total number of VMs and hosts (both powered off and powered on) in the monitored environment.

- If you want to monitor Hyper-V host instances, it is recommended to select the Sizing Configuration of HP vPV Virtual Appliance as Medium .
- It is recommended to have a different Hyper-V collector for each Hyper-V host domain.
- The following table lists the recommended resource allocation for Hyper-V collector:

Resource Allocation Table for Hyper-V Collector				
Maximum Number of VM instances	vCPUs - 2.792 GHz per vCPU	RAM in GB	Disk in GB	Network Usage in Mega bits per second
250	2	4	30	1-2

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