

Citrix SCOM Management Pack for XenApp and XenDesktop Performance Overview



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This document is designed to help you understand scalability, resource consumption, and performance of Citrix SCOM Management Pack for XenApp and XenDesktop (**XenApp/XenDesktop Management Pack, the product**). It also lists monitoring limits and average resource consumption of the XenApp/XenDesktop Management Pack Agent (`MPXAXDAgent`, full service name: `ComtradeMPXAXDAgent`) and the Microsoft System Center Operations Manager (**SCOM**) agent (`HealthService`), as measured in an environment with the specified XenApp/XenDesktop and SCOM configurations.

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Section 1: General and scalability aspects

Generally speaking, XenApp/XenDesktop Management Pack consists of three parts:

- The part installed on the SCOM management server computer (mandatory)
- XenApp/XenDesktop Management Pack Agent (mandatory)
- XenApp/XenDesktop Management Pack Machine Agent (optional)

The SCOM management server-side part

This part is a collection of management packs that include discoveries, monitors, rules, tasks, and reports. From the compute and memory perspectives, this part does not significantly add to the basic resource requirements of SCOM management server itself. It is neither resource-intensive in terms of storage requirements of the SCOM reporting data warehouse database. For these reasons, there are no special considerations related to the SCOM management-server part when monitoring larger Citrix XenApp and XenDesktop (**XenApp/XenDesktop**) environments.

XenApp/XenDesktop Management Pack Agent

Performance and resource consumption of XenApp/XenDesktop Management Pack Agent both primarily depend on the size of your XenApp/XenDesktop environment, specifically on the number of resources within each Site. Furthermore, they are influenced by the load on the Delivery Controller instances. In contrast, the number of Sites in your XenApp/XenDesktop environment has no influence on the performance and resource consumption.

For scaling up XenApp/XenDesktop Management Pack Agent, hardware of the hosting Delivery Controller computer must be reconfigured. The Agent cannot be scaled out.

XenApp/XenDesktop Management Pack Machine Agent

The product's Machine Agent can be scaled up without the need of altering XenApp/XenDesktop deployment, as no XenApp/XenDesktop component is installed on its proxy node. Machine Agent can

also be scaled out; you can achieve this by installing multiple instances on multiple proxy nodes and configuring it such that each Machine Agent instance handles only a subset of all Delivery Controller instances.

Section 2: Configuration specifications

All figures in this document are valid for environments that:

- Are monitored with the specified product version of XenApp/XenDesktop Management Pack
- Match the documented configuration specifications for XenApp/XenDesktop and SCOM
- Use the default configuration of management packs in terms of which rules and monitors are enabled (this applies to management packs included in XenApp/XenDesktop Management Pack and management packs bundled with SCOM)
- Use the default configuration of SCOM management server and SCOM agents, without fine-tuning or any special adjustments

Note Factors such as different hardware specifications and condition of your environment may cause divergence of your observed values from the documented values.

Validated XenApp/XenDesktop Management Pack version

Validation of XenApp/XenDesktop Management Pack was performed with the product version listed in the following table.

Product version
XenApp/XenDesktop Management Pack 3.7

Citrix XenApp and XenDesktop configuration specification

Computer: Delivery Controller (with a locally hosted database server)	
Specification item	Value
Compute	four virtual CPUs; CPU clock speed of 2.67 GHz
Memory	24 GB of RAM
Software version	Citrix XenApp and XenDesktop 7.8
Site database location	on the Delivery Controller computer

Microsoft System Center Operations Manager configuration specification

With this configuration, the SCOM database and data warehouse server is deployed outside the SCOM management server computer.

Computer: SCOM management server	
Specification item	Value
Compute	four virtual CPUs; CPU clock speed of 2.67 GHz
Memory	8 GB of RAM
Software version	Microsoft System Center Operations Manager 2012 R2

Computer: SCOM database and data warehouse server	
Specification item	Value
Compute	two virtual CPUs; CPU clock speed of 2.67 GHz
Memory	16 GB of RAM
Software version	Microsoft SQL Server 2014

Section 3: Monitoring ability

The following table does *not* list the extreme limits; it lists the maximum values at which XenApp/XenDesktop Management Pack was successfully validated.

Maximum number of monitored items (per Site)

Item	Value
Delivery groups	60
Server OS machines	600
Server OS machines in a delivery group	200
Desktop OS machines	4,400
Applications	500
Concurrent sessions	10,000

Section 4: Average resource consumption

Resource consumption was measured in a XenApp/XenDesktop Site that included a single Delivery Controller instance. Measuring spanned a period of 2.5 days. Windows Performance Monitor was used as the measuring tool.

Important In XenApp/XenDesktop deployments with multiple Delivery Controller instances, the majority of data processing is performed by a single XenApp/XenDesktop Management Pack Agent instance (on one Delivery Controller computer).

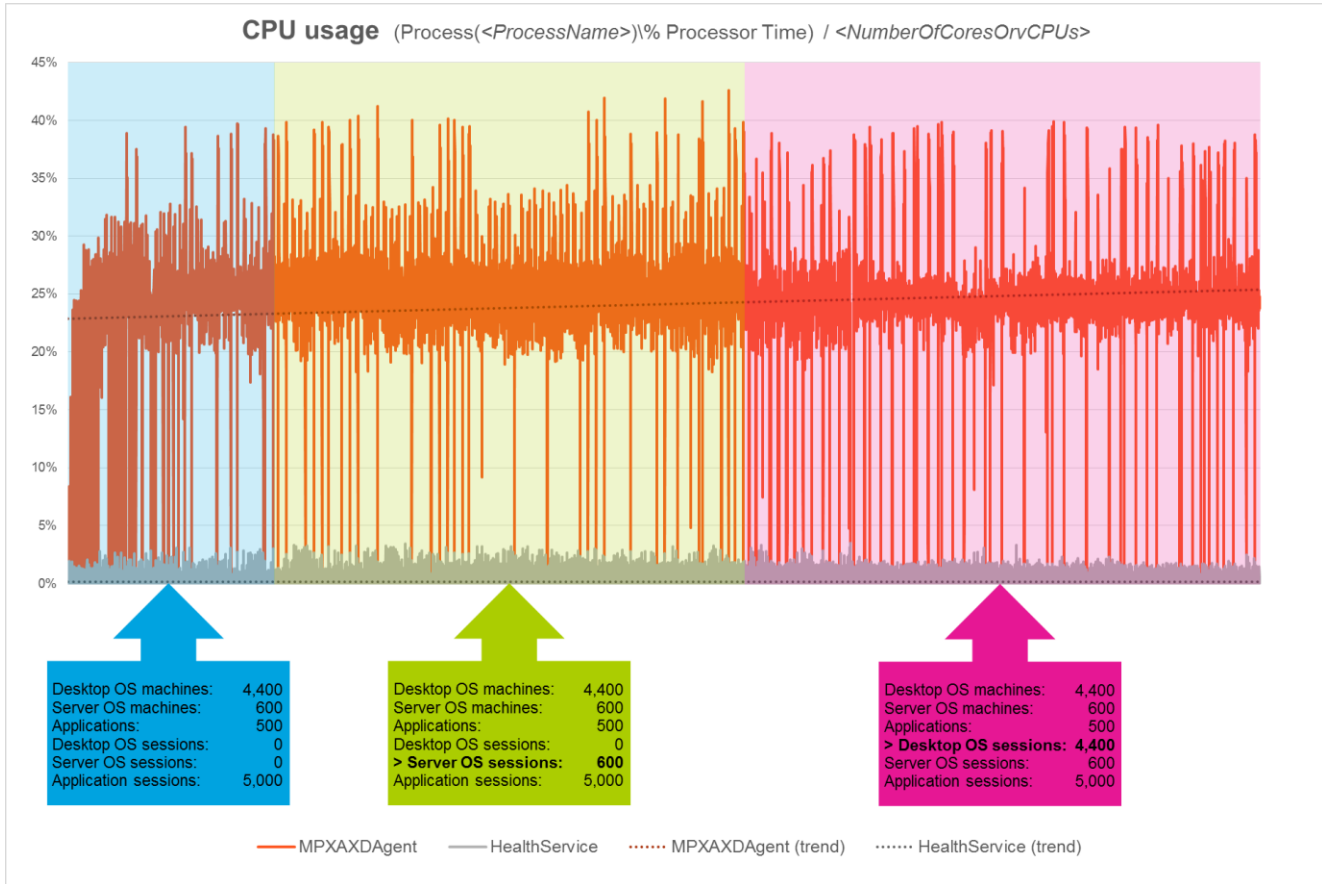
Average consumption on a Delivery Controller computer (for 5,000 VDIs)

Item	Value
MPXAXDAgent CPU usage ¹	23.82%
HealthService CPU usage	0.17%
MPXAXDAgent memory usage	2,262 MB

¹ CPU usage is calculated based on the % Processor Time counter and the number of processor cores or virtual CPUs.

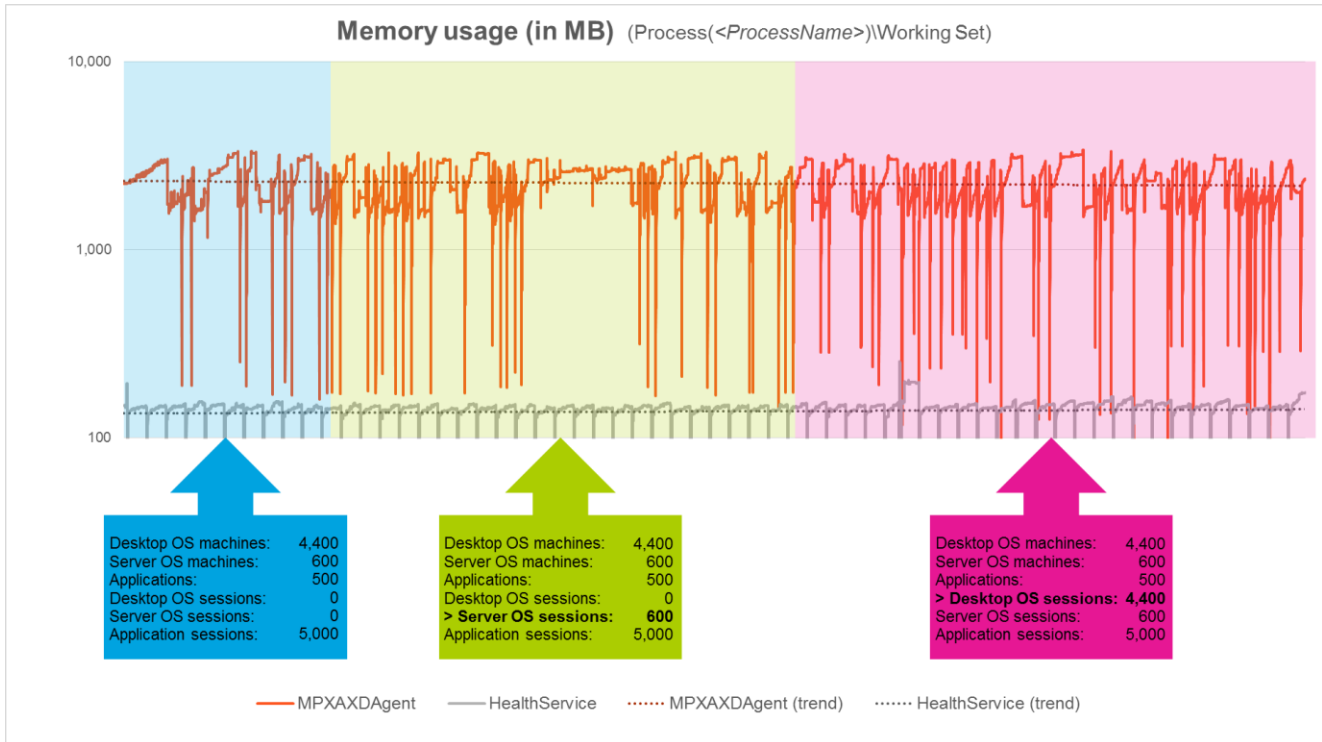
Number of published applications has negligible effect on the CPU usage of the MPXAXDAgent service.

Figure 4.1 CPU usage of MPXAXDAgent and HealthService through time, measured in three different validation sets



As figure 4.1 shows, adding VDI sessions (server OS sessions, desktop OS sessions) has no significant impact on the CPU usage of XenApp/XenDesktop Management Pack Agent. Such additions also do not influence the CPU usage of the SCOM agent (Operations Manager Agent, Microsoft Monitoring Agent).

Figure 4.2 Memory usage of MPXAXDAGENT and HealthService through time, measured in three different validation sets (note the logarithmic vertical scale)



As figure 4.2 shows, on the Delivery Controller computer there should be approximately 3.7 GB of physical memory available for the joint needs of the MPXAXDAGENT and HealthService services.