Citrix SCOM Management Pack for StoreFront Performance Overview

Software version: 1.8

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

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Citrix, Inc.
851 West Cypress Creek Road
Fort Lauderdale, FL 33309
United States of America

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Section 1: General and scalability aspects

Generally speaking, StoreFront Management Pack consists of two parts:

- The part installed on the SCOM management server
- StoreFront Management Pack Agent

The SCOM management server-side part

This part is a collection of management packs that include discoveries, monitors, rules, and tasks. From the compute and memory perspective, this part does not significantly add to the basic resource requirements of SCOM management server itself. It is also not 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 StoreFront (**StoreFront**) environments.

StoreFront Management Pack Agent

Performance and resource consumption of StoreFront Management Pack Agent primarily depend on the size of your StoreFront environment, specifically on the number of configured stores. In contrast, they are not influenced by the number of configured StoreFront servers.

Section 2: Configuration specifications

All figures in this document are valid for environments that:

- Are monitored with the specified product version of StoreFront Management Pack
- Match the documented configuration specifications for StoreFront 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 StoreFront 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 StoreFront Management Pack version

Validation of StoreFront Management Pack was performed with the product version listed in the following table.

Product version
StoreFront Management Pack 1.7

Citrix StoreFront configuration

The lab set-up in which StoreFront Management Pack was validated consisted of two StoreFront servers with identical configuration specifications.

Computer: **StoreFront server**	
Specification item	**Value**
Compute	four virtual CPUs; CPU clock speed of 2.67 GHz
Memory	8 GB of RAM
Software version	Citrix StoreFront 3.6

Citrix XenApp and XenDesktop configuration

The lab set-up used for validation initially comprised thee Citrix XenApp and XenDesktop (XenApp/XenDesktop) Delivery Controllers (with identical configuration specifications) assigned to each store. Measurements were repeated in an environment with three Delivery Controllers assigned to each store.

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: **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	four 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 lab set-up in which StoreFront Management Pack was successfully validated with the specified StoreFront, XenApp/XenDesktop and SCOM configurations.

Maximum number of monitored items

Item	**Value**
Stores	40
XenApp/XenDesktop Delivery Controllers per store	3

Section 4: Average resource consumption

Measuring was performed on different validation sets. Windows Performance Monitor was used as the measuring tool. During validation, StoreFront stores were gradually added to the monitored environment.

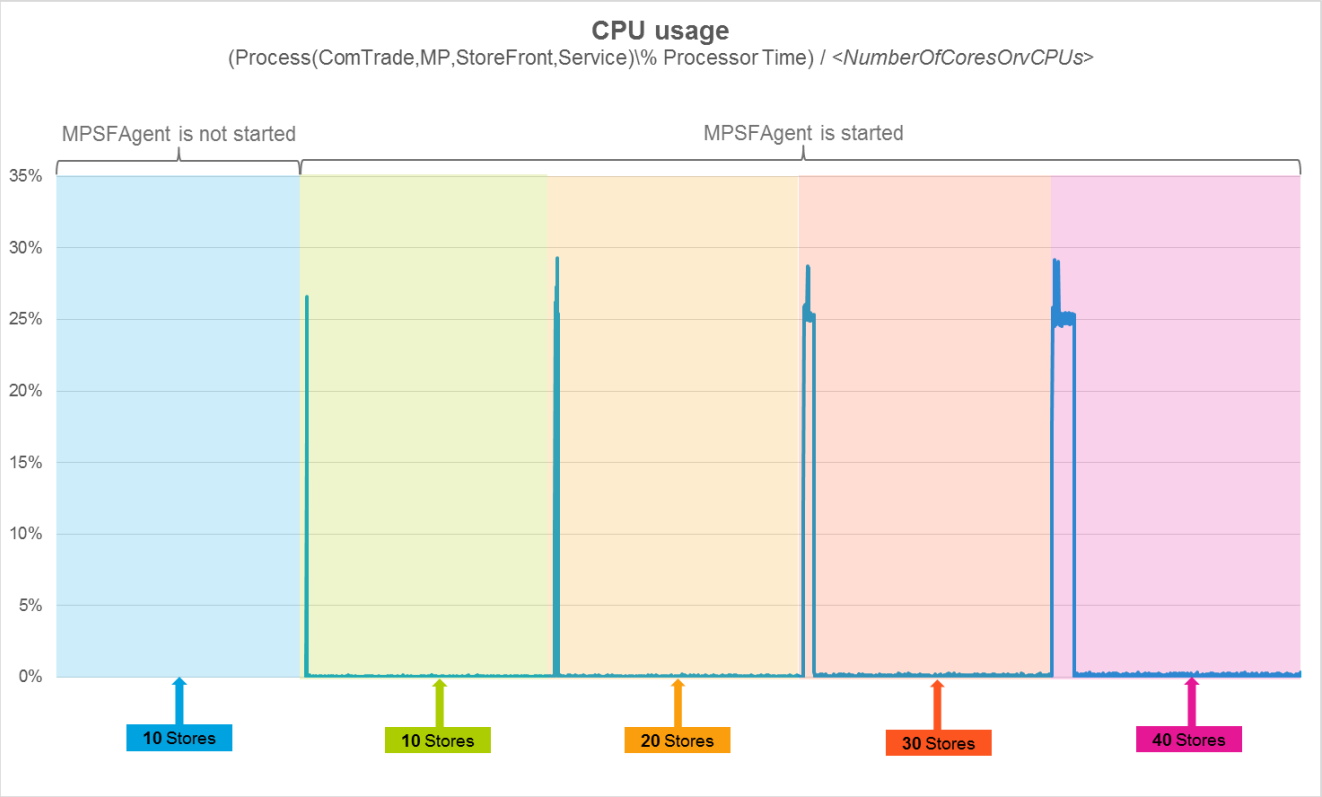
Average consumption on a StoreFront server

	Value for each test set			
Item	**10 stores**	**20 stores**	**30 stores**	**40 stores**
`MPSFAgent` CPU usage[1]	0.05%	0.24%	1.04%	2.24%
`HealthService` CPU usage	0.00%	0.01%	0.01%	0.02%
`MPSFAgent` memory usage	155 MB	157 MB	164 MB	168 MB
`HealthService` memory usage	16 MB	19 MB	18 MB	23 MB

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

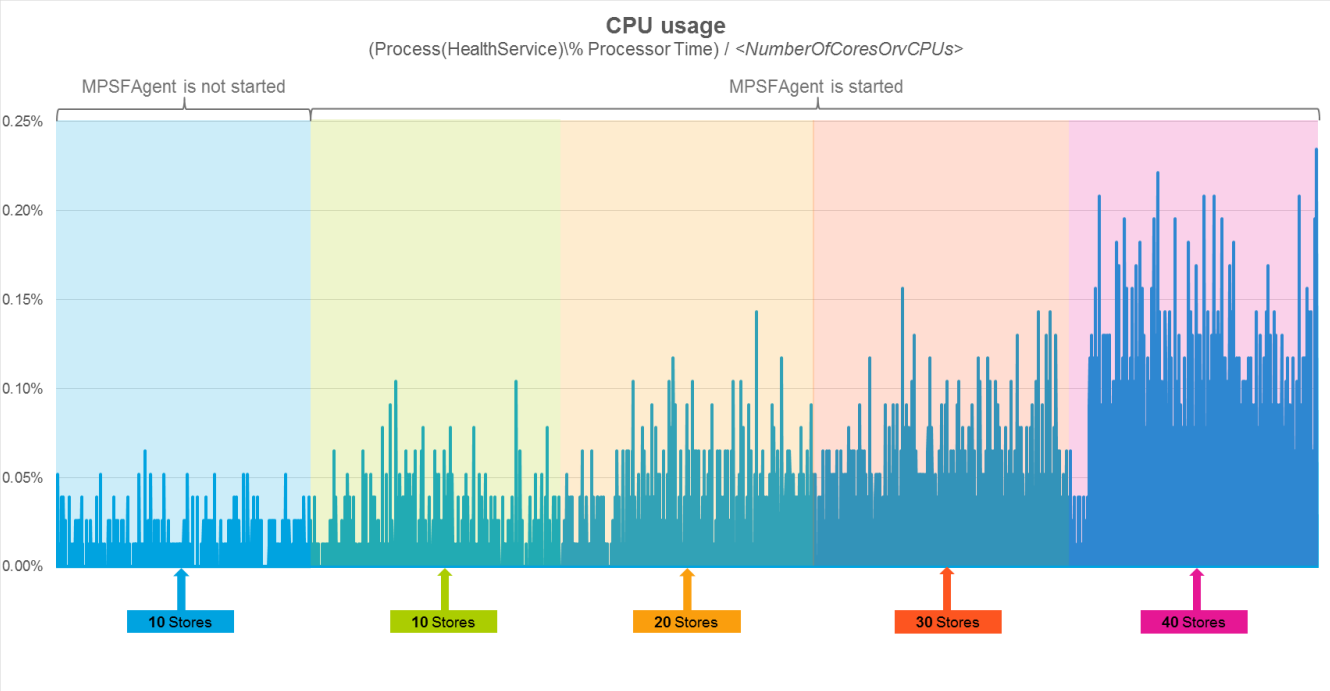
Validation tests indicated that increase in the number of Delivery Controllers per store had negligible effect on CPU usage of the `MPSFAgent` service. Regardless of this change, spikes in both CPU usage and memory usage occurred.

Figure 4.1 CPU usage of `MPSFAgent` through time, measured in four different validation sets



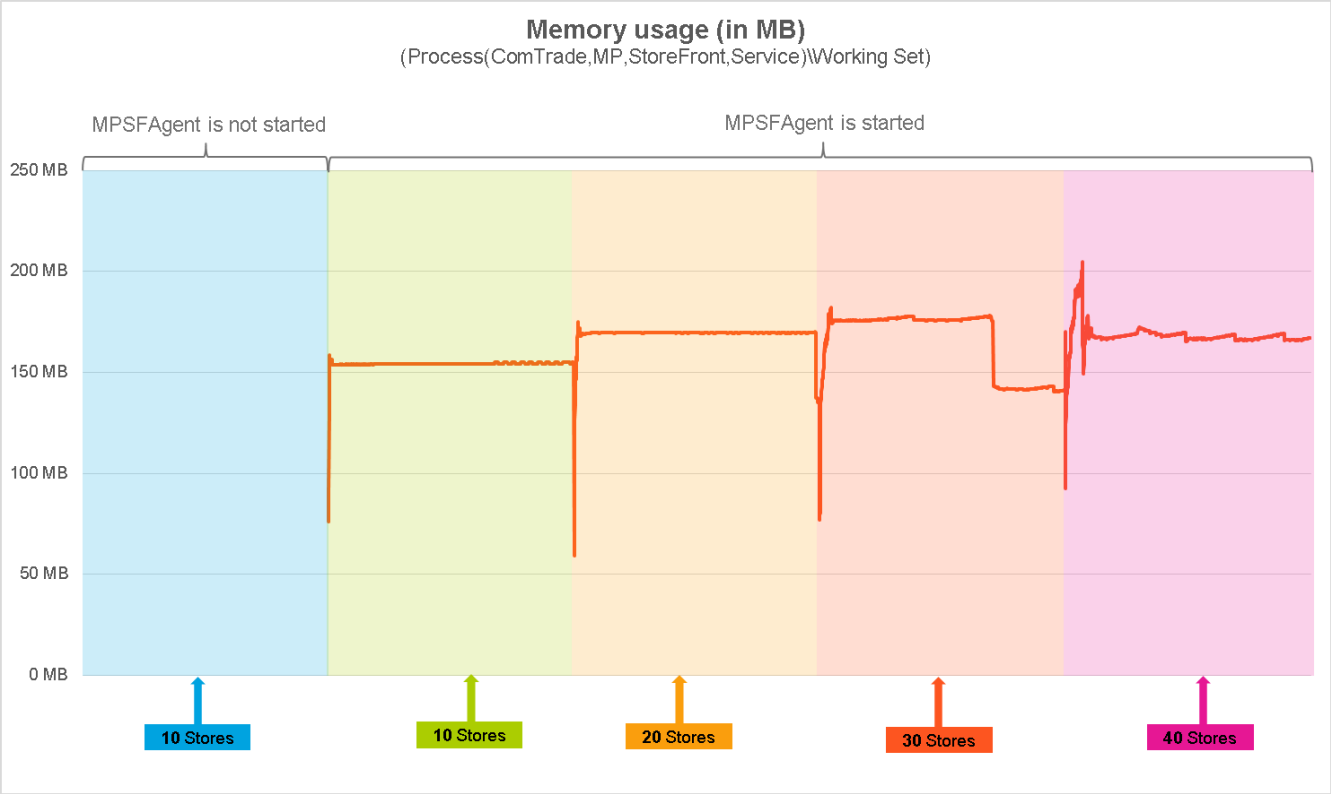
In figure 4.1 spikes can be seen. As measured in the first, second, third, and fourth validation set, they lasted 1.5, 8.5, 27.5, and 55.5 minutes, respectively. The spikes occurred immediately after the product was deployed and the `MPSFAgent` service was started for the first time.

Figure 4.2 CPU usage of `HealthService` through time, measured in four different validation sets



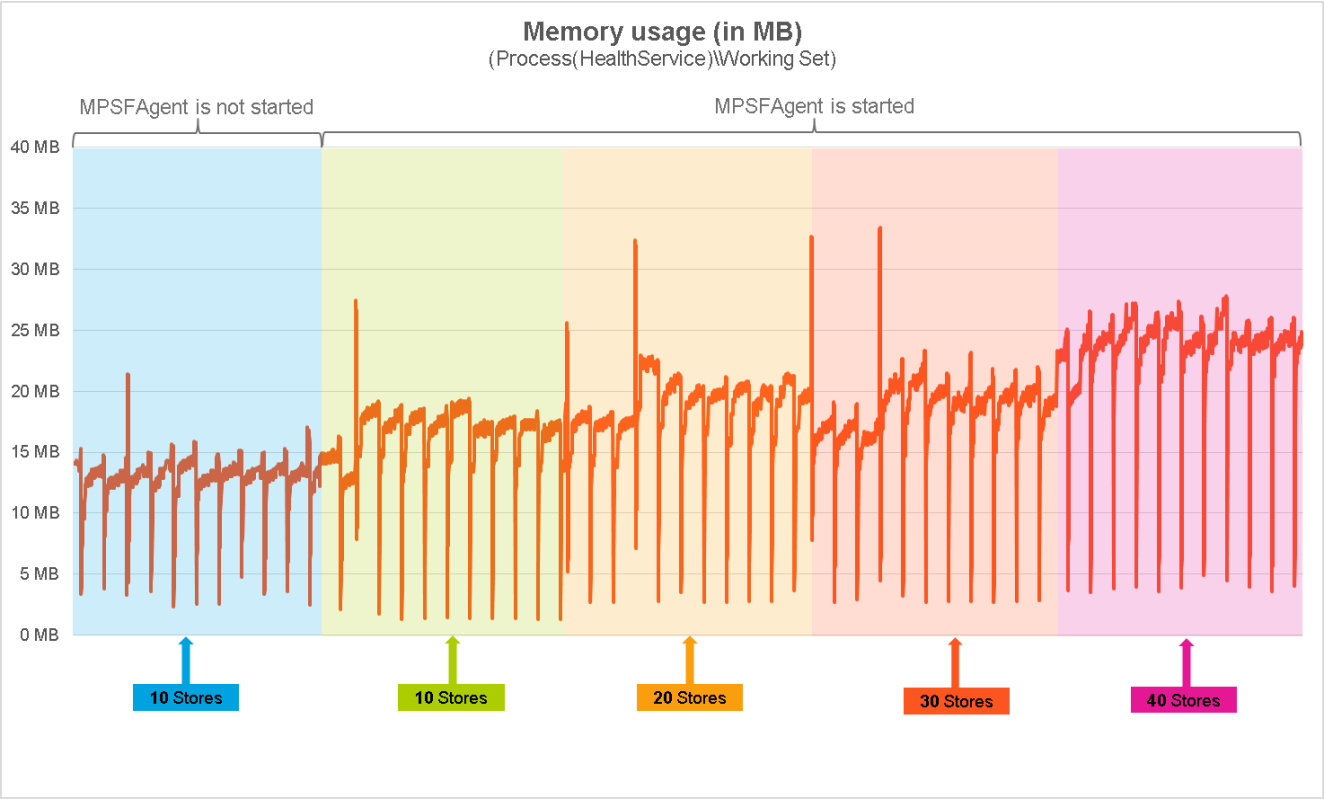
As figure 4.2 shows, addition of stores does not significantly influence the CPU usage of the SCOM agent (Operations Manager Agent, Microsoft Monitoring Agent).

Figure 4.3 Memory usage of `MPSFAgent` through time, measured in four different validation sets



As figure 4.3 shows, on the StoreFront server there should be approximately 200 MB of physical memory available for the needs of the `MPSFAgent` service.

Figure 4.4 Memory usage of `HealthService` through time, measured in four different validation sets



As figure 4.4 shows, on the StoreFront server, there should be approximately 35 MB of physical memory available for the needs of the `HealthService` service.

Detailed analysis of the sampled data reveals that StoreFront Management Pack has no significant impact on the compute and memory requirements for the StoreFront server. It also confirms that adding stores to the environment does not degrade the performance of StoreFront Management Pack. There are prolonged periods of high CPU usage in environments with 30 or 40 configured stores. However, such spikes occur only once after the first start of StoreFront Management Pack Agent.