

# Microsoft App-V 4.5 Management Pack For System Center Operations Manager 2007

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*A TMurgent Technologies White Paper*

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## Introduction

Microsoft System Center Application Virtualization (App-V for short) version 4.5 contains a substantial amount of new software. One piece of this software is a management pack for use on System Center Operations Manager 2007. This paper will take a look at this new component.

The review of this component is made using the August 2008 version of the management pack (it doesn't seem to have a version number) and was tested against computers running the release candidate software for App-V, either version 4.5.0.1305 or 4.5.0.1308.

In early 2008, TMurgent released our own management pack for the 4.1 and 4.2 versions of the SoftGrid product (as App-V was known before 4.5). In addition to reviewing this management pack, we will also compare it to the capabilities our own management pack. Although our management pack (part of the *"PimpMy for SoftGrid Real Time Monitoring Package"*) was designed for SoftGrid 4.1/4.2, we did include the ability to also work with the Beta version of SoftGrid 4.5. This package will not be updated until after the RTM release of App-V 4.5 in September, but on the basis of what we see in the Microsoft developed management pack, we believe that there remains a need for a better solution than that provided by Microsoft.

## About Microsoft App-V

Microsoft Application Virtualization is a set of software components that allow for the distribution and execution of off-the-shelf application software as virtual applications. A virtual application runs in an isolated environment on a client PC without installation, eliminating installs and providing state separation between the OS and Applications, and Applications and Users. Using App-V, conflicting applications may be used simultaneously on the same machine, and software that is not multi-user aware may be run in environments such as Terminal Servers.

Microsoft App-V supports multiple ways to architect an infrastructure to deploy virtual applications in the 4.5 release. The typical customer will use one or more of these methods:

- Stand-alone Clients (server-less)
- Dedicated App-V Servers (RTSP or RTSPS)
- Shared SCCM Servers (HTTP or BITS streaming)

## Stand-alone Mode Components

Used in a stand-alone client mode, the following components are typically used:

- Sequencer
- App-V Client
- Content File Share (Optional)

## Dedicated Infrastructure Mode Components

Used in a dedicated infrastructure mode (with “traditional” RTSP/RTSPS streaming), the following components are used:

- Sequencer
- App-V Client
- Management Server (formerly called Virtual Application Server)
- Streaming Server (Optional)
- Management Service (formerly called Management Server)
- App-V SQL Database
- Content Share

## Shared Infrastructure Mode Components

Used in a shared infrastructure mode including non-virtual application management, and operating system image management via System Center Configuration Manager (SCCM).

- Sequencer
- App-V Client
- SCCM Management Server
- SCCM SQL Database
- SCCM Distribution Server
- Content Share (Optional)

## Scope of the New Management Pack

The Microsoft Management Pack for App-V is focused on adding additional management value to some of the Dedicated Server components, specifically the back-end server components. Although the standard SCCM distribution, plus specialty management packs for SQL Server and IIS exist, the goal of this management pack is provide to focus on the App-V usage of these servers and services.

Not surprisingly, no support for the Sequencer is provided. The Sequencer PC is constantly re-imaged and should not have added software clients on it. Surprisingly, however, this management pack does not include added monitoring of the App-V client.

The Management Pack is delivered as a “sealed” management pack, meaning that end-users cannot edit the management pack. Configuration of the management pack is performed by applying “overrides”, which generally allow one to limit functionality or change thresholds.

## Installing the Management Pack

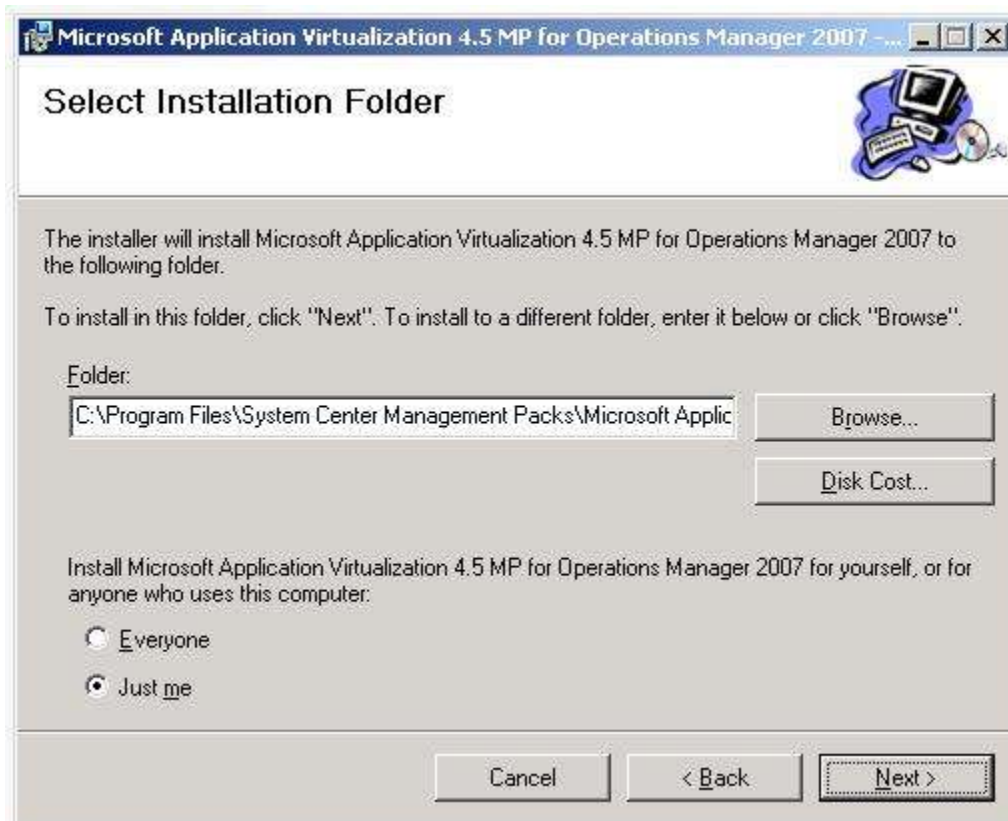
Microsoft distributes the management pack as an MSI (Microsoft Installer package). Installing the MSI appears to simply unpack the management pack into a folder, which by default is where SCCM expects management packs to be stored.

Launching the MSI will provide the administrator with a wizard interface to guide them through this installation. The first page of the wizard is the license agreement, shown next.



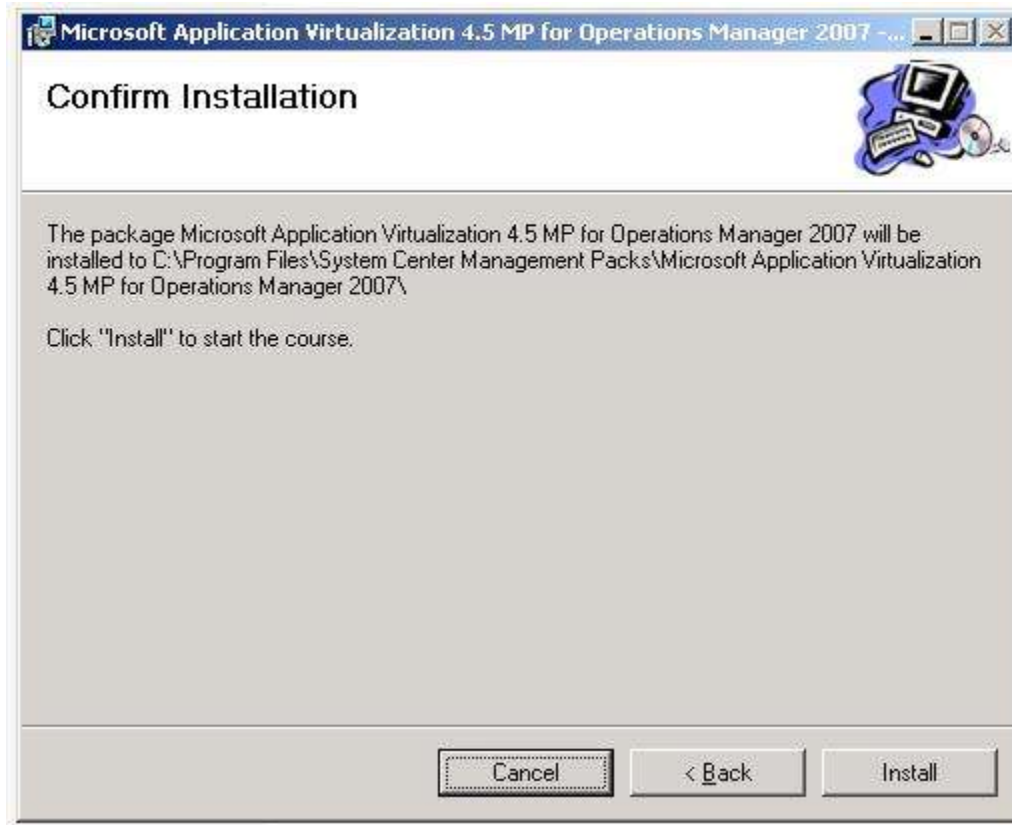
The administrator must accept the license agreement by selecting "I accept" and click the "Next" button. The "Select Installation Folder" page will appear in the wizard.

The Select Installation Folder page of the wizard is shown next.



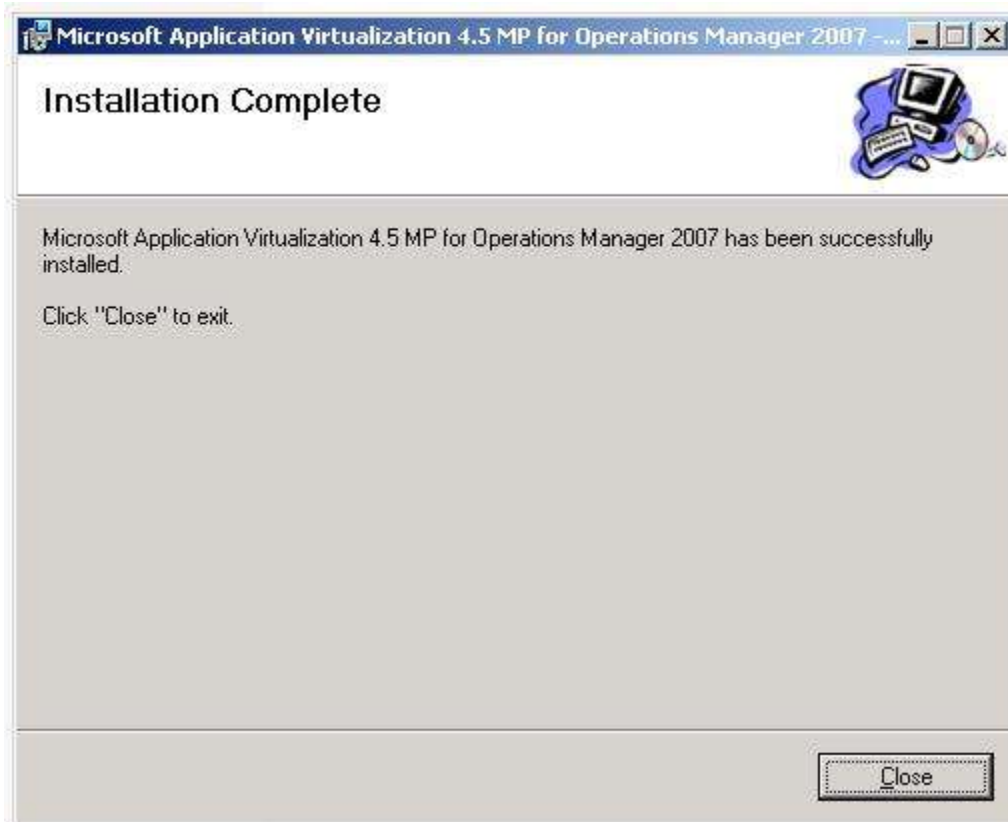
Adjustment to the folder to place the management pack may be made on this page. Selecting the "Everyone" option is recommended. Click the "Next" button.

The “Confirm Installation” page of the wizard appears next.



Click the “Install” button, which will begin the installation.

After installation (very brief), the “Installation Complete” page of the wizard appears.



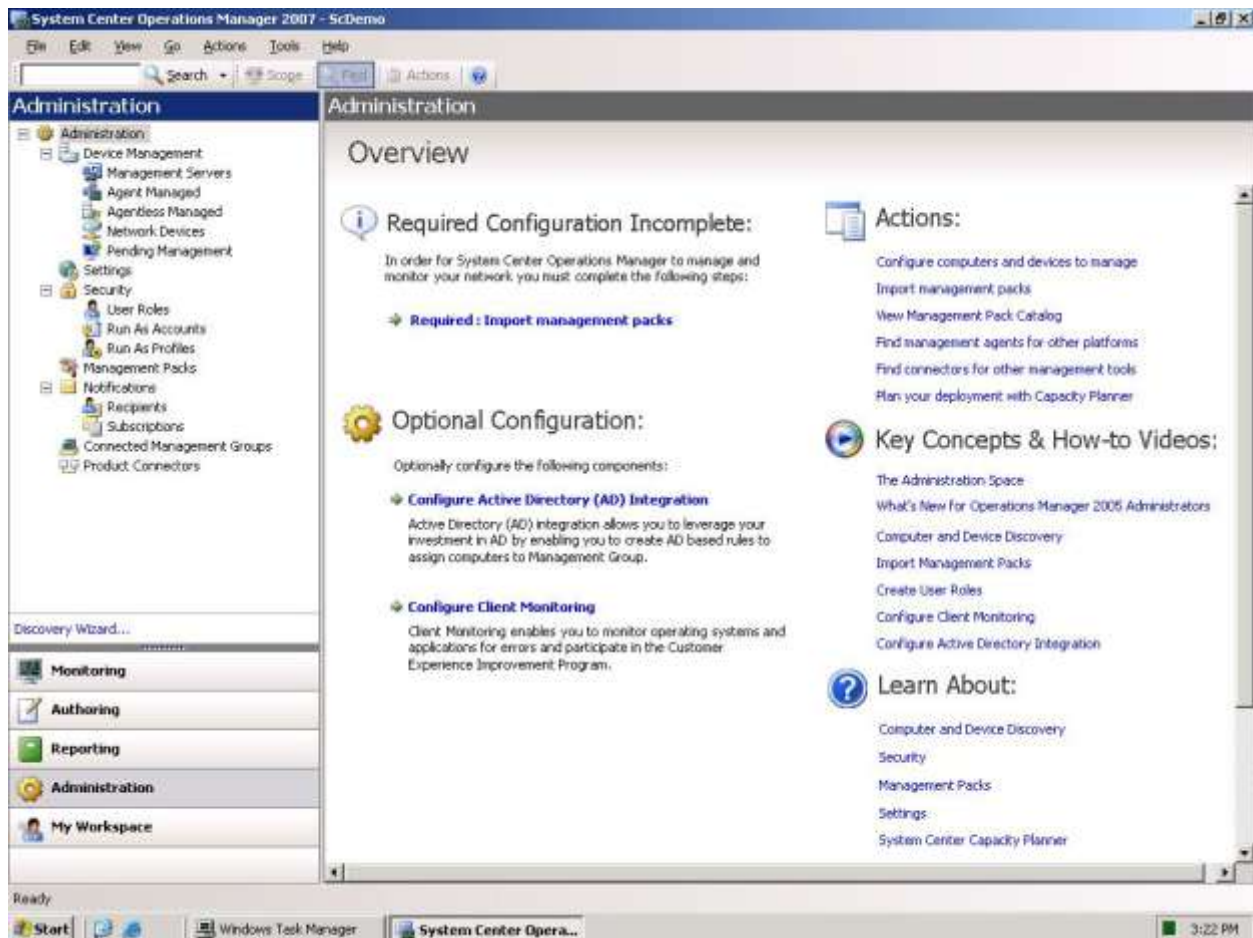
Click the “Close” button to complete the wizard.

NOTE: This installation only places the management pack file on the machine. The management pack must still be imported (shown in the next section).

## Importing the Management Pack into SCCM

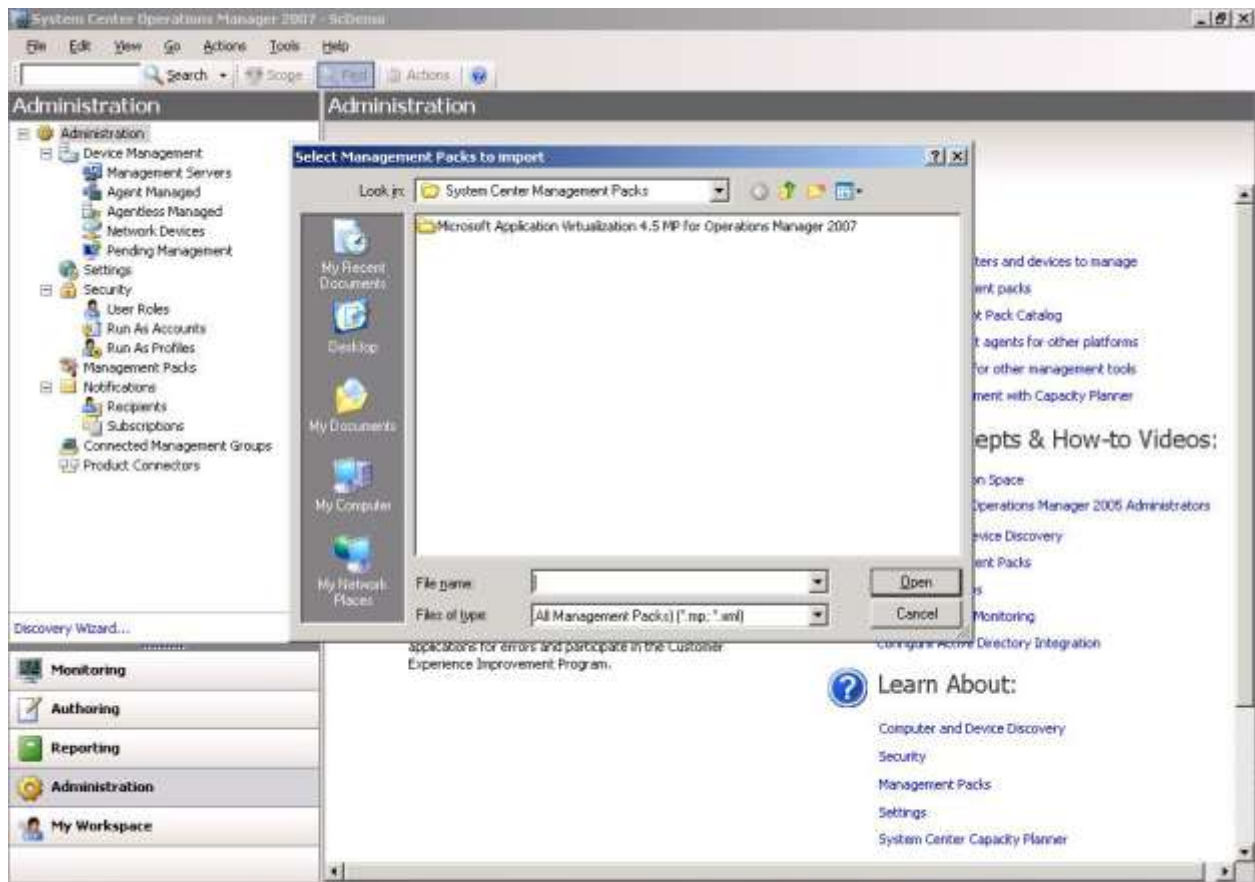
Now that the Management Pack file is copied onto the server, it must be imported using the Operations Manager Console. The process for this importation is as follows:

1. Launch the System Center Operations Manager Console from the start menu.
2. Click on Administration (left side of console). The screen should look similar to the image below.

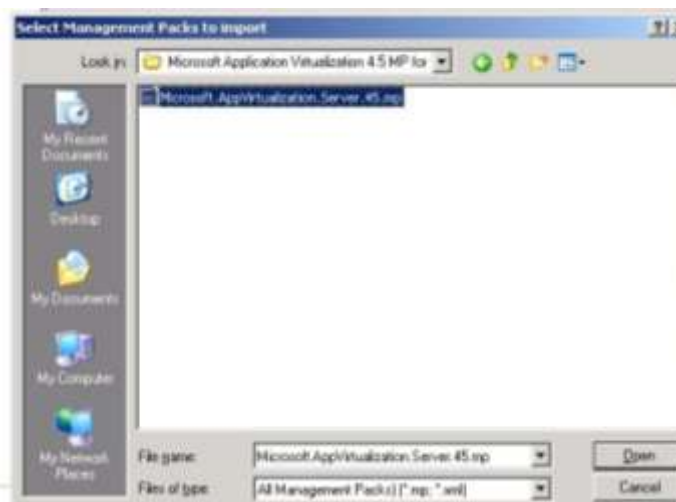


3. Click "Import management packs" on the right side actions. A file selection prompt for a management pack to import appears, as is shown next.

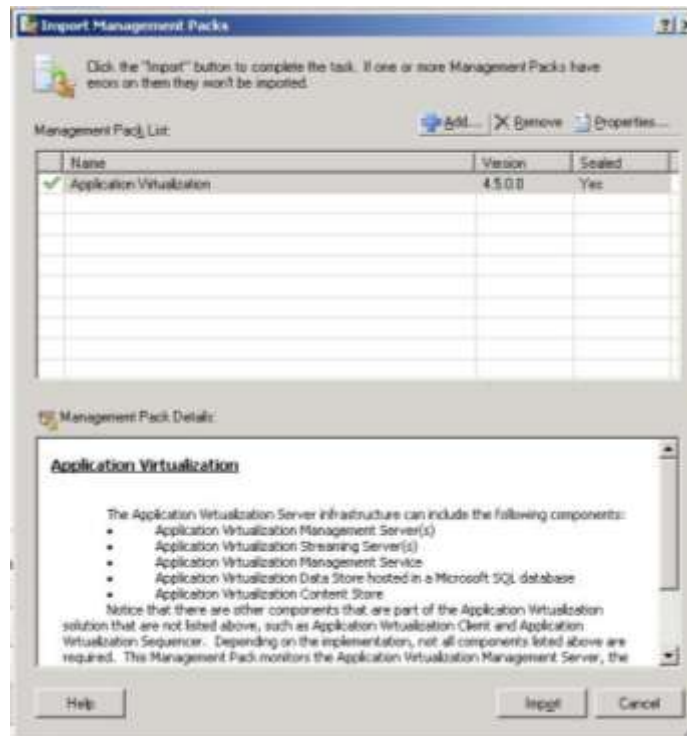




4. Open the “Microsoft Application Virtualization 4.5 MP for Operations Manager 2007” folder.



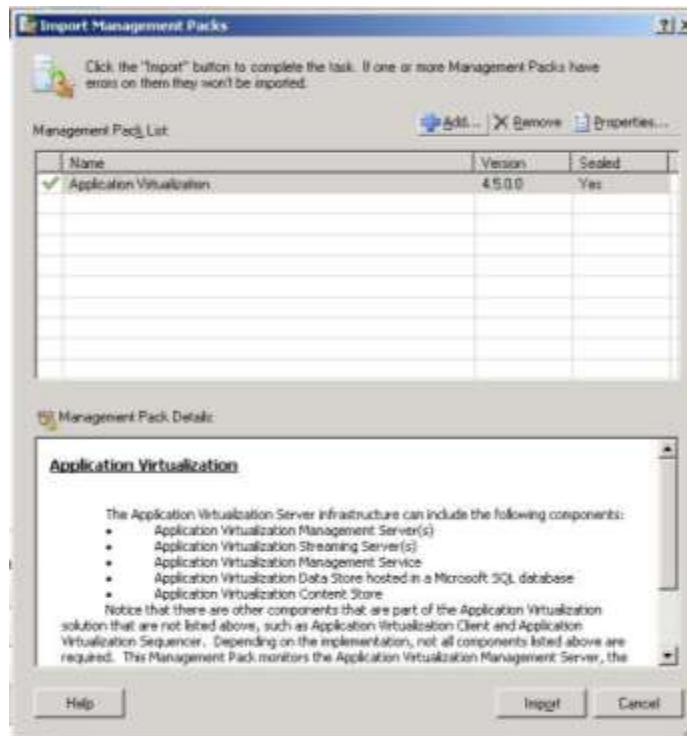
5. Select the file and click the “Open button. The import management packs dialog appears. Note below that it is a sealed management pack, meaning that the detail workings will not be visible or editable.



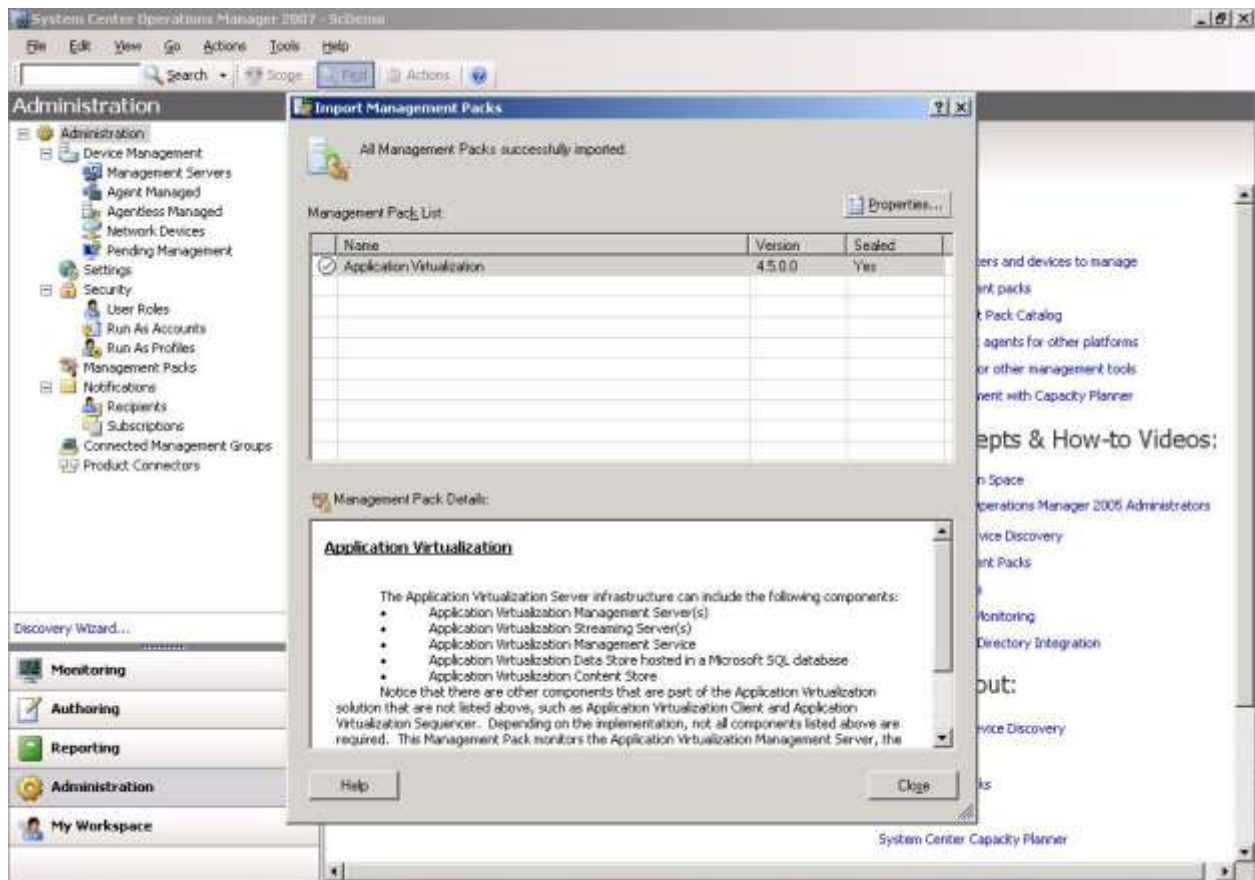
6. Clicking on the Properties button reveals a property sheet with some additional information about the Management Pack. The Knowledge tab was not very enlightening.



7. Close the properties by clicking the "OK" button. This will return to the Import Management Pack dialog.

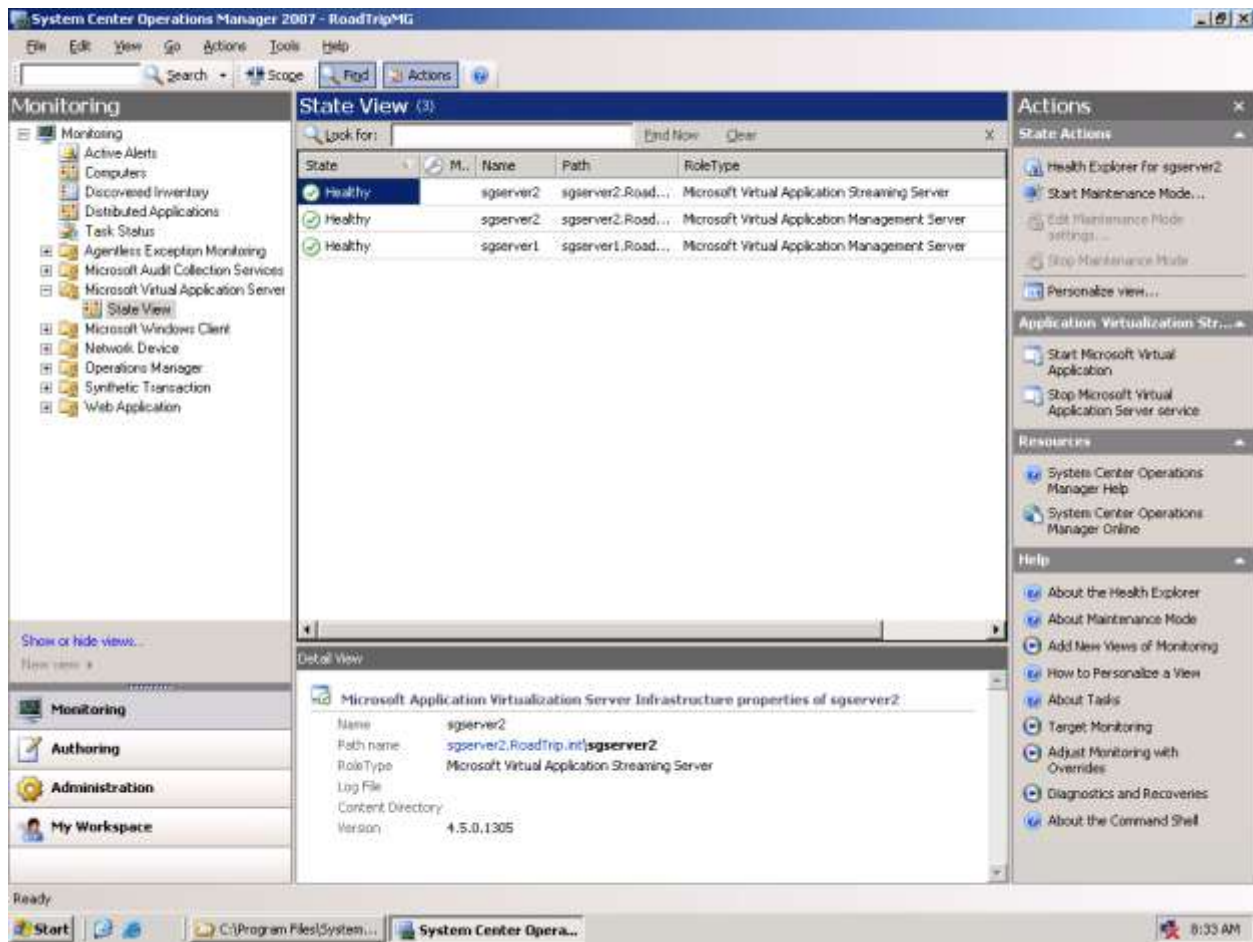


8. On the Import Management Packs dialog, click the import button. This will complete the import operation.



9. Click the “Close” button to close the Import Management Packs dialog to return to the Management Console.

10. Select Monitoring (on the left side of the console). Select the new “Monitor Virtual Application Server” folder on the left side of the console. Select State View.



In the display above, our two App-V servers are displayed. In terms of what is installed in this environment we have the following computers:

- Sgserver1 has the Management Server, IIS, The Management Service, and Management Console.
- Sgserver2 has the Streaming Server.
- SgSqlServer has the database.
- File Server holding the content store
- Several Client machines with the App-V Client software.

In the display above, we see that both SgServers listed as having the Management Server and SgServer2 also having the Streaming server. This is different than the product names imply and may be confusing.

When we installed the management pack, the Knowledge information made us think that we would see state information at this level for other components, such as the Sql Server and Content share. As we will see, these additional components do not appear as state items directly here but are covered.

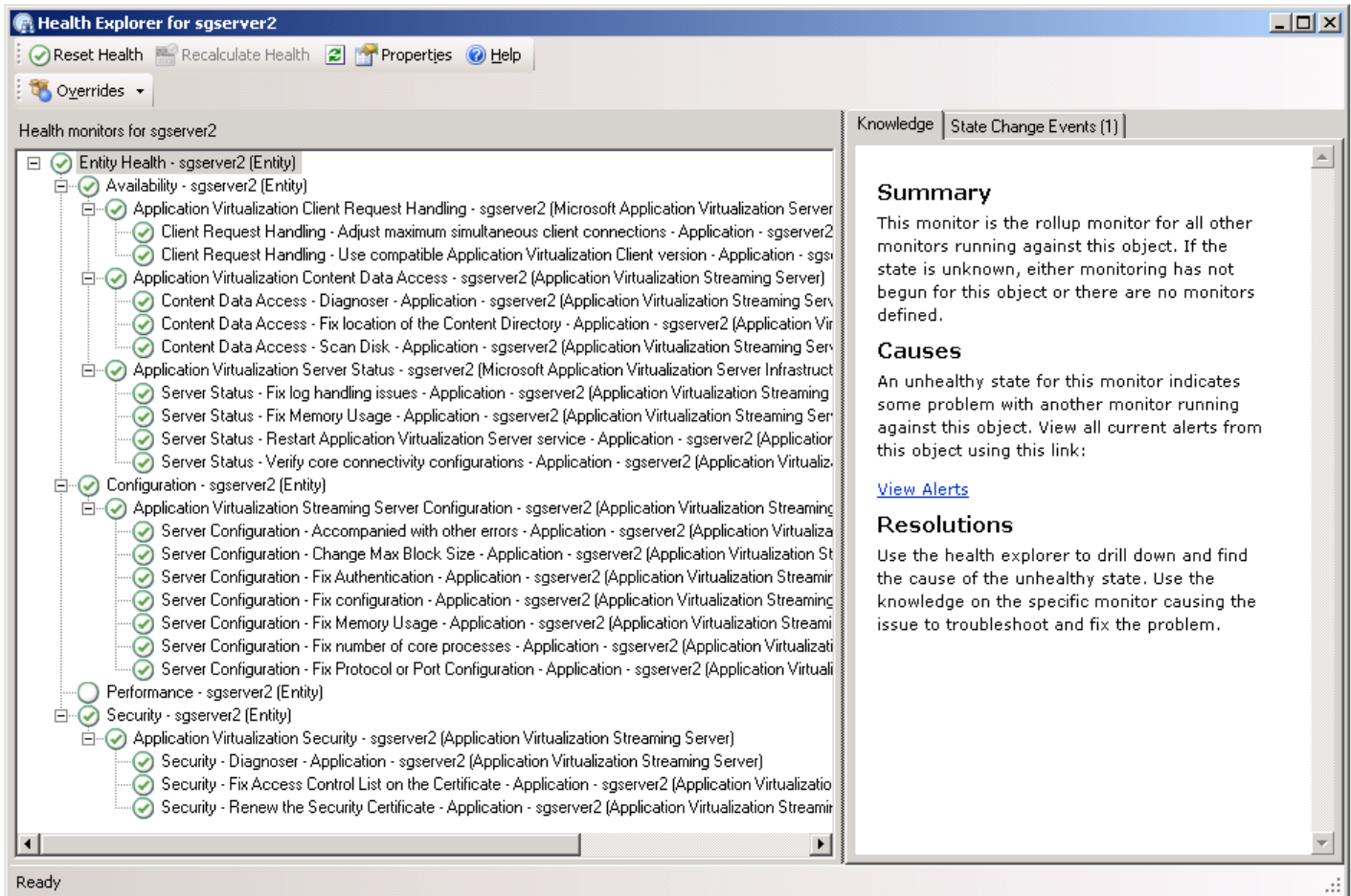
For example, the additional monitoring of the Sql database means only that the monitors for the App-V Management Server includes specific monitors to determine if that App-V Management Server can contact the registered database. The overall state of the Sql Server itself is monitored separately and does not change because of this management pack.

## **App-V Monitoring with this Management Pack**

SCOM provides this state view as a rollup of state information gathered from a series of “Monitors”. In this section, we first look at the monitors associated with the Streaming Server, and then that of the App-V Management Server.

## Health Explorer on a Streaming Server

Select the new “Monitor Virtual Application Server” folder on the left side of the console. Select State View. Select an entry with the Streaming Server Role. Click on Health Explorer for this server. The Health explorer monitors the items as shown in the image below.



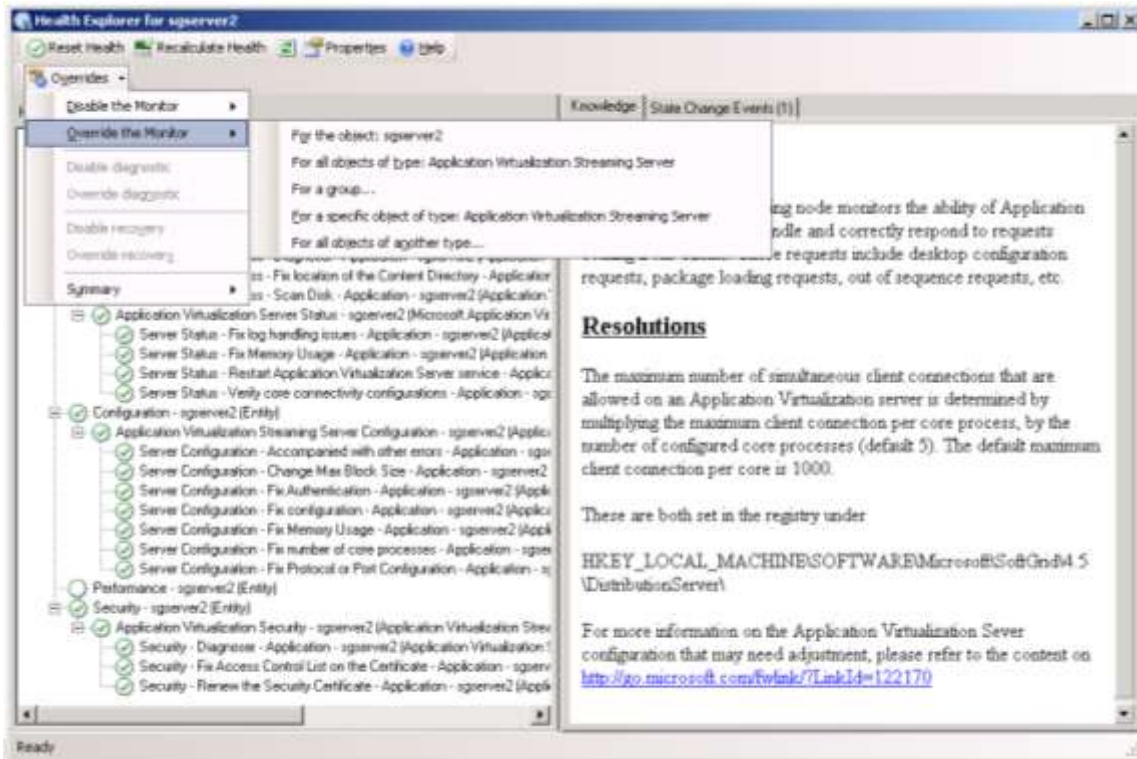


Selecting a state item will provide information about this item (called a “Monitor” in SCOM) in the knowledge tab. In the image below, we have selected the Client Request Handling for maximum simultaneous client connections. The knowledge tab tells us about this monitor as well as related configuration settings in the App-V server.

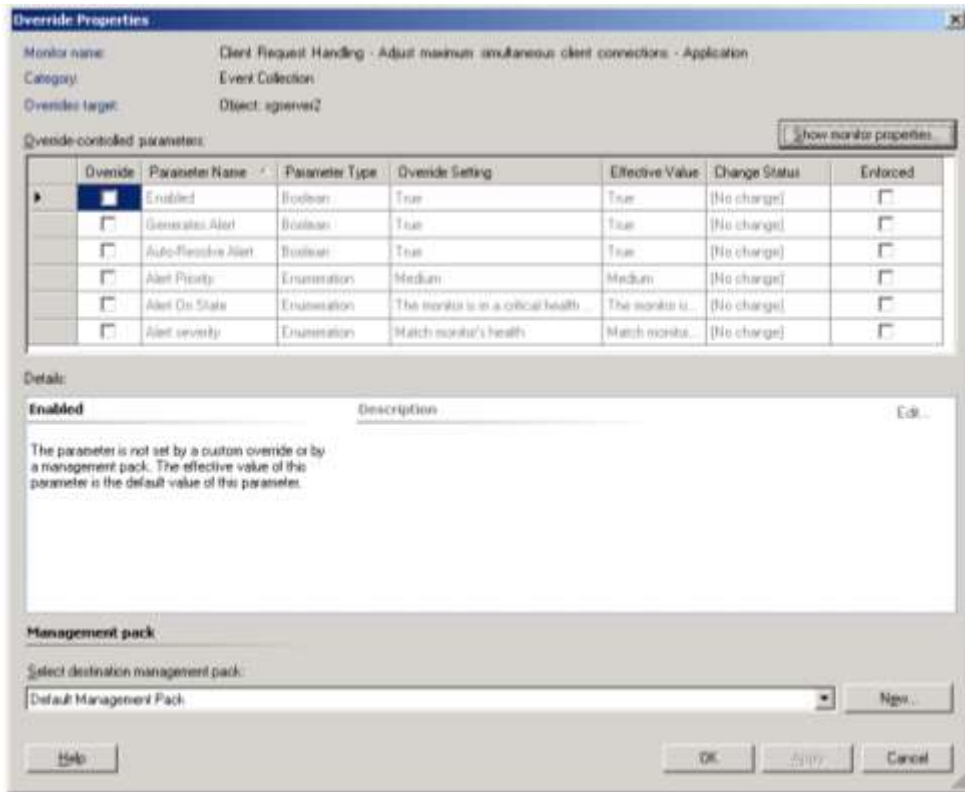


If this monitor is causing events, you might want to correct this issue by changing the configuration on the App-V server manually, which in this case the knowledge tab provided the necessary information. On the other hand, perhaps you feel the server is fine but the monitor is over-reacting.

SCCM supports your ability to change the behavior of monitors, but to a limited degree in a sealed management pack. The pack developer decides what you can or cannot override. The Overrides button on the health explorer provides the capability to alter the behavior of a monitor. As shown below, you can either disable the monitor or override settings, and select what entities this override applies to.

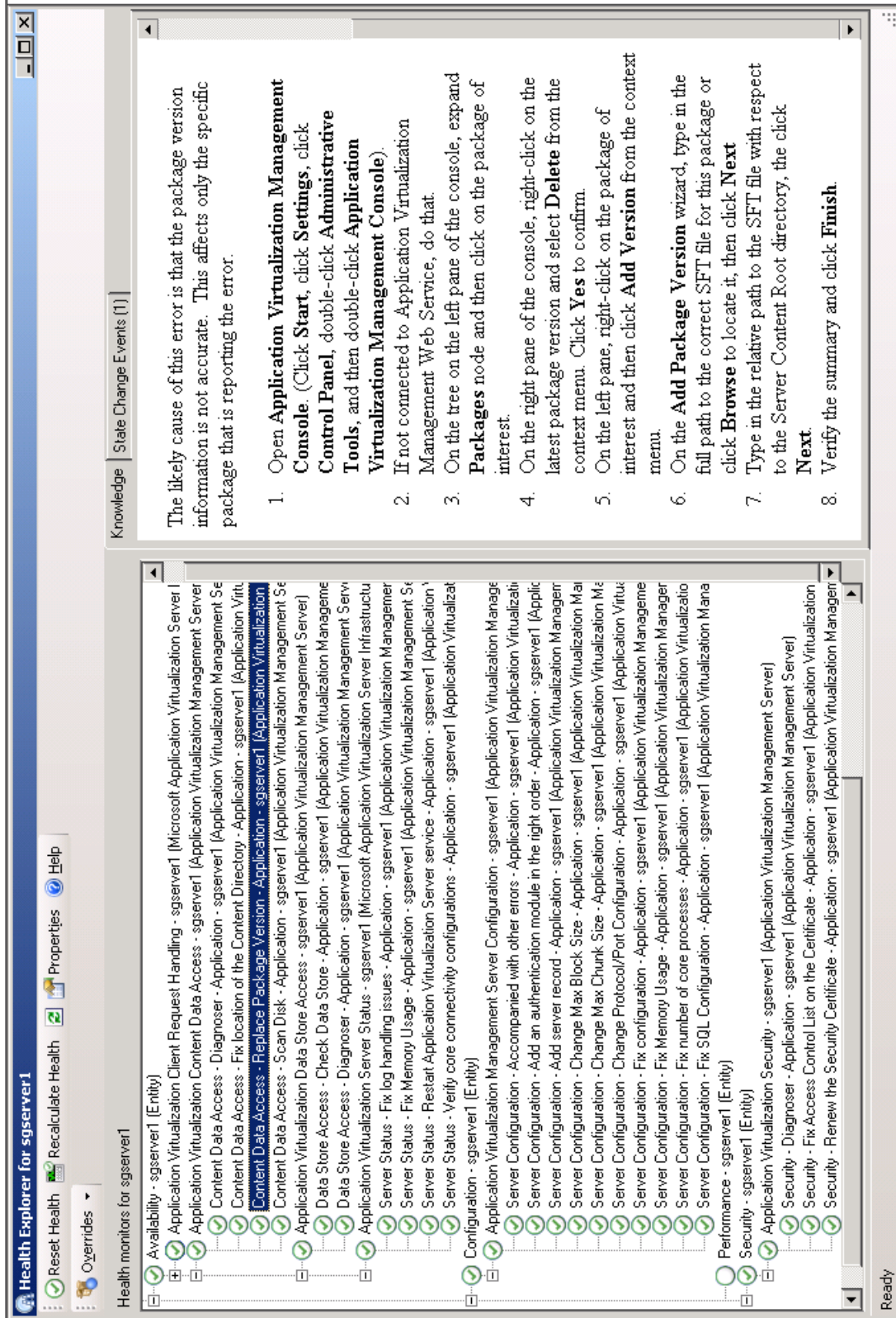


The image below shows the override properties for this item. In this case, we can only override things such as if alerts are generated (and cleared automatically) as well as the priority of the alert and how such an alert bubbles up into the health monitor for the server itself. Unfortunately, there is no override for what the threshold is. It is unfortunate, at least in this version of the management pack that we can neither override this, and the Knowledge info fails to even tell us what this threshold is.



## Health Explorer on an App-V Management Server

The health explorer monitors for a “heavy-weight” App-V Management Server are shown in the image below.



## Summary

The App-V Management Pack from Microsoft offers additional monitoring capabilities for customers that use System Center Operations Manager 2007 with SP1. The pack provides a health summary for App-V Management Servers and Streaming Servers only, but includes health indications regarding some external components to which the server software depends upon, such as the database and content share.

It is quite disappointing that client computers are not included in this management pack. In the development of our own management pack, we found the client very easy to work with (even before the addition of an App-V WMI Provider on the client). In particular, we believe that the operations manager should be monitoring the size of the App-V client cache and virtual application errors. Given the large number of remote client devices we find this decision quite baffling and perhaps this is planned to be addressed in a separate management pack.

We find that the limitations in this management pack for the servers creates a management pack that might be appropriate if SCOM monitoring is being handled by another group within the IT department for gross level issues, who would then contact an App-V expert that would use different tools.

We were hoping to see a fuller solution that would be useful to App-V administrators directly. To some extent, the developers of this management pack had their hands tied; the App-V team did not implement a WMI provider on the server to produce the necessary information. In developing our own management pack, we developed our own WMI provider to produce the necessary management points. Still, we believe more care should have been taken to provide more useful overrides.

## The Bottom Line

For an organization that uses System Center Operations Manager already, this free management pack from Microsoft can be a welcome addition that allows some limited monitoring capabilities. It is most appropriate in larger organizations where the division of responsibility leads to a list of servers and services that need to get checked off of a “to do” list by personnel who do not really even need to have a cursory knowledge what the server or service does. In that regard, additional configuration of the pack, through disabling of monitors or setting overrides, will need to be performed by someone more familiar with App-V to eliminate unwanted alerts and state display warnings.

We will continue to develop and enhance our own management pack to provide enhanced manageability beyond what is supported in the Microsoft pack. In particular we feel that monitoring of

clients is badly needed, plus monitoring of server scaling (how many users are connected rather than how many could connect) is critical to the planning needs of large organizations.