IBM SmartCloud Application Performance Management
Entry Edition - VM Image
Version 7.7

Offering Guide

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Entry Edition - VM Image
Version 7.7

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IBM
Before using this information and the product it supports, read the information in "Notices" on page 31.
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About this publication

IBM SmartCloud® Application Performance Management Entry Edition - VM Image offering includes multiple component products. This document provides an overview of the component products and the installation process to install, and configure the product.

Intended audience

This publication is for those who are responsible for installing and configuring the components within the SmartCloud Application Performance Management Entry Edition - VM Image offering. Readers might take on the following roles:

- System administrator
- Network administrator
- IBM Support
- Field system engineer

What this publication contains

This publication contains the following sections:

- Chapter 1, "Introduction"
  Provides an overview of the contents of IBM SmartCloud Application Performance Management Entry Edition - VM Image and the related information sources.

- Chapter 2, "Planning your installation"
  Provides installation related information about the component products to help you decide which component to install, where to install them, and the hardware and software requirements.

- Chapter 3, "Configuring IBM SmartCloud Application Performance Management Entry Edition - VM Image"
  Provides information sources for configuring the component products that are provided by the IBM SmartCloud Application Performance Management Entry Edition - VM Image offering.

Publications

This section lists publications in the IBM SmartCloud Application Performance Management Entry Edition - VM Image library and related documents. The section also describes how to access Tivoli® publications online and how to order Tivoli publications.

IBM SmartCloud Application Performance Management Entry Edition - VM Image library

The following documents are available in the IBM SmartCloud Application Performance Management Entry Edition - VM Image library:

Provides information about how to install and deploy IBM SmartCloud Application Performance Management Entry Edition - VM Image, and how to use it to monitor your IBM business integration systems.


### Accessing terminology online


### Accessing publications online

To access the publications using a web browser, go to the [IBM SmartCloud Application Performance Management Information Center](http://www.ibm.com/software/tivoli/products/apm-vmimage). IBM posts publications for this and all other Tivoli products, as they become available and whenever they are updated, to the Tivoli Documentation Central website at [http://www.ibm.com/tivoli/documentation](http://www.ibm.com/tivoli/documentation).

**Note:** If you print PDF documents on other than letter-sized paper, set the option in the **File > Print** window that allows Adobe Reader to print letter-sized pages on your local paper.

### Ordering publications


You can also order by telephone by calling one of these numbers:

- In the United States: 800-879-2755
- In Canada: 800-426-4968

In other countries, contact your software account representative to order Tivoli publications. To locate the telephone number of your local representative, perform the following steps:

2. Select your country from the list and click **Go**.
3. Click **About this site** in the main panel to see an information page that includes the telephone number of your local representative.

### Accessibility

Accessibility features help users with a physical disability, such as restricted mobility or limited vision, to use software products successfully. With this product, you can use assistive technologies to hear and navigate the interface. You can also use the keyboard instead of the mouse to operate all features of the graphical user interface.
For additional information, see the Accessibility Appendix in IBM SmartCloud Application Performance Management Entry Edition - VM Image: Installation and Deployment Guide.

Tivoli technical training

For Tivoli technical training information, see the following IBM Tivoli Education website at http://www.ibm.com/software/tivoli/education.

Tivoli user groups

Tivoli user groups are independent, user-run membership organizations that provide Tivoli users with information to assist them in the implementation of Tivoli Software solutions. Through these groups, members can share information and learn from the knowledge and experience of other Tivoli users. Tivoli user groups include the following members and groups:

• 23,000+ members
• 144+ groups

Access the link for the Tivoli Users Group at www.tivoli-ug.org.

Support information

If you have a problem with your IBM software, you want to resolve it quickly. IBM provides the following ways for you to obtain the support you need:

Online


IBM Support Assistant

The IBM Support Assistant is a free local software serviceability workbench that helps you resolve questions and problems with IBM software products. The Support Assistant provides quick access to support-related information and serviceability tools for problem determination. To install the Support Assistant software, go to http://www.ibm.com/software/support/isa.
Chapter 1. Introduction

The IBM SmartCloud Application Performance Management Entry Edition - VM Image provides a robust, introductory application performance management solution in a preconfigured virtual image software appliance that users can deploy in their existing VMware infrastructure.

The solution provides full-spectrum monitoring of an application delivery infrastructure, without the challenges that are often associated with deploying and configuring such a solution. The solution includes integrated system discovery and operating system monitoring, extending to virtual infrastructure monitoring, optimization, and capacity planning. Database and application monitoring, and internet service monitoring are included as well.

The IBM SmartCloud Application Performance Management UI Version 7.7.0.0.1 provides new, customizable, dashboards for SmartCloud Application Performance Management, Tivoli Monitoring, and IBM Tivoli Composite Application Manager products.

IT operations and administrators can use the IBM SmartCloud Application Performance Management Entry Edition - VM Image offering to maintain high performance and availability levels for their systems. By using the consolidated set of tools, IT organizations can optimize service levels and contain costs on critical application resources across the enterprise.

Contents of the offering

The IBM SmartCloud Application Performance Management Entry Edition - VM Image is delivered as two virtual machine images and a package that contains the files for deploying monitoring agents. The two virtual machine images are named Tivoli Data Warehouse virtual machine image and IBM Tivoli Monitoring virtual machine image. You can obtain the contents of the offering from IBM Passport Advantage® or from the product DVDs.

Contents of the offering are divided into the following three categories:

- Components contained in the Tivoli Data Warehouse virtual machine image
- Components contained in the IBM Tivoli Monitoring virtual machine image
- Agent installation images contained in separate packages

Components that are contained in the Tivoli Data Warehouse virtual machine image:

**IBM DB2® Enterprise Server Edition Version 10.1**

IBM DB2 Enterprise Server Edition provides scalable database server software to handle the demanding workloads of large and midsize enterprise servers. It delivers high performance across multiple workloads, while helping to reduce administration, storage, development and server costs. IBM DB2 Enterprise Server Edition runs on Linux, UNIX, and Windows platforms.

The following components of IBM Tivoli Monitoring Version 6.3 Fix Pack 2
Tivoli Data Warehouse
With Tivoli Data Warehouse, you can analyze historical trends from monitoring agents. The Tivoli Data Warehouse uses a DB2 for Linux, UNIX, and Windows, DB2 on z/OS®, Oracle, or Microsoft SQL Server database to store historical data that is collected across your environment. You can generate warehouse reports for short-term or long-term data through the Tivoli Enterprise Portal. Warehouse reports provide information about the availability and performance of your monitoring environment over a time. You can also use third-party warehouse reporting software, such as Crystal Reports or Brio, to generate reports.

Warehouse Proxy Agent
The Warehouse Proxy Agent receives data that is collected by monitoring agents and moves it to the Tivoli Data Warehouse database.

Summarization and Pruning Agent
The Summarization and Pruning Agent provides the ability to customize the length of time for which to save data (pruning) and how often to aggregate granular data (summarization) in the Tivoli Data Warehouse database.

Performance Analyzer
IBM Tivoli Performance Analyzer adds predictive capability to Tivoli Monitoring. You can monitor resource consumption trends, anticipate future performance issues, and avoid or resolve problems more quickly. For example, you can use Tivoli Performance Analyzer, which is fully automated, to predict application bottlenecks and create alerts for potential service threats.

Monitoring Agent for Linux OS
The Monitoring Agent for Linux OS is an intelligent, remote monitoring agent that resides on managed resources. It assists you in anticipating trouble and warns systems administrators when critical events take place on their systems. With the Monitoring Agent for Linux OS, systems administrators can set preferred threshold levels and flags to be alerted when the system reaches these thresholds.

After you deploy the Tivoli Data Warehouse virtual machine image, this agent is installed on the system where you deploy the virtual machine image, and you can see the data that is collected by the agent.

IBM Tivoli Composite Application Manager Agent for DB2 Version 7.1
The DB2 agent provides intelligent monitoring and management of DB2 database servers. Views show key metrics that are unique to each application, including buffer hits, connections that are used, thread activity, deadlocks, and contention.

After you deploy the Tivoli Data Warehouse virtual machine image, this agent is installed on the system where you deploy the virtual machine image, and you can see the data that is collected by the agent.

IBM Tivoli Common Reporting Version 3.1.0.1
Tivoli Common Reporting provides an integrated reporting solution for the products in the Tivoli portfolio. You can link multiple reports across
various IBM Tivoli products to simplify the report navigation and accelerate access to key reporting information.

**IBM SmartCloud Application Performance Management UI Version 7.7.0.0.1**
The IBM SmartCloud Application Performance Management UI provides new and customizable dashboards for IBM SmartCloud Application Performance Management, IBM Tivoli Monitoring, and IBM Tivoli Composite Application Manager products.

**IBM Tivoli Monitoring for Virtual Environments Version 7.2.0.2: Dashboard, Reporting, and Capacity Planning**
The three IBM Tivoli Monitoring for Virtual Environments components are supported through the Tivoli Integrated Portal. Tivoli Monitoring for Virtual Environments provides a comprehensive tool to monitor the availability and performance of virtual environments. In addition, Tivoli Monitoring for Virtual Environments provides performance and capacity reporting of virtual environments and helps you with capacity planning activities to optimize, consolidate, and balance the overall capacity of the virtual environments.

**Language pack**
Language packs are provided for the components that are provided by the Tivoli Data Warehouse virtual machine image. Different components might support different national languages. For more information about the supported languages, check the component-specific documentation.

**Components that are contained in the IBM Tivoli Monitoring virtual machine image:**

IBM Tivoli Monitoring virtual machine image contains the following components:

**The following components of IBM Tivoli Monitoring Version 6.3 Fix Pack 2**
IBM Tivoli Monitoring monitors and manages system and network applications on various operating systems, tracks the availability and performance of your enterprise system, and provides reports to track trends and troubleshoot problems. The following IBM Tivoli Monitoring components are included:

**Tivoli Enterprise Monitoring Server**
The Tivoli Enterprise Monitoring Server (the monitoring server) is the collection and control point for performance and availability data and alerts that are received from monitoring agents. It is also responsible for tracking the online or offline status of monitoring agents.

**Tivoli Enterprise Portal Server**
The Tivoli Enterprise Portal Server (the portal server) communicates with the hub monitoring server, which in turn controls the remote monitoring servers and any monitoring agents that might be connected to the hub directly.

**Tivoli Enterprise Portal Browser Client**
The Tivoli Enterprise Portal browser client is automatically installed with Tivoli Enterprise Portal Server. The portal server manages data access through user workspace consoles (the portal clients). The portal server connects to a hub monitoring server; it retrieves data from the hub in response to user actions at a portal client, and sends the data back to the portal client for presentation. The portal server also provides presentation information to the
portal client so that it can render the user interface views suitably.
The browser client can be run using Microsoft Internet Explorer or
Mozilla Firefox; it connects to a web server that is running in the
portal server.

**Monitoring Agent for Linux OS**
The Monitoring Agent for Linux OS is an intelligent, remote
monitoring agent that resides on managed resources. It assists you
in anticipating trouble and warns systems administrators when
critical events take place on their systems. With the Monitoring
Agent for Linux OS, systems administrators can set preferred
threshold levels and flags to be alerted when the system reaches
these thresholds.

After you deploy the IBM Tivoli Monitoring virtual machine
image, this agent is installed on the system where you deploy the
virtual machine image, and you can see the data that is collected
by the agent.

**Operating system agent depots**
Operating system (OS) agents monitor the availability and
performance of the computers in your monitoring environment. An
OS agent must reside on the computer that it is monitoring. The
agent depot is an installation directory on the Tivoli Enterprise
Monitoring Server from which you deploy agents and maintenance
packages across your environment. With the OS agent depots, you
can deploy any OS agent to the operating system that you want to
monitor from the monitoring server.

**Log File agent**
The Log File agent is an agent that provides a configurable log file
monitoring capability that uses regular expressions. For
compatibility, the agent can consume the configuration information
and format strings that are previously used by the Tivoli Event
Console Log File Adapter. These strings allow the agent to filter
the log data according to patterns in the format file, and submit
only the interesting data to an event consumer. The agent can send
data both to a Tivoli Enterprise Monitoring Server or through the
Event Integration Facility (EIF) to any EIF receiver, such as the
OMNIbus EIF probe.

**Agentless monitoring**
An agentless monitor is a standard Tivoli Monitoring agent that
can monitor multiple operating system nodes that do not have
standard OS agents running on them. An agentless monitor obtains
data from nodes it is monitoring by a remote application
programming interface (API) that is running on the node that is
being monitored. Because these interfaces provide either operating
system functions or base application functions, no IBM Tivoli
Monitoring component need be installed or deployed on the
monitored node.

**IBM SmartCloud Application Performance Monitoring agent depots for remote
deployment**
Agent depots of the following components in IBM SmartCloud Application
Performance Monitoring are provided for you to deploy to your
environment from the monitoring server:
IBM Tivoli Composite Application Manager for Applications Version 7.2.1.1

The ITCAM for Applications offering is a package of component products that monitor and manage systems, application servers, and database servers; track availability and performance; and provide reports, in a browser-based graphical user interface, to track trends and troubleshoot problems. The user interface also offers expert advice on alerts and corrective actions. The following ITCAM for Applications components are provided in the IBM Tivoli Monitoring virtual machine image:

**ITCAM Agent for DB2 Version 7.1**

The DB2 agent provides intelligent monitoring and management of DB2 database servers. Views show key metrics that are unique to each application, including buffer hits, connections that are used, thread activity, deadlocks, and contention.

**ITCAM Agent for HTTP Servers Version 7.1.0.3 Interim Fix 4**

The HTTP Servers agent ensures the availability and performance of critical business applications and services by comprehensively monitoring the health and performance of the HTTP server. This agent alerts administrators of health and performance problems, provides real-time metrics for problem diagnosis, and collects historical metrics for reporting and capacity trending.

**ITCAM Extended Agent for Oracle Database Version 6.3.1 Fix Pack 1**

The Oracle agent provides intelligent monitoring and management of Oracle database servers, Oracle Real Application Clusters (RAC) database servers, Automated Storage Management (ASM) software, and Oracle Data Guard. Views display key metrics that are unique to each application, including buffer hits, connections that are used, thread activity, deadlocks, and contention.

IBM Tivoli Composite Application Manager for Microsoft Applications Version 6.3.1.1

The ITCAM for Microsoft Applications product monitors systems, applications, and transactions to speed problem determination and automate problem resolution in Microsoft environments to increase productivity while supporting cross-platform growth. The following ITCAM for Microsoft Applications components are provided in the IBM Tivoli Monitoring virtual machine image:

**Active Directory agent**

The Microsoft Active Directory agent offers a central point of management for your Microsoft Active Directory service. This agent provides a comprehensive means for gathering the information that you require to detect problems early and to prevent them. You can monitor many servers from a single workstation, and information is standardized across the system.

**Cluster Server agent**

The Microsoft Cluster Server agent monitors availability of cluster and cluster resources, provides the ability to generate reports for the metrics that are collected, provides availability monitoring for the cluster server’s key
monitoring points (cluster level, cluster nodes, cluster resource groups, cluster resources and cluster networks),
provides cluster resource usage across the nodes of the cluster, and reports threats in capacity availability of processor, memory, disk, and networks.

**Exchange Server agent**
The Microsoft Exchange Server agent offers a central point of management for your Microsoft Exchange Server product. This agent provides a comprehensive means for gathering the information that you require to detect problems early and to prevent them. By using this agent, you can collect and analyze information that is related to the Microsoft Exchange Server.

**Hyper-V Server agent**
The Microsoft Hyper-V Server agent monitors Microsoft Hyper-V Server, and includes the following functions: availability monitoring for Hyper-V services, provides Hyper-V configuration and virtual machine configuration information, collects applicable performance attributes, providing situations where appropriate, displays the enterprise level information for all the Hyper-V systems, provides actions to start and stop the Hyper-V services and virtual machines, and monitors the availability of virtual machines.

**Internet Information Services agent**
The Microsoft Internet Information Services agent monitors internet information services and processes, indicating when they are down, monitors for errors and events affecting Microsoft IIS availability or performance, collects applicable performance attributes, providing situations where appropriate, provides actions to start and stop the website, FTP sites, and the several internet services, and provides the ability to generate reports for the attributes collected.

**.NET Framework agent**
The Microsoft .NET Framework agent collects performance attributes within the .NET Framework, providing situations where appropriate, monitors for errors and events affecting the .NET Framework, provides the ability to generate reports for the attributes collected, and provides support for 32 bit and 64 bit .NET applications.

**Microsoft BizTalk Server agent**
The Microsoft BizTalk Server agent monitors and indicates when BizTalk services status is down, monitors for errors and events affecting BizTalk Server availability or performance, collects applicable performance attributes and provides situations where appropriate, provides actions to start and stop BizTalk services, and provides the ability to generate reports for the attributes collected.

**Microsoft Host Integration Server agent**
The Microsoft Host Integration Server agent monitors and displays information that is related to Microsoft Host Integration Servers and BizTalk Adapters for Host Systems.
Microsoft Lync Server agent
Monitors Microsoft Lync Server 2007, 2007 R2, and 2010. This monitoring agent monitors functional components of the Microsoft Lync Server, such as instance messaging, text conferencing, audio and video conferencing, and web conferencing. It also generates situational alerts and provides suggestions for triggered situations.

SharePoint Server agent
The Microsoft SharePoint Server agent monitors SharePoint Server services, indicating when they are down, monitors for SharePoint event sources affecting SharePoint Server availability or performance, collects applicable performance attributes, providing situations where appropriate, provides start and stop functions for SharePoint services, and provides the ability to generate reports for the attributes collected.

SQL Server agent
The Microsoft SQL Server agent offers a central point of management for distributed databases. This agent provides a comprehensive means for gathering the information that you require to detect problems early and prevent them. Information is standardized across all systems so you can monitor hundreds of servers from a single workstation. You can collect and then analyze specific information by using the Tivoli Enterprise Portal.

IBM Tivoli Composite Application Manager for Transactions Version 7.4
The ITCAM for Transactions product delivers a comprehensive, unified transaction tracking management system that runs on a single, consolidated infrastructure with a tightly integrated user interface. The following ITCAM for Transactions components are provided in the IBM Tivoli Monitoring virtual machine image:

Internet Service Monitoring
The information gathered and processed by Internet Service Monitoring can be used to determine whether a particular service is performing adequately, identify problem areas, report service performance that is measured against Service Level Agreements (SLAs), and forward performance data to IBM Tivoli Monitoring, IBM Tivoli Composite Application Manager for Transactions, and other event management tools such as IBM Tivoli Netcool/OMNibus.

Application Management Console
The Application Management Console agent provides an accurate snapshot of ITCAM for Transactions monitoring in near real time. It provides real-time aggregated and consolidated application and transaction availability and response time information for all applications that are monitored by Internet Services, Response Time, and Transaction Tracking monitoring agents. It collects data in real time at a configurable, constant interval instead of relying on the Tivoli Data Warehouse. Use the Application Management Console agent to see status summary and trend analysis information across managed resources and
to complete problem determination. This information is displayed on the Tivoli Enterprise Portal.

**Web Response Time agent**
The Web Response Time agent provides user monitoring of client web requests to server components. It can be installed locally on the server system, or on a separate system. The Web Response Time agent uses server-side monitoring to capture HTTP and HTTPS transaction data such as response time and status codes. You can use this agent to capture the performance and availability data of actual users for Service Level Agreement (SLA) reporting. Web Response Time also detects protocols and applications by monitoring TCP/IP network flows.

**IBM Tivoli Monitoring for Virtual Environments Version 7.2.0.2**
The IBM Tivoli Monitoring for Virtual Environments helps you identify and resolve virtual server availability and performance issues.

**IBM Tivoli Monitoring for Virtual Environments Agent for Linux Kernel-based Virtual Machines**
Remote performance and availability monitoring to visualize availability, performance, and capacity trends for Kernel-based Virtual Machines (KVM) and hosts. This agent remotely monitors KVM by connecting to each host.

**IBM Tivoli Monitoring for Virtual Environments Agent for VMware VI**
This VMware VI agent provides you with the capability to monitor a VMware environment and to provide basic actions with VMware Virtual Centers.

**Network Devices agent**
The Network Devices agent offers a central point of management for your network devices environment or application. This agent provides a comprehensive means for gathering the information that you require to detect problems early and to prevent them. Information is standardized across the system. You can monitor multiple servers from a single workstation. By using the Network Devices agent, you can collect and analyze network devices-specific information.

**Language pack**
Language packs are provided for the components that are provided by the IBM Tivoli Monitoring virtual machine image. Different components might support different national languages. For more information about the supported languages, check the component-specific documentation.

**Agent installation images that are contained in separate packages:**

Some agent installation images are included in separate packages instead of the virtual machine images. If the agent supports remote deployment, its installation image for remote deployment is included in the package. If the agent does not support remote deployment, its full installation image is included.

**Agent installation images for remote deployment**
The following agents support remote deployment. Their installation images
for remote deployment are included in separate packages. If you want to deploy these agents in your environment to monitor applications, you must first upload the agent installation images to the server on which you deploy the IBM Tivoli Monitoring virtual machine image. For detailed instructions about how to remotely deploy an agent, see the IBM SmartCloud Application Performance Management Entry Edition - VM Image: Installation and Deployment Guide.

**ITCAM Agent for Lotus® Domino® Version 6.2.1**

The Lotus Domino agent provides secure monitoring and management of Lotus Domino servers, helping to optimize the performance of the Lotus Domino application. The provided function uses best practice models that focus on server availability, database management, mail routing, replication, server processes, and server health. The Lotus Domino agent includes IntelliWatch® for monitoring Lotus Domino servers.

**ITCAM Agent for Sybase ASE Version 6.2**

The Sybase ASE agent provides intelligent monitoring and management of Sybase servers. Views display key metrics that are unique to each application, including buffer hits, connections that are used, thread activity, deadlocks, and contention.

**IBM Tivoli Monitoring for Virtual Environments Version 7.2.0.2: NetApp Storage Agent**

The NetApp Storage agent provides you with the capability to monitor NetApp and IBM N Series storage systems through NetApp DataFabric Manager (DFM). IBM Tivoli Monitoring is the base software for the NetApp Storage agent.

**Full installation images for the following components**

The following components do not support remote deployment. If you want to deploy these agents in your environment to monitor applications, you must first upload the agent installation images to the managed system. For detailed instructions about how to upload the agent installation images to a managed system, see the IBM SmartCloud Application Performance Management Entry Edition - VM Image: Installation and Deployment Guide. The installation images for the following components are provided for you to install them locally on the managed systems.

**IBM Tivoli Monitoring Version 6.3 Fix Pack 2: Monitoring Agent for IBM i OS**

The Monitoring Agent for IBM i OS offers a central point of management for IBM i OS systems. It provides a comprehensive means for gathering the information that you require to detect problems early and prevent them. Information is standardized across all distributed systems so you can monitor and manage hundreds of servers from a single workstation.

**IBM Tivoli Monitoring Version 6.3 Fix Pack 2: Agent Builder**

Tivoli Monitoring Agent Builder is a set of tools that are used for creating agents, installation packages for the created agents, and application support extensions for existing agents.

**IBM Tivoli Composite Application Manager for Microsoft Applications Version 6.3.1.1: .NET Data Collector**

The .NET Data Collector can help you to track the transactions that occur in the .NET Framework application and the Internet Information Services (IIS) web applications.
Sources of information

This document provides information in summary form.

Information center for this offering

For detailed information about the component products, including installation instructions, see the product-specific information in the following product information centers.

- IBM SmartCloud Application Performance Management Information Center contains information for the following products:
  - IBM SmartCloud Application Performance Management UI
  - IBM Tivoli Composite Application Manager for Applications
  - IBM Tivoli Composite Application Manager for Microsoft Applications
  - IBM Tivoli Composite Application Manager for Transactions

- IBM Tivoli Monitoring for Virtual Environments Information Center contains information about IBM Tivoli Monitoring for Virtual Environments product.

- Tivoli Common Reporting Information Center contains information about Tivoli Common Reporting.

IBM Software Support overview

Customers who are entitled to IBM Software Support can use the IBM Software Support Handbook to address all questions that are related to IBM Software Support.

In general, customers in the United States can open a Service Request or a Problem Management Record (PMR) electronically by using IBM online Service Request Tools or by calling 1-800-IBM-SERV for voice support. Customers outside the United States can also use IBM online Service Request Tools or can call the IBM number in their country for voice support. The IBM Software Support Handbook contains contact information, phone numbers, information about IBM online Service Request Tools, and other IBM Software Support information.

When submitting PMRs for IBM SmartCloud Application Performance Management Entry Edition - VM Image, use the product ID, 5725-G70.

Review the IBM product support pages to find solutions to known problems. This method is a quick way to get answers to your questions.

Before you contact IBM Software Support, review the documentation for the component that you want to troubleshoot.

Architecture

IBM SmartCloud Application Performance Management Entry Edition - VM Image provides a comprehensive application performance management solution in a single product.

Figure 1 on page 12 illustrates the architecture of the application performance management environment after the following components are installed:

- IBM SmartCloud Application Performance Management UI
- DB2 Enterprise Server Edition
- Tivoli Common Reporting
- Tivoli Data Warehouse
• Tivoli Enterprise Portal browser client
• Tivoli Enterprise Portal Server
• Tivoli Enterprise Monitoring Server
• Operating system agents
• Application Management Console
• Any of the following IBM Tivoli Composite Application Manager for Applications monitoring agents can be installed:
  – DB2 agent
  – HTTP Servers agent
  – Lotus Domino agent
  – Sybase ASE agent
  – Oracle Database Extended agent
• Any of the following IBM Tivoli Composite Application Manager for Microsoft Applications monitoring components can be installed:
  – Active Directory agent
  – BizTalk Server agent
  – Cluster Server agent
  – Exchange Server agent
  – Host Integration Server agent
  – Hyper-V Server agent
  – Internet Information Services agent
  – .NET Framework agent
  – Lync Server agent
  – Sharepoint Server agent
  – SQL Server agent
  – .NET Data Collector
• Any of the following IBM Tivoli Monitoring for Virtual Environments monitoring agents can be installed:
  – Linux Kernel-based Virtual Machines agent
  – VMWare VI agent
  – NetApp Storage agent
  – Network Devices agent
• Any of the following IBM Tivoli Composite Application Manager for Transactions components can be installed:
  – Internet Service Monitoring
  – Web Response Time
**Figure 1. Architecture of the application performance management environment**

**Figure 2** illustrates the optional integration of the Tivoli event management and business service management products into the monitoring environment.

**Important:** IBM SmartCloud Application Performance Management Entry Edition - VM Image does not include all the monitoring agents that are shown in **Figure 2**

**Figure 2. Integrating Tivoli event management and business service management into the environment**

*In Figure 2 the box that is labeled “Tivoli Monitoring Infrastructure” represents everything in Figure 1 except for the monitoring agents. If you are using the IBM Tivoli Enterprise Console® or IBM Tivoli Netcool/OMNibus products, and Tivoli Monitoring to manage events in your enterprise, you can integrate and manage*
events from a single console. The event synchronization component sends updates 
to situation events that are forwarded to a Tivoli Enterprise Console event server 
or a Netcool/OMNIbus Objectserver and then back to the monitoring server.

For information about how to design your network firewall in relation to your 
Tivoli Monitoring environment, see Appendix C, “Firewalls,” of the IBM Tivoli 
Monitoring: Installation and Setup Guide in the ITCAM for Applications Information 
Center

SmartCloud Application Performance Management community on 
Service Management Connect

Connect, learn, and share with Service Management professionals: product support 
technical experts who provide their perspectives and expertise.

Access the IBM SmartCloud Application Performance Management community on 
Service Management Connect at https://www.ibm.com/developerworks/
servicemanagement/apm/index.html Use Service Management Connect in the 
following ways:
• Become involved with transparent development, an ongoing, open engagement 
between other users and IBM developers of Tivoli products. You can access early 
designs, sprint demonstrations, product roadmaps, and prerelease code.
• Connect one-on-one with the experts to collaborate and network about Tivoli 
and the SmartCloud Application Performance Management community.
• Read blogs to benefit from the expertise and experience of others.
• Use wikis and forums to collaborate with the broader user community.
Chapter 2. Planning your installation

Before you install and deploy IBM SmartCloud Application Performance Management Entry Edition - VM Image in your environment, identify hardware and software requirements and the procedure of deployment. After the IBM SmartCloud Application Performance Management Entry Edition - VM Image is deployed, server components and several agent components are installed. Most agent components are not installed, and the agent depots are provided for remote deployment. You must decide which monitoring agents you want to install and where to install them.

Component products that are installed

Different component products are installed to manage and monitor various software products.

After the Tivoli Data Warehouse virtual machine image is deployed, the following components are preinstalled, and you do not have to install them separately:

- IBM DB2 Enterprise Server Edition
- IBM Tivoli Monitoring components:
  - Tivoli Data Warehouse
  - Warehouse Proxy Agent
  - Summarization and Pruning Agent
  - Performance Analyzer
  - Monitoring Agent for Linux OS
  - Monitoring Agent for UNIX Logs
- IBM Tivoli Composite Application Monitoring Agent for DB2
- IBM Tivoli Common Reporting
- IBM SmartCloud Application Performance Management UI
- IBM Tivoli Monitoring for Virtual Environments: Dashboard, Reporting, and Capacity Planning

After the IBM Tivoli Monitoring virtual machine image is deployed, the following components are preinstalled, and you do not have to install them separately:

- IBM Tivoli Monitoring components:
  - Tivoli Enterprise Monitoring Server
  - Tivoli Enterprise Portal Server
  - Tivoli Enterprise Portal Web Client
  - Monitoring Agent for Linux OS
  - Monitoring Agent for UNIX Logs

Table 1 on page 16 lists the components that you must manually deploy, based on the software that you want to manage and monitor. You need full installation images to install the components locally. Otherwise, agent depots are available for you to remotely deploy them from the monitoring server. For system prerequisites of each product or component, see the Software product compatibility reports or the following information centers:
For information about how to deploy the agent depots from the monitoring server, see the **IBM SmartCloud Application Performance Management Entry Edition - VM Image: Installation and Deployment Guide**.

<table>
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<th>Product</th>
<th>Included component</th>
<th>Monitored resources or applications</th>
</tr>
</thead>
<tbody>
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<td>IBM Tivoli Monitoring Version 6.3 Fix Pack 2</td>
<td>Monitoring Agent for IBM i OS</td>
<td>IBM i OS systems</td>
</tr>
<tr>
<td></td>
<td>Monitoring Agent for UNIX OS</td>
<td>UNIX systems</td>
</tr>
<tr>
<td></td>
<td>Monitoring Agent for Windows OS</td>
<td>Windows systems</td>
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<td></td>
<td>Agentless Monitoring for AIX®</td>
<td>AIX systems</td>
</tr>
<tr>
<td></td>
<td>Agentless Monitoring for HP-UX</td>
<td>HP-UX systems</td>
</tr>
<tr>
<td></td>
<td>Agentless Monitoring for Linux</td>
<td>Linux systems</td>
</tr>
<tr>
<td></td>
<td>Agentless Monitoring for Solaris</td>
<td>Solaris systems</td>
</tr>
<tr>
<td></td>
<td>Agentless Monitoring for Windows</td>
<td>Windows systems</td>
</tr>
<tr>
<td></td>
<td>Log File agent</td>
<td>Log files</td>
</tr>
<tr>
<td></td>
<td>Agent Builder</td>
<td>Custom software</td>
</tr>
<tr>
<td>IBM Tivoli Composite Application Manager for Applications Version 7.2.1.1</td>
<td>DB2 agent</td>
<td>IBM DB2</td>
</tr>
<tr>
<td></td>
<td>HTTP Servers agent</td>
<td>Web servers</td>
</tr>
<tr>
<td></td>
<td>Lotus Domino agent</td>
<td>IBM Lotus Domino</td>
</tr>
<tr>
<td></td>
<td>Sybase ASE agent</td>
<td>Sybase ASE</td>
</tr>
</tbody>
</table>
| | Oracle Database Extended agent | • Oracle RAC  
• Oracle ASM  
• Oracle Database  
• Oracle Data Guard |
| IBM Tivoli Composite Application Manager for Microsoft Applications Version 6.3.1.1 | Active Directory agent | Active Directory service |
| | BizTalk Server agent | BizTalk Server |
| | Cluster Server agent | Cluster Server |
| | Exchange Server agent | Exchange Server |
| | Host Integration Server agent | Host Integration Server |
| | Hyper-V Server agent | Microsoft Hyper-V Server |
| | Internet Information Services agent | Internet Information Services |
| | Lync Server agent | Microsoft Lync Server |
| | .NET Data Collector | .NET transactions |
| | .NET Framework agent | .NET Framework |
| | SharePoint Server agent | SharePoint Server |
| | SQL Server agent | SQL Server |
Table 1. Extra component products that are installed (continued)

<table>
<thead>
<tr>
<th>Product</th>
<th>Included component</th>
<th>Monitored resources or applications</th>
</tr>
</thead>
<tbody>
<tr>
<td>IBM Tivoli Monitoring for Virtual Environments Version 7.2.0.2</td>
<td>Linux Kernel-based Virtual Machines agent</td>
<td>Linux Kernel-based virtual machines</td>
</tr>
<tr>
<td></td>
<td>VMWare VI agent</td>
<td>VMware environment</td>
</tr>
<tr>
<td></td>
<td>NetApp Storage agent</td>
<td>NetApp and IBM N Series</td>
</tr>
<tr>
<td></td>
<td>Network Devices agent</td>
<td>Network devices</td>
</tr>
<tr>
<td>IBM Tivoli Composite Application Manager for Transactions Version 7.4</td>
<td>Internet Service Monitoring</td>
<td>Web transactions</td>
</tr>
<tr>
<td></td>
<td>Application Management Console</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Web Response Time agent</td>
<td></td>
</tr>
</tbody>
</table>

Where the component products are installed

Information about where the additional component products are installed varies depending on the product.

The following components are installed on the computer on which you deploy the Tivoli Data Warehouse virtual machine image.

- IBM DB2 Enterprise Server Edition
- IBM Tivoli Monitoring components:
  - Tivoli Data Warehouse
  - Warehouse Proxy Agent
  - Summarization and Pruning Agent
  - Performance Analyzer
  - Monitoring Agent for Linux OS
  - Monitoring Agent for UNIX Logs
- IBM Tivoli Composite Application Monitoring Agent for DB2
- IBM Tivoli Common Reporting
- IBM SmartCloud Application Performance Management UI
- IBM Tivoli Monitoring for Virtual Environments: Dashboard, Reporting, and Capacity Planning

The following components are installed on the computer on which you deploy the IBM Tivoli Monitoring virtual machine image:

- IBM Tivoli Monitoring components:
  - Tivoli Enterprise Monitoring Server
  - Tivoli Enterprise Portal Server
  - Tivoli Enterprise Portal Web Client
  - Monitoring Agent for Linux OS
  - Monitoring Agent for UNIX Logs

For monitoring agents, different installation types exist. In a typical agent installation, the agent is on the same computer as the application that it monitors. Some agents support different configurations. For the agent that you want to install, see the agent-specific information in the information center that is listed in Table 4 on page 23.
Hardware requirements

Review the hardware requirements and ensure that your environment meets the minimum standards before you attempt to install SmartCloud Application Performance Management Entry Edition - VM Image.

SmartCloud Application Performance Management Entry Edition - VM Image requires two servers and one computer:
- A server that hosts the virtual machines
- A server that hosts VMware vCenter Server
- A computer that hosts VMware vSphere Client

For more information about hardware requirements for IBM SmartCloud Application Performance Management Entry Edition - VM Image, see the SmartCloud Application Performance Management Entry Edition - VM Image system requirements wiki page.

Requirements for the server that hosts the virtual machines

VMware ESXi must be installed on the server that hosts the virtual machines. Because VMware ESXi supports only x86 architectures, the server must have AMD or Intel processors.

The following specification describes the minimum hardware required for the server to host the virtual machines:
- 64-bit Intel or AMD x86 CPU architecture
- Minimum of 4 cores for each hardware device
- Minimum of 20 GB of RAM for the hardware device that hosts the virtual machines
- Minimum of 250 GB of hard drive disk capacity for the hardware device that hosts the virtual machines

Table 2 shows the minimum hardware capacity that is required for each virtual machine image:

<table>
<thead>
<tr>
<th>Virtual machine image</th>
<th>Number of processors</th>
<th>Disk space</th>
<th>Memory</th>
</tr>
</thead>
<tbody>
<tr>
<td>Virtual machine image for Tivoli Data Warehouse</td>
<td>4 or more</td>
<td>250 GB</td>
<td>12 GB</td>
</tr>
<tr>
<td>Virtual machine image for IBM Tivoli Monitoring</td>
<td>4 or more</td>
<td>250 GB</td>
<td>8 GB</td>
</tr>
</tbody>
</table>

Requirements for the server that hosts VMware vCenter Server

VMware vCenter Server can be installed on physical hardware that is running a Windows operating system that is supported by VMware vSphere. It can also be installed on a virtual machine that runs a Windows operating system that is supported by VMware vSphere as a guest.
For information about the system requirements for VMware vCenter Server, see the ESXi Installable and vCenter Server Setup Guide.

**Requirements for the computer that hosts VMware vSphere client**

VMware vSphere client must be installed on a computer that runs a Windows operating system. The Windows operating system must be supported by VMware vSphere client.

### Software requirements

Review the software requirements and ensure that your environment meets the minimum standards before you attempt to install SmartCloud Application Performance Management Entry Edition - VM Image.

Table 3 summarizes the software requirements for SmartCloud Application Performance Management Entry Edition - VM Image.

For more information about software requirements, see the system requirements wiki page.

**Table 3. Software requirements**

<table>
<thead>
<tr>
<th>Software required</th>
<th>Software version</th>
</tr>
</thead>
<tbody>
<tr>
<td>Virtualization executive (hypervisor)</td>
<td>VMware vSphere 4.1, 5.0, or 5.1, VMware vCenter Server 4.1, 5.0, or 5.1</td>
</tr>
</tbody>
</table>
| Internet browser                         | If you use Tivoli Enterprise Portal to view monitoring data, use one of the following internet browsers:  
  • Mozilla Firefox 3.5  
  • Microsoft Internet Explorer 6.0 through 9.0, with all critical Microsoft updates applied  
  If you use SmartCloud Application Performance Management UI to view monitoring data, use one of the following internet browsers:  
  • Internet Explorer 9  
  • Firefox 10 and Extended Support Release (ESR)  
  **Important:** The Safari browser is supported on Apple iPad devices with iOS version 5 or later. |
| Operating system                         | Microsoft Windows. VMware vCenter Server and VMware vSphere client require a Windows operating system. |

### Operating systems

The server that hosts the VMware vCenter Server must use the Windows operating system that is supported by VMware vSphere 4.1, 5.0, or 5.1.
The workstation that hosts the VMware vSphere client must use the Windows operating system that is supported by VMware vSphere 4.1, 5.0, or 5.1.

**Virtualization executive (hypervisor)**

Because SmartCloud Application Performance Management Entry Edition - VM Image is delivered as virtual machine images, VMware vSphere is required to implement the solution.

VMware vSphere and associated tools must be installed and configured before you deploy the virtual machine images of SmartCloud Application Performance Management Entry Edition - VM Image. This tooling must include the following components:

- VMware vSphere
  VMware vSphere includes the VMware ESXi hypervisor that is required for deployment.

- VMware vCenter Server
  VMware vCenter Server is a required, separately licensed component of a VMware vSphere implementation. VMware vCenter Server can be installed on physical hardware that is running a Windows operating system that is supported by VMware vSphere. It can also be installed on a virtual machine that runs a Windows operating system that is supported by VMware vSphere as a guest. The virtual machine can run on one of the provisioned VMware ESXi hypervisors.

- VMware vSphere client
  The client is used to connect directly to a VMware ESXi host or to the central VMware vCenter Server installation and manage the virtual infrastructure. Install the client on a Windows workstation that is supported by VMware.

For information about the system requirements for VMware vCenter Server, see [ESXi Installable and vCenter Server Setup Guide](#).

**Important**: You must be familiar with the installation and configuration of virtual machines when you use the VMware ESXi hypervisor software.

### Sizing the installation

The following resources can help you size your installation:


- *IBM Tivoli Monitoring Deployment Guide* and *IBM Tivoli Monitoring: Installation and Setup Guide* in the [IBM SmartCloud Application Performance Management Information Center](#)

- *Tivoli Data Warehouse load projections spreadsheet* in the IBM Tivoli Open Process Automation Library

### Preparing the virtual machine images

Before you attempt to deploy the virtual machine images, you must first prepare the images for deployment.
Before you begin

The following procedure requires a VMware vSphere client on a Windows computer that can connect to VMware vCenter Server. You can use any Windows operating system that is supported by VMware vSphere client. The computer must have at least 70 GB of free disk space.

About this task

Before you deploy the virtual machine images on the target hypervisor, prepare the images that you obtain from the physical media or the Passport Advantage website.

Procedure

1. On the computer where the VMware vSphere client is installed, create a directory to receive the virtual machine image files. These files require 70 GB of free disk space.

2. Copy the following files from the product DVDs or download them from the Passport Advantage website into the directory that you created in the previous step.
   * SCAPM_EE_1of6_V770_Base_VMImage.part
   * SCAPM_EE_2of6_V770_Base_VMImage.part
   * SCAPM_EE_3of6_V770_Base_VMImage.part
   * SCAPM_EE_4of6_V770_Base_VMImage.part
   * SCAPM_EE_5of6_V770_Base_VMImage.part
   * SCAPM_EE_6of6_V770_Base_VMImage.part

3. Run the following command to merge the split files into the complete compressed file:
   - Windows systems: `copy /b f1.part+f2.part+f3.part+f4.part+f5.part+f6.part SCAPM_EE_V770.zip`, where f1, f2, and so on, refer to the names of the files in the directory. Be sure to specify the file names in numerical order so that they are concatenated in the correct order.
   - Other platforms: `cat SCAPM*.part >> SCAPM_EE_V770.zip`

4. Confirm that the compressed file is assembled correctly by verifying its checksum values:
   a. Run the following command to generate the checksum values for the compressed file: `md5sum -b SCAPM_EE_V770.zip`
   b. Compare the generated checksum values with the values in the provided MD5SUMS text file.

5. Decompress the SCAPM_EE_V770.zip file.

Results

Two directories are created: SCAPM_EE_TDW and SCAPM_EE_ITM. The two OVF template files that you use later for deployment of virtual machine images are included in these two directories.
Completing the installation or upgrade

For information about how to install IBM SmartCloud Application Performance Management Entry Edition - VM Image, see the Installation and Deployment Guide. IBM SmartCloud Application Performance Management Entry Edition - VM Image Version 7.6 is the first release. Upgrading from a previous release is not required. However, patches are provided to upgrade IBM Tivoli Monitoring server components and IBM SmartCloud Application Performance Management agent depots. To deploy the maintenance patch, after you download the patch, use the Launch Pad to apply the patch.

About this task

**Remember:** Do not update IBM SmartCloud Application Performance Management Entry Edition - VM Image unless critical function failure occurs or security vulnerability exists.
Chapter 3. Configure IBM SmartCloud Application Performance Management Entry Edition - VM Image

Information about configuring components is located at different information centers.

The **IBM SmartCloud Application Performance Management Information Center** contains information about the following products:
- IBM SmartCloud Application Performance Management UI
- IBM Tivoli Composite Application Manager for Applications
- IBM Tivoli Composite Application Manager for Microsoft Applications
- IBM Tivoli Composite Application Manager for Transactions

The **IBM Tivoli Monitoring for Virtual Environments Information Center** contains information about the IBM Tivoli Monitoring for Virtual Environments product.

The **Jazz™ for Service Management Information Center** contains information about Tivoli Common Reporting.

The **DB2 Solution Information Center** contains information about the DB2 products.

Table 4 lists the information locations of the additional components that you might have to install and configure. Table 5 on page 25 lists the information locations of the preinstalled components.

<table>
<thead>
<tr>
<th>Component</th>
<th>Installation and configuration information</th>
</tr>
</thead>
<tbody>
<tr>
<td>IBM Tivoli Monitoring: Monitoring Agent for IBM i OS</td>
<td>IBM Tivoli Monitoring IBM i OS Agent: User’s Guide</td>
</tr>
<tr>
<td>IBM Tivoli Monitoring: Monitoring Agent for UNIX OS</td>
<td>IBM Tivoli Monitoring UNIX OS Agent: User’s Guide</td>
</tr>
<tr>
<td>IBM Tivoli Monitoring: Monitoring Agent for Windows OS</td>
<td>IBM Tivoli Monitoring Windows Agent: User’s Guide</td>
</tr>
<tr>
<td>IBM Tivoli Monitoring: Agentless Monitoring for AIX</td>
<td>Agentless Monitoring for AIX User’s Guide</td>
</tr>
<tr>
<td>IBM Tivoli Monitoring: Agentless Monitoring for Linux</td>
<td>Agentless Monitoring for Linux User’s Guide</td>
</tr>
<tr>
<td>IBM Tivoli Monitoring: Agent Builder</td>
<td>IBM Tivoli Monitoring Agent Builder User’s Guide</td>
</tr>
<tr>
<td>IBM Tivoli Monitoring: Log File agent</td>
<td>IBM Tivoli Monitoring Log File Agent User’s Guide</td>
</tr>
</tbody>
</table>
Table 4. Location of extra component installation and configuration information in the product information center (continued)

<table>
<thead>
<tr>
<th>Component</th>
<th>Installation and configuration information</th>
</tr>
</thead>
</table>
| IBM Tivoli Composite Application Manager for Applications: DB2 Agent | • IBM Tivoli Monitoring: Installation and Setup Guide  
• IBM Tivoli Composite Application Manager Agent for DB2 User’s Guide |
| IBM Tivoli Composite Application Manager for Applications: HTTP Servers Agent | IBM Tivoli Composite Application Manager Agent for HTTP Servers Installation and Configuration Guide |
| IBM Tivoli Composite Application Manager for Applications: Lotus Domino Agent | • IBM Tivoli Monitoring: Installation and Setup Guide  
• IBM Tivoli Composite Application Manager Agent for Lotus Domino User’s Guide |
| IBM Tivoli Composite Application Manager for Applications: Sybase ASE Agent | • IBM Tivoli Monitoring: Installation and Setup Guide  
• IBM Tivoli Composite Application Manager Agent for Sybase ASE User’s Guide |
| IBM Tivoli Composite Application Manager Extended Agent for Oracle Database | • IBM Tivoli Monitoring: Installation and Setup Guide  
• IBM Tivoli Composite Application Manager Extended Agent for Oracle Database User’s Guide |
| IBM Tivoli Composite Application Manager for Microsoft Applications: Active Directory agent | IBM Tivoli Composite Application Manager for Microsoft Applications: Microsoft Active Directory Agent User’s Guide |
| IBM Tivoli Composite Application Manager for Microsoft Applications: BizTalk Server agent | IBM Tivoli Composite Application Manager for Microsoft Applications: Microsoft BizTalk Server Agent User’s Guide |
| IBM Tivoli Composite Application Manager for Microsoft Applications: Cluster Server agent | IBM Tivoli Composite Application Manager for Microsoft Applications: Microsoft Cluster Server Agent User’s Guide |
| IBM Tivoli Composite Application Manager for Microsoft Applications: Exchange Server agent | IBM Tivoli Composite Application Manager for Microsoft Applications: Microsoft Exchange Server Agent User’s Guide |
| IBM Tivoli Composite Application Manager for Microsoft Applications: Host Integration Server agent | IBM Tivoli Composite Application Manager for Microsoft Applications: Microsoft Host Integration Server Agent User’s Guide |
| IBM Tivoli Composite Application Manager for Microsoft Applications: Hyper-V Server agent | IBM Tivoli Composite Application Manager for Microsoft Applications: Microsoft Hyper-V Server Agent User’s Guide |
| IBM Tivoli Composite Application Manager for Microsoft Applications: Internet Information Services agent | IBM Tivoli Composite Application Manager for Microsoft Applications: Microsoft Internet Information Services Agent User’s Guide |
| IBM Tivoli Composite Application Manager for Microsoft Applications: Lync Server agent | IBM Tivoli Composite Application Manager for Microsoft Applications: Microsoft Lync Server Agent User’s Guide |
| IBM Tivoli Composite Application Manager for Microsoft Applications: .NET Data Collector | IBM Tivoli Composite Application Manager for Microsoft Applications: .NET Data Collector User’s Guide |
| IBM Tivoli Composite Application Manager for Microsoft Applications: .NET Framework agent | IBM Tivoli Composite Application Manager for Microsoft Applications: Microsoft .NET Framework Agent User’s Guide |
| IBM Tivoli Composite Application Manager for Microsoft Applications: SharePoint Server agent | IBM Tivoli Composite Application Manager for Microsoft Applications: Microsoft SharePoint Server Agent User’s Guide |
| IBM Tivoli Composite Application Manager for Microsoft Applications: SQL Server agent | IBM Tivoli Composite Application Manager for Microsoft Applications: Microsoft SQL Server Agent User’s Guide |
| IBM Tivoli Monitoring for Virtual Environments Agent for Linux Kernel-based Virtual Machines | IBM Tivoli Monitoring for Virtual Environments Agent for Linux Kernel-based Virtual Machines User’s Guide |
| IBM Tivoli Monitoring for Virtual Environments Agent for VMware VI | IBM Tivoli Monitoring for Virtual Environments Agent for VMware VI User’s Guide |
Table 4. Location of extra component installation and configuration information in the product information center (continued)

<table>
<thead>
<tr>
<th>Component</th>
<th>Installation and configuration information</th>
</tr>
</thead>
<tbody>
<tr>
<td>IBM Tivoli Monitoring Agent for Network Devices</td>
<td>IBM Tivoli Monitoring Agent for Network Devices User’s Guide</td>
</tr>
<tr>
<td>IBM Tivoli Composite Application Manager for Transactions: Internet Service Monitoring</td>
<td>IBM Tivoli Composite Application Manager for Transactions: Installation and Configuration Guide</td>
</tr>
<tr>
<td>IBM Tivoli Composite Application Manager for Transactions: Application Management Console</td>
<td>IBM Tivoli Composite Application Manager for Transactions: Installation and Configuration Guide</td>
</tr>
<tr>
<td>IBM Tivoli Composite Application Manager for Transactions: Web Response Time Agent</td>
<td>IBM Tivoli Composite Application Manager for Transactions: Installation and Configuration Guide</td>
</tr>
</tbody>
</table>

Table 5. Location of preinstalled component installation and configuration information in the product information center

<table>
<thead>
<tr>
<th>Component</th>
<th>Installation and configuration information</th>
</tr>
</thead>
<tbody>
<tr>
<td>IBM DB2 Workgroup Server Edition</td>
<td>DB2 Solution Information Center</td>
</tr>
<tr>
<td>IBM Tivoli Monitoring: Tivoli Data Warehouse</td>
<td>IBM Tivoli Monitoring Installation and Setup Guide</td>
</tr>
<tr>
<td>IBM Tivoli Monitoring: Tivoli Enterprise Monitoring Server</td>
<td>IBM Tivoli Monitoring Installation and Setup Guide</td>
</tr>
<tr>
<td>IBM Tivoli Monitoring: Tivoli Enterprise Portal Server browser client</td>
<td>• IBM Tivoli Monitoring Installation and Setup Guide</td>
</tr>
<tr>
<td></td>
<td>• Tivoli Enterprise Portal User’s Guide</td>
</tr>
<tr>
<td>IBM Tivoli Monitoring: Warehouse Proxy Agent</td>
<td>• IBM Tivoli Monitoring: Installation and Setup Guide</td>
</tr>
<tr>
<td></td>
<td>• Warehouse Proxy Agent: User’s Guide</td>
</tr>
<tr>
<td>IBM Tivoli Monitoring: Summarization and Pruning Agent</td>
<td>• IBM Tivoli Monitoring: Installation and Setup Guide</td>
</tr>
<tr>
<td></td>
<td>• Warehouse Summarization and Pruning Agent: User’s Guide</td>
</tr>
<tr>
<td>IBM Tivoli Monitoring: Monitoring Agent for Linux OS</td>
<td>IBM Tivoli Monitoring Linux OS Agent: User’s Guide</td>
</tr>
<tr>
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<td>IBM Tivoli Composite Application Manager for Applications: DB2 Agent</td>
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</tr>
<tr>
<td></td>
<td>• IBM Tivoli Composite Application Manager Agent for DB2 User’s Guide</td>
</tr>
<tr>
<td>Tivoli Common Reporting</td>
<td>IBM Tivoli Common Reporting User’s Guide</td>
</tr>
<tr>
<td>IBM SmartCloud Application Performance Management UI</td>
<td>IBM SmartCloud Application Performance Management User Interface User’s Guide</td>
</tr>
</tbody>
</table>
Glossary

This glossary includes terms and definitions for IBM SmartCloud Application Performance Management.

The following cross-references are used in this glossary:
• See refers you from a term to a preferred synonym, or from an acronym or abbreviation to the defined full form.
• See also refers you to a related or contrasting term.

To view glossaries for other IBM products, go to www.ibm.com/software/globalization/terminology (opens in new window).

A

agent  Software that is installed to monitor systems. An agent collects data about an operating system, a subsystem, or an application.

alert  A message or other indication that signals an event or an impending event that meets a set of specified criteria.

application  One or more computer programs or software components that provide a function in direct support of a specific business process or processes.

arithmetic expression  A statement that contains values joined together by one or more arithmetic operators and that is processed as a single numeric value. See also arithmetic operator.

arithmetic operator  A symbol, such as + or -, that represents a fundamental mathematical operation. See also arithmetic expression.

attribute group  A set of related attributes that can be combined in a view or a situation. See also view.

C

capacity planning  The process of determining the hardware and software configuration that is required to accommodate the anticipated workload on a system.

D

database (DB)  A collection of interrelated or independent data items that are stored together to serve one or more applications.

data warehouse  A central repository for all or significant parts of the data that an organization’s business systems collect.

DB  See database.
event  An occurrence of significance to a task or system. Events can include completion or failure of an operation, a user action, or the change in state of a process. See also alert.

historical collection  
A definition that is used to collect and store data samples for historical reporting. The historical collection identifies the attribute group, any row filtering you have assigned, the managed system distribution, frequency of data collection, where to store it for the short term, and whether to save data long term.

historical data management  
A set of procedures that are applied to short-term binary files that send historical data to either a data warehouse or to delimited text files. Entries in the short-term history file that are over 24 hours old are deleted, which makes room for new entries.

interval  
The number of seconds that have elapsed between one sample and the next.

managed system  
A particular operating system, subsystem, or application in an enterprise where a monitoring agent is installed and running.

migrate  
To move data from one location to another.

monitor  
An entity that performs measurements to collect data pertaining to the performance, availability, reliability, or other attributes of applications or the systems on which the applications rely. These measurements can be compared to predefined thresholds. If a threshold is exceeded, administrators can be notified, or predefined automated responses can be performed.

monitoring agent  
See agent

monitor interval  
A specified time, scalable to seconds, minutes, hours, or days, for how often the monitoring server checks to see if a situation has become true. The minimum monitor interval is 30 seconds; the default value is 15 minutes.
**P**

**parameter (parm)**
A value or reference passed to a function, command, or program that serves as input or controls actions. The value is supplied by a user or by another program or process.

| param | See parameter |

**performance**
A measure of a system's ability to perform its functions, including response time, throughput, and number of transactions per second.

**S**

**sample**
The data that the product collects for the server.

**V**

**view**
A window pane, or frame, in a workspace. It may contain data from an agent in a chart or table, or it may contain a terminal session or notepad, for example. A view can be split into two separate, autonomous views. See also attribute group.

<table>
<thead>
<tr>
<th>virtual machine (VM)</th>
<th>A software implementation of a machine that executes programs like a real machine.</th>
</tr>
</thead>
<tbody>
<tr>
<td>VM</td>
<td>See virtual machine</td>
</tr>
</tbody>
</table>

**W**

**workspace**
In Tivoli management applications, the working area of the user interface, excluding the Navigator pane, that displays one or more views pertaining to a particular activity. Predefined workspaces are provided with each Tivoli application, and systems administrators can create customized workspaces.
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