

Figure 1. Agent interaction with IBM Tivoli Monitoring

The Managing Server is a component of ITCAM for Application Diagnostics. Its Visualization Engine provides a user interface for "deep dive" diagnostics information. The user can "click through" or "launch in context" to the Visualization Engine from the Tivoli Enterprise Portal when detailed information is required. The Visualization Engine can also be used as a stand alone user interface; this user interface is a good solution for software developers and performance analysts.

Most information provided by ITCAM Agent for WebSphere Applications and available through the Tivoli Enterprise Portal can also be viewed through the Visualization Engine. The Visualization Engine also provides additional diagnostic information, including:

- Method entry/exit and stack tracing,
- Lock analysis,
- Heap object analysis for memory leak diagnosis,
- Thread information,
- "In-flight" request analysis to detect malfunctioning applications.

For details on the capabilities of ITCAM for Application Diagnostics Managing Server, and information on deploying it, see *IBM Tivoli Composite Application Manager for Application Diagnostics Managing Server Installation Guide*.

The diagram on Figure 2 on page 5 shows how ITCAM Agent for WebSphere Applications interacts with the components of the Managing Server. (The Data Collector is a component of the Agent).

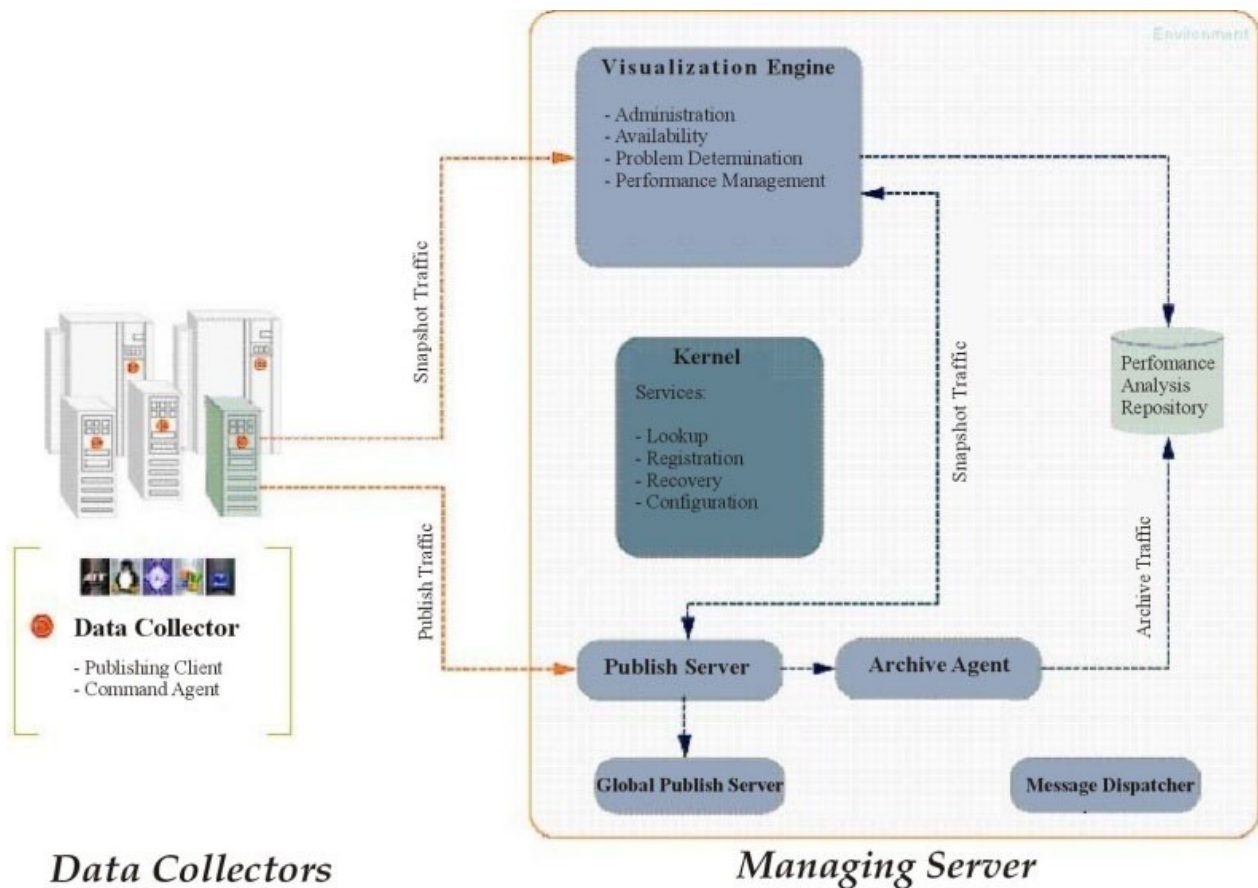


Figure 2. Agent interaction with ITCAM for Application Diagnostics Managing Server

Components of the Agent

ITCAM Agent for WebSphere Applications consists of two components: the *Data Collector* and the *Monitoring Agent*. These components are deployed on every monitored host (except the Deployment Manager in WebSphere Network Deployment or Extended Deployment) by a single installer. For interaction with IBM Tivoli Monitoring, the Agent provides *application support files* that are to be installed on servers and clients in the IBM Tivoli Monitoring infrastructure.

Data Collector

The Data Collector collects monitoring and diagnostics information from the application server using the following methods:

- In *Byte Code Instrumentation (BCI)* the Data Collector injects monitoring calls (probes) into the Java™ code that processes application requests. Data is collected on request processing time and on different types of nested requests within the process. The use of BCI creates a performance overhead; the amount of collected information, and thus the overhead, is determined by the *monitoring level*, which can be set for every monitored application server. With IBM Tivoli Monitoring, levels L1 and L2 are supported; with ITCAM for Application Diagnostics Managing Server, the additional level L3 is available.

- *Performance Monitoring Interface (PMI)* is an API provided by IBM WebSphere Application Server, supplying a number of performance metrics.
- *Garbage Collection logs* are written by IBM WebSphere Application Server, and contain detailed information about the garbage collection process. Such information can be useful for application monitoring and enhancement.

The Data Collector sends the information to the monitoring agent. It also communicates directly with the Managing Server (if the Managing Server infrastructure is used).

You must configure the Data Collector for every instance of the application server that you need to monitor.

Monitoring Agent

The Monitoring Agent collects information from the Data Collector, and processes and aggregates it for presentation to the user. It also parses application server logs.

In WebSphere Extended Deployment, if cell monitoring is configured, the monitoring agent communicates to the Deployment Manager over the network to retrieve configuration and performance information for the cell.

The Monitoring Agent sends monitoring information to the Tivoli Enterprise Monitoring Server. It also receives Take Action commands from the Tivoli Enterprise Monitoring Server. When these commands involve server management actions (starting, stopping, or restarting the application server), the monitoring agent performs these actions.

Application support files

To enable ITCAM Agent for WebSphere Applications interaction with IBM Tivoli Monitoring, the application support files shipped with the Agent **must** be installed on all hub Tivoli Enterprise Monitoring Servers, all Tivoli Enterprise Portal Servers, and Tivoli Enterprise Portal clients except browser-based clients.

On the Tivoli Enterprise Monitoring Server, support files provide the ITCAM for Application Diagnostics data tables and situations.

On the Tivoli Enterprise Portal Server, support files provide the ITCAM for Application Diagnostics workspaces that display the monitoring information and include code that processes situation information for the Summary workspaces.

On the Tivoli Enterprise Portal client, support files provide the ITCAM for Application Diagnostics Helps and Language Packs.

Prerequisites to installation

The instructions in the subsequent chapters assume the following:

- If ITCAM Agent for WebSphere Applications will communicate with the IBM Tivoli Monitoring infrastructure, you are familiar with basic usage of the Tivoli Enterprise Portal and have installed the base components of this infrastructure, including:
 - A Tivoli Enterprise Monitoring Server (monitoring server)
 - A Tivoli Enterprise Portal (portal) server
 - Tivoli Enterprise Portal clients