



HP OpenView Internet Services and the Citrix Access Suite – Data Sheet

Citrix Systems, Inc.



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Introduction

In today's IT infrastructure, the adoption of the Internet as a centralized point of access for customers and employees has increased demand for monitored and dependable systems. One of these systems is the Citrix Access Suite. Citrix Presentation Server, a core component of the Access Suite, enables enterprises to host applications on server-class systems, located in high-speed data centers in order to host multiple simultaneous users. This configuration has many benefits ranging from management to security and performance. However, it requires effective monitoring and proactive management in order to ensure high-availability and sustained performance, as many users may be impacted should a non-redundant component of the infrastructure become unavailable.

Enterprises have several options when evaluating systems management solutions. These solutions enable enterprise administrators to monitor system availability, network and server resource metrics and events. Some tools provide event and metrics correlation to assist in root-cause analysis. However, few solutions enable administrators to monitor applications and evaluate the end-user experience, as well as track issues associated with factors beyond resource utilization. Hewlett-Packard (HP) has addressed this demand by integrating OVIS (OpenView Internet Services) in its HP OpenView Suite.

OVIS enables the creation of software **probes**, processes or workflows that emulate user activity or system usage. These probes are then monitored and recorded to provide a measure of end user experience and enable immediate notification when issues occur. Custom probes can be created to monitor performance as required by the established SLAs (Service Level Agreements).

This whitepaper provides a brief overview of the HP OpenView Internet Services solution and how it can be used to monitor a Citrix Access Suite environment. It also includes a brief description of each component of the solution's architecture. Further architectural details, as well as step-by-step instructions for configuring OVIS in a Citrix Access Suite environment can be found in Citrix Consulting's whitepaper *Monitoring Citrix MetaFrame Access Suite Environments Using HP OVIS and Citrix Probes*.

Architecture Overview

This section provides an overview of each component of this tightly integrated architecture. The solution's components can be broken down into core components, performance components, and Internet Services components.

HP OpenView Core Components

HP OpenView's core components consist of Network Node Manager and HP OpenView Operations.

Network Node Manager

Network Node Manager (NNM) provides robust network management for large or complex switched and routed environments. It gathers information regarding the configuration, status and topology of network devices to help IT staff understand the relationships between network devices and the services they provide. NNM improves network availability and efficiency through the automatic discovery of physical and virtual network services, intelligent monitoring, dynamic root cause analysis, and alarm management using SNMP (Simple Network Management Protocol).

HP OpenView Operations

HP OVO (OpenView Operations) provides comprehensive event management, proactive performance monitoring and automated alerting, reporting, and graphing for Windows, Linux, and Unix systems, middleware, and applications. It also enables administrators to link their infrastructure to business services and evaluate resource requirements. OVO communicates with its own agents, enabling administrators to gather system and software information, in addition to SNMP traps. Furthermore, OVO can be configured to use SPI (Smart Plug-In) management modules to provide in-depth intelligence for managing key systems and applications. SPIs contain thousands of predefined rules and policies in logical groupings for managing heterogeneous hardware, operating system, service and application environments. Several Smart Plug-Ins are available for various mission critical applications, middleware, and terminal server configurations, including Citrix Presentation Server. For further information regarding the SPI for Citrix Presentation Server, please refer to the [Integration with Citrix Technologies](#) section.

HP OpenView Performance Components

The HP OpenView Performance manager, agent, reporter, and monitor integrate in a single interface to provide a powerful and flexible management solution for centrally monitoring, analyzing, and forecasting resource utilization of distributed multi-vendor environments.

Performance Manager

The Performance Manager is a graphical analysis and planning tool designed to analyze and project future resource utilization and performance trends using historical data. This information enables administrators to manage workloads, allocate resources, and deliver quality of service that parallels business needs. Performance data can be exported in a variety of formats for use in capacity planning, statistical analysis, and spreadsheet applications.



Performance Agent

The Performance Agent is installed in every system being monitored. It logs and collects performance data from the systems being monitored and can be configured to send alarms when specified thresholds are reached.

Performance Reporter

The Performance Reporter is a management reporting tool that interrogates the Performance Agent on a daily basis to obtain historical summary data. It then generates structured HTML-based graphs, tables, and reports of historical performance. It is highly customizable, allowing administrators to create reports of precisely the desired metrics, from a specific set of systems, for a specific period of time. It differs from the Performance Manager in that it generates daily snapshots of historical performance instead of real-time graphs on demand.

Performance Monitor

The Performance Monitor allows administrators to configure custom actions on real-time alarms, such as paging or sending electronic email. It also provides alarm filtering by severity, type, or system node, as well as interval-driven alarm status updates.

HP OpenView Internet Services

HP OpenView's Internet Services management tools consist of the Configuration Manager, and the Dashboard.

Internet Services Configuration Manager

The Configuration Manager is the main OVIS graphic user interface. It is used to add, modify and delete services and configure probes for Internet services, including: setting up customers, service groups, service targets, service level objectives, probe locations, and service level agreement conformance levels. The Configuration Manager also enables administrators to create and schedule software probes, configure alarm destinations or schedule downtime. This structure allows administrators to view data by service type and customer.

Internet Services Dashboard

The Dashboard is a collection of gauges, graphs and trend data used to view data from software probes and information about service levels. It provides data such as response time, availability, service level violations, and conformance to server level agreements. It also provides trend graphs that provide a longer-term view of the data and out-of-the-box reports that summarize the data on a daily basis.

OVIS response times can be logged, monitored and threshold-checked by the HP OpenView Performance Agent, rendering the metrics available to Performance Manager and Performance Reporter and thus increasing their data presentation value. The addition of OVIS to the mixture enables HP OpenView to show administrators a slowdown in service response time and its likely cause such as an increase in CPU or disk I/O on the web server.

Integration with Citrix Technologies

HP OpenView Internet Services can be configured to tightly integrate with the components of Citrix Access Suite environments. In order to enable this functionality, the appropriate SPIs (Smart Plug-Ins) and probes need to be added and configured. This section provides a brief overview of the plug-in required, the SPI for Citrix Presentation Server, as well as best practices recommendations for configuring probes to monitor Citrix Access Suite environments.

The SPI for Citrix Presentation Server

The SPI for Citrix Presentation Server was specifically designed by HERMES SoftLab for use with Citrix Presentation Server[†]. It enables the secure, centralized and proactive management of distributed Citrix Presentation Server environments.

The SPI incorporates the following functionality into HP OpenView's monitoring capabilities:

Server, Session, and Application Monitoring

- Sends alerts upon failure of critical and optional Citrix Presentation Server services.
- Identifies and forwards relevant System and Application Event Log messages to help identify internal Citrix Presentation Server issues.
- Sends notification of changes to the Citrix Presentation Server environment architecture and configurations that could potentially render the farm unstable.
- Monitors session and published application activity parameters and generates alerts when specified thresholds have been reached.
- Extends the metrics available for monitoring to include more detailed session and application specific counters; these include session state, number of session processes, full domain and username information and session login times.

Reporting Capabilities

- Records resource consumption of critical and optional Citrix Presentation Server services at specified intervals.
- Generates reports that increase data relevance by relating server, session and application performance information to other environmental variables such as the number of users, session status, transmission activity or session duration.

Environment Administration

- Provides server administration information including software and service pack versioning information for each server in the environment.

[†] For further information regarding product benefits, features and downloads please visit HERMES SoftLab's web site at <http://www.hermes-softlab.com/products/SPI/citrix.html>.

- Enables the automated discovery of Citrix Presentation Servers and their published applications and dependencies in the environment; it also creates and periodically updates a corresponding service map model for ease of administration.

Configuring Citrix Access Suite Probes

In order to obtain more detailed performance information regarding specific user experiences, probes need to be configured within HP OVIS (OpenView Internet Services). When using OVIS probes, administrators can configure the measurement of existing services. Alternatively, they can create custom probes to measure specific work flows or processes. This section provides a high-level overview of these two options.

Configuring Pre-defined Probes

When configuring probes for pre-defined services within OVIS, the following must be defined in the Internet Services Configuration Manager:

- **Service Target.** Identify the service being measured and its location
- **Service Objective.** Specify the service's acceptance criteria as per service level objectives
- **Probe Location.** Specify whether the probe will run in the centralized OVIS server or the remote systems being measured

An example of a pre-defined probe in a Citrix Access Suite environment would be to configure a probe whose service target is a Citrix Presentation Server published instance of Microsoft Outlook 2003 that should launch within 10 seconds and process 1 MB e-mail attachments in 12 seconds or less.

Creating Custom Probes

Custom probes can be created using Probe Builder for HP OpenView Internet Services. Probe Builder is a macro recording feature that enables the recording of interactions or workflows and converts them to editable scripts in the standard JScript Windows scripting language.

The following should be taken into account when using Probe Builder to create custom probes:

- **Session Metrics.** Terminal services sessions run at the Session Layer of the OSI Network Model; as a result, session-specific metrics such as window movements, mouse movements and keyboard strokes should be taken into account when measuring the performance of applications in a Citrix Access Suite environment
- **Base Script.** Custom scripts are created by modifying base scripts; therefore, the first step for creating a custom probe is to create a base script using Probe Builder's recording tool
- **Target Servers.** Special attention should be paid when planning probe deployment, as clicking a single published application icon launches a Citrix Presentation Server session hosted on any one server in the configured load managed group; therefore, Citrix Presentation Server targets must be specified prior to probe deployment – similarly, target Web Interface, Secure Gateway, and Secure Access Manager servers need to be specified, depending on the environment's specific architecture

Examples of custom probes in a Citrix Access Suite environment would be to configure a probe to measure the login time for a Citrix Presentation Server published instance of SAP R/3 configured for single sign-on with Citrix Password Manager.



For further information and step-by-step instructions for creating a Citrix custom probe please refer to Citrix Consulting's whitepaper *Monitoring Citrix MetaFrame Access Suite Environments Using HP OVIS and Citrix Probes* or HP's [Introductory Guide to Custom Probe Building](#).



Conclusion

By enhancing the OpenView solution with OpenView Internet Services, HP has addressed the need to monitor applications and systems from a usability standpoint. OVIS provides functionality to emulate users in a Citrix environment and report usability measurements allowing proactive responses to system degradation. These measurements can help enterprises and Application Service Providers ensure they meet Service Level Agreements and keep productivity dependent on the user rather than their Access Infrastructure.

The HP OVIS product and custom probes are an excellent addition to a growing enterprise that needs to proactively monitor and control their Citrix Access Infrastructure. By leveraging the Citrix SPI with OVIS and the custom probes, an IT administrator can have total monitoring access and extensive control over the information heartbeat of their organization.

For further information please refer to the following:

- <http://www.citrix.com/English/partners/partner.asp?partnerID=14653>
- <http://www.hermes-softlab.com/products/SPI/citrix.html>
- http://devresource.hp.com/drc/resources/probebuilder_intro/index.jsp



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