

Integrating NetIQ® AppManager® with NetIQ Vivinet® Diagnostics

Management Guide

March 2007



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About This Guide

The NetIQ® AppManager® Suite (or AppManager) is a comprehensive solution for managing, diagnosing, and analyzing the performance, availability, and server health for a broad spectrum of operating environments, applications, and server hardware.

AppManager enables system administrators to view all of their servers and workstations from a central, easy-to-use console, providing complete visibility of critical server and application resources across the enterprise. With AppManager, administrative staffs can monitor computer and application resources, check for potential problems, initiate responsive actions, automate routine tasks, and gather performance data for real-time and historical reporting and analysis.

Intended Audience

This management guide explains how to successfully use AppManager and Vivinet Diagnostics to diagnose problems with voice over IP and call quality.

For more information about working with AppManager, see the *User Guides* for the Operator Console or Control Center. For more information about configuring and maintaining an AppManager management site, see the *Administrator Guide*.

Conventions

This guide uses consistent conventions to help you identify items throughout the documentation. The following table summarizes these conventions.

Convention	Use
Bold	<ul style="list-style-type: none">♦ Window and menu items♦ Technical terms, when introduced
<i>Italics</i>	<ul style="list-style-type: none">♦ Book and installation kit titles♦ Variable names and values♦ Emphasized words
Fixed Font	<ul style="list-style-type: none">♦ File and folder names♦ Commands and code examples♦ Text you must type♦ Text (output) displayed in the command-line interface

Using Online Help

AppManager provides task-based, reference, and context-sensitive online Help.

To access task-based Help or search for Help topics, click **Help Topics** on the Help menu. To view context-sensitive Help within dialog boxes, click **Help** or press **F1**.

You can get help on individual Knowledge Scripts in one of the following ways:

- ♦ On the **Values** tab of the Knowledge Script Properties dialog box, click **Help** or press **F1**.
- ♦ In the Knowledge Script pane of the Operator Console, highlight a Knowledge Script and press **F1**.
- ♦ In the Knowledge Script view of the Control Center Console, highlight a Knowledge Script and press **F1**.

Other Information in the Library

The library provides the following information resources:

- ♦ *Installation Guide*: Provides complete information about AppManager pre-installation requirements and step-by-step installation procedures for all AppManager components.
- ♦ *Control Center User Guide*: Provides complete information about managing groups of computers, including running jobs, responding to events, creating reports, and working with the Control Center Console. A separate guide is available for the AppManager Operator Console.
- ♦ *Administrator Guide*: Provides information about maintaining an AppManager management site, managing security, using scripts to handle AppManager tasks, and leveraging advanced configuration options.
- ♦ *Upgrade and Migration Guide*: Provides complete information on how to upgrade from a previous version of AppManager.
- ♦ *Management Guides*: Provide information about installing and monitoring specific applications with AppManager.

The AppManager library is available in Adobe Acrobat (PDF) format and is located in the \Documentation folder of the AppManager installation kit.

NetIQ Online Support and Extended Support Web sites provide other resources:

- ♦ Downloads, including hotfixes, service packs, and product upgrades.
- ♦ Documentation, including white papers and the most current information about version support for the systems and applications monitored by AppManager.

NOTE: You can access NetIQ Support without a password or registration. To access the Extended Support site, you must be a registered AppManager customer.

In addition to the AppManager documentation, you may want to consult the documentation for your Windows or UNIX operating system, or other application- or system-specific documentation for reference and conceptual information. This background information can help you get the most out of your AppManager installation.

About Attachmate

Attachmate, owned by an investment group led by Francisco Partners, Golden Gate Capital and Thomas Cressey Equity Partners, enables IT organizations to extend mission critical services and assure they are managed, secure and compliant. Attachmate's leading solutions include host connectivity, systems and security management, and PC lifecycle management. Our goal is to empower IT organizations to deliver trusted applications, manage service levels, and ensure compliance by leveraging knowledge, automation and secured connectivity. For more information, visit www.attachmate.com.

NetIQ Solutions from Attachmate

Attachmate provides a wide selection of systems and security management solutions to help you manage and secure all your essential platforms, including Windows, UNIX, Linux, and iSeries. These Knowledge-Based Service Assurance products and solutions include embedded knowledge and tools to implement industry best practices and to better ensure operational integrity, manage service levels and risk, and ensure policy compliance. Our modular, best-of-breed solutions for Performance and Availability Management, Security Management, Configuration and Vulnerability Management, and Operational Change Control integrate through an open, service-oriented architecture allowing for common reporting, analytics and dashboards. Attachmate offers the following systems and security management solutions:

- ♦ **Performance and Availability Management** These products offer rapid time-to-value solutions that enable you to align your IT operations with business priorities and optimize the delivery of your IT-based business services. This solution automates the complete IT service management lifecycle: assessment of requirements, definition of Service Level Agreements, management of day-to-day operations, and review of operational metrics.
- ♦ **Security Management** These easy-to-install-and-deploy products provide effective protection from and response to security-related threats. This solution provides powerful features, such as real-time security event monitoring, mapping of threat indicators, policy violation alerts, and expedited incident forensics and resolution. These products reduce the time required to identify and resolve security threats.
- ♦ **Configuration and Vulnerability Management** These products allow you to quickly and easily assess vulnerabilities, manage security risks, and assure policy compliance. This powerful solution measures and enforces compliance to configuration baselines based on your corporate policies, regulations, and evolving security threats. You can use the latest security knowledge, which is updated in real time, to resolve compliance and configuration issues.
- ♦ **Operational Change Control** These products enable IT organizations to control, manage, and audit operational changes to servers, Active Directory, and Group Policy with unprecedented levels of accountability. NetIQ's Operational Change Control (OCC) solutions enable enterprise customers to meet IT compliance and operational integrity needs in the most cost-effective manner, by delegating access control, managing changes according to policy, and alerting and reporting on change activities and entitlements.

Contacting NetIQ Solutions Support

Please contact us with your questions and comments. We look forward to hearing from you.

Sales Email:	info@netiq.com
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Telephone:	713.418.5555 (United States) +353 (0) 91 782 677 (Europe, Middle East, and Africa) For other locations, see our Support Contact Information Web site at www.netiq.com/support
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Support Web Site:	www.netiq.com/support
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1 Integrating Vivinet Diagnostics with AppManager

This management guide discusses how you can use NetIQ Vivinet Diagnostics and NetIQ AppManager to diagnose problems with Voice over IP and call quality. The following topics are covered:

- ♦ [Section 1.1, “Brief Overview,” on page 9](#)
- ♦ [Section 1.2, “What is Vivinet Diagnostics?,” on page 10](#)
- ♦ [Section 1.3, “How the Integration Works,” on page 10](#)
- ♦ [Section 1.4, “Integration Prerequisites,” on page 14](#)
- ♦ [Section 1.5, “Integration Configuration,” on page 14](#)
- ♦ [Section 1.6, “Parameters for Action_DiagnoseNortelIPT,” on page 15](#)
- ♦ [Section 1.7, “Parameters for Action_DiagnoseVoIPQuality,” on page 16](#)
- ♦ [Section 1.8, “Diagnosis Triggers,” on page 16](#)
- ♦ [Section 1.9, “Deleting Expired Reports,” on page 19](#)
- ♦ [Section 1.10, “Troubleshooting the Integration,” on page 19](#)

1.1 Brief Overview

NetIQ AppManager includes Knowledge Scripts that monitor and detect problems with voice over IP (VoIP) quality and call quality. These scripts raise informational events as a result of the detected problems. The integration of Vivinet Diagnostics with AppManager provides the means to diagnose more precisely any problems with VoIP quality between phones, Performance Endpoints, or other target devices such as routers and gateways.

Using a methodology that already exists (triggering an Action script based on an event), the integration of AppManager and Vivinet Diagnostics involves two Action scripts — *Action_DiagnoseVoIPQuality* and *Action_DiagnoseNortelIPT* — which trigger Vivinet Diagnostics to diagnose the problem for events raised by any of the following Knowledge Scripts:

- ♦ **CiscoCallMgr_CallQuality.** Vivinet Diagnostics can diagnose the problem when jitter, latency, and percentage of lost data exceed their thresholds.
- ♦ **CiscoCallMgr_CallFailures.** Vivinet Diagnostics can diagnose the problem when the number of failed calls exceeds its threshold.
- ♦ **PhoneQuality_CiscoPhoneQuality.** Vivinet Diagnostics can diagnose the problem when the values for listening MOS and listening R-value fall below their thresholds, and when the values for average jitter, maximum jitter, and packet loss exceed their thresholds.

- ♦ **VoIPQuality_CallPerf_<name of codec>**. Vivinet Diagnostics can diagnose the problem when MOS, R-Value, delay, jitter, jitter buffer loss, and percentage of lost data exceed their thresholds.
- ♦ **NortelCS_Alarms**. Vivinet Diagnostics can diagnose the call quality problem that is identified by the QoS0028 alarm.

NOTE

- ♦ For a more in-depth discussion of the information in a script that triggers a Diagnosis, see [Section 1.8, “Diagnosis Triggers,” on page 16](#).
 - ♦ Vivinet Diagnostics *must* be installed on the computer on which the action is run.
-

1.2 What is Vivinet Diagnostics?

NetIQ Vivinet Diagnostics diagnoses problems with the routing, connections, and performance of voice over IP (VoIP) telephone calls on your network. With the data you receive from a Diagnosis, you can quickly resolve problems with VoIP hardware and software and improve the performance of voice over IP.

Vivinet Diagnostics is designed to perform two primary functions:

- ♦ Diagnose and locate the source of problems you detect on your network, such as poor-quality voice transmissions, dropped calls, or cutouts.
- ♦ Analyze the path a particular call actually takes through your network, including routers, switches, or voice gateways that intervene between the caller and called party.

Vivinet Diagnostics helps you diagnose and remedy problems on your voice over IP network by gathering data from network devices and measuring simulated VoIP traffic. To pinpoint the source of a problem, it also runs a *path trace* between two selected nodes on the network.

Vivinet Diagnostics contains a *Knowledge Engine* that stores data collected on your network from each Diagnosis you run. The Knowledge Engine compares the data it collects to its own information about voice over IP, network hardware and software, and typical VoIP trouble spots to analyze and diagnose a problem you report. The Knowledge Engine stores and analyzes the data gathered from your network and then uses it to generate a diagnostic report after a Diagnosis has run.

As the Diagnosis runs, Vivinet Diagnostics sends simulated VoIP traffic between selected endpoints or phones (the same phones or endpoints for which AppManager detected problems) and shows you a path trace indicating exactly how the traffic is traveling from Point A to Point B. Vivinet Diagnostics takes measurements, checks call data records from VoIP network software, and uses its Knowledge Engine to arrive at a Diagnosis. A diagnostic report helps you analyze the problem and respond appropriately.

1.3 How the Integration Works

When you run one of the applicable monitoring Knowledge Scripts, Vivinet Diagnostics can diagnose the problem should any VoIP or call quality parameter exceed its threshold. AppManager uses Action scripts — `DiagnoseVoIPQuality` and `DiagnoseNortelIPT` — to invoke Vivinet Diagnostics.


The Diagnose Action scripts use an interface to Vivinet Diagnostics to define the parameters of the Diagnosis, run the Diagnosis, and save the results. The parameters used to define the Diagnosis are taken from the monitoring script that raised the event. The thresholds in the scripts correspond to the marginal/poor thresholds in Vivinet Diagnostics. Results are saved in Vivinet Diagnostics Diagnosis files, which have a file extension of `.dgv`.

NOTE: If the AppManager Report agent is installed on the same computer on which the Diagnose Action scripts run, then you use the Report agent settings, which allow the Diagnosis results to be integrated with the AppManager Report Binder.

Upon completion of the Diagnosis, AppManager raises an event that contains the results of the Diagnosis. An event for an *unsuccessful* Diagnosis contains an error message explaining why the Diagnosis was unsuccessful. In an event message for a *successful* Diagnosis, the **Message** tab contains one of the following:

- ♦ A URL to an HTML report, if the AppManager Report agent is installed on the computer on which the Diagnosis was run
- ♦ Computer name and full path of the location of the output files, if the AppManager Report agent is not installed on the computer on which the Diagnosis was run

The HTML report contains a hyperlink to the Vivinet Diagnostics Diagnosis file, and, if you are running Vivinet Diagnostics 2.1 or later, a hyperlink to an HTML summary report of the Diagnosis.

 **Diagnosis - Job 314 - RALDTEST7-005 to RALDTEST7-00...**

Diagnosis run at 2/15/2007 3:47:03 PM on computer RALDTEST7-005.
Job: 314
Knowledge Script: VoIPQuality_CallPerf_G711a
Reason: Unacceptable MOS [RALDTEST7-005 to RALDTEST7-005]

Diagnosis performed between Endpoints.

Result for RALDTEST7-005 - RALDTEST7-005 : [\\valdeanb01\root\AM Reports\Diag_Job314_RALDTEST7-005_RALDTEST7-005_2007-02-15-15-47\Diag_Job314_RALDTEST7-005_RALDTEST7-005_2007-02-15-15-47.dgv](#)

Report for RALDTEST7-005 - RALDTEST7-005 : [\\valdeanb01\root\AM Reports\Diag_Job314_RALDTEST7-005_RALDTEST7-005_2007-02-15-15-47\Diag_Job314_RALDTEST7-005_RALDTEST7-005_2007-02-15-15-47.htm](#)



This report was generated by [NetIQ](#)

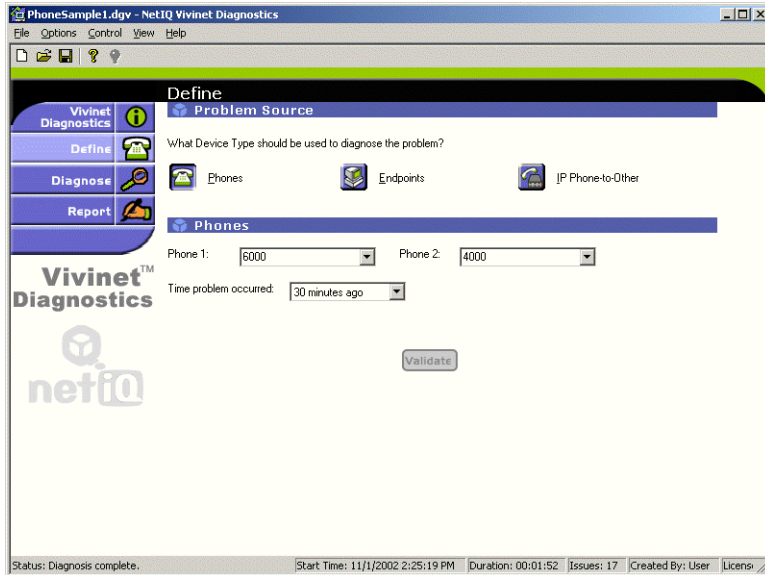
In this example, the first hyperlink provides access to the .dgv Diagnosis file in the Vivinet Diagnostics Console. The second hyperlink provides access to the HTML summary report.

- ♦ [Section 1.3.1, “Reviewing the Diagnosis File,” on page 12](#)
- ♦ [Section 1.3.2, “Reviewing the HTML Summary Report,” on page 13](#)

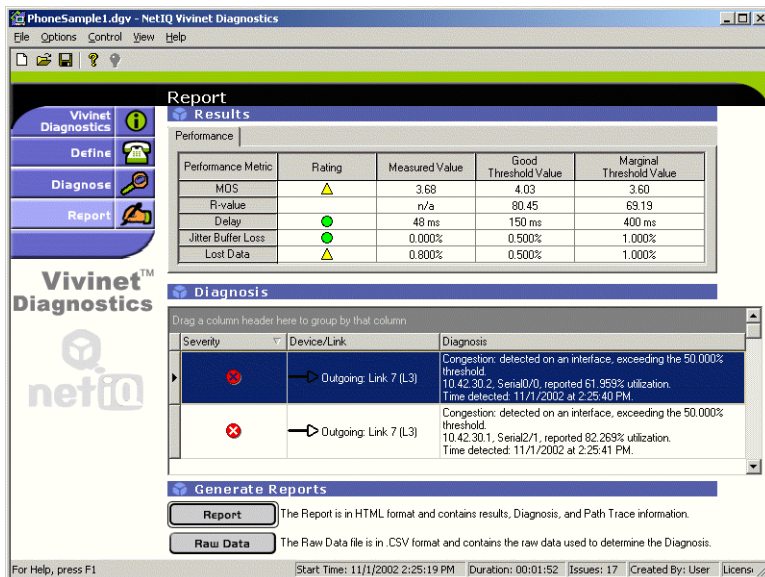
1.3.1 Reviewing the Diagnosis File

When you click on the hyperlink for the Diagnosis .dgv file, the Vivinet Diagnostics Console opens to the **Define** tab, which displays the parameters of the Diagnosis.

Depending on your browser settings, the Console will open or you will be given the option to “Save” or “Open the file.” Opening the file will launch the Vivinet Diagnostics Console.



Click the **Report** tab of the Vivinet Diagnostics Console to see the results of the Diagnosis.



When you open the Diagnosis file directly from the Web server, Internet Explorer makes a copy of the file in your Temporary Internet Files folder. If you click **Save** in Vivinet Diagnostics, this copy is updated. If you modify the Diagnosis parameters or rerun the Diagnosis, we recommend that you use **Save As** to save the file in a different folder.

For more detailed information about understanding Vivinet Diagnostics reports, see the Vivinet Diagnostics *User Guide*.

NOTE

- You can launch the Vivinet Diagnostics Console from the **Extensions > Launch Vivinet Diagnostics** menu in the AppManager Operator console.
 - When the Report agent is being used for creating Diagnoses, you can see all completed Diagnoses by launching the AppManager Report Binder, which you can access from the AppManager Operator Console: **Extensions > Report Viewer**.
-

1.3.2 Reviewing the HTML Summary Report

For Vivinet Diagnostics version 2.1 or later, AppManager generates a summary report of the Diagnosis in HTML format, and saves it in the same location as the Diagnosis file discussed in [Section 1.3.1, “Reviewing the Diagnosis File,” on page 12](#).

The summary report provides the same information as the Diagnosis file, without the need to open the Vivinet Diagnostics Console.



Problem Summary

Endpoint 1	RALDTEST7-005
Endpoint 2	RALDTEST7-005
Start Time	Thursday, February 15, 2007 3:47:06 PM
Duration	00:00:26
Issues	1
Status	Diagnosis complete

The **Problem Summary** section identifies the parameter settings from the **Define** tab, as well as thresholds and settings from the **Options** menu selections, such as QoS definitions and call quality thresholds.

The **Path Trace** section provides a graphical representation of the outgoing and incoming path taken by the Diagnosis. This is the same representation you see on the **Diagnose** tab of the Console.

The **Results** and **Diagnosis** sections present the same information you find on the **Report** tab.

The remaining sections in the HTML summary vary depending on the types of devices represented in the path trace, such as **Device Details** and **Link Details**. But all information in these sections is available in the Console by right-clicking on a device icon in the path trace on the **Diagnose** tab.

For more information, see the *Vivinet Diagnostics User Guide*.

1.4 Integration Prerequisites

The computer on which the Action script runs requires the following:

- ♦ Licensed version of Vivinet Diagnostics:
 - ♦ Version 1.1 or later to run Action_DiagnoseVoIPQuality
 - ♦ Version 2.0 or later to run Action_DiagnoseNortelIPT
 - ♦ Version 2.1 or later to export Diagnosis summary reports in HTML format
- ♦ Microsoft XML Parser version 3 or Internet Explorer 5.5 SP2 or later

In addition, AppManager assumes that you have already configured Vivinet Diagnostics with global settings for CallManager, SQL passwords, and SNMP community strings, and security information for accessing your Nortel Call Servers and Signaling Servers. For more information, see the Vivinet Diagnostics *User Guide*.

1.5 Integration Configuration

This section discusses the two ways in which you can configure AppManager to work with Vivinet Diagnostics

- ♦ [Section 1.5.1, “Diagnostics and AppManager on One Computer,” on page 14](#)
- ♦ [Section 1.5.2, “Diagnostics and AppManager on Separate Computers,” on page 14](#)

1.5.1 Diagnostics and AppManager on One Computer

The most common configuration is one in which the AppManager server components (repository, management server, Web management server, consoles, and agent, including the Report agent) are installed on a single computer. Vivinet Diagnostics is installed on this same computer. Installing both applications on the same computer allows the Diagnose Action scripts to run on the management server computer, which is the default location. In addition, having both applications on the same computer allows the integration of the Diagnosis results with the AppManager Report Binder and Web management server.

1.5.2 Diagnostics and AppManager on Separate Computers

An alternative configuration is one in which Vivinet Diagnostics, the AppManager agent (including the Report agent), and the AppManager consoles are installed on a computer that is remote from the computer on which the AppManager repository, management server, and Web management server are installed.

In this configuration, you must configure DiagnoseVoIPQuality and DiagnoseNortelIPT to run on the remote, or proxy, computer.

To configure the script to run on a proxy computer:

- 1 In the Properties dialog box of the Monitoring script, click the **Actions** tab. Action_DiagnoseVoIPQuality is selected by default.
- 2 Click in the **Location** field and select **Proxy** from the drop list that appears. The Computer Browser dialog box is displayed.

- 3 Select the computer on which Vivinet Diagnostics and the AppManager agent are installed, and then click **OK**.
- 4 Continue entering information on the other tabs, or click **OK** to start the monitoring job.

If you are running Vivinet Diagnostics 2.0 or earlier, we recommend that you purchase and install Vivinet Diagnostics on each computer on which you have installed an AppManager Operator Console. Having the Console and Vivinet Diagnostics on the same computer allows you to view the Vivinet Diagnostics report as well as rerun the Diagnosis.

For Vivinet Diagnostics 2.1 or later, access to the Vivinet Diagnostics Console is not required because AppManager generates a summary report in HTML format. All that is required is access to the directory in which the summary report is saved. However, access to the Console is necessary if you want to be able to rerun a Diagnosis.

For more information, see [Section 1.3.2, “Reviewing the HTML Summary Report,” on page 13](#).

1.6 Parameters for Action_DiagnoseNortelIPT

Use the following guidelines for configuring the parameters on the **Values** tab of the Action_DiagnoseNortelIPT Knowledge Script:

Parameter	How To Set It
Output folder prefix	<p>Enter a prefix for the output folder that is generated by the diagnosis. The output folder then uses this prefix in the following naming convention: <i>Prefix_JobID_Phone1_Phone2_DateTime</i>.</p> <p>The default prefix is <i>Diag</i>. <i>Phone1</i> and <i>Phone2</i> are the IP addresses of the Nortel phones being diagnosed.</p>
Use Report Agent settings?	<p>Set to <i>y</i> to specify that the Diagnostic results should be integrated into the AppManager Web management server (the Report Binder). The default is <i>y</i>.</p>
Full path to root of output folders	<p>Enter the full UNC path to the root of where the output folder(s) will be created.</p> <p>Make sure that the <i>NetIQmc</i> service (NetIQ AppManager Client Resource Monitor) is configured to run as a user that has access to the UNC path. The default setting of “local system” does not have access to the UNC path. Without access to the path, Vivinet Diagnostics will not be able to save a Diagnosis to the output folder.</p> <p>NOTE: This parameter is ignored if <i>Use Report Agent settings</i> is set to <i>y</i>.</p>
Event severity when ...	<p>Set the severity level, between 1 and 40, to indicate the importance of the following events:</p> <p>... error. Raises an event when the diagnosis does not complete successfully. The default is 15.</p> <p>... successful. Raises an event when the diagnosis completes successfully. The default is 35.</p>

1.7 Parameters for Action_DiagnoseVoIPQuality

Use the following guidelines for configuring the parameters on the **Values** tab of the Action_DiagnoseVoIPQuality Knowledge Script.

Parameter	How To Set It
Event severity when ...	<p>Set the severity level, between 1 and 40, to indicate the importance of the following events:-</p> <p>... error. This script raises an event when the Diagnosis does not complete successfully.</p> <p>... successful. This script raises an event upon successful completion of the action (Diagnosis).</p>
Output folder prefix	<p>Enter a prefix for the output folder that is generated by the Diagnosis. The output folder naming convention is as follows:</p> <pre><user-defined prefix>_<JobID>_<name of CallManager computer OR talker/listener>_<DateTime><0 1 2 3 4></pre> <p>NOTE: <0 1 2 3 4> is appended only if a single event triggers multiple diagnoses.</p> <p>The output folder will contain the .dgv file, the diagnostic .html report file, and, if integrated with the Report Agent, a default.rptIndex.xml file and a default.htm file that contains hyperlinks to both the .dgv file and the diagnostic .html report.</p>
Use Report Agent settings?	<p>Set to Yes to specify that the Diagnostics results should be integrated into the AppManager Web management server (the Report Binder). To use this option, the Report Agent must be installed on the computer on which you run Action_DiagnoseVoIPQuality.</p>
Full path to root of output folders	<p>Enter the full path to the root of where the output folder(s) will be created.</p> <p>NOTE: This parameter is ignored if <i>Use Report Agent settings</i> is set to Yes.</p>
Maximum diagnoses	<p>Enter a number between 1 and 5 to indicate the maximum number of diagnoses that can be triggered by a single event.</p> <p>This parameter is applicable only for events raised by CiscoCallMgr_CallQuality and CiscoCallMgr_CallFailures, where one event may identify multiple pairs of phones that indicate a problem.</p>

1.8 Diagnosis Triggers

The following topics discuss in detail each of the monitoring scripts for which you can use an Action script to trigger a Diagnosis.

- ♦ [Section 1.8.1, "CiscoCallMgr_CallQuality," on page 17](#)
- ♦ [Section 1.8.2, "CiscoCallMgr_CallFailures," on page 17](#)
- ♦ [Section 1.8.3, "NortelCS_Alarms," on page 18](#)
- ♦ [Section 1.8.4, "PhoneQuality_CiscoPhoneQuality," on page 18](#)
- ♦ [Section 1.8.5, "VoIPQuality_CallPerf," on page 18](#)

1.8.1 CiscoCallMgr_CallQuality

The CiscoCallMgr_CallQuality Knowledge Script monitors the Cisco CallManager CMR (call management record) database for calls for which poor VoIP quality metrics were recorded. This script runs periodically and looks at all calls that were generated since the last time the script ran. If any call falls in the “poor” category, then the script raises an event. If multiple calls exhibit poor quality, then the event detail message may contain information for multiple pairs of phones (up to 50).

CiscoCallMgr_CallQuality detects the following VoIP quality conditions:

- ♦ Jitter exceeds the threshold
- ♦ Latency exceeds the threshold
- ♦ Percentage of lost data exceeds the threshold

An event raised by this script will trigger a Vivinet Diagnostics Diagnosis between two phones. Vivinet Diagnostics uses the following information when generating a Diagnosis:

- ♦ **Phone 1** and **Phone 2**, which are IP telephones or traditional telephones (POTS phones) on the PSTN. Either Phone 1 or Phone 2 must be an IP phone.
- ♦ **Time problem occurred**, which is specified as unknown, 5, 10, 15, 30, 60, or 90 minutes ago. The time is based on the schedule of the Monitoring script.
- ♦ **Thresholds**, which are specified below. Diagnostics defaults will be used for any threshold not specified.
 - ♦ Delay, measured in ms, set to the value of the *Maximum acceptable latency* parameter in the Knowledge Script.
 - ♦ Lost data, measured in %, set to the value of the *Maximum acceptable percentage lost data* parameter in the Knowledge Script.

1.8.2 CiscoCallMgr_CallFailures

The CiscoCallMgr_CallFailures Knowledge Script monitors the Cisco CallManager CDR (call detail record) and CMR (call management record) databases, looking at the termination codes for all calls. This script runs periodically and looks at all calls terminated since the last time the script ran. If any call contains an abnormal termination code, then the script raises an event. If multiple calls contain abnormal termination codes, then the event may contain information for multiple pairs of phones (up to 50).

CiscoCallMgr_CallFailures detects conditions in which the number of abnormally terminated calls exceeds the value you set in the *Maximum failed calls* threshold.

An event raised by this script will trigger a Vivinet Diagnostics Diagnosis between two phones. Vivinet Diagnostics uses the following information when generating a Diagnosis:

- ♦ **Phone 1** and **Phone 2**, which are IP telephones or traditional telephones (POTS phones) on the PSTN. Either Phone 1 or Phone 2 must be an IP phone.
- ♦ **Time problem occurred**, which is specified as unknown, 5, 10, 15, 30, 60, or 90 minutes ago.

NOTE: No call quality threshold information is configured in the CallFailures script, therefore the Vivinet Diagnostics defaults will be used.

1.8.3 NortelCS_Alarms

This Knowledge Script monitors the Nortel CS1000 proxy agent for Nortel CS1000 alarms. Signaling Servers, VGMCs, and Media Gateways send alarms to the proxy agent using SNMP traps. One particular alarm, QoS0028, triggers Action_DiagnoseNortelIPT to invoke Vivinet Diagnostics.

The QoS0028 alarm indicates that the R-value has exceeded the configured threshold.

An event raised by this script will trigger a Vivinet Diagnostics Diagnosis between two Nortel Phase 2 IP phones.

1.8.4 PhoneQuality_CiscoPhoneQuality

The PhoneQuality_CiscoPhoneQuality Knowledge Script polls Web-enabled Cisco IP phones for voice quality statistics on active calls. When an active call is detected, this script collects or calculates the following call quality metrics:

- ♦ Jitter
- ♦ Percent packet loss
- ♦ MOS
- ♦ R-value

If, while AppManager is polling an IP phone, any call quality metric falls below or exceeds a threshold, then AppManager raises an event while the call is active. However, AppManager will raise *only* one event per call.

For instance, if the jitter threshold is crossed, then AppManager will raise an event. If, 30 seconds later during the same call, the MOS threshold is crossed, AppManager will not raise another event.

An event raised by this script will trigger a Vivinet Diagnostics Diagnosis between two IP phones. Vivinet Diagnostics uses the following information when generating a Diagnosis:

- ♦ **Phone 1 and Phone 2**, which are Web-enabled IP telephones.
- ♦ **Time problem occurred**, which is specified as unknown, 5, 10, 15, 30, 60, or 90 minutes ago.

1.8.5 VoIPQuality_CallPerf

The VoIPQuality_CallPerf Knowledge Scripts monitor VoIP quality by periodically driving synthetic VoIP traffic between two NetIQ Performance Endpoints. Although this script can be run on a matrix of endpoints, a separate event is raised for each pair, if needed. For example, if the script is configured with two talkers and two listeners (for a total of four endpoint pairs), and two of these pairs have unacceptable MOS values, then two events will be raised.

VoIPQuality_CallPerf scripts detect the following conditions:

- ♦ MOS or R-value that is below minimal acceptable threshold
- ♦ Delay that exceeds the threshold
- ♦ Jitter that exceeds the threshold
- ♦ Percentage of lost data that exceeds the threshold
- ♦ Percentage of loss due to jitter buffer that exceeds the threshold
- ♦ Test that failed to run

An event raised by this script will trigger a Vivinet Diagnostics Diagnosis between two endpoints. Vivinet Diagnostics uses the following information when generating a Diagnosis:

- ♦ **Endpoint 1 and Endpoint 2**, the talker and caller, respectively, that were used in the VoIP test. Diagnostics uses the endpoints' IP addresses or DNS hostnames.
- ♦ **Script parameters**, as listed below:
 - ♦ Codec, from the configuration parameter (G.711a, G.711u, G.723.1-ACELP, G.723.1-MPMLQ, G.726, G.729, or G.729A)
 - ♦ Packet loss concealment
 - ♦ Silence suppression
 - ♦ Delay between voice datagrams, in milliseconds
 - ♦ Service quality
 - ♦ Jitter buffer size, in milliseconds
 - ♦ Additional fixed delay, in milliseconds

NOTE: The *Voice Activity Rate* parameter in AppManager cannot be set when triggering a Diagnosis. Therefore, the Vivinet Diagnostics default of 50% is used when generating a Diagnosis.

- ♦ **Target port**, from the *Destination port* parameter in the Knowledge Script
- ♦ **Threshold**, as listed below:
 - ♦ MOS, set to the *Minimum acceptable MOS* parameter, or R-value, set to the *Minimum Acceptable R-value* parameter in the Knowledge Script. Vivinet Diagnostics does not display the R-value metric. When a Diagnosis with R-value thresholds is triggered, Vivinet Diagnostics translates these thresholds into their equivalent MOS values.
 - ♦ Delay, measured in milliseconds, set to the *Maximum acceptable delay* parameter in the Knowledge Script.
 - ♦ Lost data, measured in percentage, set to the *Maximum acceptable percentage lost data* parameter in the Knowledge Script.
 - ♦ Loss due to jitter buffer, measured in percentage, set to the *Maximum acceptable percentage jitter buffer loss* parameter in the Knowledge Script.

1.9 Deleting Expired Reports

A new Diagnosis result file is generated for each Diagnosis triggered by the Diagnose Action scripts. These files can build up over time — you should consider implementing a process to occasionally delete these files.

If you are using the Report agent setting when generating the Diagnosis results, then we recommend that you use the AMAdmin_DeleteExpired Reports Knowledge Script to automatically delete old reports. Reports generated as a result of the Diagnose Action scripts are set by default to expire after 60 days.

1.10 Troubleshooting the Integration

The following are some common problems that you may encounter when integrating Vivinet Diagnostics and AppManager.

You received an error message indicating that Action_DiagnoseVoIPQuality will not run.

Ensure that Vivinet Diagnostics version 1.1 (or later) is installed on the computer on which the Action script is to run. That same computer requires Microsoft XML Parser version 3 or Internet Explorer 5.5 SP2 or later.

In addition, you must register your version of Vivinet Diagnostics before the integration with AppManager will work.

You ran the Diagnosis, but cannot view the Diagnostic report from a different computer.

Ensure that Vivinet Diagnostics version 1.1 or 2.0 is installed on the computer from which you are trying to view the Diagnostics Report. If additional AppManager Operator Consoles are installed for remote computers, we recommend that you purchase and install Vivinet Diagnostics on these computers as well. Installing both the Operator Console and Diagnostics on the same computer allows you to view the Diagnostic report as well as rerun the Diagnosis.

NOTE: With Vivinet Diagnostics 2.1, you can view an HTML summary report from a different computer. For more information, see [Section 1.3.2, “Reviewing the HTML Summary Report,” on page 13](#).

The Diagnosis results indicate that Vivinet Diagnostics cannot resolve the phone or query SNMP information.

If Vivinet Diagnostics cannot resolve phone or SNMP information, you will see a Log Viewer when you attempt to open the Diagnosis file (.dgv). The Log Viewer displays the error messages. In addition, if there is an error, then the Vivinet Diagnostics Console will not display results when you click the **Report** tab.

Ensure that you have configured Vivinet Diagnostics with the CallManager names and passwords as well as the SNMP community strings for querying SNMP information from routers.

If you had not configured this information prior to running the Diagnosis, do so now, and then rerun the Diagnosis by clicking the **Diagnose** tab on the Vivinet Diagnostics Console.

You need only configure the CallManager and SNMP information once. Vivinet Diagnostics will continue to use the information for subsequent Diagnoses.

AppManager raised several call-quality events, but Vivinet Diagnostics ran only one Diagnosis.

So that the Action script can trigger Vivinet Diagnostics to run a diagnosis as often as a problem occurs, you need to disable or modify the “event collapsing” feature on the Alarms script. Event collapsing allows AppManager to suppress, or collapse, what it considers to be duplicate events. However, you will probably want Vivinet Diagnostics to diagnose a problem each time one occurs, even if it occurs between the same two targets. And you cannot do that if AppManager has collapsed all call quality events between the same targets into one event. Use the **Advanced** tab of the Alarms script to disable event collapsing, or at least to shorten the 20-minute collapsing interval.

To disable or modify event collapsing:

1. Click the **Advanced** tab.
2. To disable event collapsing, click to uncheck **Collapse duplicate events into a single event**.
3. To shorten the collapsing interval, select a smaller number in the **Time interval for event collapsing** field.
4. Stop and then restart the Knowledge Script job so that your changes are activated.

You receive a 404 error message when attempting to open a .dgv file that is housed on Windows 2003 Server.

Tightened security of IIS in Windows Server 2003 prohibits the opening of unrecognized MIME types. You need to configure Windows Server 2003 to recognize the .dgv extension.

1. On the Windows Server 2003 computer, right-click **My Computer** and select **Manage**.
2. Expand **Services and Applications**.
3. Expand **Internet Information Service**.
4. Expand **Web Sites**.
5. Right-click on the Web site in question (you may have several) and select **Properties**. The Properties dialog box appears.
6. Click the **HTTP Headers** tab.
7. Click the **MIME Types** button. The MIME Types dialog box is displayed.
8. Click the **New** button.
9. In the **Extension** field, type .dgv.
10. In the **MIME type** field, type application/octet-stream.
11. Click **OK** to return to the MIME Types dialog box.
12. Click **OK** to return to the Properties dialog box.
13. Click **OK** or **Apply** to complete the change.

NOTE: You may need to stop and restart the Web site before the change takes effect.
