Configuring eHealth® Application Response to Monitor Web Applications

eHealth® Application Response (AR) helps you manage the performance of your Web applications by monitoring response times for real users, allowing you to diagnose and fix performance problems before users notice them.

AR allows you to write detailed rules for any application, but it also provides out of the box value for Web applications, monitoring the basic response time of Web sites with very little setup.

Within 20 minutes of installing an AR agent on your system, you can start monitoring the performance of selected Web pages or an entire site. After the AR agent has collected performance data, you can use eHealth to generate:

- **Health Reports** – Show you the client, server, and network response times for your application, as well as the poorest performing paths. Use Health Reports to get an overall picture of how your application is performing, and to identify problem areas.

- **At-a-Glance Reports** – Show the key performance metrics for your application on a single report, including average response time, number of transactions, and data transmitted. Use At-a-Glance reports to quickly troubleshoot problem areas.

- **Trend Reports** – Show how application response has changed over time. Use Trend reports to reveal patterns in the data, troubleshoot current problems, and identify future problems before they occur.

Using this document, you can begin monitoring your Web applications to ensure that your end users receive optimal performance, ultimately resulting in higher employee productivity and greater customer satisfaction.

Getting Started with Application Response

This topic describes how to configure an AR agent to monitor a simple Web application from your desktop. The process takes only a few minutes, but provides immediate benefits to your organization.

This topic includes:

- **Application Response and Web Applications** – Describes how AR monitors Web applications, and what information it tracks.

- **Reporting With Application Response** – Describes how to use eHealth reports to identify and troubleshoot existing problems, as well as to fix performance problems before they affect users.

- **Configuring AR to Monitor a Web Application** – Describes how to configure AR to monitor your Web application, and deploy a test agent to ensure that AR is monitoring it.

- **Setting Up Optional Features** – Describes how to use more advanced AR features, such as monitoring multiple applications, and deploying multiple AR agents across your organization.
Configuring Application Response to Monitor Web Applications

Application Response and Web Applications

Understanding How AR Agents Work

An AR agent looks for specific transactions on a client system, and records performance information about these transactions when they occur. This information is then sent to the eHealth system, allowing you to monitor the performance of your Web applications as experienced by actual users throughout your organization.

Each AR agent monitors application performance from a single client system. To start out, you will deploy one test agent, so that you can generate test data for the agent to monitor. Later on, you can deploy multiple agents throughout your organization. Web applications that you add to AR are then automatically downloaded to all agents installed on your network, allowing you to monitor performance from multiple users.

Understanding How AR Monitors Applications

Adding a simple Web application to AR is easy and takes just a few minutes. To monitor the performance of a specific web page, for example, you only need to enter one URL.

For AR to understand what you want to monitor, you must tell it the executable (program) running on the client system, the destination server that runs the remote application, and the specific transactions to monitor. This process is called “adding an application.” For simple web applications, the executable is a Web browser and the transaction is loading a Web page, so all you need to specify is what URLs to monitor.

You can make this URL as general or specific as necessary. Entering a general URL (concord.com) will monitor all transactions to the Web pages in the concord.com domain. Entering the URL of a specific Web page (www.concord.com/support/ehealth_focus.shtml) will monitor only transactions to that page.

AR can also monitor different sections of your web site separately, so you can set different performance expectations for each. For example, you may need the product sales pages of your Web site to load very quickly, while you can tolerate slower response times for most of your technical support pages. There may also be one critical page on your site that must load almost instantly. By adding separate AR applications for these three sections of the site, you can monitor the performance of each independently, ensuring that they meet individual response time goals.

To do this, you must add an AR application for each section you want to monitor. For example, you could add one application to monitor all the pages on your site, a second to monitor only the Product sales section, a third for the support section, and a fourth to monitor the single critical web page (See Figure 1).

Figure 1. Adding Multiple AR Applications

Understanding What AR Monitors

AR allows you to write detailed rules to monitor any transaction, but it provides great value for simple Web applications without any additional setup. Out of the box, the AR Web application monitors:

- The observed response time for each Web transaction, as experienced by the end user.
- A breakdown of this response time into client, server, and network times, allowing you to pinpoint the cause of a slow application.
- The total number of Web transactions, showing you how many times your Web site has been accessed (by the clients with AR agents installed).
- The response times for specific users accessing your application, showing you exactly which locations or groups are experiencing the slowest response.
- The total amount of data transmitted and received for each transaction, showing you how response time relates to data-intensive web pages, such as those with large graphics or PDF files.
Configuring Application Response to Monitor Web Applications

**Reporting With Application Response**

After the AR agents have collected data, you can run eHealth reports to monitor the performance of your Web application. By using reports, along with other eHealth features, you can ensure that your business critical applications meet the needs of your users by:

- Quickly identifying existing problems (through reports or Live Health alarms), and determining the source (network, server, or client) and cause of the problem.
- Determining if complaints about network speed are valid by examining actual performance data for specific groups, and comparing it to performance thresholds, historical data, and data from other groups.
- Identifying performance problems proactively, before users notice them.

**Responding to Alarms**

You can use eHealth to set response limit thresholds for your Web applications and to generate alarms if performance falls below these limits. This ensures that you can identify performance problems quickly when they occur.

When you receive an alarm from Live Health, or identify a problem using the Health Report, you can generate an At-a-Glance Report to quickly troubleshoot the problem area. The At-a-Glance report provides a detailed look at key performance metrics, allowing you to identify the cause of a problem.

Figure 2 shows an At-a-Glance report for a Web application that triggered a Live Health alarm. The report shows average response time over the last 8 hours broken down into client, network and server components. From the report, you can see that performance was normal until response times exceeded the threshold about 3:00pm, and that the performance problem is being caused mostly by the client.

To further examine the severity of a problem, and identify when it began, you can run a Trend Report. The Trend Report provides a historical look at the selected data, allowing you to quickly see how performance or usage has changed over time.

Figure 3 shows a Trend report for the same application and time period. The report shows that client response time has increased dramatically over the last hour, while network and server response have remained at normal levels. This indicates that the client PC accessing your application may be overloaded.

**Responding to Complaints**

When users call to complain about a slow application, their first reaction is often “the network is slow.” However, most of the time it is not the network causing the problem, but something else.

AR can help you determine if complaints about network performance are valid, and if so what is causing them. AR gives you concrete performance data for specific applications and specific groups. You can use this data to compare the current performance for a specific location or group to:

- **Performance thresholds** – Telling you if an application is slow compared to your standards, and by exactly how much (At-a-Glance reports).
- **Historical performance** – Telling you if the application is slow compared to the past, and when performance started to degrade (Trend reports).
- **Other groups** – Telling you if the application is slower in one location than another (Service Performance reports).
If you determine that users are experiencing a slow application, AR then helps you determine the cause of the problem. The network could be slow, but maybe the application server is overloaded, or the client is the problem. AR gives you data that quantifies exactly which part of the response time is caused by the client, the network, and the server (See Figure 4).

**Fixing Problems Proactively**

The best way to keep users happy is to fix problems before they are even noticed. A good way to be proactive is by periodically running a *Health Report*.

AR Health Reports display the performance of your web application over a daily, weekly, or monthly time span. These reports give you an overall picture of how your application is performing, and help you to identify problem areas.

Health Reports break down the performance data in three important ways:

- **Poorest Performing Paths** – Displays response times for the transactions with the worst performance, allowing you to see which users are unhappy and why. Helps you identify performance problems and their causes.
- **Response History** – Displays the current and historical performance of your application, helping you to spot performance trends.
- **Response Breakdown** – Displays a breakdown of your application’s client, network, and server response times during the current time period. Allows you to identify which component contributes the most to the overall response time.

Figure 4 shows a partial Application Response Health Report, showing the Poorest Performing Paths for a Web application. The report shows you the response times for the users experiencing the worst application performance, with a breakdown of the client, network, and server components of the response time.

![Figure 4. Sample Application Response Health Report](image)

From the report, you can identify 5 users whose application response times exceed the response limit threshold, and see exactly how bad performance is for each. For example, users 1, 2, and 3 are experiencing response times that are significantly worse than the limit (shown by the red line), while users 4 and 5 are right at the limit.

You can also identify the main cause of the problem for each user. For example, users 1, 4, and 5 are all experiencing poor performance due to client problems, while the server appears to be the issue for user 2, and user 3 is experiencing a network issue.

More details about each transaction are also provided in the report, including the name of the client computer, the application and server accessed, and the exact response times for the client, network, and server.
Configuring AR to Monitor a Web Application

This section describes how to configure AR to monitor your Web site, and deploy a test agent to ensure that AR is monitoring it. When you complete this procedure, you will have done everything needed to monitor your Web application, and will be able to generate reports to view application performance.

After you complete the procedures in this section, see Setting Up Optional Features for information on adding multiple applications, configuring an application server, and setting up other AR features.

Configuring AR to Monitor Your Application

For AR to monitor your Web application, you must tell it what transactions to monitor and what server runs the application. For simple Web applications, this only requires specifying a URL.

Accessing eHealth:

1. Log in to the eHealth Web interface with administrator privileges.
2. Select the Systems & Apps tab.

Adding an Application:

1. Select Applications from the Application Response menu. The Application List page opens.
2. Click (Add Application). The Add an Application dialog box opens.
3. Enter a name for your application. For example: concordweb.
4. Select Web from the Application Type drop-down list.
5. Click Next. The Application Properties dialog box opens.
6. In the URL field of the Parameter Substitutions section, enter the URL of the Web page you want to monitor (Figure 5). For example: concord.com.
   Note: Entering a general URL (concord.com) will monitor all transactions to the Web pages in that domain. Entering the URL of a specific web page will monitor only transactions to that page.
7. Click Insert. The URL appears in the Values list.
8. Click OK to save the application.

Figure 5. Adding an Application

Deploying a Test Agent

After you add your Web application, deploy a single agent to a Windows® client system so that you can generate test data for the agent to monitor. The test system can be any PC with access to your Web application.

Creating the Agent Installation Program:

1. Select Download from the Application Response menu. The Download page opens.
2. Select Download AR Agent Publisher. Then follow the on screen instructions to save the publisher to your desktop.
3. Double-click the AR Agent Publisher icon.
4. Follow the directions on screen to generate a default AR Agent Installation program.
   Note: The agent installation program is saved in C:\eHealth\ARInstl.exe.

Deploying the Test Agent:

1. Distribute the ARInstl.exe file to the test system by email.
2. Copy the AR agent installation program to the desktop of the test system.
3. Double-click the ARInstl.exe icon to install the AR agent.
4. Reboot the computer.
Verifying that the Agent is Monitoring Data

After you configure the AR agent, verify that the agent is monitoring your Web application by starting transaction logging in eHealth, generating sample data from the test system, then viewing the resulting transactions using the eHealth Agent Transaction Viewer (ATV).

Starting Transaction Logging:

1. Select Agents from the Application Response menu.
2. In the list of agents, select the checkbox next to the name of the agent you deployed to the test system.
3. Click (Start Transaction Logging).
4. A message box opens. Click OK.
5. Click on the name of the agent you deployed to the test system. The Agent Properties page opens.
6. Click (Configure Agent).
7. Click (Force Agent Heartbeat).
8. Click OK to exit.

Generating Sample Data from the Test System:

1. Open a Web browser on the test system.
2. Navigate to the Web page you are monitoring. For example: www.concord.com.
3. Click several links in the Web page to generate data for the AR Agent to monitor.

Viewing the Data in eHealth:

1. Log in to the eHealth Web interface.
2. Select ATV from the Application Response menu.
3. In the Agent drop-down list, select the name of the test system to which you deployed the agent.
4. Click (Get Transaction Data from Agent).
   A list of the transactions monitored by the AR Agent appears.
5. Verify that the agent observed transactions to the Web pages you specified.

Running Reports

After the AR agent has collected data, you can run eHealth reports to monitor the performance of your application.

Note: Reports only show the data that the AR Agent has collected for your application. Before you run reports, you should wait for the AR Agent to collect enough transactions for the report to be useful.

To run an initial report:

1. Select the Run Reports tab.
2. In the Available Reports section, select Standard under At-a-Glance.
3. In the Technology drop-down list, select Response Path.
4. In the Available Elements scroll list, select the response path displaying the client system with the AR agent and the application you added. For example: nymktg001-concordweb.
5. In the Report Time section, select Today.
6. Click Generate Report. eHealth generates an At-a-Glance report showing the initial transactions monitored by the AR agent. (See Figure 6).

Figure 6. At-a-Glance Report Showing Initial Transaction
Setting Up Optional Features

Adding Multiple Applications
You can add multiple applications to AR to enable you to monitor different sections of your web site separately.

To add multiple applications to AR, repeat the procedure described in “Adding an Application” for each Web application you want to add, entering the appropriate URL for each Web page or site you want to monitor.

Note: Make the URL for each application as general or specific as needed to monitor the appropriate pages.

Configuring the Application Server
To achieve a greater level of detail in your reports, you can define specific servers for your Web application. Defining a server allows you to run reports on specific client-application-server paths, as well as on the performance of all applications using a specific server. This is particularly useful if your application runs on multiple servers, as it allows you to track the performance of each separately.

1. Select Servers from the Application Response menu. The Server List page opens.
2. Click (Discover Servers). The Server Discovery page opens.
3. In the Discover Servers on Agent drop down list, select the name of the test system to which you deployed the AR agent.
4. Click (Start Server Discovery).
5. Open a Web browser on the test system, then navigate to the Web application that you want to monitor. For example: www.concord.com.
6. In the eHealth Server Discovery page, click (Refresh Data). The Web server to which you navigated appears at the top of the list.
7. Click menu to the left of the server you want to add, then select Server > Create New. The Server Properties window opens, displaying the Name, Type, and Hostname of your Web server.
8. Click Next.
9. In the Match URL substrings, enter the URL of the Web page you want to monitor. For example: concord.com.
10. Click OK to save the server information.
11. If you want to add multiple servers, repeat steps 5–10 for each server you want to add.
12. In the Server Discovery page, click (Stop Server Discovery), then close the page.

Deploying Multiple AR Agents
Once you have verified that your test agent is working correctly, you should deploy AR agents to multiple systems in your organization. eHealth automatically downloads your AR applications to all the agents you deploy, allowing you to monitor performance from multiple users.

1. Distribute the ARInstl.exe file to target systems by email.
2. Run the ARInstl.exe program on each target system.
3. Reboot each computer after installation.

Organizing Deployed Agents
After deploying AR agents across your infrastructure, you can group these agents based on location, organization, or business function. Grouping agents allows you to monitor application performance for users in different locations or different departments, giving you more detailed information about which users are experiencing performance problems.

For more information about creating Agent Sets to organize your AR agents, see the AR Web Help.

Configuring Live Health to Generate Alarms
If you use Live Health, you can set response limit thresholds for your Web applications and have Live Health generate alarms if performance falls below these limits. Using Live Health ensures that you can identify performance problems quickly when they occur.

For more information about configuring Live Health to monitor your AR applications, see the Live Health Web Help.