



Using the TV VDS Streamer Application Monitoring Tool

This appendix describes the TV VDS Streamer Application Monitoring Tool (AMT) that can be used to monitor the VOD Error Repair feature. For more information about VOD Error Repair, see the “[VOD Error Repair](#)” section on page 1-11. The topics covered in this appendix include:

- [Overview, page E-1](#)
- [AMT Statistics, page E-3](#)

Overview

The AMT is a browser-based tool installed on the Streamer and used to display the settings and statistics of the VOD Error Repair feature.

The Error Repair page provides a retransmission overview of the following:

- Incoming RTCP NACK requests
- Retransmission packets sent
- Verification that requested and sent repair packets match

The RTP Session page provides details on each RTP stream. You can use this information to verify that the RTP session configuration is correct.

Initializing AMT on the Streamer

AMT is installed on every Streamer as part of the Cisco TV VDS software. There are some additional steps that are required to complete the installation of AMT.

To initialize the AMT, do the following:

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- Step 1** Start a Telnet or SSH session to the Streamer, logging in as user *root*.
 - Step 2** Run the `gen_cert.sh` script to create the SSL certificate.
 - Step 3** Edit the `rc.local` file. Uncomment the following lines:

```
service httpd start
service tomcat5 start
```

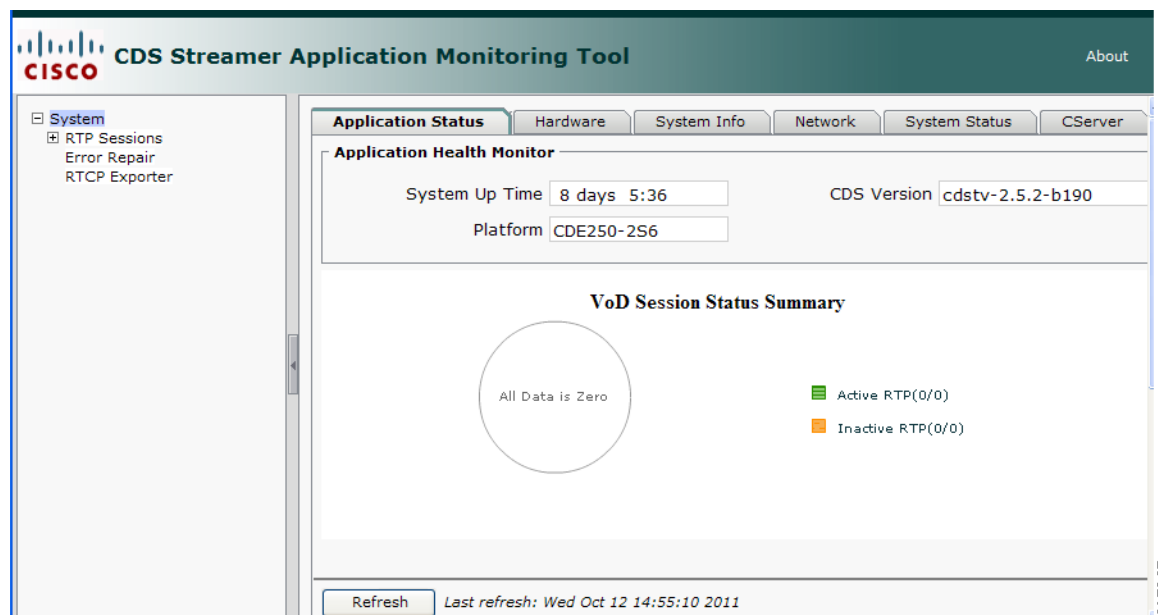
Logging In to AMT

AMT uses HyperText Transport Protocol Secure (HTTPS) to access the browser-based GUI. Any valid Linux username and password can be used to log in to AMT. The username does not have to belong to any special group.

To log in to AMT, do the following:

- Step 1** Using your web browser, enter the IP address or hostname of your Streamer.
- For example, if the IP address of your Streamer is 192.168.0.235, you can access it by entering https://192.168.0.235 in the address or location text box of your browser program.
- The username and password dialog box is displayed.
- Step 2** Enter a Linux username and password for this Streamer and click **OK**. The AMT System Application Status page is displayed (Figure E-1).

Figure E-1 AMT System Application Status Page



AMT Statistics

This section provides general information about the information displayed in AMT.

Click **Refresh** to update the displayed data. The AMT statistical data is not updated automatically. The last refresh date and time are displayed to the right of the **Refresh** button.

[Table E-1](#) describes the information displayed for each page of AMT.

Table E-1 AMT GUI Pages

Navigation Tree and Tab	Information Provided
System Tabs	
Application Status	Provides the following information: <ul style="list-style-type: none"> • System Up Time—Length of time the Streamer has been up and running • Platform—CDE model hosting the TV Streamer Content Delivery Application (CDA) • VDS Version—TV VDS software release number • VOD Session Status Summary—Percentage of active and inactive RTP sessions
Hardware	Provides the following information: <ul style="list-style-type: none"> • Processor—CPU model and speed • Memory—Total Random Access Memory (RAM) installed in kilobytes (KB).
System Info	Provides the following information: <ul style="list-style-type: none"> • Hostname—Hostname of the Streamer • OS Version—Linux operating system software version • NTP Server—NTP server configured for this Streamer • DNS Server—DNS servers configured for this Streamer
Network	Lists the output of the ifconfig command.
System Status	Provides the following information: <ul style="list-style-type: none"> • Host Uptime—Length of time the Streamer has been up and running • Services—Services running on the Streamer • File System Disk Space—Used and available disk space
CServer	CServer status.

Table E-1 AMT GUI Pages (continued)

Navigation Tree and Tab	Information Provided
RTP Sessions	
Displays the following information on VOD Sessions that can be filtered by session ID, or session destination and subnet mask:	
<ul style="list-style-type: none"> • Status • Session ID • Content name • Source IP address and port • Destination IP address and port • Bit rate (Kbps) • Repair Enabled 	
If a filter is entered, click Submit to see the filtered results. If the number of VOD sessions spans several pages, click the Prev Page and Next Page to view the other pages.	
Error Repair	
Configuration	Displays the configuration settings for this Streamer that were set on the CDSM GUI. For more information, see Chapter 4, “Configuring the VDS.”
Statistics	Displays the following information: <ul style="list-style-type: none"> • Generic NACK Messages Received <ul style="list-style-type: none"> – Total Messages – Invalid Messages • Repair RTP Packets <ul style="list-style-type: none"> – Requested – Sent – Not Sent • Inbound and Outbound Error Repair Request Average Rate (packets per second) <ul style="list-style-type: none"> – 5 Second (interval) – 1 Minute (interval) – 5 Minute (interval) – 15 Minute (interval) • Advanced—Displays Advanced Debug Statistics for Error Repair. Click Advanced to see these statistics. For more information about the Error Repair statistics, see the “Viewing Error Repair Statistics” section on page E-5.
Excess BW	Displays histogram for Error Repair e-Factor. For more information, see the “Viewing Excess Bandwidth” section on page E-7.

Table E-1 AMT GUI Pages (continued)

Navigation Tree and Tab	Information Provided
RTCP Exporter	
Configuration	Displays configuration settings for the VQM CDA.
Statistics	Displays the following information: <ul style="list-style-type: none"> • VQM CDA configuration settings • VQM CDA configuration status • VQM CDA operational status • RTCP Exporter Packets Exported • RTCP Exporter Packets Dropped • Advanced—Displays Advanced Debug Statistics for VQM. Click Advanced to see these statistics.

Viewing Error Repair Statistics

When you click **Error Repair** in the navigation tree and click the **Statistics** tab, AMT displays the Error Repair statistics tab (see [Figure E-2](#)).

Figure E-2 Error Repair Statistics Page

Configuration		Statistics	Excess BW	
Error Repair Statistics				
Generic NACK Messages Received				
Total Messages	339851	Invalid Messages	0	
Repair RTP Packets				
Requested	3398470	Not Sent	10660	
Sent	3387810			
Inbound Error Repair Request Average Rate (packets per second)				
5 Second	0.000	1 Minute	0.000	
5 Minute	0.000	15 Minute	0.000	
Outbound Error Repair Average Rate (packets per second)				
5 Second	0.000	1 Minute	0.000	
5 Minute	0.000	15 Minute	0.000	
Advanced...		Refresh		Last refresh: Wed Oct 12 15:57:54 2011

Table E-2 lists the information in the Error Repair Statistics page.

Table E-2 Error Repair Statistics

Field	Description
Generic NACK Messages Received	
Total Messages	Number of NACK messages received by this Streamer.
Invalid Messages	Number of invalid messages received by this Streamer. Invalid messages are received messages that, for example, cannot be parsed.
Repaired RTP Packets	
Requested	Number of RTP packets set-tops have requested for ER from this Streamer.
Sent	Number of RTP packets sent by this Streamer that have succeeded in repairing an error.
Not Sent	Number of failed RTP packets that were not repaired by the Streamer. The Streamer may not be able to send an ER packet for several reasons, including the following: <ul style="list-style-type: none"> • Most likely cause is that the ER requests were bursty and exceeded the ER rate-policer limit at one point. • Requested RTP packets were not found in the Streamer memory cache. • Streamer failed to send the RTP packets because of a socket sendto() failure.
Inbound and Outbound Error Repair Average Rate (packets per second)	
5 second, 5 minute, 1 minute, 15 minute	For each time period, the average number of packets per second that the Streamer has received (inbound) or sent (outbound) to set-tops to repair errors (Unicast Retransmission).

Viewing Excess Bandwidth

When you click **Error Repair** in the navigation tree and click the **Excess BW** tab, AMT displays the Excess BW page (see [Figure E-3](#)).

Figure E-3 Excess BW Page



If Error Repair is enabled and active, you can choose to display a client e-factor histogram or table by clicking the icons in the upper-right corner of the page. Use the **Select a histogram** drop-down menu to select Error Repair histograms.

An e-factor is an excess bandwidth fraction that determines the rate at which packets are sent during Error Repair. The data displayed in the histograms and tables include the following:

- E-factor count with the number of times a client e-factor has been calculated. This appears on the vertical axis in the histograms.
- E-factor distribution of the client e-factor percentages that have been used. This appears on the horizontal axis in the histograms. If the distribution is widely dispersed, there can be more than one grouping of percentages.

Move the slider below the histograms to change the way in which the histograms are displayed. The e-factor percentages cannot be negative values.

