



AMPS UNIX / Linux Diagnostic User Manual

Version 2.3

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Preface

Naviga Transmit (AMX) makes it easy to add customized, real-time, rich media content to your website. From thousands of media sources, we bring today's top headlines, and more to your website.

About This Manual

This document describes the software used to diagnose an AMPS connection. AMPS is a TCP-based protocol used to deliver data over the Internet.

Typographical Conventions

This manual uses the following typographical conventions:

- *install-dir* represents the directory chosen at time of installation.
- **Bold** is used for names the user can enter; for example, all command names and filenames.
- A fixed space font is used for examples. Where user input needs to be distinguished from program output, **bold** is used for user input.
- Nonprinting characters and keyboard characters are capitalized and appear as follows: <EOF>, <CTRL-G>.
- [] Brackets enclose optional items in format and syntax descriptions.
- | A vertical bar separates items in a list of choices.
- # at the beginning of a line signifies a command line prompt.

Customer Support

If you have any problems with the software or documentation, please contact Naviga Customer Support via telephone or email as described below.

Support Location	Telephone	Email
Roseland, NJ, USA	+1 (973) 422-0800	datasupport@navigaglobal.com

Introduction

The AMPS Diagnostic Utility (windiag) is a diagnostic tool that can be used to monitor, diagnose, and alter the configuration of your connection to Naviga's AMPS server in Newark, NJ. This manual discusses the windiag program, the information it presents and how to use it in troubleshooting your AMPS connection.

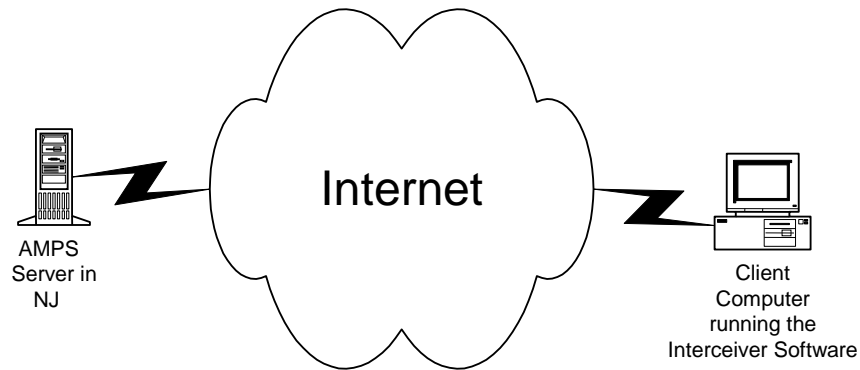
Note 1: Normally, AMPS configuration is done automatically during installation. Therefore, in normal use, you should not need to use windiag to reconfigure AMPS. And a caution is necessary: It is possible to render your AMPS connection unusable if you incorrectly modify parameters.

Note 2: If you report a problem with AMPS to Naviga, you may be asked by customer support personnel to use windiag and report the results.

Some of the information in this manual is meant for personnel who understand Internet protocols and the configuration of connections from your local computer to the Internet. Depending on your level of expertise, you may need assistance from your local network administrator when running windiag.

Overview of AMPS and the Interceiver™

AMPS is comprised of two basic components. First, there is an AMPS server located at Naviga's facilities in Newark, NJ. Second, there is a software "client" component installed on every computer receiving an AMPS feed. This software component is referred to as the AMPS Interceiver™. The Interceiver software works in conjunction with application software running on the client computer.



The AMPS server manages connections from Newark, NJ to all client computers. The AMPS server distributes data to the various client computers based on the subscription agreements in place for each client.

The Interceiver receives a data flow from the AMPS server over the Internet and ensures that all data is received reliably and error-free. If there are temporary problems on the Internet or with any local Internet connection, the Interceiver software will periodically try to re-establish its connection to the AMPS server. Once a connection is made, the Interceiver will communicate to the AMPS server information on data already received. The AMPS server will then recover up to 24 hours (depending on configuration parameters) of data that it was unable to send previously.

In diagnosing problems with your AMPS connection, it is important that you understand that all connections are initiated from your location. Following the initial connection, data flows as a true "push" from the Server. The mechanisms used by the Interceiver (on your computer) to make the connection are like those used by an Internet browser (e.g., Microsoft Internet Explorer or Google Chrome). Therefore, if you are unable to "browse the Internet" from your computer, it is unlikely that you will be able to establish an AMPS connection either.

Running windiag

There are three components to the windiag capabilities. They are:

- View statistics which summarize the performance of a running Interceiver
- View/edit the Interceiver configuration
- Perform a connection test.

Each of these capabilities can be accessed from the UNIX/Linux command line via the windiag program.

windiag Statistics

The windiag statistics screen displays basic information about the state of your AMPS connection. Run windiag to receive statistics which will be updated in real-time every ten seconds. <CTRL-C> terminates the program.

The following is an example of the windiag statistics output screen.

```
Connection:
  State:                                     Online
  Runtime:                                3 days  1h 58m  6s
  * Reconnects Today:                      0
  Reconnects (7 day avg):                  1
  Last Disconnect GMT:                     n/a
  Last Outage Duration:                    0h  0m  1s
  * Total Outage Today:                    0h  0m  0s
  * Average Outage Today:                  n/a
  Last Ping Time GMT:                      28-Apr-00  17:40:35
  Last Ping Delay (ms):                    59
  Avg Ping Delay (ms):                     68
  * Max Ping Delay Today (ms):             304
  Missed Sequences:                       0

Data:
  * Bytes Received Today:                  77218549
  * Bytes Sent Today:                      278831
  * Packets Received Today:                97421
  * Packets Sent Today:                    12889
  Received Bytes per Sec (7 day avg):      1219
  Sent Bytes per Sec (7 day avg):          4
  Last Data Interval:                     0h  0m  1s
  Last Data Received GMT:                  28-Apr-00  17:40:39
  * Max Data Interval Today:               0h  2m 52s
  ReXmits from Server:                     0
  ReXmits to Server:                      0
```

This output contains various data fields that are useful in determining if your AMPS connection and your Interceiver are operating properly. A description of each item follows. This information can be accessed only while the Interceiver is running.

Note that certain fields (marked with a “*”) are reset at midnight GMT (8:00 p.m. EST or 7:00 p.m. EDT). The values in these fields indicate what has occurred since midnight GMT and do not reflect any changes prior to that. Obviously, if the software was started sometime after midnight, the values will reflect only the performance of the software since it was started (or restarted).

Connection Section

State: This field indicates whether the Interceiver is currently connected to the AMPS server or not. There are two possible values. “Online” indicates that the Interceiver is connected to the AMPS server and capable of receiving information. “Pending” indicates

that the software is currently trying to establish a connection with the server. If the Interceiver remains in the Pending state for a bit of time, such as more than 5 minutes, it is likely that there is either a network (e.g., your ISP may be down) or Interceiver configuration problem.

Runtime: This field provides information on how long the Interceiver has been running on your machine. It does not indicate that the Interceiver has been connected to the AMPS server.

*** Reconnects Today:** This field indicates the number of reconnects that have occurred since midnight GMT.

Reconnects (n day avg): This field indicates the average number of times per day that the Interceiver has been disconnected and reconnected to the AMPS server. Because of normal occurrences on the Internet, it is normal to have several reconnects. As the Interceiver collects information, the number of days in the average will increase until it reaches 30. At that point the average will always represent data from the last 30 days.

Last Disconnect GMT: This field indicates the date and time (GMT) that the last disconnect of the Interceiver from the AMPS server occurred.

Last Outage Duration: This field indicates the duration of the last disconnect. Typically, this outage is on the order of a few seconds to a minute.

*** Total Outage Today:** This field indicates the total amount of time the connection has been down since the software made its initial connection or midnight GMT (whichever is later). The value of this field can be evaluated only in respect to the total amount of time the software has been running.

*** Average Outage Today:** This field indicates the average amount of time the connection was down during each outage that has occurred since midnight GMT. Typically, this value will be on the order of a few seconds to a minute. However, if a network outage occurs (e.g., an ISP outage or a problem with your LAN connection), the outage could be considerably longer.

Last Ping Time GMT: This field indicates the date and time (GMT) of the last AMPS ping that was sent by the Interceiver software. Note that an AMPS ping is not a true Internet ping. However, it serves the same purpose (See Ping description in the next field).

Last Ping Delay (ms): This field indicates the length of time of the last AMPS ping sent. Essentially, the ping time is a measure of how long it takes data sent from the AMPS server to arrive at your computer. Typical values are 100 to 1000 milliseconds (1000 milliseconds equal 1 second). However, during normal AMPS operation, there may be times as high as 30,000 milliseconds (30 seconds).

Avg Ping Delay (ms): This field indicates the average ping delay seen by the Interceiver. This value should typically be between 100 to 1000 milliseconds.

*** Max Ping Delay Today (ms):** This field indicates the largest ping delay that has occurred since midnight GMT. It is not unusual for this value to be as high as 30,000 milliseconds.

Missed Sequences: This is an internal AMPS count. You may be asked to provide this number to customer support. Normally, it should have a value of zero.

Data Section

*** Bytes Received Today:** This value indicates the number of bytes (characters) of information received from the AMPS server by the Interceiver since the Interceiver was started or midnight GMT (whichever is later). This value includes the overhead of the AMPS control information.

*** Bytes Sent Today:** This value indicates the number of bytes of information sent by the Interceiver to the AMPS server. This field consists mainly of control information being sent to the AMPS server. Typically, this value will be significantly smaller than “Bytes Received Today”.

*** Packets Received Today:** This value indicates the number of AMPS data packets received from the AMPS server.

*** Packets Sent Today:** This value indicates the number of AMPS data packets sent by the Interceiver to the AMPS server. Typically, this number will be significantly less than the “Packets Received Today”.

Received Bytes per Sec (n day avg): This field represents the average of the received data rate of the Interceiver. As the Interceiver collects information, the number of days in the average will increase until it reaches 90. At that point the average will always represent data from the last 90 days.

Sent Bytes per Sec (n day avg): This field represents the average of the transmitted data rate of the Interceiver. As the Interceiver collects information, the number of days in the average will increase until it reaches 90. At that point the average will always represent data from the last 90 days.

Last Data Interval: This field indicates the amount of time between the last two data receptions from the AMPS server.

Last Data Received GMT: This field indicates the date and time (GMT) when the last data was received from the AMPS server.

* **Max Data Interval Today:** This field indicates the maximum time between receipt of data.

ReXmits from Server: This field indicates how many retransmissions were done to ensure that data was received properly by the Interceiver.

ReXmits to Server: This field indicates how many retransmissions were done to ensure that data was received properly by the AMPS server.

Note: All n-day averages (7 in the above example) shown above are in fact statistically estimated “trailing averages”.

windiag Configuration

The windiag configuration screen is used to view parameters concerned with establishing the connection to the AMPS server.

Run **windiag -cfg** to display the configuration information. The output will display the values of the parameters currently in use if the Interceiver is running. If the Interceiver is not running, the output will display the values specified in the AMPS configuration files.

The following is an example of the windiag configuration data.

```
Configuration (from running Interceiver):
  Login:                               ecAMXUSER
  Serial Number:                       123456
  Server Name:                         head1.acquiremedia.com
  Ping Interval:                       300
  Ping Delay:                          30
  Ping Timeout:                        60
  AMPS Key 1:                          512
  AMPS Key 2:                          95

Proxy Information:
  Name:                                myproxy
  Port:                                8080
```

This output contains information entered during the Interceiver installation.

- The Login name and the serial number were given to you by customer support or via email from the Naviga website. (Note: Login names are case-sensitive, but by convention, Naviga always transforms all user-entered Login names to uppercase).
- The proxy information was supplied by you during the install. (If you are not using a proxy to connect to the Internet, the Proxy Information section will not be displayed.)
- The reset of the information is generated automatically, and you may be asked to supply it to Naviga customer support in the event the Interceiver cannot connect to the AMPS server.

Updating Configuration Parameters

windiag can be used to modify some of the configuration parameters shown in the configuration output. In particular, the Login, Serial Number, Server Name and Proxy Information can be modified using **windiag -u** from the command line. The format of the command is:

```
windiag -u ["username;serial_number;AMPS_server;proxy_server;proxy_port"]
```

If you choose to enter the parameters on the command line, any parameter whose value you wish to leave unchanged should be specified as a space. The following are example valid command lines.

```
windiag -u "ecMYNAME; ; ;myproxy;8080"
windiag -u "ecMYNAME; ; ; ;"
windiag -u "ecMYNAME;987654; ;myproxy;8080"
windiag -u " ; ; ;REMOVE; " (This removes existing proxy configuration)
```

Alternatively, as the following example illustrates, **windiag -u** will prompt for the new parameter values.

```
# windiag -u

Please update each parameter when prompted. Use <Enter> to
leave each value unchanged.

Username:      ecAMXUSER           New value: ecNEWUSER

Serial Number: 123456             New value: <Enter>

AMPS Server:   head1.acquiremedia.com New value: <Enter>

Currently there is no proxy server configured.
Do you want to add one? [y|n] n

Successfully update Username (ecNEWUSER).

Updates will not take effect until next restart of Interceiver.
```

Note that in general, the AMPS Server name is generated automatically, and you should not change this information unless requested to do so by Naviga customer support.

Moving/Re-installing the Interceiver and Repairing the Connection ID

Note: You should not normally use the procedures in this section unless directed to do so by Naviga customer support.

You may need to repair the connection ID in two of circumstances.

- 1) You decide to uninstall the Interceiver software and reinstall it.
- 2) You move the Interceiver installation to a different machine.

If you need to do this, please follow the procedure outline here.

Before you uninstall (or move machines), run **windiag -cfg** and save the value of the item referred to as AMPS Key 2.

After you have installed (reinstalled) the software, run **windiag -key <value>** where <value> is the number you saved in the previous step. Then, restart the Interceiver.

windiag Connection Test

The connection test is used to investigate the Interceiver's ability to connect to the AMPS server.

Important: Before initiating a test of the AMPS connection be sure that the Interceiver is not running.

Run a connection test by using the command line:

```
/nwsys/release/etc/intcvr -t -d
```

The software will test the five steps involved in establishing a connection to the AMPS server. (Note: Once a test fails, no further tests are done.)

Each component of the connection test verifies that a portion of your system required by the AMPS software is operating correctly. The tests are:

Checking TCP/IP Stack: This test verifies that the Interceiver can create a TCP socket and that Domain Name Server (DNS) lookup is available (if AMPS server was specified via a name rather than an IP address). A failure of this test may indicate that DNS is not available. Please contact your network administrator.

Checking Proxy Name Resolution: This test verifies that the Interceiver software can read and resolve the IP address of your proxy server (assuming you are using a proxy server to connect to the AMPS server). A failure of this test typically indicates that either the proxy server name specified in your system is incorrect or that a Domain Name Server (DNS) is not configured for your system. Please contact your network administrator.

Checking TCP/IP Connection to AMPS Server: This test verifies that the Interceiver can talk to your local proxy server (if a proxy server exists) and that the Interceiver can talk to the AMPS server using the Secure Socket Layer port (port 443). A failure of this test normally indicates that there is a configuration problem in how your computer connects to the Internet. For example, your firewall or proxy server may be setup to prohibit communications on port 443. This port must be available for AMPS to operate. Please contact your network administrator.

Checking HTTP Connection: This test verifies that the various configuration parameters you entered as part of installing the Interceiver are correct. A failure of this test typically indicates that either the login name has been typed in incorrectly (login names are case sensitive meaning that capital letters must be entered as capital letters and lower-case letters must be entered as lower case) or the serial number has been entered incorrectly. You can use the configuration display and update capabilities of windiag to

verify and modify (if necessary) this information. If this does not solve the problem, you should contact Naviga customer support and verify your login ID and serial number.

Checking Data Reception: This test verifies that the Interceiver is receiving information from the AMPS server. A failure of this test is rare. Please contact Naviga customer support. (Note: You may use the amxviewer utility, described in the AMPS Solutions Guide, to view data as it is received from the Interceiver.)

The following is an example of the output received from running a successful connection test. It is intended to be informative only to someone familiar with the inner-workings of the Interceiver. Note that the beginning and end of each test section is marked by lines whose messages begin with “-----”.

```
16:24:00 DEBUG      : ----- Begin Stack Verification
16:24:00 DEBUG      : Successful name resolution of headl.acquiremedia.com to
209.63.3.32
16:24:00 DEBUG      : Socket created - fd = 5.
16:24:00 DEBUG      : ----- End Stack Verification
16:24:00 DEBUG      : ----- Begin Proxy Name Resolution
16:24:00 DEBUG      : Successful proxy name resolution of topaz to 10.1.40.204
16:24:00 DEBUG      : ----- End Proxy Name Resolution
16:24:00 DEBUG      : ----- Begin TCP/IP Connection to Server
16:24:00 DEBUG      : Attempting to connect to proxy topaz:8080
16:24:00 DEBUG      : Successfully connected to proxy.
16:24:00 DEBUG      : Attempting to connect to 209.63.3.32:443 via proxy
topaz:8080
16:24:00 DEBUG      : Send tunnel request CONNECT 209.63.3.32:443 HTTP/1.0
Accept: */*
Pragma: No-Cache
Connection: keep-alive
Host: 209.63.3.32
User-Agent: Interceiver/1.0 (Solaris)

16:24:00 DEBUG      : Answer = HTTP/1.0 200 Connection established
Proxy-agent: Netscape-Proxy/3.52

16:24:00 DEBUG      : Successfully connected to server via proxy.
16:24:00 DEBUG      : ----- End TCP/IP Connection to Server
16:24:00 STATUS     : Shared memory size = 1412
16:24:00 STATUS     : Pointer to shared memory = ef660000
16:24:00 STATUS     : Using ID of 95 from cfg file
16:24:00 DEBUG      : ----- Begin HTTP Connection Test
16:24:00 STATUS     : Stage 1 - Submit authorization request
16:24:00 STATUS     : Stage 2 - Received magic number
16:24:00 STATUS     : Stage 3 - authorization initiated
16:24:00 STATUS     : Login information sent to AMPS server
16:24:01 STATUS     : Interceiver has been authorized (ID: 95)
16:24:01 STATUS     : cvidrSocket::Run - connected to AMPS (AMPS_MSG)
16:24:01 DEBUG      : ----- End HTTP Connection Test
16:24:01 DEBUG      : ----- Begin Data Check Test
16:24:01 DEBUG      : Please ACK VC 1 seqnum 0 (0)
16:24:01 STATUS     : Expecting data from seqnum 48235 on VC 1
16:24:01 DEBUG      : Sending ACK 0 (0)
16:24:01 INFO       : Requesting data reception w/ packet 48235 (0xbc6b) on VC 1
16:24:01 DEBUG      : ----- End Data Check Test
16:24:01 STATUS     : cvidr::~cvidr - cleaning up cvidr (AMPS_MSG)
16:24:01 STATUS     : Process exiting with status 0.
```

Appendix A–Problem Diagnosis

This section discusses a procedure for diagnosing problems that occur either immediately after installing the AMPS software or after the system has been running for some time. It also discusses why the Interceiver may be unable to connect to the AMPS server and provides a step-by-step procedure for troubleshooting. This appendix is to be used whenever you believe the Interceiver is not receiving data feeds from the AMPS server.

1. **Verify that you can use your Internet browser to browse the Internet.** For example, be sure you can reach the site www.google.com. If you are unable to browse the Internet, then it is unlikely that you will be able to make a connection between your computer and the AMPS server. If you are unable to browse the Internet, then you should contact your network administrator and have them configure your computer appropriately.
2. **Use windiag to determine if you are making a connection to the AMPS server.** While the Interceiver software is running, start up the AMPS Diagnostic program (windiag; see the description of how to do this earlier in this manual). When the statistics appear, verify that the Connection “State” is shown as “Online”. If “State” is “Online”, then skip to item 4.
3. **If the connection “State” is “Pending”, you need to determine why the connection can not be made.** To do this, you should first shut down the Interceiver software. Then run the connection test as described in an earlier section of this document. Determine which of the various tests fails and use the description of the likely problem to determine the likely resolution.
4. **Verify that the Interceiver is receiving data.** Start the windiag software and look at the item labeled “Bytes Received Today”. This number should be non-zero, and its value should increment over time. If it is zero, there are two possibilities: (1) If this is the first time the software has been run, it may be that there is no data currently being sent by the information providers you are enabled for. (2) It may also be that the AMPS server does not have the proper list of news feeds configured. Please contact Naviga Customer Support.
5. **If the “Bytes Received Today” field shows that data is being received and you are not seeing data**, then it is likely that the problem is somewhere in the configuration of your application software. You should consult the user manual for that software.