

# Everyplace Active Session Table

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This section contains an overview of the Active Session Table and its functional relationships. Tasks required for planning, migrating, configuring, and operating the Active Session Table from the remote operator interface are also covered.

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## [Overview](#)

Everyplace Active Session Table (AST) replaces the function formerly provided by a component of Tivoli Internet Services Manager (TISM), which is part of Tivoli Personalized Services Manager. Everyplace Active Session Table provides a high speed specialized cache for information about users that are currently connected to the WebSphere Everyplace Server domain.

Everyplace Wireless Gateway and WebSEAL-Lite use this cache and must be able to communicate with the AST.

- The IP address of each client that attempts to connect to the AST server must appear in the accept list of the AST server. The accept list is one of the AST server's configuration parameters. The AST server will refuse connections from clients who are not in the accept list.
- The client can send one or more requests on a single connection and the AST server responds to each request in the order in which they are received.
- The AST server performs field validation on each request and, if an error is detected, returns an AST message describing the first error detected.

## [Planning Information](#)

Before installing and configuring AST v2.1, you will need to estimate disk storage for the code, the cache data, and the log data. Minimum recommended values are:

Description	Size
Program files	0.5 MB
Cache data	400 bytes per active user
Log data	10 MB

**Note:** The maximum number of active users is defined in the **AST.properties** file.

## Installation

Installation of Everyplace Active Session Table is handled through WebSphere Everyplace Setup Manager.

Two AST servers should be installed on two different machines in the WebSphere Everyplace Server domain. The first AST server is the primary and the second is the backup.

## Configuration

A sample AST properties file, **AST.properties**, is provided with the Everyplace Setup Manager. Under normal circumstances, the Active Session Table server configuration is performed by the Everyplace Setup Manager at installation time using default values. Subsequent updates can then be made to the configuration values from the Everyplace Suite Manager. If, for some reason LDAP is not running, it is possible to configure and edit the Active Session Table server outside of the Everyplace Suite Manager environment.

You can configure the AST Table server outside of the Everyplace Suite Manager by performing the following:

On AIX

- Copy the sample properties file **/usr/IBMEPS/AST/Sample.AST.properties** to **/usr/IBMEPS/AST/AST.properties**
- Edit the new file and define or change values, as appropriate.

On Sun Solaris

- Copy the sample properties file **/opt/IBMEPS/AST/Sample.AST.properties** to **/opt/IBMEPS/AST/AST.properties**
- Edit the new file and define or change values, as appropriate.

Go to [Everyplace Active Session Table properties](#) to view descriptions and possible values for the AST properties.

## Start and stop the AST server

The Active Session Table (AST) can be started using a command line interface. You do not need to specify the configuration path and name if the **AST.properties** file is placed in the default directories.

The default directories are:

- **/usr/IBMEPS/AST/** (for AIX)
- **/opt/IBMEPS/AST** (for Sun Solaris)

To start the AST server:

1. Telnet to the system where AST is running.
2. Enter `nohup ASTServer&`.

Using the no hangup command (`nohup`) when starting the server allows the server to continue running after you have logged off. Then you can log back on to the host and use the Remote

Operator Interface to control the AST server.

To stop the AST server, use the Remote Operator Interface.

## Remote Operator Interface

The AST server can be operated from two different user interfaces:

- Command line interface
- Everyplace Suite Manager

Both interfaces allow the operator to perform the following functions:

- Display cache statistics, for example the number of entries and the number of requests processed
- Stop the AST server
- Dynamically change the severity levels to be displayed in the AST logs
- Display current status, usage statistics and configuration parameters
- Query the contents of the cache by searching for entries that match a user-specified UserName@realm

To start the AST remote operator interface:

- Telnet to the machine were AST is running.
- Enter ASTConsole.

The main menu of the command line interface is displayed. At the top section of the main menu, the following fields are displayed:

Field	Description
Time	The time that the display was last refreshed
Ports	The ports that are in use by the AST
State	Either Running or Stopped
Log, Level, File	The current severity threshold for messages logged
Log Level, stderr	The current severity threshold for messages logged to the stderr
Connections	The current number of connections between the AST and its clients
WSL Entries	The number of cache entries created by WebSEAL-Lite servers
EWG Entries	The number of cache entries created by Everyplace Wireless Gateways
Requests	The number of requests processed since the AST was started
Errors	The number of requests containing errors
WSL Inserts	The number of WebSEAL-Lite server inserts processed
EWG Inserts	The number of Everyplace Wireless Gateway inserts processed
Deletes	The number of deletions processed by the AST server
Queries (ID)	The number of ID Queries processed by the AST server
Queries (IP)	The number of IP Queries processed by the AST server
Cleanups	The number of cleanups processed by the AST server

From the main menu, you can choose from a set of options by typing a number and pressing Enter. The following options are available:

- |               |   |
|---------------|---|
| 0. Exit       | - Exit the AST Operator's Console.                    |
| 1. Stop       | - Stop the AST Server.                                |
| 2. Log File   | - Select the type of messages logged to the log file. |
| 3. Log Cons   | - Select the type of messages logged to stderr.       |
| 4. Properties | - Display current properties.                         |
| 5. Query      | - Query the cache by UserName.                        |

If option **1** is selected from the main menu, a confirmation panel is displayed asking for confirmation of the request to stop the AST server. Select **1** to stop the server or **0** to cancel the request.

If options **2** or **3** are selected from the main menu, the Set Log Level panel is displayed. The current log level is displayed along with a menu of message logging levels. Choose the level of messages to be logged to the log file by entering one of the following numbers:

0. Do not change the log level.
1. Log Terminal Errors.
2. Log Procedural Errors.
3. Log Warnings.
4. Log contents of Requests and Responses.
5. Log Trace messages.
6. Log Detailed Trace messages.

If option **4** is selected from the main menu, the Properties panel is displayed. The current settings from the AST configuration file (**AST.properties**) are displayed at the top of the page. In addition the following options are available:

0. Return to the main menu.
1. Show the full profile name.
2. Show the full cache directory name.
3. Show the full list of acceptable hosts.

- If the value of the *properties file name* or the *cache\_dir* entries is too long to be displayed in the space available, it is displayed with an ellipses in the middle. You can see the entire path name by choosing options **1** or **2** from the Properties panel, as appropriate.
- If the list of many acceptable hosts is too long to be displayed in the space available, choose option **3** from the Properties panel to display the entire list.

If option **5** is selected from the main menu, the Query UserName panel is displayed. This panel allows you to enter a search string pattern to select cache entries containing a *UserName@Realm* pattern. You can enter a simple string or a modified regular expression. The pattern you enter can contain '\*' and '?' characters.

- The '\*' pattern character matches zero or more of any character. For example, \*@myco.com will search for all UserNames from the myco.com realm.
- The '?' pattern character matches any single character. For example, ?Smith@myco.com will search for all users in the myco.com realm with a last name of Smith and any first initial.

All cache entries matching the search criteria are displayed in the Query Results panel.

The entries are displayed two at a time starting with the oldest for a maximum of 500 entries.

- Press **Enter** to display the next two entries.
- Repeat the process until all the entries have been displayed.

## Service

In support of problem determination, the AST server logs messages to two destinations:

1. **stderr**: Logging to stderr is useful only when installing and configuring the AST and its associated clients. This allows the installer to observe the activity that is occurring in real time. Once all the WebSphere Everyplace Server components are installed and configured properly, the AST server will usually be run in the background and the log written to stderr is no longer of value.
2. **xxxxxxxx.log**: This file will be placed in the same directory as the cache data files. The default is **/var/IBMEPS/AST**. The log directory and the maximum log size are defined by configuration parameters in the **AST.properties** file. For more information on these configuration parameters, see [Everyplace Active Session Table properties](#). Once the log file reaches its maximum log size (as defined in the **max\_log\_file\_size** parameter), the AST server will start writing at the beginning of the log file and will overwrite the oldest message in the file.

Each time the AST server starts, it opens a new log file; therefore, you can have more than one log file in the directory. The name of the log file is the hexadecimal representation of the Universal Coordinate Time at which the log file was created. Use the GMT time and date to find the earliest and latest entries in the log. The AST server will automatically erase all but the five most recent log files from the directory.

## Active Session Table log message severities

The Active Session Table classifies log messages into seven severity categories, from most severe (1) to least severe (7). Each of the log levels has a separate and independent severity threshold. These thresholds are used to determine which messages will be logged. For example, setting the log threshold to 4 will log all messages in categories 1 through 4. In normal operation, the thresholds should not be set higher than the default of 2. Higher threshold levels are typically used when more information is needed to troubleshoot a problem.

The following table illustrates the AST message severities and their descriptions:

1 -	Terminal Errors	Show errors that cause the AST server to end (ABEND).
2 -	Procedural Errors	Show errors that prevent the AST server from completing a request.
3 -	Progress Messages	Record each request processed.
4 -	Warnings	Record events which may not be errors but could be the subsequent cause of an error.
5 -	Requests/Responses	Show the raw data of each request received and each response sent.
6 -	Trace Messages	Show the major events in the processing of each request.
7 -	Internal Program Flow	Shows the internal program flow details.

## Active Session Table message categories

Everyplace Active Session Table messages are grouped into categories according to the type of problem or the type of the response to be taken by the customer.

The following message categories are defined for the Active session Table messages:

Category	Description
Configuration error	Indicates an error in the AST.properties file or the LDAP directory. The administrator should correct the statement or entry in error.
User error	Indicates that the operator entered an invalid search pattern at the operator's console. The operator should correct the error.
File error	Indicates that either the disk is full or the AST server does not have the necessary authority to perform the operation. The administrator should verify that there is sufficient disk space and that the AST server has the necessary authority for the operation that failed.
Security error	Indicates that an unauthorized host tried to connect to the AST server. All hosts, including hosts used to access operator functions, must be defined in an accept statement either the AST.properties files or the LDAP directory.
System error	Indicates that system resources are running low. When this occurs, it is usually necessary to restart the AST server and, possibly, reboot the host system. It may be necessary to provide additional memory, increase the page file size, or limit the load on the Active Session Table.
Socket error	Indicates a problem in the network or the host system. If the message is "Could not bind a socket", then the administrator should verify the host and port keywords in the AST.properties file or the LDAP directory. If the value assigned to the host keyword is not 0.0.0.0, verify that it is a valid IP address for the host on which the AST server is running. Verify that the port number assigned is not being used by another application.
Message error	Indicates a problem with an AST client, such as WebSEAL-Lite or the Everyplace Wireless Gateway. Report this problem to the appropriate IBM service representative.
HTTP error	May indicate that someone is trying to access the AST server without using the AST provided Web pages. If this problem persists, temporarily increase the logging level to level 3 (Progress messages) to determine who is attempting to access the AST server.
Program error	Indicates an error in the AST server code. Report this problem to the appropriate IBM service representative.

## Active Session Table log message format

The Everyplace Active Session Table log contains the following information read from left to right:

Field description	Comments
GMT date, time and sequence number	The AST logs wrap; use the GMT date and time fields to find the earliest and latest entries.
Thread number	
Function issuing the message	For IBM developer use only.

Severity	See <i>Active Session Table log message severities</i> for more information.
Category	See <i>Active Session Table message categories</i> for more information.
Message text and parameters	

#### Related information

- [Everyplace Active Session Table properties](#)
- [Everyplace Suite Manager](#)

# Everyplace Active Session Table properties

The *AST.properties* file contains configuration parameters for the Active Session Table server. The following conventions are used in the *AST.properties* file:

- A keyword = value format is followed.
- An "\*" in column one indicates the line is treated as a comment.
- Keywords are not case sensitive.
- No data is permitted after the value.
- The maximum allowable line length is 255 characters.

Following is the list of acceptable configuration keywords for the *AST.properties* file:

Keyword	Description	
<b>accept</b>	<p>The list of other servers which may connect to the AST server. Each entry is separated from the next by a comma. If there is more than one <i>accept</i> statement, the entries from subsequent <i>accept</i> statements are appended to the list of the first <i>accept</i> statement. If the list is blank or if the keyword is missing, the AST server will not accept requests from any servers. If there are no entries, or if any of the host names cannot be resolved to a host address, the AST server will not start.</p> <p>The <i>accept = &lt;host&gt;</i> entry must have one of the following formats:</p> <ol style="list-style-type: none"><li>1. The TCP/IP host address of a server.<p>Format = ddd.ddd.ddd.ddd Example = 123.234.210.6 The AST will accept connection requests from this server.</p></li><li>2. A TCP/IP host address and a subnet mask.<p>Format = (ddd.ddd.ddd.ddd : ddd.ddd.ddd.ddd) Example = (123.234.210.224 : 255.255.255.224) The AST server will accept connection requests from any server which has a host address in the range of 123.234.210.224 to 123.234.210.255.</p></li><li>3. The DNS host name of the server.<p>Format = name.name.name.... Example = MyServer1.MyCo.com The AST server will accept connection requests from this server.</p></li></ol>	
Range	Example	Default

	n/a	accept = 5.22.356.12, ( 5.22.356.128 : 255.255.255.128 )  accept = as1.myco.com, as2.myco.com, as3.myco.com	none
<b>Keyword</b>	<b>Description</b>		
<b>cache_dir</b>	<p>The directory where the AST server stores its logs and cache files. It is recommended that you reserve at least 1000 KB for each 1000 cache entries. The AST server will not start if one of these conditions is present:</p> <ul style="list-style-type: none"> <li>● The <i>cache_dir</i> keyword is missing.</li> <li>● The directory does not exist.</li> <li>● The AST server is not able to create files in the directory.</li> </ul>		
	<b>Range</b>	<b>Example</b>	<b>Default</b>
	n/a	cache_dir =/var/IBM_ASTServer_Cache	none
<b>Keyword</b>	<b>Description</b>		
<b>port</b>	<p>The TCP/IP port number on which the AST server listens for connection requests from other servers requesting to use the AST server's cache.</p> <p><b>Note:</b> In addition to this port number, The AST server will also use the next two sequentially higher port numbers. Therefore you need to ensure that there is no port number conflict with any other TCP/IP applications in your network.</p>		
	<b>Range</b>	<b>Example</b>	<b>Default</b>
	1 - 65535	port = 1234	8017
<b>Keyword</b>	<b>Description</b>		
<b>host</b>	<p>The TCP/IP host address on which the AST server listens for connection requests from other servers. The default value, 0.0.0.0, indicates that the AST server will accept connections from all attached subnets. However, if the AST server is running on a server that has multiple connections to the Internet, for security enhancements, you can restrict the AST server to accept connections from only one of the attached subnets.</p>		
	<b>Range</b>	<b>Example</b>	<b>Default</b>
	n/a	host = 12.245.222.31	0.0.0.0
<b>Keyword</b>	<b>Description</b>		
<b>max_cache_age</b>	<p>The amount of time, in minutes, that the AST server will hold entries in its cache. When the cache is full, the AST server automatically deletes any entries that are older than this value. It is recommended that you choose a value that is twice as long as the average length of time that a user is logged onto the Everyplace Server network.</p>		
	<b>Range</b>	<b>Example</b>	<b>Default</b>
	5-120	max_cache_age = 20	10
<b>Keyword</b>	<b>Description</b>		

<b>max_cache_size</b>	<p>The maximum number of entries the AST server will hold in its cache. When the cache is full, the AST server automatically deletes the oldest entry in the cache to make room for the new entry.</p> <p><b>Note:</b> This value should be chosen very carefully. The AST requires approximately 130 KB of real memory for each 1000 entries.</p> <table border="1" data-bbox="453 333 1530 460"> <thead> <tr> <th data-bbox="453 333 616 382">Range</th><th data-bbox="616 333 1318 382">Example</th><th data-bbox="1318 333 1530 382">Default</th></tr> </thead> <tbody> <tr> <td data-bbox="453 382 616 460">10000 - 2000000</td><td data-bbox="616 382 1318 460">max_cache-size = 500000</td><td data-bbox="1318 382 1530 460">500000</td></tr> </tbody> </table>	Range	Example	Default	10000 - 2000000	max_cache-size = 500000	500000
Range	Example	Default					
10000 - 2000000	max_cache-size = 500000	500000					
<b>Keyword</b>	<b>Description</b>						
<b>max_log_file_size</b>	<p>The maximum size, in megabytes, for the log file. If this maximum size is reached while logging, the log file wraps and new log records are written starting at the beginning of the log file, overlaying the older records.</p> <p>Each time the AST server is started, a new log file is opened and the AST server automatically erases all but the five most current log files in the directory.</p>						
	<table border="1" data-bbox="453 756 1530 868"> <thead> <tr> <th data-bbox="453 756 616 804">Range</th><th data-bbox="616 756 1318 804">Example</th><th data-bbox="1318 756 1530 804">Default</th></tr> </thead> <tbody> <tr> <td data-bbox="453 804 616 868">1 - 10</td><td data-bbox="616 804 1318 868">max_log_file_size = 5</td><td data-bbox="1318 804 1530 868">2</td></tr> </tbody> </table>	Range	Example	Default	1 - 10	max_log_file_size = 5	2
Range	Example	Default					
1 - 10	max_log_file_size = 5	2					
<b>Keyword</b>	<b>Description</b>						
<b>log_level_file</b>	<p>The <i>log_level_file</i> keyword sets the initial level of messages that will be logged to the log file. The logging levels can be changed while the AST server is running by using the AST console.</p>						
<b>log_level_stderr</b>	<p>Log files are created in the same directory in which cache files are placed and should be planned for in your disk space allocations. A new log file is created each time the AST server is started. Only the five most current log files are kept. Older log files are deleted each time a new log file is created.</p>						
	<p>The <i>log_level_stderr</i> keyword sets the initial level of messages written to the stderr. By default, messages sent to stderr are displayed on the console. This feature is only useful when running AST in the foreground as messages sent to stderr will not appear when the AST server is started in the background. This feature is generally used for testing and problem resolution and not for normal operation.</p> <p>The allowed values for these keyword are:</p>						
	<p>1 = Start/Stop messages and terminal errors (program or system errors)</p>						
	<p>2 = Errors that prevent a request from being completed</p>						
	<p>3 = Progress messages logging each connection and each request</p>						
	<p>4 = Warnings about network exceptions</p>						
	<p>5 = Contents of all requests, replies and commands</p>						
	<p>6 = Trace creation and destruction of internal program objects</p>						
	<p>7 = Trace internal program flow</p>						

	<b>Range</b>	<b>Example</b>	<b>Default</b>
	1 - 7	log_level_file = 5 log_level_stderr = 1	2
<b>Keyword</b>	<b>Description</b>		
<b>LDAP_server</b>	The LDAP server from which the AST server gets configuration property values. The value can be specified as either an IP address or a DNS name.		
	<b>Range</b>	<b>Example</b>	<b>Default</b>
	n/a	LDAP_server = 6.7.8.102 LDAP_server = redrobin.com	none
<b>Keyword</b>	<b>Description</b>		
<b>LDAP_port</b>	The port number that is used when contacting the LDAP server.		
	<b>Range</b>	<b>Example</b>	<b>Default</b>
	n/a	LDAP_port = 2525	none
<b>Keyword</b>	<b>Description</b>		
<b>LDAP_root_suffix</b>	The suffix that is used when searching the LDAP directory.		
	<b>Range</b>	<b>Example</b>	<b>Default</b>
	n/a	LDAP_root_suffix = ???	none
<b>Keyword</b>	<b>Description</b>		
<b>LDAP_userid</b>	The user ID that is used when contacting the LDAP server.		
	<b>Range</b>	<b>Example</b>	<b>Default</b>
	n/a	LDAP_userid = joeuser@redrobin	none
<b>Keyword</b>	<b>Description</b>		
<b>LDAP_password</b>	The password that is used when contacting the LDAP server. The password string represents the encrypted form of the password.		
	<b>Range</b>	<b>Example</b>	<b>Default</b>
	n/a	LDAP_password = my_passwd	none

The AST server checks the AST.properties file every five minutes to determine if the AST.properties file or the parameters in the LDAP directory have changed. Changes to the following properties take effect immediately. The server does not need to be stopped and started for the changes to take effect.

- accept
- max\_cache\_age
- max\_cache\_size

Changes to all other properties do not take effect until the AST server is stopped and restarted.

#### [Related information](#)

- [Everyplace Active Session Table](#)