

External User Records Management in SA



What is a user record?

User Records is the name given to internal data structures created and maintained by the SA platform. These records contain end user related information and these are created when an end user logs into the SA for the first time.

What persistent session information does the user record contain?

User records can contain any of the following information as persistent data for end users:

- a) End user created bookmarks (Web, File, SAM, Win terminal, Telnet/ SSH).
- b) Persistent Cookies, Cached Passwords or any SSO related information.
- c) If users use 'Email Client option.
- d) Any secure meetings that are scheduled.

What features, when enabled will cause a user record to be stored permanently on the SA platform?

If any of the below mentioned options are enabled then the record will be permanently stored on the SA platform:

- 1) If user is a local auth server user.
- 2) If user settings contain web rewriting bookmarks, file rewriting bookmarks, terminal services session bookmarks.
- 3) If user record contains information about NFS, Windows Shares or other client/server application data.
- 4) If user record contains persistent cookies from websites browsed.
- 5) If user record has NC Preferred IP Address and it is not older than 7 days. This will ensure that user logging into the system frequently is assigned the same IP address.
- 6) If SSO (single sign on) settings are enabled in order to pass user credentials automatically to SA protected web resources.
- 7) If the user account is quarantined. This will help SA to make sure it continues to quarantine the user, hence not giving full access the next time user logs in.
- 8) If the user was added as local admin. "Local Admins" are user-account administrators to other Local Auth Servers. They have special privileges to add/delete local user records.
- 9) If user has mail. This is only possible if email-client settings are configured.
- 10) If there is a Secure Meeting scheduled for the user.

Best Practice Recommendations

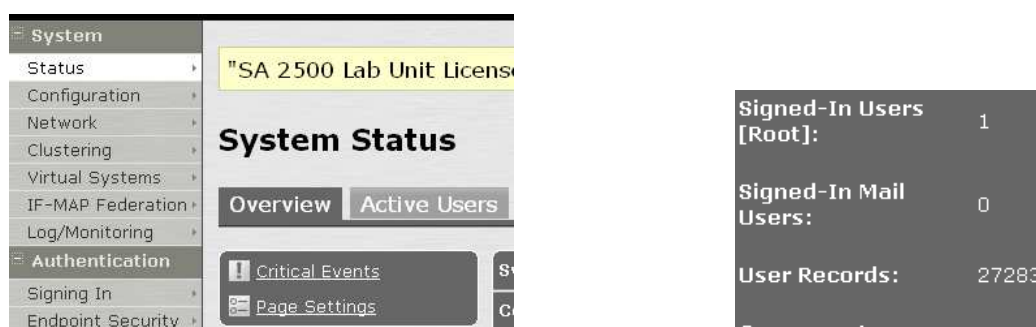
How many user records can SA store in its database?

There is no hard limit on how many records SA can store, however overall system performance could be impacted as number of user records become significantly high.

[Note: In our internal testing we have noticed that once the SA's user.cfg file grows beyond 128 MB it can start to deteriorate system performance and in multi node clusters it may also affect system stability. So once your user.cfg grows to 64 MB we recommend that you start planning to introduce some of the below best practice recommendations.]

Where can we check how many record does the SA currently store?

a) User records count can be seen on admin overview page. (Enable "**State storage**" option under **Status -> overview -> page settings**).



In the above screenshot you can see this SA has around 27283 user records.

b) You can also see them under **System->options** page.

What can SA admin do to control the number of user records on SA?

SA admins are provided a feature which can be used to set number of user record limits and manage user records.

Under **System->options->External User records Management**, admins can set a maximum user record limit and also set how many records to delete in batches whenever the limit is exceeded.

This way SA will automatically perform the user record deletion activity whenever the box reaches the maximum limit.

External User Records Management
 Currently, there are 50827 persistent user records in the system.
 Persistent user records limit:
 Number of user records to delete when the limit is exceeded: Delete Records Now...
 Enable automatic deletion of user records during new user logins

In the above screenshot you can see the device currently has about 50827 records in its database.

“Persistent user records limit.”- This option is used to set maximum user record limit.

“Number of user records to delete when the limit is exceeded.” – This option is used to set the number of records to delete when the above set maximum limit is reached.

External User Records Management
 Currently, there are 50827 persistent user records in the system.
 Persistent user records limit:
 Number of user records to delete when the limit is exceeded: Delete Records Now...
 Enable automatic deletion of user records during new user logins

In the above example we have set a max limit of 5000 records and number of records to delete as 500.

Ensure to turn **ON** **“Enable automatic deletion of user records”**, this will ensure that SA will delete user records based on the above set values without admin intervention.

Which user records does the SA delete?

SA starts deleting records based on the creation date. Records which are oldest in the database will be deleted.

Can SA admin delete user records on a per instance basis and not perform this automatically?

Yes, on the above screenshot the total records in this device is 50827, max limit is set as 5000 records and number of records to delete as 500, when you click on the **‘delete records now’** option it will delete 500 records starting from the oldest.

Though the max limit is set as 5000, the total records on the device will now be 50327.

Ensure that you **DONT** select the option **“Enable automatic deletion”**.

Another approach of deleting individual user records is by going into respective auth server of each realm and under the users tab, user can be deleted.

This will then delete the corresponding user record associated with this user. Sample screenshot as follows:

The screenshot shows the 'Employees Access' page with the following data:

	Username ^	Last Sign-in Statistic		
		Date&Time	IPAddress	Agent
<input type="checkbox"/>	mydomain\user1	2010/05/10 21:40:00	10.10.10.10	Mozilla/4.0 (compatible; MSIE 6.0; Windows NT 5.1; SV1; .NET CLR CLR 2.0.50727)
<input type="checkbox"/>	mydomain\testuser	2010/05/08 10:55:36	10.10.10.2	Mozilla/4.0 (compatible; MSIE 6.0; Windows NT 5.1; SV1; .NET CLR CLR 2.0.50727)

How many user records can we delete at one instance?

There is no pre-defined number on how many records you can delete, but there is a calculation on how many records that system will allow you to delete at one instance.

The calculation is as follows:

Maximum user record upper limit / 5 = number of records you can delete at once.

The value that you get here is the value that you can configure in "Number of user records to delete".

Eg.,

Upper limit = 25,000 and records to delete = 5000

Upper limit = 20,000 and records to delete = 4000

Upper limit = 15,000 and records to delete = 3000

Upper limit = 10,000 and records to delete = 2000

Upper limit = 5,000 and records to delete = 1000

In the above sample you would have deleted nearly 15,000 records in 5 iterations of "**delete records now**" operation.

[Note: If you already have a pile up of a huge number of user records and you are configuring this option for the first time then it is recommended that you do the above activity during a maintenance window after terminating all active user sessions. As this activity can be resource intensive if there are a huge number of records to delete.]

What log is generated when a user record is deleted?

SA admin log will have a entry as follows whenever a user record is deleted:

```
ADM24473 2010-04-16 09:06:44 - SA - [127.0.0.1] Root::System()[] - user 'testuser' associated with authentication server 'Lab-auth-srv' is deleted.
```

What is the recommended maximum user record upper limit to be set on an SA?

If you do not need end user related information to be maintained on the SA platform across sessions then we recommend that you set the maximum user record value to twice the max concurrent user license currently installed on the box.

I have already exceeded 64 MB size of user.cfg and I have several end users that will use this solution and I need to maintain persistent information across user sessions. Is there any solution that you can recommend?

Yes. While 64 MB is not the hard limit it is good to start planning once you cross this size so you have adequate time to plan mitigation strategies. And if you are not able to delete some of the old user records then we recommend that you explore the "**User Record Synchronization**" feature/solution. More details on this can be found in the SA admin Guide.

Does user record deletion have any side effects on SA or its performance?

If there is heavy record deletion activity, then due to frequent deletion there is a chance of the configuration files getting fragmented. This may result in higher read/write times thereby affecting overall system performance.

Is there a way to address the fragmentation problem that is caused as a result of user record deletion?

Yes, when large number of user records is deleted by SA admin then perform the following activity to address fragmentation problems:

Save a copy of **user.cfg** file from SA. User.cfg file will contain all user records that SA currently stores. Login to SA admin, goto -> **import/export ->import export->users -> Save config as.**

Import this file back into the same SA. **goto->import/export ->import export->users -> Import config.**

When you import user.cfg file SA writes the entire user.cfg file in a continuous manner allocating disk space in the same block/disk thus reducing the overall sequential read and write time during normal operations. This addresses the fragmentation problems on SA.

[Note: Currently there is no easy way to monitor fragmentation levels so we strongly recommend that you perform this activity only when recommended by JTAC. This activity should only be performed during a maintenance window and during this window end user login into the platform should be disabled.]