SafeNet Authentication Service
Synchronization Agent
Configuration Guide
Document Information

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</tbody>
</table>

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SafeNet invites constructive comments on the contents of this document. These comments, together with your personal and/or company details, should be sent to the address or email below.
## Preface

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Preface

Purpose of this Guide

This document describes how to configure SafeNet Authentication Service (SAS) Sync Agent. It contains the following chapters:

- Preface - page 4
- Overview - page 6
- Configuration - page 10

Applicability

The information in this document applies to:

- **SafeNet Authentication Service (SAS)** — A cloud authentication service of SafeNet, Inc.
- **SafeNet Authentication Service – Service Provider Edition (SAS-SPE)** — The software used to build a SafeNet authentication service.
- **SafeNet Authentication Service – Private Cloud Edition (SAS-PCE)** — A term used to describe the implementation of SAS-SPE/PCE.

Audience

This document is intended for personnel responsible for maintaining your organization’s security infrastructure. This includes SAS users and security officers, the key manager administrators, and network administrators. It is assumed that the users of this document are proficient with security concepts.

All products manufactured and distributed by SafeNet, Inc. are designed to be installed, operated, and maintained by personnel who have the knowledge, training, and qualifications required to safely perform the tasks assigned to them. The information, processes, and procedures contained in this document are intended for use by trained and qualified personnel only.
Support Contacts

If you encounter a problem while installing, registering or operating this product, please make sure that you have read the documentation. If you cannot resolve the issue, contact your supplier or SafeNet Customer Support. SafeNet Customer Support operates 24 hours a day, 7 days a week. Your level of access to this service is governed by the support plan arrangements made between SafeNet and your organization. Please consult this support plan for further information about your entitlements, including the hours when telephone support is available to you.

<table>
<thead>
<tr>
<th>Contact Method</th>
<th>Contact Information</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Address</strong></td>
<td>SafeNet, Inc.</td>
</tr>
<tr>
<td></td>
<td>4690 Millennium Drive</td>
</tr>
<tr>
<td></td>
<td>Belcamp, Maryland 21017</td>
</tr>
<tr>
<td></td>
<td>USA</td>
</tr>
<tr>
<td><strong>Phone</strong></td>
<td>United States</td>
</tr>
<tr>
<td></td>
<td>1-800-545-6608</td>
</tr>
<tr>
<td></td>
<td>International</td>
</tr>
<tr>
<td></td>
<td>1-410-931-7520</td>
</tr>
<tr>
<td><strong>Technical Support</strong></td>
<td><a href="https://serviceportal.safenet-inc.com">https://serviceportal.safenet-inc.com</a></td>
</tr>
<tr>
<td><strong>Customer Portal</strong></td>
<td>Existing customers with a Technical Support Customer Portal account can log in to manage incidents, get the latest software upgrades, and access the SafeNet Knowledge Base.</td>
</tr>
</tbody>
</table>
The Synchronization Agent has been developed to simplify the task of user creation in SafeNet Authentication Service. Without the Synchronization Agent, the administrator must manually input user information via the web-based management interface. With the Synchronization Agent configured, LDAP or SQL user groups are monitored for membership changes, and user information updates are automatically made in SafeNet Authentication Service to reflect these changes.

1. The organization imports its encrypted Sync Agent Key File into the Synchronization Agent, configures a connection to its LDAP Directory Server or SQL Server, and selects one or more LDAP or SQL user groups.

2. The Synchronization Agent queries the LDAP Directory Server or SQL Server for all users within the selected groups.

3. Details of the users within the selected groups are transmitted and stored in the Synchronization Agent’s user source.

4. When the Sync Agent service is started and configured, the Synchronization Agent pushes all user and group information to SafeNet Authentication Service, which in turn creates each user and group in the Virtual Server. The Synchronization Agent queries the LDAP Directory Server or SQL Server periodically. The default synchronization period is every 20 minutes. When a change is detected, the user or group is updated in the Virtual Server.
# Environment

<table>
<thead>
<tr>
<th>Environment</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Supported Platforms</strong></td>
<td>• Windows XP SP 3</td>
</tr>
<tr>
<td></td>
<td>• Windows 2003 R2 Server</td>
</tr>
<tr>
<td></td>
<td>• Windows Server 2008 SP2 and 2008 R2</td>
</tr>
<tr>
<td></td>
<td>• Windows Vista SP2</td>
</tr>
<tr>
<td></td>
<td>• Windows 7</td>
</tr>
<tr>
<td></td>
<td>• Windows 8</td>
</tr>
<tr>
<td></td>
<td>• Windows Server 2012</td>
</tr>
<tr>
<td><strong>Supported Architecture</strong></td>
<td>• 32-bit</td>
</tr>
<tr>
<td></td>
<td>• 64-bit</td>
</tr>
<tr>
<td><strong>Network</strong></td>
<td>TCP Port 80 or 443</td>
</tr>
<tr>
<td><strong>Additional Software Components</strong></td>
<td>Windows .Net 2.0</td>
</tr>
<tr>
<td><strong>Network Ports</strong></td>
<td>• SAS: TCP Port 8456 (required)</td>
</tr>
<tr>
<td></td>
<td>• LDAP: TCP Port 389 - TCP Port 636 (optional)</td>
</tr>
<tr>
<td></td>
<td>• SQL: Appropriate TCP port</td>
</tr>
<tr>
<td><strong>LDAP Directory Server Access or SQL Access</strong></td>
<td>Read-only</td>
</tr>
<tr>
<td><strong>Supported LDAP or SQL User Groups</strong></td>
<td>• Single LDAP or SQL group</td>
</tr>
<tr>
<td></td>
<td>• Multiple LDAP or SQL groups</td>
</tr>
<tr>
<td><strong>Supported LDAP Directory Servers</strong></td>
<td>• Active Directory</td>
</tr>
<tr>
<td></td>
<td>• Sun One 5.x</td>
</tr>
<tr>
<td></td>
<td>• Novell eDirectory 8.x</td>
</tr>
<tr>
<td><strong>Supported SQL Servers</strong></td>
<td>• MS SQL</td>
</tr>
<tr>
<td></td>
<td>• MySQL</td>
</tr>
<tr>
<td></td>
<td>• PostgreSQL</td>
</tr>
<tr>
<td></td>
<td>• Oracle</td>
</tr>
</tbody>
</table>
Features

Most organizations maintain information about their users in an SQL database or in an LDAP directory such as Active Directory. The purpose of the Synchronization Agent is to auto-populate SafeNet Authentication Service (SAS) with users maintained in one of these user sources.

Key features of the agent include:

- Can be used with most LDAP directory servers and SQL servers
- Can accommodate custom schemas
- Does not write to the user source
- Does not require an administrator account to connect to the user source
- Can synchronize multiple user sources, such as multiple LDAP directory servers or multiple SQL servers
- Uses AES encryption between the Synchronization Agent and SafeNet Authentication Service.
- Supports SSL between the Synchronization Agent and the LDAP directory server or SQL server.

Prerequisites

NOTE: In SAS Cloud, these settings are already configured on the SAS cloud service by the SAS team. SAS Cloud users should skip to step 7.

Follow the steps below before configuring the Synchronization Agent:

1. Open the SAS Management Console.
2. Click VIRTUAL SERVERS.
3. Under Managed Account List, select the applicable server.
4. Click COMMS > Communications > LDAP Sync Server Settings.

This is where the SAS server is configured to accept synchronized data from LDAP repositories. The host and port settings determine the communication between the LDAP directory server (for example, Active Directory) and the SAS authentication service (cloud or on-premises).
5. If you are managing your own on-premises SAS server, select the **Custom** option. Enter the following information:

<table>
<thead>
<tr>
<th><strong>Sync Agent Primary Host</strong></th>
<th>The details entered here are used to set the communication between the LDAP Directory Server (e.g. Active Directory) and the SAS authentication service (cloud or on-premises).</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sync Agent Secondary Host</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Sync Agent Port (used only if you are using a non-default port)</strong></td>
<td></td>
</tr>
</tbody>
</table>

6. Click **Apply**.

7. From the **COMMS** tab of your virtual server, click **Authentication Processing > LDAP Sync Agent Settings**.

   ![LDAP Sync Agent Settings Table]

   - **Apply**
   - **Cancel**

   - **Persist Operators Against Sync**
   - **Use Delayed Sync Removal**

   Key Set: 7b4e602d9c9a0793c54d93b71e0d24649fd8c56

   ![Download Button]

   No LDAP Sync Server DNS/IP Address configured.

8. Click **Download** to download and save the **SASSyncConfigFile.bmc** key file. This file will be required during the Synchronization Agent configuration.

9. Download and install the **LDAP Sync Agent** installation package.
   - A link to the agent and other software can be found on the **References** module's **Snapshot** tab.
   - Installers are available for Windows 32- and 64-bit operating systems, as well as for several Linux 32- and 64-bit distributions.

10. Prepare the following information, as it will be required for the Sync Agent configuration:
   - The IP address/host name and port number of your LDAP directory server or SQL server.
   - An account name and password that can be used by the Synchronization Agent to connect to the LDAP directory server or SQL server. The account password should be set to never expire to ensure that the Synchronization Agent is always able to connect to LDAP or SQL. The user account does not need write permissions because the Sync Agent only reads from the directory.
   - For LDAP environments, TCP Port 389 or 636 must be open between the Synchronization Agent and the LDAP directory server.
   - TCP Port 8456 must be open between the Synchronization Agent and SAS.

11. Configure the Synchronization Agent by following the instructions in the next chapter.
CHAPTER 2
Configuration

Configuring the Sync Agent for SQL

For SQL environments, prepare the SQL schema before configuring the connection details.

NOTE: For LDAP environments, see “Configuring the Sync Agent for LDAP” on page 17.

To configure the Sync Agent for SQL:

1. From an administrator account, launch the SAS Sync Agent by clicking Start > SafeNet > Agents > SAS Sync Agent. If necessary, right-click SAS Sync Agent and select Run as administrator.
2. Under SafeNet Authentication Server Virtual Server, click Add. Browse to the location of the SASSyncConfigFile.bmc key file saved in step 8 of the "Prerequisites" section on page 8, and load the file.

The Virtual Server Name field displays the name of your Virtual Server.
3. Select the **Configuration** tab to configure an SQL schema for your SQL server environment.

![Configuration Tab](image)

a. Under **SQL Schema Configuration**, click **Configure**. The **SQL Schema Management** window opens, showing the first of five statements in the sample user source schema.

![SQL Schema Management](image)
b. To add a new schema, enter a name in the **Mapping Schema Name** field and then click **Add**.

The numeral identifier of each SQL statement is displayed at the bottom left of each window:

- 1 Single User
- 2 User List
- 3 Groups
- 4 User’s Groups
- 5 Group’s Membership

C. In each statement's window, do the following:

- Following the word **SELECT** in the SQL statement box, replace each default field name with the corresponding field name used in your SQL environment. Ensure that all of the fields in the edited statement are listed in the same order as in the default statement.

- Under **Filter Columns**, replace each default field name with the corresponding field name used in your SQL environment.

d. Click **Next** or **Previous** to move through the statements.

e. When the field names in all five SQL statements comply with the field names used in your SQL environment, click **OK > Apply** to save the configured SQL schema.

4. Click the **Configuration** tab.

a. Under **User Source Configuration**, click **Configure**.

b. On the **User Source Type** window, select **SQL** and then click **Next**.
c. In the **Provider** field, select the appropriate database provider from the list, and then click **Next** to continue.

![Provider selection](image)

**For example:**

For **PostgreSQL**:

![PostgreSQL configuration](image)

For **MySQL**:

![MySQL configuration](image)

d. Enter the configuration settings required for your SQL database, and then click **Next**.

For example:
For MS SQL:

For Oracle:

Depending on your SQL settings, you may be prompted to enter one or more failover hosts or servers for the agent to connect to in the event that the primary SQL server is inaccessible.

5. On the **Database Found** window, click **Next**.

6. On the **Custom SQL Mapping** window, select the SQL schema whose statements were defined on page 13. Click **Next** to continue.
7. On the **Configuration Complete** window, click **Finish**.

![Configuration Complete window](image)

8. Click the **Status** tab.

9. Under **Synchronization Details**, click **Details** to see the SQL connection details.

![SQL connection details](image)

10. On the **User Source Connection Details** window, click **OK**.

    **NOTE:** Password information is not displayed.

The Synchronization Agent has been configured for SQL.

The next step is to configure the SQL group memberships that are used to determine which users are synchronized. See “Configuring Groups for Synchronization” on page 23.
Configuring the Sync Agent for LDAP

An appropriate LDAP schema has been provided for each of the supported LDAP Directory Servers, and it should not be changed.

**NOTE:** For SQL environments, See “Configuring Groups for Synchronization” on page 23.

To configure the Sync Agent for LDAP:

1. From an Administrator account, launch the SAS Sync Agent by clicking **Start > SafeNet > Agents > SAS Sync Agent**. If necessary, right-click **SAS Sync Agent** and select **Run as administrator**.
2. Under **SafeNet Authentication Server Virtual Server**, click **Add**.
3. Browse to the location of the **SASSyncConfigFile.bmc** key file saved in step 8 of the “Prerequisites” section on page 8 and load the file.
   
   The **Virtual Server Name** field displays the name of your Virtual Server.

   **NOTE:** An appropriate LDAP Schema is built-in for each supported LDAP Directory Server. The LDAP schema must not be changed.

4. On the **Sync Agent** window, click the **Configuration** tab. Under **User Source Configuration**, click **Configure**.
5. On the **User Source Type** window, select **LDAP** and then click **Next**.

![User Source Type window]

6. On the **LDAP Configuration** window, enter the following information, and then click **Next**:

<table>
<thead>
<tr>
<th><strong>Host name or IP</strong></th>
<th>Enter the host name of the LDAP directory server.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Port</strong></td>
<td>Enter the port number of the LDAP directory server. Usually, TCP port 389 is used. If required, the Active Directory Global Catalog (TCP port 3268) may be used.</td>
</tr>
<tr>
<td><strong>Use SSL</strong></td>
<td>Select this option if you have a certificate installed on the server. If selected, change the Port value to 636.</td>
</tr>
<tr>
<td><strong>Number of Failover hosts</strong></td>
<td>Select the number of failover LDAP directory servers that are available for the Sync Agent to connect to in the event that the primary server is inaccessible.</td>
</tr>
</tbody>
</table>
NOTE: All servers must have access to the same BaseDN.

7. On the Select LDAP Schema window, select the LDAP Schema from the list.

8. Click Next to continue.
9. On the **LDAP Credentials** window, enter the following information and then click **Next**:

<table>
<thead>
<tr>
<th><strong>User DN</strong></th>
<th>Enter the User DN created for the Sync Agent connection to the LDAP directory server. The User DN contains the user name (and location of the user within LDAP) that is used by the Sync Agent to connect to the LDAP directory server.</th>
</tr>
</thead>
</table>
| **Base DN** | Select the highest level in the directory in which the Sync Agent is to begin its search for users.  
**Note:** For an Active Directory schema, this value must be entered in email format.  
**For example:** In the sample shown, the Base DN is DC=number, DC=sys.  
Define the User DN as `<username>@number.sys`  
For non-Active Directory schemas, this value may be more complicated.  
**For example:** In the sample shown, the Base DN is DC=number, DC=sys.  
Define the User DN as `<username>@number.sys`  
For non-Active Directory schemas, this value may be more complicated.  
**For example:** `uid=<username>, ou=Administrators, dc=aecl, dc=crypto, dc=prod` |
| **Append Base DN to User DN** | Select this check box to add the Base DN to the information defined in User DN.  
For example, if the **User DN** is `uid=<username>`, the following would be submitted to the LDAP directory server when connecting:  
`uid=<username>, dc=aecl, dc=crypto, dc=prod` |
| **Password** | Enter the password created for the Sync Agent connection to the LDAP directory server. |
10. After clicking **Next**, the agent starts to search for all containers that have users, starting from the Base DN. To exclude or add containers, select **Manually edit searched Containers**, and then click **Next**.

11. The **Manual DN Configuration** window opens. If the **Manually edit searched Containers** option is selected, you can add or remove the containers to be searched for users.

   a. Click **Next** to continue.
   b. On the **Configuration Complete** window, click **Finish**.
12. Select the **Status** tab.
   a. Under **Synchronization Details**, click **Details** to view the LDAP connection details.
   b. Click **OK** to close this window.

   ![User Source Connection Details](image)

   **NOTE:** Password information is not displayed.

The Synchronization Agent is now configured for LDAP.

The next step is to configure the LDAP group memberships that are used to determine which users are synchronized. See “Configuring Groups for Synchronization” on page 23.
Configuring Groups for Synchronization

The **Sync Groups** box lists all LDAP or SQL user groups configured for synchronization with SafeNet Authentication Service.

To view the users in the groups selected for synchronization, and ensure that the groups were configured correctly, see “Browsing the User Source” on page 34.

**To configure groups for synchronization:**

1. On the SAS Sync Agent **Configuration** tab, under **Groups for Synchronization**, click **Configure**.

2. On the **Groups for Synchronization** window, do the following:
   a. To search for an available group, enter the first letters of the required group’s name in the **Available Groups** field.
   b. Use the arrow buttons to add or remove highlighted **Available Groups** to and from the **Synch Groups** list
   c. When finished, click **OK**.

**NOTE:** Synchronization will take place only if the **Sync Groups** list contains at least one group. To remove all synced users from SAS, create a group that has no users, and include only that group in the **Sync Groups** list. SAS will be synced but no users will be synced.
3. On the message prompt, click Yes to confirm your changes to the list of synchronized groups.

![Warning message]

The groups selected for synchronization are displayed in the Status tab’s Sync Groups list.
Granting the Agent Permissions in SAS

1. From the **COMMS** tab of your virtual server, select **Authentication Processing > LDAP Sync Agent Hosts**. The new Sync Agent Host is listed.

![Sync Agent Host Configuration Table]

2. To enable sync permission for this host, click **Change Permission**.
3. Under **Change Sync Agent Host Permission**, select **Allow** and then click **Apply**.

![Change Sync Agent Host Permission]

The Sync Agent Host is shown as now having Sync Permission.
Viewing Transaction Details and Last Sync Details

To view transaction details and last sync details:

Click the SAS Sync Agent's **Status** tab.

The following options are available under **Last Sync Details**:

- **Sync Time** - Displays the last synchronization attempt by the agent.
- **Scan Duration** - Displays the amount of time required to scan all groups to retrieve user information.
- **# of Unique Objects** - Displays the number of LDAP or SQL objects discovered during the last scheduled scan.
- **# of Details** - Displays the number of LDAP or SQL object differences found during the last scheduled scan between the local persistent cache and the LDAP directory server or SQL server.
- **Sent Transactions** - Displays the number of updates sent to SafeNet Authentication Service.
- **Total Users Sync'd** - Displays the number of users currently synchronized with SafeNet Authentication Service.

The following options are available under **Transaction Details**:

![Transaction Details](image)

- **ID** - Displays the ID number of the current transaction record.
- **Status** - Displays the status of the transaction.
- **Scan Started** - Displays the start date and time of an LDAP Directory Server or SQL Server scan.
- **Scan Ended** - Displays the end date and time of an LDAP Directory Server or SQL Server scan.
- **Sent to SAS** - Displays the date and time the transaction was delivered to SAS.
- **Refresh** - Refreshes the display.
- **Second auto refresh** - How often a refresh is performed (seconds).
- **Save As** - Saves all transaction details to a file.
- **Clear** - Permanently deletes all transaction details from the display. To save the transaction details, click **Save As** and save the data before clicking **Clear**.
Viewing the LDAP Schema

In an LDAP directory server environment, you can view the LDAP schema settings.

NOTE: This is not relevant for SQL environments.

To view the LDAP schema:

1. On the SAS Sync Agent’s Configuration tab, under LDAP Schema Configuration, click Configure. The LDAP Schema Management window opens, displaying the mapping schema.

2. Click Cancel to close the window.

NOTE: The LDAP schema must not be modified.
CHAPTER 2: Configuration

Configuring Other Synchronization Options

To configure other synchronization options:

1. Select the SAS Sync Agent’s Configuration tab.
2. Under Other Synchronization Options, click Configure.

The Other Configuration Options tab is displayed.

The Sync Agent uses the Country code to prepend field as follows:

- If the Cell Number’s leading digits are 00, the agent will remove the leading 00, regardless of the content of the Country code to prepend field.
  
  For example: 0041-77889991111 becomes 4177889991111

- If the Cell Number’s leading digit is 0, the agent will remove the 0 and prepend the country code to it if Country code to prepend contains a numeric value.
  
  For example: When using 31 as prepend country code, 0778-89991111 becomes 3177889991111

- If the Cell Number’s leading digit is 1 through 9, the agent will prepend the country code to it if Country code to prepend contains a numeric value.
  
  For example: When using 31 as prepend country code, 778-89991111 becomes 3177889991111

**NOTE:** The Sync Agent automatically removes all non-numeric characters from the data in the schema’s ‘Cell Number’ mapping.

- The Scan Interval determines how frequently the Synchronization Agent scans the LDAP directory server or SQL server for changes. The default interval is 20 minutes.
• In the **Groups to sync** field, select one of the following:
  • Groups with users only
  • Filter groups only
  • None
• The value displayed in the **SafeNet Authentication Service Key Set** field must be identical to the **Key Set** value displayed on your virtual server **Key Set** field under **COMMS > Authentication Processing > LDAP Sync Agent Settings**.
  
  See the screenshot in the section “Prerequisites” on page 8.

3. Click **OK** to close the window.

### Viewing the SAS Server Details

On the SAS Sync Agent’s **Configuration** tab, under **SafeNet Authentication Service Synchronization Server**, click **Details**.

The **Server Details** window opens, displaying the primary and secondary SAS server IP addresses and ports.

![Server Details](image)
Configuring the Notification Settings

The Synchronization Agent can be configured to send email alerts if it is unable to connect to SafeNet Authentication Service, or to the LDAP directory server or SQL server. An email alert can also be sent if an expected group is not found. The text can be customized for each alert.

**NOTE:** Email alerts may be sent only if the service status is stopped.

To configure notification settings:

1. Open the SAS Sync Agent's Notification tab.
2. Under **SMTP Configuration**, click **Configure**.

3. The **SMTP Configuration** window is displayed. These settings define the mail server (SMTP) used by the SAS server to send out notifications to the operator/administrator who runs the Virtual Server, and provides LDAP sync process notifications (for example, failed or succeeded).

<table>
<thead>
<tr>
<th>From email address</th>
<th>Enter the email address from which notifications are sent.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hostname/IP address</td>
<td>Enter the IP address or host name of the SMTP server (mail server) used for sending out notifications.</td>
</tr>
<tr>
<td>Port</td>
<td>Enter the port used by the specific mail server to send and receive emails.</td>
</tr>
<tr>
<td>Username</td>
<td>If credentials are required to log on to the SMTP server, enter the username and password of the account from which the notifications are sent.</td>
</tr>
</tbody>
</table>

4. Click **OK** to close the window.

5. Under **E-mail Test**, in the **Enter e-mail Address** field, enter a recipient email address, and then click **Test** to test the SMTP configuration.

6. To customize the email alerts that are sent, under **E-mail Message Templates**, click **Customize**.
7. On the **Email Templates** window, enter the following information and then click **OK**:

<table>
<thead>
<tr>
<th>Message</th>
<th>Select the message type:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• LDAP Connection Issues</td>
</tr>
<tr>
<td></td>
<td>• User Source Server Connection Issues</td>
</tr>
<tr>
<td></td>
<td>• Sync Server Connection Issues</td>
</tr>
<tr>
<td></td>
<td>• Missing Group</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Subject</th>
</tr>
</thead>
<tbody>
<tr>
<td>Modify the Subject and Body content as required.</td>
</tr>
</tbody>
</table>

| Body |

| ![Email Templates](image) |

8. Under **Event Recipient Lists**, click **Add** to add an email address to which alerts are sent.

| ![Event Recipient Lists](image) |

9. On the **Mailing List** window, enter the following information:

<table>
<thead>
<tr>
<th>List Name</th>
<th>Enter a name for the email list.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recipient E-mail</td>
<td>For each address to be added to the Recipient Email List, enter a valid email address into the Recipient Email field, and then click <strong>Add</strong></td>
</tr>
<tr>
<td>Recipient E-mail List</td>
<td></td>
</tr>
<tr>
<td>Events</td>
<td>Select the appropriate <strong>Events</strong> for which the recipient will receive an alert:</td>
</tr>
<tr>
<td></td>
<td>• Sync Server Connection Issues</td>
</tr>
<tr>
<td></td>
<td>• User Source Connection Issues</td>
</tr>
<tr>
<td></td>
<td>• Missing Group</td>
</tr>
</tbody>
</table>
10. Click **OK** to close the window.

   The **List Name** is displayed in the **Event Recipient Lists** box.

### Browsing the User Source

When a connection has been established between the Synchronization Agent and the organization’s LDAP directory server or SQL server, the Synchronization Agent queries the server for all users within the user groups that were selected for synchronization. The user information is transmitted and stored in the Synchronization Agent's user source.

The following may be viewed in the Synchronization Agent's User Source:

- The list of groups selected for synchronization
- The details of the users stored in the user source. The following user details are displayed if they are available:
  - User name
  - First name
  - Last name
  - Email
  - Phone number
  - Cell number
  - The list of LDAP or SQL user groups in which the user is a member
To browse the user source:

1. Click the SAS Sync Agent’s **Browse User Source** tab.
2. Select the **Users** tab, and then click **Search** to view a list of the users.
   
   A list of the first 500 users is displayed.

3. To easily search the entire user source for a specific user, enter the first letters of the required user’s user name in the **User Name** box, and then click **Search**.
4. In the **User Name** list, select the required user.
   
   Details of the selected user are displayed in the **Details** area.

**NOTE:** An error message indicates that the schema was configured incorrectly.
5. To view a list of the groups, select the **Groups** tab, and then click **Search**.  
A list of the first 500 groups is displayed.

![Image of SafeNet Authentication Service Sync Agent Configuration](image)

6. To easily search the entire user source for a specific group, enter the first letters of the required group’s group name in the **Group Name** box, and then click **Search**.

7. In the **Group Name** list, select the required group.  
The user names of users included in the selected group are displayed in the **Details** area.

### Starting and Stopping the Agent

Under **Service Status**, click **Start** or **Stop** to start or stop synchronization.
Backing Up and Restoring the Agent Configuration

You can back up the Sync Agent configurations of all your virtual servers. If configurations were backed up, you can restore the backed up configuration of any virtual server.

1. In the **SAS Sync Agent** menu, select **File**.

![SafeNet Authentication Service Sync Agent menu](image)

2. To back up the agent’s settings, select **Backup all configuration**, and then select the location and name of the backup file.

3. To restore an agent’s saved settings, select **Restore configuration**, and then select the location and name of the appropriate backup file.
   
   If multiple virtual servers have been configured, a prompt is displayed listing all of them.

4. Select the relevant virtual servers to be restored.