

# Integration with Microsoft Active Directory and Exchange 2007

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<?xml version="1.0" encoding="utf-8"?>  
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## Integration with Microsoft Active Directory

sipXecs, starting with release 3.10, is able to automatically synchronize with Microsoft Active Directory using the LDAP protocol. Synchronization can be done one or automatically at a configurable time interval. Users created or deleted in Microsoft Active Directory are then automatically synchronized with users in sipXecs, which makes administration a lot easier. the following explains the steps you have to take to accomplish this:

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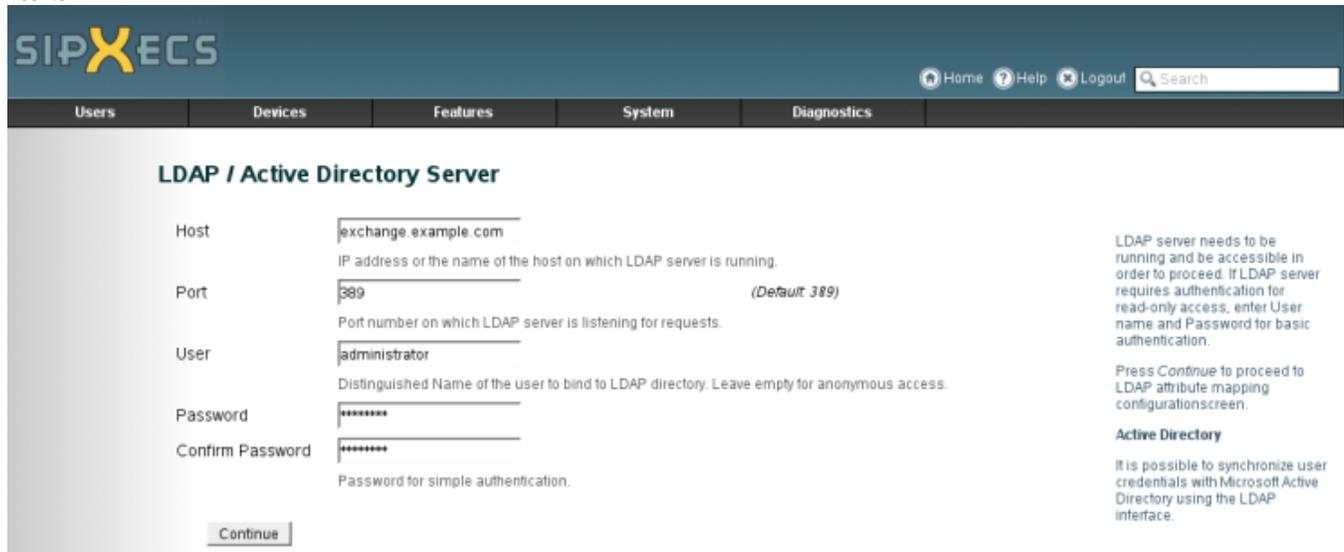


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First, navigate to the LDAP / AD screen found under the System tab. To setup a new LDAP / Active Directory server select the "LDAP Server" link on the right side under Quick Links. This will take you to the screen below. Enter the hostname / IP address of your Microsoft server including the administrator password.

NOTE: The User section requires your full DN information, for example: CN=Administrator,CN=Users,DC=pcd,DC=mydomain,DC=com

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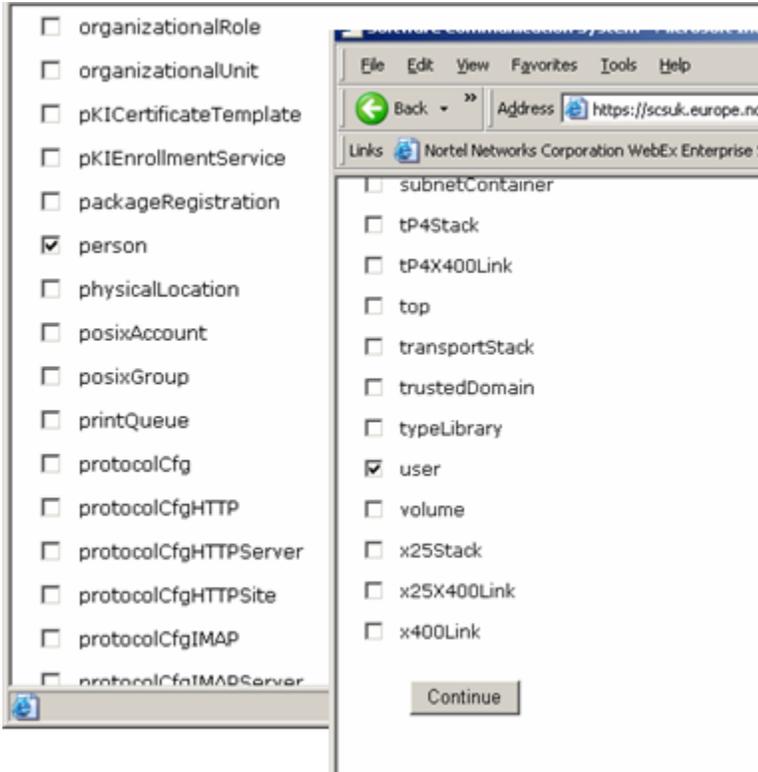


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Next, you have to select the relevant object classes you want to extract from the Active Directory database. Select just two classes: "User" and "Person" as shown below.

NOTE: Because the attributes AD uses are different from a standard LDAP installation they won't match up, you'll have to manually configure them. Standard LDAP setups such as OpenLDAP by default use those attributes unless it's configured differently.

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The next screen allows you to assemble the query for the Active Directory database using a graphical interface. The search base must be: "CN=Users, DC=example, DC=com", where the DC parameters have to represent your domain. The Filter is "proxyaddress=\*". Use "cn" and "sn" as the first name and last name attributes, respectively. The email address is "userPrincipalName". The Alias, User group, and SIP password attributes will vary depending on what the admin of the Active Directory server configured.

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## LDAP/AD Server

Search base   
The root of the LDAP entities subtree that will be searched for users.

User object class   
LDAP class that will be used to filter entries corresponding to users. Entries that do not have this class are disregarded during search.

Filter   
Optional filter expression for example 'ou=marketing'. Only entries selected by this filter will be considered when importing users. You can specify compound filter expression using & and | operators.

User ID attribute   
LDAP attribute representing user ID. Its value needs to be unique.

First name attribute

Last name attribute

Alias attribute   
If this attribute has more than one value a separate alias will be created for each value of this attribute.

E-Mail attribute   
If this attribute has more than one value a separate alias will be created for each value of this attribute.

User group attribute   
If this attribute has more than one value an imported user will be added to multiple groups. Groups will be created if necessary.

PIN attribute

Default PIN

Confirm Default PIN   
If no mapping attribute is configured for PIN, all imported users will be assigned default PIN specified here.

SIP password attribute   
If no mapping attribute is configured for SIP password, this system will automatically generate random SIP password for each imported user.

During LDAP operation LDAP attributes will be used to create or update user information.

This page allows for associating LDAP attributes with users properties. For example if you choose attribute *sn* as the *Last name attribute*, the value of *sn* will be used to create Last name for an imported user.

Press *Continue* to check the example user imported from LDAP with newly configured attribute mapping.

### Active Directory

Active Directory text goes here.

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The next screen allows you to preview user records as they would be imported based on the query you just defined. This is really helpful to make sure everything is working as intended.

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## LDAP Import Preview

LDAP configured properly. Press OK to return to LDAP Import Page.

[Download Preview](#)

### Quick Links

[LDAP Server](#)

User ID

Last name

First name

E-Mail

SIP password

Groups

Aliases

If LDAP is configured properly you will see the example of the user imported from LDAP server. You can press OK to return to LDAP Import page or you can click LDAP Server link to change LDAP server and mapping parameters.

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The last step then is to do the actual import. This is done back on the original screen for LDAP / AD import. An import can be triggered manually or you can setup a schedule for recurring imports.

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## Import from LDAP or Active Directory Server

[Preview](#) [Import](#)

Enable periodic import from LDAP

Every Day  12:00 AM

[Apply](#)

### Quick Links

[Job Status](#)  
[LDAP Server](#)

Press *Preview* to verify LDAP import configuration. If LDAP Server connection parameters and attribute mapping are configured properly you will see an example of imported user.

Press *Import* to initiate importing users from LDAP. Go to *Job Status* page to monitor the status of the import operation.

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## Integration with Microsoft Exchange 2007 Voicemail and Auto-Attendant

The following provides instructions on how to integrate sipXecs with Microsoft Exchange 2007 for VM and AA applications. Microsoft Exchange 2007 is a speech enabled application able to serve as a Voice Mail or auto-Attendant server. In addition, it can read your email or provide voice enabled access to your calendar.

Upgrading from Exchange 2003 to Exchange 2007 requires an upgrade to the 64 bit version of the Windows Server 2003 operating system.

As part of sipXecs release 3.9/3.10 we completed a tight integration with Exchange 2007, which provides automated plug & play configuration. Even a mixed environment is possible where one group of users uses Exchange 2007 as their voicemail system, while another group used the sipXecs voicemail system.

## Give a User or Group of Users Permission to use Exchange VM as their Voicemail System

On a per user basis or for an entire group of users the administrator can select Microsoft Exchange as the voicemail system. Go to the configuration screen for the respective user and select "Permission" from the left navigation menu. Scroll all the way down until you see the fields for voicemail permission.

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The screenshot shows the SIPX ECS web interface. At the top is the SIPX ECS logo. Below it are two tabs: 'Users' and 'Devices'. The 'Users' tab is active, showing a list of permissions on the left and a 'User: 300' section on the right. The permissions list includes: Identification, Phones, Call Forwarding, Schedules, Speed Dial, Group Supervisor, Personal AutoAttendant, Registrations, Permissions (highlighted), and Caller ID. The 'User: 300' section is titled 'Permissions' and 'General Permission', and lists 'Superadmin Access' and 'Change PIN from IVR'.

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Then scroll down on the "Permission" page until you find the entries for the voicemail system:

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### Voicemail Server

Only one voicemail server permission should be chosen at a time

Internal Voicemail Server



(Default: checked)

User has permissions for Internal Voicemail Server

Microsoft Exchange UM Voicemail Server



(Default: unchecked)

User has permissions for Microsoft Exchange UM Voicemail Server

OK

Apply

Cancel

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**Note:** Only one voicemail server must be selected for a user.

### Create a Dialplan Rule for the Microsoft Exchange 2007 Server

If all the users on this system use Microsoft Exchange 2007 as their voicemail system, then change the default voicemail rule in the dialplan to indicate that Exchange 2007 is selected as the voicemail server. If both Exchange 2007 and the sipXecs voicemail system shall be used simultaneously then a second voicemail dialing rule has to be created that designates Microsoft Exchange 2007 as the voicemail server. A different voicemail extension and prefix have to be chosen for one of the voicemail servers.

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Name	Enabled	Type	Schedule
Emergency	Disabled	Emergency	Always
International	Disabled	Long Distance	Always
Local	Disabled	Long Distance	Always
Long Distance	Disabled	Long Distance	Always
Restricted	Disabled	Long Distance	Always
Toll free	Disabled	Long Distance	Always
AutoAttendant	Enabled	Attendant	Always
Voicemail	Enabled	Voicemail	Always

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Select the "Voicemail" rule or create a new one (there can be several voicemail rules in a system if you have more than one voicemail system).

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Voice mail type: Exchange Voicemail Server

Voice mail host: exchange.example.com

IP address or name of the voice mail server. Leave empty if voice mail server runs on the same computer as SIP proxy.

Schedule: Always

Buttons: OK, Apply, Cancel

Both the internal voicemail server and Exchange 2007 can be used in parallel, however, every user can only be connected to one voicemail system. If both systems are used certain restrictions apply: The default prefix "8" used to route calls directly to voicemail will only work for one of the voicemail servers. Also, due to a Microsoft problem Message Waiting Indication (MWI) does not work with Exchange 2007.

Note: Other external voicemail servers can be used instead of Exchange 2007 using this configuration.

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**Note:** Due to a bug in the Microsoft implementation of SIP Message Waiting Indication (MWI) does not work for users who use Exchange 2007 as their voicemail system. However, Microsoft provides full unified messaging where all voicemail messages are available in your inbox.

## Integration with the Exchange 2007 Auto-Attendant

Two steps are required to add the Microsoft Exchange 2007 Auto-Attendant as a system auto-attendant to sipXecs:

1. Create a new SIP Trunk Gateway that points at the Microsoft Exchange 2007 Server. Choose TCP as the transport protocol under advanced settings. The Route fields can be left empty if the Exchange server is reachable over a routed network (no NAT or firewall).

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The screenshot shows the SIPX ECS web interface. At the top, there is a navigation bar with the SIPX ECS logo and links for Home, Help, Logout, and a search box. Below the navigation bar is a menu with tabs for Users, Devices, Features, System, and Diagnostics. The main content area is titled 'Gateway: ExchangeAA / SIP trunk' and includes a 'Show Advanced Settings' link. The configuration form contains the following fields:

- Name:** ExchangeAA
- Address:** exchange.example.com
- Description:** A large empty text area.
- Route:** Please select.. (dropdown menu)

Below the Route field, there is a descriptive text: 'Session Border Controller (SBC), firewall or proxy that processes calls directed at the provider served by this SIP trunk'. At the bottom of the form are three buttons: OK, Apply, and Cancel.

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1. Create a new Custom dialing rule that routes calls with a specific number to the Exchange AA Server

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