

# **PingFederate®**

## **SAP C4C Provisioner v1.0.0**

### **User Guide**



© 2005-2017 Ping Identity ® Corporation. All rights reserved.

PingFederate SAP C4C Provisioner User Guide  
Version 1.0.0  
November 2017

Ping Identity Corporation  
1001 17<sup>th</sup> Street, Suite 100  
Denver, CO 80202  
USA

Phone: 877.898.2905 (+1 303.468.2882 outside North America)  
Fax: 303.468.2909 E-mail: [info@pingidentity.com](mailto:info@pingidentity.com)  
Web Site: <http://www.pingidentity.com>

### **Trademarks**

Ping Identity, the Ping Identity logo, PingFederate, PingOne, PingConnect, PingID, and PingEnable are registered trademarks of Ping Identity Corporation (“Ping Identity”). All other trademarks or registered trademarks are the property of their respective owners.

### **Disclaimer**

This document is proprietary and not for general publication. It may be provided ad hoc for informational purposes only, and the information herein is subject to change without notice. Ping Identity does not provide any warranties and specifically disclaims any liability in connection with this document.

Note that Ping Identity may not provide support for any sample configurations provided in this document. The variability inherent among security environments prevents full testing and support for all possible platform configurations. If you need special assistance or would like to inquire about implementation or support programs, please contact Ping Identity Global Client Services (<http://support.pingidentity.com>).

# Contents

*Purpose .....4*

*Prerequisites.....4*

*Installation.....4*

*Configuration .....5*

*Testing.....29*

*Logging .....30*

# Purpose

This user guide is intended for use by clients who would like to leverage a PingFederate outbound provisioner to manage the identity life cycles of users from a source system to the SAP C4C target system.

## Prerequisites

This document assumes that you already have the following installed and configured:

- A functional PingFederate environment, version 7.X+
- JDK version 7+
- A source data repository (e.g., Active Directory)
- A SQL Database (e.g., MySQL, MS SQL)
- SAP C4C configuration information:
  - SOAP Query User URL
  - SOAP Process User URL
  - SOAP Query Territory URL
  - SOAP Assign Territory URL
  - SOAP Create Territory URL
  - SOAP Header ID
  - SOAP Header Sender Business System ID
  - SOAP Header Recipient Business System ID
  - SOAP Header Business Scope Type Code
  - SOAP Header Business Scope ID
  - Authentication Method
    - Basic – administrator ID and password
    - Mutual – SSL client key and certificate
- Email configuration information:
  - Mail SMTP Host
  - Mail SMTP Port
  - Email Security Method
    - SSL
    - TLS
  - Authentication via Mail SMTP Credentials (if enabled)
    - Mail SMTP Admin Username
    - Mail SMTP Admin Password
  - Sender Email Address
  - Receiver Email Address
  - Territory Error Email Subject

## Installation

1. From the /dist folder in *pf-c4c-provisioner-1.0.0.zip*, copy the following files to <PingFederateInstall>/pingfederate/server/default/deploy/:
  - pf-c4c-provisioner-1.0.0.jar
  - javax.mail-1.6.0.jar

2. Go to <PingFederateInstall>/pingfederate/bin/
  - a. Make a copy of run.properties
  - b. Open up run.properties and make the following change:
    - i. For single node:  
pf.provisioner.mode=STANDALONE
    - ii. For each clustered node:  
pf.provisioner.mode=FAILOVER  
provisioner.node.id=1 [has to be unique on each clustered node]  
provisioner.failover.grace.period=600 [in seconds, must be bigger than the provisioning-frequency cycle]
  - c. Save and close the file
3. Start or restart PingFederate.

## Configuration

### Executing the Provisioner Database Script

1. Go to <PingFederateInstall>/pingfederate/server/default/conf/provisioner/sql-scripts/.
2. Choose the ***provisioner-[your database].sql*** script that fits the type of database chosen.
3. Execute the SQL script in the database to create the provisioner tables.

### Configuring the Provisioner Data Store

1. Log into the PingFederate admin console and click **Data Stores** under **System Settings**.
2. Click **Add New Data Store...**
3. Select **Database** and click **Next**.

The screenshot shows the PingFederate admin console interface. At the top, the 'PingFederate' logo is on the left, and 'Help | About | Logout (Administrator)' is on the right. Below the header, there are three tabs: 'Main', 'Manage Data Stores', and 'Data Store'. The 'Data Store' tab is active. Under the 'Data Store' tab, there are three sub-tabs: 'Data Store Type', 'Database Config', and 'Summary'. The 'Data Store Type' sub-tab is active. It contains a message: 'Please select a type of data store.' Below this message, there are three radio button options: 'Database' (which is selected), 'LDAP', and 'Custom'. At the bottom right of the form, there are two buttons: 'Cancel' and 'Next >'. At the bottom left, there is a copyright notice: '© 2003-2015 Ping Identity Corporation All Rights Reserved Version 7.3.0.5'. At the bottom right, there is the 'Ping Identity' logo.

4. Enter the **JDBC URL**, **Driver Class**, **Username**, and **Password**. If needed, apply appropriate settings to the fields under the **Advanced...** tab. Click **Next**.

The screenshot shows the PingFederate web interface. At the top is the 'PingFederate' logo. To the right are links for 'Help', 'About', and 'Logout (Administrator)'. Below the header is a navigation bar with three tabs: 'Main' (with a home icon), 'Manage Data Stores' (with a square icon), and 'Data Store' (with a circle icon and highlighted in teal). Under the 'Data Store' tab, there are two sub-tabs: 'Database Config' (with a star icon) and 'Summary' (highlighted in teal). A light blue message box says 'Please provide the details for configuring this database connection.' Below this are several form fields: 'JDBC URL' (containing 'jdbc:mysql://mywin-lab.pingidentit \*'), 'Driver Class' (containing 'com.mysql.jdbc.Driver \*'), 'Username' (containing 'sa \*'), 'Password' (containing '\*\*\*\*\*'), and 'Validate Connection SQL' (empty). There are also two checkboxes: 'Mask Values in Log' (unchecked) and 'Allow Multi-Value Attributes' (checked). At the bottom left of the form area is a tab labeled 'Advanced...'. At the bottom right are four buttons: 'Cancel', 'Next >' (highlighted in teal), 'Done', and 'Save'. The footer contains the copyright text '© 2003-2015 Ping Identity Corporation All Rights Reserved Version 7.3.0.5' and the 'Ping Identity' logo.

5. Review the **Data Store Summary**, and click **Done**.


[Main](#)

[Manage Data Stores](#)

[Data Store](#)
[Database Config](#)
[★ Summary](#)

Click a heading link to edit a configuration setting.

## Data Store

### DATABASE CONFIG

JDBC URL	jdbc:mysql://mywin-lab.pingidentity.com:3306/provisionerdb
Driver	com.mysql.jdbc.Driver
Username	sa
Validate Connection SQL	
Allow Multi-Value Attributes	true

[Cancel](#)
[< Previous](#)
[Done](#)
[Save](#)

© 2003-2015 Ping Identity Corporation All Rights Reserved  
Version 7.3.0.5



6. Click **Save**.

## Configuring Outbound Provisioning Settings

1. Log into the PingFederate admin console and click on **Server Settings** under **System Settings**.
2. Click on **Roles & Protocols**, and ensure that **Outbound Provisioning** is checked.


[Main](#)

[Server Settings](#)

- [System Administration](#)
- [System Info](#)
- [Runtime Notifications](#)
- [Runtime Reporting](#)
- ★ [Roles & Protocols](#)
- [Federation Info](#)
- [System Options](#)
- [WS-Trust STS Settings](#)
- [Outbound Provisioning](#)
- [Metadata Signing](#)
- [Metadata Lifetime](#)
- [Summary](#)

Select the role(s) and protocol(s) that you intend to use with your federation partners.

- ☒ Enable OAuth 2.0 Authorization Server (AS) role
  - ☒ OpenID Connect
- ☒ Enable Identity Provider (IdP) role and support the following:
  - ☒ SAML 2.0
    - ☒ Auto-Connect Profile
  - ☒ SAML 1.1
  - ☒ SAML 1.0
  - ☒ WS-Federation
  - ☐ Outbound Provisioning
  - ☒ WS-Trust
- ☒ Enable Service Provider (SP) role and support the following:
  - ☒ SAML 2.0
    - ☒ Auto-Connect Profile
    - ☒ Attribute Requester Mapping for X.509 Attribute Sharing Profile (XASP)
  - ☒ SAML 1.1
  - ☒ SAML 1.0
  - ☒ WS-Federation
  - ☒ WS-Trust
  - ☒ Inbound Provisioning
- ☒ Enable IdP Discovery role (SAML 2.0 only)

[Cancel](#)
[< Previous](#)
[Next >](#)
[Save](#)

3. Click on the **Outbound Provisioning** tab under **Server Settings**.



4. Ensure that the **Internal Provisioning Data Store** is the correct provisioner data store that was just created. Modify the **Synchronization Frequency (secs)** to the appropriate setting for your environment.

**Note:** if the **Internal Provisioning Data Store** is not selectable, you will need to do the following:

- a. Stop PingFederate
- b. Go to <PingFederateInstall>/pingfederate/server/default/data/pingfederate-jdbc-ds.xml
- c. Find the currently selected Internal Provisioning Data Store and comment it out, for example:

```
<!-- local-tx-datasource maskAttributeValues="false">
  <description>jdbc:hsqldb:${pf.server.data.dir}${/}hypersonic${/}ProvisionerDefaultDB;hsqldb.lock_file=false</description>
  <jndi-name>ProvisionerDS</jndi-name>
  <connection-
url>jdbc:hsqldb:${pf.server.data.dir}${/}hypersonic${/}ProvisionerDefaultDB;hsqldb.lock_file=false</connection-url>
  <driver-class>org.hsqldb.jdbcDriver</driver-class>
  <user-name>sa</user-name>
  <password>eyJhbGciOiJIcGkiOiJkaXliLCJlbmMiOiJBMTI4Q0JDLUhTMjU2liwia2lkIjoizZFCQkR5UzdlZCIsInZlcnNpb24iOiI3LjMuMC41In0..1uptNRm1RonqxNatRhFJoQ.3OunG6vuluUQ1OZnqOTSgw.BXR7AmwEkYZez5UNU2HUaw</password>
  <ping-db-type>Custom</ping-db-type>
  <allow-multi-value-attributes>false</allow-multi-value-attributes>
</local-tx-datasource -->
```

- d. Start PingFederate
- e. Redo Steps 3 and 4 above
- f. Stop PingFederate
- g. Go to <PingFederateInstall>/pingfederate/server/default/data/pingfederate-jdbc-ds.xml
- h. Uncomment the previously commented out data store
- i. Start PingFederate

# PingFederate®

Help | About | Logout (Administrator)

Home

Main

Server Settings

System Administration

System Info

Runtime Notifications

Runtime Reporting

Roles & Protocols

Federation Info

System Options

WS-Trust STS Settings

★ Outbound Provisioning

Metadata Signing

Metadata Lifetime

Summary

Specify the database PingFederate will use internally to facilitate outbound provisioning to service providers. You can also control the Synchronization Frequency. These settings apply to all outbound provisioning "channels."

Internal Provisioning Data Store

jdbc:mysql://mywin-lab.pingidentity.com:3306/provisionerdb

Data Store Type

JDBC

Manage Data Stores...

Synchronization Frequency (secs)

1800

\*


Cancel

< Previous

Next >

Save

© 2003-2015 Ping Identity Corporation All Rights Reserved  
Version 7.3.0.5



5. Click **Save**.

### Configuring the SSL Client Keys & Certificates (Optional – only if mutual auth is chosen)

1. Have the SAP C4C SSL Client Key and Certificate ready (must be a PKCS12 file).
2. Log into the PingFederate admin console and click on **SSL Client Keys & Certificates** under **Certificate Management**.
3. Click on the **Import** button.

# PingFederate®

Help | About | Logout (Administrator)

Home Main

Certificate Management

★ Manage SSL Auth Private Keys and Certificates


Establish and maintain the SSL client certificate your server presents as a client in an SSL transaction.

SERIAL	SUBJECT DN	EXPIRES	KEY DETAILS	STATUS	ACTION
<div>Create New... Import...</div>					

Cancel

Save

© 2003-2015 Ping Identity Corporation All Rights Reserved  
Version 7.3.0.5



- Click the **Browse** button, select the .p12 file, enter the **Password**, and click **Next**.

# PingFederate®

Help | About | Logout (Administrator)

Home Main

Certificate Management

Import Certificate

★ Import Certificate Summary

Please select the file containing the desired certificate.

Filename

Browse...

Certificate.p12


Password

\*\*\*\*\*

Cancel

Next >

© 2003-2015 Ping Identity Corporation All Rights Reserved  
Version 7.3.0.5



- Click **Done**.
- Click **Save**.

## Configuring the SAP C4C Provisioner

1. Log into the PingFederate admin console and click **Create New** under **SP Connections**, and click **Next**.

The screenshot shows the PingFederate admin console interface. At the top, the 'PingFederate' logo is on the left, and 'Help | About | Logout (Administrator)' is on the right. Below the header, there's a navigation bar with 'Main' and 'SP Connection' (the latter is highlighted). Under 'SP Connection', there are tabs: 'Connection Template' (selected), 'Connection Type', 'General Info', and 'Activation & Summary'. A light blue informational box states: 'PingFederate provides quick-configuration templates, available separately with SaaS Connectors, for specific Service Providers. If applicable, please select a template for this connection; otherwise, continue to the next screen for more options.' Below this, there are two radio button options: 'Do not use a template for this connection' (which is selected) and 'Use a template for this connection'. At the bottom right, there are 'Cancel' and 'Next >' buttons. The footer contains the copyright notice '© 2003-2015 Ping Identity Corporation All Rights Reserved Version 7.3.0.5' and the Ping Identity logo.

2. Select **Outbound Provisioning**, select **C4C Provisioner 1.0.0** for **Type**, and click **Next**.


[Main](#)

[SP Connection](#)
[Connection Template](#)
[★ Connection Type](#)
[General Info](#)
[Outbound Provisioning](#)
[Activation & Summary](#)


Select the type of connection needed for this SP: Browser SSO Profiles (for Browser SSO), WS-Trust STS (for access to identity-enabled Web Services), Outbound Provisioning (for provisioning users/groups to an SP) or all.

Connection Template No Template

☐ Browser SSO Profiles

☐ WS-Trust STS

☒ Outbound Provisioning

Type

C4C Provisioner 1.0.0

[Cancel](#)
[< Previous](#)
[Next >](#)


© 2003-2015 Ping Identity Corporation All Rights Reserved  
Version 7.3.0.5



3. Enter the **Partner's Entity ID (Connection ID)** and **Connection Name**, and click **Next**.

[Main](#)
[SP Connections](#)
[SP Connection](#)

[Connection Type](#)
[General Info](#)
[Outbound Provisioning](#)
[Activation & Summary](#)

 This information identifies your partner's unique connection identifier (Connection ID). Connection Name represents the plain-language identifier for this connection. Optionally, you can specify multiple virtual server IDs for your own server to use when communicating with this partner. If set, these virtual server IDs will be used in place of the unique protocol identifier configured for your server in Server Settings. The Base URL may be used to simplify configuration of partner endpoints.

Partner's Entity ID (Connection ID)  \*

Connection Name  \*

Virtual Server IDs  [Add](#)

Base URL

Company

Contact Name

Contact Number

Contact Email

Application Name

Application Icon URL

Logging Mode
 ☐ None
 ☒ Standard
 ☐ Enhanced
 ☐ Full

[Cancel](#)
[< Previous](#)
[Next >](#)

4. Click the **Configure Provisioning** button.

PingFederate®

Help | About | Logout (Administrator)

Home

Main

SP Connection

Connection Template

Connection Type

General Info

☆ Outbound Provisioning

Activation & Summary

Configure outbound provisioning for this service provider.

Outbound Provisioning

Connection Type

C4C Provisioner 1.0.0

Source Repository

Not Configured

Configure Provisioning

Cancel

< Previous

Next >

© 2003-2015 Ping Identity Corporation All Rights Reserved  
Version 7.3.0.5

Ping  
Identity

5. Click the **Target** tab at the top. Review and adjust the settings accordingly, and click **Next**.

Note: If **Mutual** is chosen for **Authentication Method**, an SSL Client Key & Certificate must be uploaded first. If none have been uploaded, save the connection as a draft and see [Configuring the SSL Client Keys & Certificates \(Optional – only if mutual auth is chosen\)](#). Then come back to this step.

Please also note that the **Keystore Password** must be different from the certificate password.

[Main](#)
[SP Connection](#)
[Configure Channels](#)

[★ Target](#)
[Manage Channels](#)

Specify credentials and/or other connection details that PingFederate will use to access the target service provider for outbound provisioning.

Provisioning Target	C4C Provisioner 1.0.0
SOAP Query User URL	<input type="text" value="https://my328745.crm.ondemand."/>
SOAP Process User URL	<input type="text" value="https://my328745.crm.ondemand."/>
SOAP Query Territory URL	<input type="text" value="https://my328745.crm.ondemand."/>
SOAP Assign Territory URL	<input type="text" value="https://my328745.crm.ondemand."/>
SOAP Create Territory URL	<input type="text" value="https://my328745.crm.ondemand."/>
SOAP Header ID	<input type="text" value="XSC003"/>
SOAP Header Sender Business System ID	<input type="text" value="I054955"/>
SOAP Header Recipient Business System ID	<input type="text" value="0M21VRH"/>
SOAP Header Business Scope Type Code	<input type="text" value="3"/>
SOAP Header Business Scope ID	<input type="text" value="302"/>
SOAP Time To Wait Between Transactions (in seconds)	<input type="text" value="20"/>
Authentication Method	<input type="radio"/> Basic <input checked="" type="radio"/> Mutual
Administrator Id (required if 'Basic' is chosen)	<input type="text" value="_I054955"/>
Administrator Password (required if 'Basic' is chosen)	<input type="password" value=""/>
Client Certificate (required if 'Mutual' is chosen)	<input type="text" value="0D:CB:EB:AB:A3:63:AC:81:10:01:04:0A:45:FA (cn=_EDX_00163E12AEE81EE6BFFF6A733611F6EB)"/>
Keystore Password (required if 'Mutual' is chosen, must be different from cert password - e.g., b4j7C^Psh*)	<input type="password" value=""/>
Mail SMTP Host	<input type="text" value="smtp.gmail.com"/>
Mail SMTP Port	<input type="text" value="465"/>
Email Security Method	<input checked="" type="radio"/> SSL <input type="radio"/> TLS
	<input checked="" type="checkbox"/> Authenticate via Mail SMTP Credentials
Mail SMTP Admin Username	<input type="text" value="spc.pingidentity@gmail.com"/>
Mail SMTP Admin Password	<input type="password" value=""/>
Sender Email Address	<input type="text" value="no-reply@pingidentity.com"/>
Receiver Email Address	<input type="text" value="schang@pingidentity.com"/>
Territory Error Email Subject	<input type="text" value="SAP C4C Territory Error"/>

[Cancel](#)
[Next >](#)
[Done](#)
[Save](#)

6. Click the **Create...** button.



PingFederate®

Help | About | Logout (Administrator)

Main SP Connection **Configure Channels**

Target ★ Manage Channels

On this screen you can manage provisioning channels. A channel is a combination of a source data store and a provisioning target.

Channel Configuration

NAME	SOURCE	STATUS	ACTION
Create...			

Cancel < Previous Done

© 2003-2015 Ping Identity Corporation All Rights Reserved  
Version 7.3.0.5

Ping Identity

7. Enter the **Channel Name**, adjust the **Max Threads** if needed, and click **Next**. In the below example, a specific group is configured.

PingFederate®

Help | About | Logout (Administrator)

Main SP Connection Configure Channels **Channel**

★ Channel Info Source Source Settings Source Location Attribute Mapping Activation & Summary

Specify a unique name for this channel. Adjust the default number of processing threads as needed.

Channel Name Sales Managers \*

Max Threads 1 \*

Cancel Next > Done Save

© 2003-2015 Ping Identity Corporation All Rights Reserved  
Version 7.3.0.5

Ping Identity

8. Select the **Active Data Store** (in this example, an Active Directory data store will be chosen), and click **Next**.

Choose the data store that serves as the local repository for user accounts requiring provisioning.

Active Data Store

Data Store Type

[Manage Data Stores...](#)

[Cancel](#)

[< Previous](#)

[Next >](#)

© 2003-2015 Ping Identity Corporation All Rights Reserved  
Version 7.3.0.5



9. Review and adjust the **Source Settings** as needed, and click **Next**.

Enter or modify LDAP settings that apply to the source user-data store, as needed. Note that these fields are preconfigured with default settings based on the LDAP Type, when specified (see documentation). For most LDAP Directory installations, the default settings can be used.

## Data Source

Data Source mswin-lab.pingidentity.com:389

Data Source Description Active Directory

Ldap Type ActiveDirectory

## Identity

Entry GUID Attribute objectGUID \*

GUID Type Binary

## Group Membership Detection

Member of Group Attribute memberof \*

Group Member Attribute member \*

## Change Detection

User objectClass user \*

Group objectClass group \*

Changed Users/Groups Algorithm Active Directory USN

USN Attribute uSNChanged \*

Timestamp Attribute modifyTimestamp \*

## Account Management

Account Status Attribute userAccountControl \*

Account Status Algorithm Active Directory Bitmap

Default Status true

Flag Comparison Value

Flag Comparison Status false

[Cancel](#)
[< Previous](#)
[Next >](#)

10. Enter the appropriate **Base DN**, and **Users Group DN** or **Filter**, and/or **Groups Group DN** or **Filter**, and click **Next**.

# PingFederate®

Help | About | Logout (Administrator)

MainSP ConnectionConfigure ChannelsChannel

Channel InfoSourceSource SettingsSource LocationAttribute MappingActivation & Summary

Enter the Base DN where user records are located in the data store, and specify either an LDAP Filter or Group DN.

Base DN

CN=Users,DC=myad-lab,DC=ping \*

Users

Group DN

CN=Sales Managers,CN=Users,C

Nested Search

☐

Filter

Groups

Group DN

Nested Search

☐

Filter

Cancel


< Previous

Next >

Done

Save

© 2003-2015 Ping Identity Corporation All Rights Reserved  
Version 7.3.0.5



11. Associate the data store attribute with the provisioner field by clicking **Edit** for each attribute. Define by selecting the appropriate data store attribute and clicking the **Add Attribute** button. For static attributes, enter the static value in the **Default Value** field. Click **Done**. Repeat this process for each attribute. When the field-attribute definitions have been completely mapped, click the **Next** button.

PingFederate®

Help | About | Logout (Administrator)

MainSP ConnectionConfigure ChannelsChannel

Channel InfoSourceSource SettingsSource LocationAttribute MappingActivation & Summary

Edit the mapping of attributes from the local data store into Fields specified by the service provider. The Refresh Fields button queries the target partner to update Fields and specifications.

FIELD NAME	ATTRIBUTE(S)	EXPRESSION	DEFAULT	ACTION
Employee ID*				Edit
Phone*				Edit
Email*				Edit
Mobile*				Edit
Country Code*				Edit
Employee Type Start Date*				Edit
Employee Type End Date*				Edit
Username*				Edit
Logon Language Code*				Edit
User Accounts Inactive Indicator*				Edit
Business Role ID*				Edit
Prefix*				Edit
First Name*				Edit
Last Name*				Edit
Nationality Country Code*				Edit
Job Title*				Edit
HR Store*				Edit
Alias*				Edit
SA Number*				Edit
Territory Process Type*				Edit
Territory End Date*				Edit

Refresh Fields

[View Partner Field Specifications](#)

Cancel< PreviousNext >

© 2003-2015 Ping Identity Corporation All Rights Reserved  
Version 7.3.0.5

## Mapping a field-attribute definition:

# PingFederate®

Help | About | Logout (Administrator)

Main

SP Connection

Configure Channels

Channel

Attribute Mapping

☆ Specify Attribute Mapping

Configure how attribute values from your user store will be mapped into Fields specified by the service provider.

FIELD NAME	VALIDATION	NOTES
Employee ID	Required Unique Min: 1 Max: 64	

ROOT OBJECT CLASS	ATTRIBUTE	ACTION
	employeeNumber	Remove
- SELECT -		Add Attribute

VALUE DEFINITION

Default Value

Expression

Options

☐ Create Only

☐ Trim


☐ Mask Log Values

☐ Upper Case ☐ Lower Case ☒ None


Parsing: None

CancelDoneSave

© 2003-2015 Ping Identity Corporation All Rights Reserved  
Version 7.3.0.5



After field-attribute mappings have been completed - an example of a Sales Managers Channel:


Help | About | Logout (Administrator)

Main
SP Connection
Configure Channels
Channel

Channel Info
Source
Source Settings
Source Location
Attribute Mapping
Activation & Summary

*Edit the mapping of attributes from the local data store into Fields specified by the service provider. The Refresh Fields button queries the target partner to update Fields and specifications.*

FIELD NAME	ATTRIBUTE(S)	EXPRESSION	DEFAULT	ACTION
Employee ID*	- employeeNumber	#employeeid = new String (@org.apache.commons.lang.StringUtils.stripStart(#this.get("employeeNumber"), "0"))		<a href="#">Edit</a>
Phone*	- telephoneNumber			<a href="#">Edit</a>
Email*	- mail			<a href="#">Edit</a>
Mobile*	- mobile			<a href="#">Edit</a>
Country Code*	- c			<a href="#">Edit</a>
Employee Type Start Date*	- whenCreated			<a href="#">Edit</a>
Employee Type End Date*			9999-12-31	<a href="#">Edit</a>
Username*	- sAMAccountName			<a href="#">Edit</a>
Logon Language Code*			EN	<a href="#">Edit</a>
User Accounts Inactive Indicator*	- userAccountControl			<a href="#">Edit</a>
Business Role ID*			SALES_MANAGER	<a href="#">Edit</a>
Prefix*	- personalTitle			<a href="#">Edit</a>
First Name*	- givenName			<a href="#">Edit</a>
Last Name*	- sn			<a href="#">Edit</a>
Nationality Country Code*	- c			<a href="#">Edit</a>
Job Title*	- title			<a href="#">Edit</a>
HR Store*	- physicalDeliveryOfficeName			<a href="#">Edit</a>
Alias*	- sAMAccountName			<a href="#">Edit</a>
SA Number*	- extensionName			<a href="#">Edit</a>
Territory Process Type*			ASSIGN	<a href="#">Edit</a>
Territory End Date*			9999-12-31	<a href="#">Edit</a>

Refresh Fields


View Partner Field Specifications

Cancel

< Previous

Next >

© 2003-2015 Ping Identity Corporation All Rights Reserved  
Version 7.3.0.5



## Example of a Sales Associates Channel:

Help | About | Logout (Administrator)

Main
SP Connection
Configure Channels
Channel

Channel Info
Source
Source Settings
Source Location
Attribute Mapping
Activation & Summary

Edit the mapping of attributes from the local data store into Fields specified by the service provider. The Refresh Fields button queries the target partner to update Fields and specifications.

FIELD NAME	ATTRIBUTE(S)	EXPRESSION	DEFAULT	ACTION
Employee ID*	- employeeNumber	#employeeid = new String (@org.apache.commons.lang.StringUtils.stripStart(#this.get("employeeNumber"), "0"))		<a href="#">Edit</a>
Phone*	- telephoneNumber			<a href="#">Edit</a>
Email*	- mail			<a href="#">Edit</a>
Mobile*	- mobile			<a href="#">Edit</a>
Country Code*	- c			<a href="#">Edit</a>
Employee Type Start Date*	- whenCreated			<a href="#">Edit</a>
Employee Type End Date*			9999-12-31	<a href="#">Edit</a>
Username*	- sAMAccountName			<a href="#">Edit</a>
Logon Language Code*			EN	<a href="#">Edit</a>
User Accounts Inactive Indicator*	- userAccountControl			<a href="#">Edit</a>
Business Role ID*			SALES_ASSOCIATE	<a href="#">Edit</a>
Prefix*	- personalTitle			<a href="#">Edit</a>
First Name*	- givenName			<a href="#">Edit</a>
Last Name*	- sn			<a href="#">Edit</a>
Nationality Country Code*	- c			<a href="#">Edit</a>
Job Title*	- title			<a href="#">Edit</a>
HR Store*	- physicalDeliveryOfficeName			<a href="#">Edit</a>
Alias*	- sAMAccountName			<a href="#">Edit</a>
SA Number*	- extensionName			<a href="#">Edit</a>
Territory Process Type*			CREATE	<a href="#">Edit</a>
Territory End Date*			9999-12-31	<a href="#">Edit</a>

Refresh Fields

[View Partner Field Specifications](#)

Cancel
< Previous
Next >

© 2003-2015 Ping Identity Corporation All Rights Reserved  
Version 7.3.0.5



## Example of a Sales BPCs Channel:

Help | About | Logout (Administrator)

Main
SP Connection
Configure Channels
Channel

Channel Info
Source
Source Settings
Source Location
Attribute Mapping
Activation & Summary

*Edit the mapping of attributes from the local data store into Fields specified by the service provider. The Refresh Fields button queries the target partner to update Fields and specifications.*

FIELD NAME	ATTRIBUTE(S)	EXPRESSION	DEFAULT	ACTION
Employee ID*	- employeeNumber	#employeeid = new String (@org.apache.commons.lang.StringUtils.stripStart(#this.get("employeeNumber"), "0"))		<a href="#">Edit</a>
Phone*	- telephoneNumber			<a href="#">Edit</a>
Email*	- mail			<a href="#">Edit</a>
Mobile*	- mobile			<a href="#">Edit</a>
Country Code*	- c			<a href="#">Edit</a>
Employee Type Start Date*	- whenCreated			<a href="#">Edit</a>
Employee Type End Date*			9999-12-31	<a href="#">Edit</a>
Username*	- sAMAccountName			<a href="#">Edit</a>
Logon Language Code*			EN	<a href="#">Edit</a>
User Accounts Inactive Indicator*	- userAccountControl			<a href="#">Edit</a>
Business Role ID*			SALES_BPC	<a href="#">Edit</a>
Prefix*	- personalTitle			<a href="#">Edit</a>
First Name*	- givenName			<a href="#">Edit</a>
Last Name*	- sn			<a href="#">Edit</a>
Nationality Country Code*	- c			<a href="#">Edit</a>
Job Title*	- title			<a href="#">Edit</a>
HR Store*	- physicalDeliveryOfficeName			<a href="#">Edit</a>
Alias*	- sAMAccountName			<a href="#">Edit</a>
SA Number*	- extensionName			<a href="#">Edit</a>
Territory Process Type*			CREATE	<a href="#">Edit</a>
Territory End Date*			9999-12-31	<a href="#">Edit</a>

Refresh Fields

[View Partner Field Specifications](#)

Cancel
< Previous
Next >
Done
Save

© 2003-2015 Ping Identity Corporation All Rights Reserved  
Version 7.3.0.5

## Example of a Deprovisioned Accounts Channel:

Help | About | Logout (Administrator)

Main
SP Connection
Configure Channels
**Channel**

Channel Info
Source
Source Settings
Source Location
☆ Attribute Mapping
Activation & Summary

*Edit the mapping of attributes from the local data store into Fields specified by the service provider. The Refresh Fields button queries the target partner to update Fields and specifications.*

FIELD NAME	ATTRIBUTE(S)	EXPRESSION	DEFAULT	ACTION
Employee ID*	- employeeNumber	#employeeId = new String (@org.apache.commons.lang.StringUtils.stripStart(#this.get("employeeNumber"), "0"))		<a href="#">Edit</a>
Phone*	- telephoneNumber			<a href="#">Edit</a>
Email*	- mail			<a href="#">Edit</a>
Mobile*	- mobile			<a href="#">Edit</a>
Country Code*	- c			<a href="#">Edit</a>
Employee Type Start Date*	- whenCreated			<a href="#">Edit</a>
Employee Type End Date*			9999-12-31	<a href="#">Edit</a>
Username*	- sAMAccountName			<a href="#">Edit</a>
Logon Language Code*			EN	<a href="#">Edit</a>
User Accounts Inactive Indicator*			514	<a href="#">Edit</a>
Business Role ID*			DELETED_USER	<a href="#">Edit</a>
Prefix*	- personalTitle			<a href="#">Edit</a>
First Name*	- givenName			<a href="#">Edit</a>
Last Name*	- sn			<a href="#">Edit</a>
Nationality Country Code*	- c			<a href="#">Edit</a>
Job Title*	- title			<a href="#">Edit</a>
HR Store*	- physicalDeliveryOfficeName			<a href="#">Edit</a>
Alias*	- sAMAccountName			<a href="#">Edit</a>
SA Number*	- extensionName			<a href="#">Edit</a>
Territory Process Type*			DELETE	<a href="#">Edit</a>
Territory End Date*			9999-12-31	<a href="#">Edit</a>

Refresh Fields

[View Partner Field Specifications](#)

Cancel

< Previous

Next >

© 2003-2015 Ping Identity Corporation All Rights Reserved  
Version 7.3.0.5

12. Enable the **Channel Status** by selecting **Active**, and click **Done**.

Note: if **Active** is selected, this will start the provisioning process for ALL users in the filter configured in Step 10. Keep it **Inactive** if you do not wish to begin the provisioning process just yet.

[Main](#)
[SP Connection](#)
[Configure Channels](#)
[Channel](#)

[Channel Info](#)
[Source](#)
[Source Settings](#)
[Source Location](#)
[Attribute Mapping](#)
[Activation & Summary](#)

Summary information for this provisioning channel. Click a heading in a section to edit a particular configuration setting. You can also activate or deactivate the channel, or reset provisioning synchronization if needed.

Channel Status ☒ Active ☐ Inactive

## Channel

### CHANNEL INFO

Channel Name	Sales Managers
Max Threads	1

### SOURCE

Active Data Store	mswin-lab.pingidentity.com:389
Data Store Type	LDAP

### SOURCE SETTINGS

Entry GUID Attribute	objectGUID
GUID Type	Binary
Member of Group Attribute	memberof
Group Member Attribute	member
User objectClass	user
Group objectClass	group
Changed Users Algorithm	Active Directory USN
USN Attribute	uSNChanged
Timestamp Attribute	modifyTimestamp
Account Status Attribute	userAccountControl
Account Status Algorithm	Active Directory Bitmap
Default Status	true

### SOURCE LOCATION

Base DN	CN=Users,DC=myad-lab,DC=pingidentity,DC=com
Group DN for Users	CN=Sales Managers,CN=Users,DC=myad-lab,DC=pingidentity,DC=com
User Nested Search	false

### ATTRIBUTE MAPPING

Click link above to view mapping.	
-----------------------------------	--

[Cancel](#)
[< Previous](#)
[Done](#)
[Save](#)

13. Click **Done** again.

14. Repeat Steps 6 through 13 to create additional channels. In this example, these channels have been created.

**PingFederate®** Help | About | Logout (Administrator)

**Main** **SP Connection** **Configure Channels**

**Target** **Manage Channels**

On this screen you can manage provisioning channels. A channel is a combination of a source data store and a provisioning target.

**Channel Configuration**

NAME	SOURCE	STATUS	ACTION
<a href="#">Deprovisioned Accounts</a>	mswin-lab.pingidentity.com:389	Active	In Use / <a href="#">Copy</a>
<a href="#">Sales Associates</a>	mswin-lab.pingidentity.com:389	Active	In Use / <a href="#">Copy</a>
<a href="#">Sales BPCs</a>	mswin-lab.pingidentity.com:389	Active	In Use / <a href="#">Copy</a>
<a href="#">Sales Managers</a>	mswin-lab.pingidentity.com:389	Active	In Use / <a href="#">Copy</a>

[Create...](#)

[Cancel](#) [< Previous](#) [Done](#) [Save](#)

© 2003-2015 Ping Identity Corporation All Rights Reserved  
Version 7.3.0.5

**Ping Identity**

15. Click **Next**.

**PingFederate®** Help | About | Logout (Administrator)

**Main** **SP Connection**

**Connection Type** **General Info** **Outbound Provisioning** **Activation & Summary**

Configure outbound provisioning for this service provider.

**Outbound Provisioning**

Connection Type	C4C Provisioner 1.0.0
Source Repository	mswin-lab.pingidentity.com:389

[Configure Provisioning](#)

[Cancel](#) [< Previous](#) [Next >](#) [Save](#)

© 2003-2015 Ping Identity Corporation All Rights Reserved  
Version 7.3.0.5

**Ping Identity**

16. Enable the **Connection Status** by selecting **Active**, review the **Activation & Summary**, and click **Save**.



Main



SP Connection

Connection Type

General Info

Outbound Provisioning

★ Activation &amp; Summary

Summary information for your SP connection. Click a heading in a section to edit a particular configuration setting.

Connection Status ☒ Active  
☐ Inactive

**SP Connection****CONNECTION TYPE**

Connection Role	SP
Browser SSO Profiles	false
WS-Trust STS	false
Outbound Provisioning	true

**GENERAL INFO**

Partner's Entity ID (Connection ID)	328745-c4c-provisioner-sp
-------------------------------------	---------------------------

**Configure Channels****TARGET**

SOAP Query User URL	https://my328745.crm.ondemand.com/sap/bc/srt/scs/sap/queryemployeein?sap-vhost=my328745.crm.ondemand.com
SOAP Process User URL	https://my328745.crm.ondemand.com/sap/bc/srt/scs/sap/employeeereplicationin2?sap-vhost=my328745.crm.ondemand.com
SOAP Query Territory URL	https://my328745.crm.ondemand.com/sap/bc/srt/scs/sap/yyhga09ezy_ws_territory_query?sap-vhost=my328745.crm.ondemand.com
SOAP Assign Territory URL	https://my328745.crm.ondemand.com/sap/bc/srt/scs/sap/managesalesterritoryteamin?sap-vhost=my328745.crm.ondemand.com
SOAP Create Territory URL	https://my328745.crm.ondemand.com/sap/bc/srt/scs/sap/salesterritoryreplicationinit?sap-vhost=my328745.crm.ondemand.com
SOAP Header ID	XSC003
SOAP Header Sender Business System ID	I054955
SOAP Header Recipient Business System ID	0M21VRH
SOAP Header Business Scope Type Code	3
SOAP Header Business Scope ID	302
SOAP Time To Wait Between Transactions (in seconds)	20
Authentication Method	Mutual
Administrator Id (required if 'Basic' is chosen)	_I054955
Client Certificate (required if 'Mutual' is chosen)	34mjdtgkp3wtzimg8xwel8gc
Mail SMTP Host	smtp.gmail.com
Mail SMTP Port	465
Email Security Method	SSL
Authenticate via Mail SMTP Credentials	true
Mail SMTP Admin Username	spc.pingidentity@gmail.com
Sender Email Address	no-reply@pingidentity.com
Receiver Email Address	schang@pingidentity.com
Territory Error Email Subject	SAP C4C Territory Error

**MANAGE CHANNELS**

Channel Name	Sales Managers
Channel Name	Sales Associates
Channel Name	Sales BPCs
Channel Name	Deprovisioned Accounts

Cancel < Previous Save

© 2003-2015 Ping Identity Corporation All Rights Reserved  
 Version 7.3.0.5



## Testing

**Note:** Test these test cases using Basic Authentication as well as Mutual Authentication.

1. Provision a new user in the source data store.

**Results:** the new user's data should be posted via the SOAP web service, and a new account should be created along with a territory creation or assignment depending on the user type (for managers, a territory should be assigned; for regular users, a territory should be created) in the target SAP C4C system.

2. Make a change to one or more of the mapped fields of an existing user in the source data store.

Results: the new changes should be posted via the SOAP web service, and the existing user's account should be updated in the target SAP C4C system.

3. Deprovision an existing user in the source data store.

Results: the existing user's disabled status should be posted via the SOAP web service, and the existing user should be deprovisioned in the target SAP C4C system.

4. Re-provision a deprovisioned user in the source data store.

Results: the deprovisioned user's enabled status should be posted via the SOAP web service, and the user's account should be re-enabled in the target SAP C4C system.

## Logging

### *Configuring for PingFederate 7.X*

To enable various logging modes for the SAP C4C provisioner, add the following in the logger section (near the bottom) to <PingFederateInstall>/pingfederate/server/default/conf/log4j.xml:

```
<logger name="com.pingidentity.clientservices.product.provisioner.c4c">  
  <level value="[ DEBUG | INFO | WARN | ERROR ]"/>  
</logger>
```

If you copy and paste the above block, make sure special characters like the quotes (") are valid in the log4j.xml

Detailed training on using Log4j in PingFederate can be found at:

<https://ping.force.com/Support/PingIdentityKnbSearchHome?searchText=log4j>

### *Configuring for PingFederate 8.X*

To enable various logging modes for SAP C4C Provisioner, add the following in the logger section (<Loggers>...</Loggers>) to <PingFederateInstall>/pingfederate/server/default/conf/log4j2.xml:

```
<Logger name="com.pingidentity.clientservices.product.provisioner.c4c" level="[ DEBUG |  
INFO | WARN | ERROR ]" />
```

To enable logging for the SAP C4C Provisioner in a separate file, add the following in the relevant sections in <PingFederateInstall>/pingfederate/server/default/conf/log4j2.xml.

```
<RollingFile name="C4CProvisioner" fileName="${sys:pf.log.dir}/c4cprovisioner.log"  
  filePattern="${sys:pf.log.dir}/c4cprovisioner.%d{yyyy-MM-dd}.log"  
  ignoreExceptions="false">
```

```

<PatternLayout>
    <!-- Uncomment this if you want to use UTF-8 encoding instead of system's
    default encoding.
    <charset>UTF-8</charset> -->
    <pattern>%d %m%n</pattern>
</PatternLayout>
<Policies>
    <TimeBasedTriggeringPolicy />
</Policies>
</RollingFile>

<Logger name="com.pingidentity.clientservices.product.provisioner.c4c"
level="[ DEBUG | INFO | WARN | ERROR ]" additivity="false" includeLocation="true"/>
    <appender-ref ref="C4CProvisioner" />
</Logger>

```

If you copy and paste the above block, make sure special characters like the quotes (") are valid in the log4j.xml

Detailed training on using Log4j in PingFederate can be found at:

<https://ping.force.com/Support/PingIdentityKnBSearchHome?searchText=log4j>