# Table of Contents

**Overview** .................................................................................................................. 3

**Active Directory Integration** ...................................................................................... 3

**Identify your scenario for proper setup sequence** ....................................................... 4

- Scenario 1 - Existing TELUS Business Connect™ customer without Okta ......................... 4
- Scenario 2 - Existing TELUS Business Connect™ customer with Okta ............................. 6
- Scenario 3 – Brand new TELUS Business Connect™ customer without Okta .................. 9
- Scenario 4 – Brand new TELUS Business Connect™ customer with Okta ...................... 9
- Porting Old Numbers from Older Phone System ............................................................. 9
- Requirement for Special Phone (eg. Conference room setup) ........................................ 9

**Configure integration between Okta & TELUS Business Connect™** ............................... 10

- Enable “Directory Integration” in TELUS Business Connect™ ........................................ 10
- Adding TELUS Business Connect™ app in Okta ............................................................ 10
- Configuring TELUS Business Connect™ app for Provisioning ........................................ 10

**Set up Active Directory integration with Okta** .............................................................. 12

**Set up Attribute Mappings** ........................................................................................ 12

- Understanding Okta User Schema .................................................................................. 13
- Using profile editor ......................................................................................................... 13
- Setting up bi-direction sync for phone number .............................................................. 14
  - Enable feature flags through Okta Support ................................................................. 14
  - Configure AD as a master and write-back ................................................................. 14
  - Configure TELUS Business Connect™ as a “profile master” to enable attribute-level mastering ................................................................. 15
  - Configure mapping for directNumber and extension coming in from TELUS Business Connect™ to Okta ................................................................. 16
  - Configure mapping for Okta to push phone number information back to AD ............... 18
  - Testing Bi-Directional Sync ....................................................................................... 18

**“Disable/Enable”, “Delete” in Active Directory** ............................................................. 19

**Appendix** ....................................................................................................................... 20

- TELUS Business Connect™ Okta Org Creation ............................................................... 20
- AD > Okta Attribute Mapping requirements for TELUS Business Connect™ .................. 20
- Okta > TELUS Business Connect™ Attribute Mapping requirements ............................ 21
- Provisioning Errors ........................................................................................................ 21
Overview

To effectively onboard new users into TELUS Business Connect™, many customers leverage Active Directory (or LDAP) which acts as the corporate directory to drive the provisioning lifecycle. The Okta-TELUS Business Connect™ integration allows TELUS Business Connect™ to benefit from Okta’s Active Directory integration to provide an AD-driven provisioning solution. With Okta, the integration with AD is simple – providing both SSO and provisioning support for any TELUS Business Connect™ customers.

The key benefit in integrating Okta with your TELUS Business Connect™ org is to allow authentication and provisioning to be driven by your existing Active Directory infrastructure.

Specifically, the Okta-TELUS Business Connect™ integration allows the following:

• New user account provisioning based on Active Directory users and groups
• Single Sign On support
• End users to login into TELUS Business Connect™ using their Active Directory credentials.

Okta also supports other non-AD LDAP products including Oracle, Sun, eDirectory, OpenLDAP,OpenDJ/DS. In this document, we will focus on the AD integration. Other LDAPs follow a very similar deployment procedure.

The Active Directory integration involves the following core steps:

1. Configure integration between Okta & TELUS Business Connect™ – This allows Okta to handle authentication for your TELUS Business Connect™ instance and provide automated-provisioning based on Active Directory that is integrated via Okta.

2. Set up Active Directory integration with Okta – Configure Okta Active Directory Agent with your Active Directory instance and setting up provisioning rules to enable automated provisioning of your AD users into TELUS Business Connect™.

3. Set up the necessary attribute mappings – There are custom attribute mappings between AD and Okta (phone number and extension attributes) – and between Okta and TELUS Business Connect™ that need to be configured.
Identify Your Scenario For Proper Setup Sequence

Depending on your current Okta and TELUS Business Connect™ setup, the initial setup sequence will vary slightly. Once configured and bootstrapped, subsequent user creation/deactivation will follow the exact same pattern. In all the scenarios, we assume the existence of AD/LDAP. In the flows below, we will use Active Directory as the example.

Scenario 1 – Existing TELUS Business Connect™ customer without Okta

In this scenario, you have been using TELUS Business Connect™ for some time. Active users already exist in TELUS Business Connect™ and they correspond to users in your Active Directory. You are now deploying Okta for the very first time to set up provisioning (and SSO) between AD and TELUS Business Connect™.

<table>
<thead>
<tr>
<th>Steps</th>
<th>Active Directory Phone/ext exists</th>
<th>Okta Newly created Okta org</th>
<th>TELUS Business Connect™ Existing TELUS Business Connect™ customer Users already exist</th>
</tr>
</thead>
</table>
| 1     |                                  |                             | Create Okta Org. This can be done from TELUS Business Connect™ Web Portal->Tools->Active Directory Integration.  
See Appendix for details.  
After submission, an Okta Org will be created along with the “TELUS Business Connect SAML” app instantiated. The rest of the app configuration will be done in step 7. |
| 2     | Now, Log into Okta org to set up Okta AD agent with Okta. Follow the instructions here on “Installing and Configuring the Active Directory Agent” – followed by “Configuring Your Active Directory Settings”. |                             |                                                                                  |
| 3     |                                  | Once the agent is installed, complete the rest of AD setup in Okta UI. Under “Settings” of your newly created directory instance, configure import/scheduling/confirmation as suggested  
- Automate import by setting “Schedule import”  
- Auto-confirmation and Auto-activation should be enabled for all “match” types.  
By default,  
- “Activation email” option is turned off. Leave it as is. |                                                                                  |
| 4     |                                  | Complete field mapping between AD user profile & Okta user profile. This maps an AD attribute to an Okta attribute for the user.  
See Appendix for details |                                                                                  |
<table>
<thead>
<tr>
<th>Steps</th>
<th>Active Directory Phone/Ext exists</th>
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<th>TELUS Business Connect™ Existing TELUS Business Connect™ customer Users already exist</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Set up AD group for automated provisioning. This refers to picking/creating the appropriate group(s) in AD to configure automated provisioning in Okta later on. It is recommended that you do this step. You could leverage “Everyone” group in Okta for this. However, using dedicated AD group(s) will give you more fine-grained control.</td>
<td>Manually perform a full Import of users (and groups) into Okta using the “Import Now” button under the “Import” tab. To validate, check “People” and “Groups” under “Directory” to make sure the right entries have been imported from AD.</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Now – to automate provisioning, we need to first complete the TELUS Business Connect™ app setup. Go to your TELUS Business Connect™ app under “Applications”. Under “Provisioning” tab, enable provisioning by authenticating with the right API user. Enable “Create Users”, “Update User Attributes”, “Deactivate Users” options. Save the options.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>You must now configure the attribute mapping between Okta and TELUS Business Connect™. See Appendix for details.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Steps</td>
<td>Active Directory Phone/ext exists</td>
<td>Okta Newly created Okta org</td>
<td>TELUS Business Connect™ Existing TELUS Business Connect™ customer Users already exist</td>
</tr>
<tr>
<td>-------</td>
<td>----------------------------------</td>
<td>-----------------------------</td>
<td>--------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>9</td>
<td></td>
<td>To enable automated</td>
<td>Provides TELUS Business Connect™ app with group(s). Automated Group membership can</td>
</tr>
<tr>
<td></td>
<td></td>
<td>provisioning, you will now</td>
<td>be mastered from an external source like AD or it can be set up through rules. See</td>
</tr>
<tr>
<td></td>
<td></td>
<td>associate your TELUS</td>
<td>how to use groups for application assignments to assign app to group.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Business Connect™ app with</td>
<td>At this point, Okta will attempt to provision all users associated with these</td>
</tr>
<tr>
<td></td>
<td></td>
<td>group(s).</td>
<td>groups into TELUS Business Connect™. If user already exists, Okta will link the</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>accounts. Otherwise, a new TELUS Business Connect™ account will be created.</td>
</tr>
<tr>
<td>10</td>
<td>[Optionally] If SSO is needed,</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>test login with AD credentials.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Make sure Delegated Authentication is configured</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Optionally] Set up SAML if SSO to access TELUS Business Connect™ Web App is desired</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Scenario 2 – Existing TELUS Business Connect™ customer with Okta**

In this scenario, TELUS Business Connect™ customer has already been using Okta. The assumption here is that Active Directory has already been integrated with Okta – and that the user population exists in Okta. Scheduled import is already in place and appropriate groups have been either imported from AD to drive automated provisioning. The focus here is to set up the TELUS Business Connect™ App and import/match all existing TELUS Business Connect™ users with Okta users. These should match if the TELUS Business Connect™ users already exist in AD – and therefore in Okta.

<table>
<thead>
<tr>
<th>Steps</th>
<th>Active Directory Phone/ext exists</th>
<th>Okta Newly created Okta org</th>
<th>TELUS Business Connect™ Existing TELUS Business Connect™ customer Users already exist</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>Review field mapping between AD user profile &amp; Okta user profile. This maps an AD attribute to an Okta attribute for the user. While you may have already configured AD-to-Okta mapping, please look at the list in the Appendix to make sure the minimum attribute requirement for TELUS Business Connect™ is met. If mapping is changed, manually perform a full import of AD under the “Import” tab by clicking on “Import Now”.</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Set up AD group for automated provisioning. This refers to picking/creating the appropriate group(s) in AD to configure automated provisioning in Okta later on. It is recommended that you do this step. You could leverage “Everyone” group in Okta for this. However, using dedicated AD group(s) will give you more fine-grained control.</td>
<td>Manually perform a full Import of users (and groups) into Okta using the “Import Now” button under the “Import” tab. To validate, check “People” and “Groups” under “Directory” to make sure the right entries have been imported from AD.</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Steps</td>
<td>Active Directory Phone/ext exists</td>
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</tr>
<tr>
<td>-------</td>
<td>----------------------------------</td>
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<td>---------------------------------------------------------------</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>Now – to automate provisioning, we need to first complete the TELUS Business Connect™ app setup. &lt;br&gt; If you don’t have a TELUS Business Connect™ app yet, create it under “Applications” tab. &lt;br&gt; Now go to your TELUS Business Connect™ app “TELUS Business Connect SAML” under “Applications”. Under “Provisioning” tab, enable provisioning by authenticating with the right API user. &lt;br&gt; Enable “Create Users”, “Update User Attributes”, “Deactivate Users” options. &lt;br&gt; Save the options.</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>You must now configure the attribute mapping between Okta and TELUS Business Connect™. See Appendix for details.</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td>To enable automated provisioning, you will now associate your TELUS Business Connect™ app with group(s). Automated Group membership can be mastered from an external source like AD or it can be set up through rules. See how to use groups for application assignments to assign app to group. &lt;br&gt; At this point, Okta will attempt to provision all users associated with these groups into TELUS Business Connect™. If user already exists, Okta will link the accounts. Otherwise, a new TELUS Business Connect™ account will be created.</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td></td>
<td>[Optionally] If SSO is needed, test login with AD credentials. Make sure Delegated Authentication is configured.</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
<td>[Optionally] Set up SAML if SSO to access TELUS Business Connect™ Web App is desired.</td>
<td></td>
</tr>
</tbody>
</table>
Scenario 3 – Brand new TELUS Business Connect™ customer without Okta

This is similar to scenario 1. You will most likely have a few TELUS Business Connect™ users defined before rolling out to a larger population. The recommended approach is to follow the steps in Scenario 1 to bootstrap those few users after you have set up Okta. Then leverage Okta to provision the rest of the users into TELUS Business Connect™ through automated provisioning.

Scenario 4 – Brand new TELUS Business Connect™ customer with Okta

This is similar to scenario 2. You will most likely have a few TELUS Business Connect™ users defined before rolling out to a larger population. Follow the steps to set up TELUS Business Connect™ app and import the TELUS Business Connect™ users into Okta and match them. Then leverage Okta to provision the rest of the users into TELUS Business Connect™ through automated provisioning.

Porting Old Numbers from Older Phone System

Brand new TELUS Business Connect™ customer with Okta who is porting numbers from older phone system. In this scenario it’s a combination of business process and automated provisioning. Temporary numbers will be assigned during provisioning and the number will not get pushed to Active Directory. Numbers will be pushed to Active directory after the porting is done.

Requirement for Special Phone (eg. Conference room setup)

This will be a combination of business process and automated provisioning. Admin manually assigns the special phone in voice manager as first step. Then leverage Okta to provision the rest of the users into TELUS Business Connect™ through automated provisioning.
Configure integration between Okta & TELUS Business Connect™

The following are details on some of the steps. Please refer to the scenarios above to establish the proper sequence.

Enable “Directory Integration” in TELUS Business Connect™

Please contact TELUS Business Connect™ support to enable “Directory Integration” option for the corresponding account.

Adding TELUS Business Connect™ app in Okta

• Log into Okta as an administrator.
• Go to Admin Console > Applications and hit “Add Application” button.
• Type in “TELUS Business Connect” in the search-for-an-application field and select “TELUS Business Connect SAML”
• You should see the following app setup wizard

Configuring TELUS Business Connect™ app for Provisioning

• Hit Next to continue after specifying the appropriate Application label. This is the label that end users will see.

• Under “Provisioning”, check the box to Enable Provisioning Features.
• Click on “Authenticate with TELUS Business Connect” button to complete API integration. The UI will take you back to TELUS Business Connect™ for authentication. If the valid credentials are provided, the UI will return to the Okta page with a green button indicating authentication is successful.
• Have “user import” enabled – but leave scheduled import as “Never” since we are not doing periodic import from TELUS Business Connect™. Import is only done for initial bootstrap.

• Note: Depending on which part of the setup sequence you are at, the steps below may happen at a later time after you have completed other bootstrap steps. Please refer to the scenarios above.

• Check the boxes for “Create Users”, “Update User Attributes”, and “Deactivate Users”.

• Hit “Next” and skip the “Assign to People” step for the time being. This will complete the app creation in Okta.

At this point, provisioning has been turned on. Now, we must complete the AD integration as well as attribute mappings before we try to provision a TELUS Business Connect™ account.
Set Up Active Directory Integration with Okta

You can skip this section if you have already set up your Active Directory.

To set up Active Directory, please follow the instructions here on “Installing and Configuring the Active Directory Agent” – followed by “Configuring Your Active Directory Settings”.

Once this is completed, periodic synchronization with AD will happen. You should be seeing AD users populating the Okta directory. To understand how Okta handles AD Security Groups imported from AD - go to “Importing and Using Groups in Okta”.

At a high-level, once groups are imported you will associate the TELUS Business Connect™ app with the appropriate group to trigger auto-provisioning. Before we do that, we need to configure a few more things.

Set up Attribute Mappings

AD-driven provisioning involves several steps:

1. AD synchronizing into Okta – Okta does not directly pull attributes from AD and pushes them into TELUS Business Connect™. The first step of the flow is synchronizing user from AD into the Okta user profile. This involves the periodic sync that you have just setup. It also involves careful attribute mapping to make sure all the needed AD user attributes are synchronized into Okta correctly.

   For details on AD > Okta attribute mappings, please refer to the Appendix.

2. Okta pushing into TELUS Business Connect™ – This is typically caused by one of the following triggers:
   
   a. Manual assignment
   b. Group-based assignment
   c. User Profile update
   d. User deactivation (in which case the TELUS Business Connect™ use)

   Attribute Mappings between Okta and TELUS Business Connect™ must be configured beforehand.

   For details on Okta > TELUS Business Connect™ attribute mappings, please refer to the Appendix.
Understanding Okta User Schema

Okta core user schema contains most of the common user profile attributes. (See our Universal Directory documentation for more info - https://support.okta.com/help/articles/Knowledge_Article/About-Universal-Directory).

The phone “extension” attribute tends to be set up differently in different AD deployment. It is also an attribute that needs to be added to the Okta base schema. Follow the “Add Attribute” portion of the documentation above to add the “extension” attribute. Recommendation is to add it as a String attribute. If the extension value is nested within another attribute (eg. telephone=+1-415-555-6789;ext.321), you can leverage the expression language to customize the mapping of the attribute.

For more information on Okta’s expression language – go to - http://developer.okta.com/docs/api/getting_started/okta_expression_lang.html

Using Profile Editor

To set up mappings, you need to go to “Profile Editor” in the Admin Console. Note that you need to have AD and TELUS Business Connect™ configured in order for them to show up under the Profile Editor.

To set up custom attributes for TELUS Business Connect™ – select under “Apps” on the left pane the TELUS Business Connect™ app that you have just configured. Select “Okta to TELUS Business Connect” to configure the outbound mapping.
Setting Up Bi-direction Sync For Phone Number

While Active Directory is the source of truth for most attributes in a user profile, in the case of a TELUS Business Connect™ deployment, the Direct Number and Extension info will be coming from TELUS Business Connect™. To support this, you will need to set up bi-directional sync for these attributes so that those values can flow back to Active Directory.

Bi-directional sync is also known as “attribute-level mastering” within Okta. There are two levels of “masters” in Okta for any Okta user profile. “Profile-level master” is the broader of the two that deals with attributes as well as lifecycle of a user (when to create or deactivate). “Attribute-level master” can override profile-level master to aim at specific attribute(s) to be mastered from a different source.

In this TELUS Business Connect™ use case, Active Directory (or LDAP) will be the profile master while TELUS Business Connect™ will be configured to have attribute-level mastering for “directNumber” and “extension”.

Here are the steps to set up bi-directional sync in Okta:

1. Enable feature flags through Okta Support.
2. Configure AD as a master and enable attribute write-back in AD settings
3. Configure TELUS Business Connect as a “profile master” to enable attribute-level mastering
4. Configure mapping for directNumber and extension coming in from TELUS Business Connect to Okta
5. Configure mapping for Okta to push phone number information back to AD
6. Testing

Enable Feature Flags Through Okta Support

While Active Directory “Settings” tab, enable “Create User” and “Profile Master” (which you should have done so already). The “Create User” might be misleading. We are NOT creating users in AD. However, this setting is needed to enable Okta to write back to AD. Because AD configured as a profile master, Okta will not create any users in AD.
Configure TELUS Business Connect™ as a “profile master” to enable attribute-level mastering

Go to TELUS Business Connect™ application and click on the “Provisioning” tab and edit the setting for Profile Master by enabling it.

This will allow Okta to import attributes from TELUS Business Connect™. Note that if the feature flag “ALLOW_BOTH_PROFILE_MASTERING_AND_PUSH” is not enabled, you will get an error when you try to do this. Make sure you have Okta Support enable the flag for you.

IMPORTANT: At this point, please make sure that the Profile Master Priority is set up correctly to have Active Directory as the highest priority. Go to “Directory” > “Profile Masters” from the top navigation.

If the priority is incorrect, use the side arrows to swap the priorities so that Active Directory is the top.

Configure mapping for directNumber and extension coming in from TELUS Business Connect™ to Okta

This step will set up the mapping of directNumber and extension from TELUS Business Connect™ to Okta.

1. Go to “Directory” > “Profile Editor” and select TELUS Business Connect™ app “Profile”.

You should see the following:
Hit “Add Attribute” if “DirectNumber” and “Extension Number” are not already on the list. Select them and hit “Save” on the pop-up. Your settings may vary if you choose to have additional attributes pushed into TELUS Business Connect™ from user’s Active Directory Profile.

2. Now, hit “Map Attributes” to do the mapping. First, make sure “Okta to TELUS Business Connect SAML” mapping is correct by selecting “Okta to TELUS Business Connect” at the top of the pop-up. You would have used this pop-up before for the initial attribute mappings. For “directNumber” and “extensionNumber”, set it to a dummy value (e.g., “blank” is shown here). The value will only be imported from TELUS Business Connect™. Setting a dummy value here will avoid the need to set a value during group assignment or direct assignment of TELUS Business Connect™ to a user. Save Mappings and apply updates when prompted.

3. Now click on “Mappings” again for TELUS Business Connect™ app and select “TELUS Business Connect SAML to Okta” at the top to configure the import mapping from TELUS Business Connect™ into Okta. You should have the following configured:

   a. appuser.userName -> login
   b. appuser.firstName -> firstName
   c. appuser.lastName -> lastName
   d. appuser.userName -> email
Now, configure the mapping for “directNumber” and “extensionNumber”. The incoming values from TELUS Business Connect™ are captured in the variables “appuser.directNumber” and “appuser.extensionNumber” respectively. You can choose to map them to individual attributes in the Okta profile.

In this example, we are mapping a combined value to the “primaryPhone” attribute in the Okta profile. The format here is <directNumber>#<extensionNumber>. We use the following expression:

$$\text{appuser.directNumber} \neq \text{null} ? \text{appuser.directNumber} : '' + '#' + \text{appuser.extensionNumber}$$

Hit “Save Mappings” and “Apply Updates”.

To complete the mapping, we now go to the Okta profile to make sure “primaryPhone” which is the example we had just configured is “mastered” by TELUS Business Connect™. If you have mapped the attributes differently, you need to make sure the corresponding Okta profile attributes are mastered correctly by following the exact same steps below.

1. Under “Directory”->“Profile Editor”, click on the Okta “Profile” button.
2. Most of the attributes should have “Inherit from profile master” as the option under “Master Priority”.

In the case of “primaryPhone”, we will force TELUS Business Connect™ to be the master which will trigger the bi-directional sync.

3. Scroll down to “primaryPhone” on the left pane and click on it to reveal the details on the right pane. Under the Master Priority dropdown, select “Override profile master”.

4. Then click “Add Master” and select the TELUS Business Connect option.

5. Hit “Save Attribute” to complete.
Configure mapping for Okta to push phone number information back to AD

Now that we have the “directNumber” and “extensionNumber” configured in the Okta profile from TELUS Business Connect™, we will map it back to AD.

1. Go to “Directory”->“Profile Editor” and select “Mappings” for your Active Directory instance.
2. Click on “Okta to <AD>” option at the top.
3. Unless there are other attributes that you would like to write-back to AD, everything here should be set to blank (having no mappings). Scroll down to the Active Directory attribute on the right pane where you wish to push the telephone information back to. If you have different attributes for extension number and direct number, then you will have to set them appropriately similar to the example here. We will be mapping the Okta “primaryPhone” attribute to the Active Directory “telephoneNumber” attribute in this example.

Testing Bi-Directional Sync

Here are the steps to “manually” test this. When in production, these should all be automated by setting up scheduled import from AD and from TELUS Business Connect™. Scheduled import from AD will import user from Active Directory periodically – picking up new users. Scheduled import from TELUS Business Connect™ will pick up the directNumber and extensionNumber from any newly created TELUS Business Connect™ users whose creation is triggered by Active Directory.

To manually test this:

1. Create new user in AD
2. Manually perform import from AD under the AD “Import” tab. Make sure the user is activated.
3. If you have configured group-based provisioning for this user and the user is a member of the group, then TELUS Business Connect™ provisioning (or push to TELUS Business Connect™) should happen automatically at this point.
4. Verify that user has been created in TELUS Business Connect™ and check that a directNumber and extensionNumber has been assigned for this new user
5. Now, in Okta, go to the TELUS Business Connect™ application and under the “Import” tab, hit “Import Now” to trigger a manual import.
6. Now check the Okta profile of the newly created user. If the mappings are functioning properly, you should see the correct attribute values in the Okta profile that are derived from the imported TELUS Business Connect™ directNumber and extensionNumber.
7. At this point, the push to Active Directory should have also happened. Go to Active Directory and verify that the selected attribute(s) have been updated with the new telephone number information.
“Disable/Enable”, “Delete” in Active Directory

With automated provisioning enabled, if the “Deactivate Users” option is selected in Provisioning settings, Okta will deactivate the TELUS Business Connect™ account when a user is deactivated in AD. Since the AD synchronization relies on a scheduled import, there is potentially a small lag between the time a user is deactivated in AD and when Okta tells TELUS Business Connect™ to deactivate the user.

In the case where the TELUS Business Connect™ account needs to be deactivated immediately, you can do so in Okta directly – bypassing AD.

If you need to support Reactivation of a user where a TELUS Business Connect™ account is reactivated due to the same user being reactivated in AD, please first contact Okta support to have “AD Reactivation” enabled. If static group memberships were applied to the user prior to deactivation (ie. Manually assigned to local Okta groups), those group memberships will not be re-enabled upon reactivation. However, any AD security group membership will be there as the reactivated will have his/her AD group membership re-populated in Okta upon reactivation. Ideally, if you want reactivation to lead to TELUS Business Connect™ provisioning in your setup.

For a disabled AD user to be reactivated in Okta after being re-enabled in AD, an incremental AD import will suffice. If a deleted user in AD is recreated, Okta will require a Full AD import to capture the new user.
Appendix

TELUS Business Connect™ Okta Org Creation

AD > Okta Attribute Mapping requirements for TELUS Business Connect™

The following list is the minimum set of attributes needed from AD into Okta:

<table>
<thead>
<tr>
<th>Active Directory</th>
<th>To &gt; Okta</th>
</tr>
</thead>
<tbody>
<tr>
<td>appuser.firstName</td>
<td>firstName</td>
</tr>
<tr>
<td>appuser.lastName</td>
<td>lastName</td>
</tr>
<tr>
<td>appuser.email != null ? appuser.email : appuser.userName</td>
<td>email</td>
</tr>
<tr>
<td>appuser.mobilePhone</td>
<td>mobilePhone</td>
</tr>
<tr>
<td>appuser.streetAddress</td>
<td>streetAddress</td>
</tr>
<tr>
<td>appuser.city</td>
<td>city</td>
</tr>
<tr>
<td>appuser.state</td>
<td>state</td>
</tr>
<tr>
<td>appuser.postalCode</td>
<td>zipCode</td>
</tr>
<tr>
<td>appuser.countryCode</td>
<td>countryCode</td>
</tr>
<tr>
<td>appuser.department</td>
<td>department</td>
</tr>
</tbody>
</table>
Okta > TELUS Business Connect™ Attribute Mapping requirements

The following list is the minimum set of attributes needed from Okta into TELUS Business Connect™:

<table>
<thead>
<tr>
<th>Okta</th>
<th>To &gt; TELUS Business Connect</th>
</tr>
</thead>
<tbody>
<tr>
<td>user.firstName</td>
<td>firstName</td>
</tr>
<tr>
<td>user.lastName</td>
<td>lastName</td>
</tr>
<tr>
<td>user.email</td>
<td>email</td>
</tr>
<tr>
<td>user.mobilePhone</td>
<td>mobilePhone</td>
</tr>
<tr>
<td>user.streetAddress</td>
<td>street</td>
</tr>
<tr>
<td>user.city</td>
<td>city</td>
</tr>
<tr>
<td>user.state (Note: Make sure state in AD/Okta is in proper ISO format)</td>
<td>State/Province</td>
</tr>
<tr>
<td>user.zipCode</td>
<td>Postal code</td>
</tr>
<tr>
<td>user.countryCode</td>
<td>country</td>
</tr>
<tr>
<td>user.department</td>
<td>department</td>
</tr>
</tbody>
</table>

Please make sure that the “state” name should be either a standard “state name” (such as California) or “state code” (such as CA)

Provisioning Errors

<table>
<thead>
<tr>
<th>Error Message</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>$(parameterName) is invalid. Please correct the parameter in Active Directory</td>
<td>Values coming from Active Directory are not right. Please correct the values. Make sure all the values are right.</td>
</tr>
<tr>
<td>Resource for parameter [$(parameterName)] is not found</td>
<td>Value is missing in Active Directory. Please correct it.</td>
</tr>
<tr>
<td>JSON can not be parsed. Please check your data AD and correct it</td>
<td>JSON can not be parsed. Please check your data AD and correct it</td>
</tr>
<tr>
<td>Service Temporarily Unavailable. Please check back later</td>
<td>Please check back again sometime. Issues on Okta</td>
</tr>
<tr>
<td>Extension already in use. Please go to TELUS Business Connect’s Web portal and see what extensions are available*</td>
<td>Extension already in use. Please check in voice manager if extension available or not</td>
</tr>
</tbody>
</table>
| Extension number is duplicate. Please correct in Active Directory if you have an extension field. Otherwise edit it in the TELUS Business Connect™ Voice Manager | To bulk edit extensions in the TELUS Business Connect™ Webportal. Please go to User Management and click on edit extensions and follow the instructions to edit.