SMART Directory Sync 4.5
Comprehensive User Guide for
Domino-Active Directory
Synchronization

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# Table of Contents

**Section 1. Introduction** .................................................................................................................. 4  
1.1 Purpose .................................................................................................................................. 4  
1.2 Audience for Domino - Active Directory Synchronization .............................................................. 4  
1.3 About SMART Directory Sync for Domino - Active Directory Synchronization .............................. 4  
Key Features and Functions ................................................................................................................. 4

**Section 2. Configuring Synchronization** ....................................................................................... 6  
2.1 Applying a License .................................................................................................................... 6  
2.2 Adding a Domino Directory to Active Directory Synchronization Profile ......................................... 7  
2.3 Adding an Active Directory to Domino Directory Synchronization Profile ....................................... 21  
2.4 Importing and Exporting a Profile .............................................................................................. 32  
2.5 Suspending and Activating a Profile ............................................................................................ 33  
2.6 Removing a Profile ................................................................................................................... 33  
2.7 Resetting a Profile .................................................................................................................. 33

**Section 3. Running Sync Reports** ............................................................................................... 35

**Section 4. Running Directory Sync** ............................................................................................. 43  
4.1 Manually Starting a Synchronization using a Sync Profile ............................................................ 43  
4.2 Manually Starting a Synchronization Process using the Right-Click Menu ...................................... 43  
4.3 Manually Starting a Synchronization Process from a Command Line ........................................... 44

**Section 5. Using the SMART Directory Sync Log Viewer to View Logs and Audits** ..................... 45  
5.1 Using the SMART Directory Sync Log Viewer to View Logs and Audits ....................................... 45  
5.2 Searching Log or Audit Entries .................................................................................................. 45  
5.3 Pausing a Log .......................................................................................................................... 46  
5.4 Showing or Audit Log Entries for a Time Period ......................................................................... 46  
5.5 Filtering the Log or Audits ......................................................................................................... 47  
5.6 Grouping the Log or Audits by Column ...................................................................................... 47  
5.7 Viewing Log or Audit Entry Details ........................................................................................... 48  
5.8 Exporting Log or Audit Entries .................................................................................................. 49  
5.9 Clearing Log or Audit Entries ..................................................................................................... 49

**Section 6. Updating the Groups to Ignore List in SQL** .................................................................. 51  
6.1 Updating the Groups to Ignore List in SQL for Domino - Active Directory Synchronization ........... 51  
6.2 Default List of Groups in the Groups to Ignore List for Domino - Active Directory Synchronization .. 51  
6.3 Updating the Groups to Ignore List with the SQL Server Management Studio (SSMS) .................. 53  
6.4 Updating the Groups to Ignore List with the SQL Import and Export Tool ..................................... 55
6.5 Excluding Security Groups from Synchronization with the Group Filter ........................................... 59

Appendix A: Using the User and Group LDAP Filters.............................................................................. 60

Appendix B: Additional Configuration Options....................................................................................... 61
   Changing the attribute used for "Created by Dirsync" or "Updated by Dirsync".................................. 61
   Setting msExchRecipientDisplayType and msExchRecipientTypeDetails Exchange attributes .......... 61

Appendix C: Default Mapping ................................................................................................................. 64
   Domino Source – AD Target Default Mapping ...................................................................................... 64
   AD Source – Domino Target Default Mapping ....................................................................................... 73

Appendix D: Customizing Overrides ....................................................................................................... 83
   Controlling actions with Overrides ..................................................................................................... 86
   Matching user accounts with Overrides ............................................................................................. 86
   Example Overrides .............................................................................................................................. 87

Appendix E: Directory Sync Fields with Special Processing ................................................................. 90
   AD Directory Sync Fields with Special Processing .............................................................................. 90
   Writing Users to AD ............................................................................................................................ 90
   Writing Groups to AD .......................................................................................................................... 92
   Additional Notes .................................................................................................................................. 94
   Domino Directory Sync Fields with Special Processing .................................................................... 95

About Binary Tree .................................................................................................................................... 97
Section 1. Introduction

1.1 Purpose

The purpose of this document is to provide information on how to use Binary Tree SMART Directory Sync to perform synchronizations between Domino and Active Directory.

1.2 Audience for Domino - Active Directory Synchronization

It is assumed the reader has the following technical expertise:

- Advanced Domino Administration
- Advanced Active Directory & Exchange Administration
- Windows Administration
- SQL Administration
- LDAP
- SMTP Routing
- DNS

1.3 About SMART Directory Sync for Domino - Active Directory Synchronization

SMART Directory Sync allows you to synchronize objects from Domino to Active Directory or Active Directory to Domino. Directory Sync has been carefully designed and crafted to meet the challenging requirement for a solution that can deliver a reliable, secure, and automated solution that synchronizes and transforms directory data between Exchange 2003, 2007, 2010, 2013, 2016, and Domino 7.x or higher environments.

Key Features and Functions

- Sync Reports allow you to view how objects will appear in the target directory before synchronizing a profile. This allows for the remediation of any data issues without impacting the target directory
- User Synchronization
  - Synchronize user objects from between Active Directory and Domino
  - Create Active Directory objects as Contacts or Mail-Enabled Objects
  - Ability to match and update existing objects
- Customizable attribute matching logic
- Ability to mail-enable matched users in the target Active Directory
- Ability to synchronize, mail-in databases, rooms and resources from Domino to Active Directory
- Ability to synchronize shared mailboxes, rooms and resources from Active Directory to Domino
- Group Synchronization
  - Synchronize groups into the target directory as member-populated groups or as contacts
  - Conflict resolution options
  - Create External Members as Contacts in AD
Section 2. Configuring Synchronization

The SMART Directory Sync Console provides an easy to follow wizard for creating directory synchronization profiles between Domino and Active Directory. It also allows you to quickly manage profiles and immediately start synchronization.

To begin configuring the synchronization, start the installed SMART Directory Sync Console.

2.1 Applying a License

All SMART Directory Sync profile types are licensed for the number of objects to be synchronized. Some options are either enabled or disabled (for example, Group migration). A license key must be added in order to synchronize objects to a Target. To apply a license:

1. On the SMART Directory Sync Console, click the License button. The License dialog window appears.
2. Click the Apply License button.
3. Browse to and select the license (.lic) file obtained from Binary Tree, and then click Open.
4. The license details appear in the dialog window. Click Close to close the window.
2.2 Adding a Domino Directory to Active Directory Synchronization Profile

To add a Domino directory to Active Directory synchronization profile:

1. Click **Add Profile**.

![Profile Type Selection Window]

2. In the Profile Type Selection window, select **Domino Directory to Active Directory** and then click **OK**.

The following Profile Types are also available:

- **AD Migration/Synchronization** – used for both AD to AD directory synchronization and in support of an Active Directory migration utilizing Binary Tree’s SMART Active Directory Migrator product.
- **Exchange Migration** – used in support of an Exchange migration utilizing Binary Tree’s E2E Complete product.
- **Active Directory to Domino Directory** – used to synchronize objects from an Active Directory source to a Domino directory target.
- **Window Server Migration** – used in support of a Windows Server migration utilizing Binary Tree’s Windows Server Migration product.
3. A new pane appears at the bottom of the console which provides the ability to configure options for synchronization.

4. On the General tab, enter a name to identify the profile in the Name field.

5. Select the status of the profile from the Status drop-down list:
   - **Active** – will synchronize as scheduled
   - **Suspended** – Not active, will not synchronize

6. Select the logging level of the profile from the Logging drop-down list:
   - **Low** – only errors are logged
   - **Medium** – errors and warnings are logged
   - **High** – all messages (errors, warnings, information, etc.) are logged (should be used for troubleshooting purposes only)

7. Select an Audit Logging option from the drop-down list:
   - **Enabled** – Records object and attribute changes in the Audit Log
   - **Disabled** – Object and attribute changes will not be recorded in the Audit Log

8. For Schedule, select the schedule:
   - **By frequency** – enter the appropriate frequency or the specific time for the synchronization process to run for your environment. Zero (0) is not a valid value for frequency. The minimum interval is 15 minutes.
   - **At specific time(s)** – enter one or more specific times or select times from the drop-down list of times.

   A selected time can be deleted by selecting the time and clicking the **Delete** key.

   - **Manual only** – the synchronization process will not run until it is manually started.

If you choose the **By frequency** option, SMART Directory Sync will initiate a synchronization when an active profile is saved. Select the **At specific time(s)** option and select a time in the future or select the **Manual only** option if you want to save an active profile without it syncing right away. This would be helpful if you wanted to run a Sync Report or inspect items in SQL before pulling them into the target Active Directory.
9. Click the **Domino Source** tab.

10. Select an **Attribute Change Detection** option from the drop-down list:
   - **Enabled** – Only fields changed on the source Domino directory will be synchronized
   - **Disabled** – All fields on the source Domino directory will be synchronized

11. Select the Binary Tree Domino server from the **Domino Server** drop-down list.

12. Select or enter the Domino directories to synchronize in the following ways:
   - Click **Add Directory** to select Domino directories to synchronization. Select the Domino directories to synchronize, select the **Synchronize Users, Synchronize Rooms/Resources, Synchronize Groups**, and **Synchronize MailInDBs** options if you want users, groups, rooms/resources, and MailInDBs to synchronize, and then click **OK**. Use Ctrl+click to select more than one directory.
Click a row in the table to manually enter a directory file name (example: names.nsf). Any directory added must be in the data directory of the Binary Tree Domino server. The Sync Users, Sync Groups, Sync Rooms/Resources, and Sync MailInDBs options are selected by default. Uncheck options if you don't want those object types to synchronize for the entered directory.

To deselect a Domino directory from the source, select it and then click **Remove Directory**. The **Remove Directory** button is enabled when a directory is added.

13. The following source Domino directory fields are displayed:
   - Title – Title of the Domino directory.
   - File Name – File name of the Domino directory.
   - Sync Users – Select this option to synchronize users. Clear this option if you do not want to synchronize users.
   - Sync Groups – Select this option to synchronize groups. Clear this option if you do not want to synchronize groups.
   - Sync Rooms/Resources – Select this option to synchronize rooms/resources. Clear this option if you do not want to synchronize rooms/resources.
   - Sync MailInDBs – Select this option to synchronize mail-in databases. Clear this option if you do not want to synchronize mail-in databases.
14. Click the **AD Target** tab to enter credentials that have read/write access to the target Active Directory.

15. In the **User Name** field, enter the name of the Active Directory user that has the required rights to the Target directory.

   The credential should be entered as a user principal name (for example, jsmith@acmecorp.com)

16. In the **Password** field, enter the password of the Active Directory user. These credentials should have write access to target OU, as well as any Domains or subdomains that may contain matched users.

17. In the **Global Catalog Server** field, enter the IP Address or fully qualified domain name of the server (FQDN) of the Global Catalog Server or Domain Controller that will be used for all read operations.

18. In the **Target OU**, Click **Browse** to select a target OU.

19. Enter a default password for new users in the **Default Password** field.

   Default Password is not required when creating users as contacts.

   Directory Sync does not validate the password policies present within your domains. Verify that the password entered complies with the password policy of your target environment. The default password cannot exceed 128 characters in length.

20. Select an option from the **Preserve Objects in Target** drop-down list to control what happens to target objects when the corresponding source objects are deleted:
   - **No** – (default) When objects are deleted in the source, the corresponding objects will be deleted from the target. This only applies to objects created in the target by SMART Directory Sync.
   - **Yes** – Objects that are deleted in the source will not be deleted in the target.

21. Select an option from the **Preserve Deleted Objects in Target As Is** drop-down list to control what happens to target objects if they are deleted:
   - **No** – (default) If an object previously synchronized is deleted on the target, it will be recreated.
   - **Yes** – If an object previously synchronized is deleted on the target, it will not be recreated.
22. Select an option from the **Preserve Soft Deleted Objects in Target** drop-down list to control what happens to target objects when the corresponding source objects are soft deleted:
   - **No** – (default) Both hard and soft deleted objects in the source will be deleted in the target if they were created by SMART Directory Sync.
   - **Yes** – Soft deleted objects in the source will not be deleted in the target. Hard deleted objects in the source will be deleted in the target if they were created by SMART Directory Sync.

23. Click the **AD Target Options** tab.

24. Click the **Users** sub-tab.

25. Select an option from the **Create Users as** drop-down list:
   - **Mail-Enabled, AD Enabled** – Users will be Mail-Enabled Users in the target.
   - **Mail Enabled, AD Disabled** – Users in the source will be Disabled Mail-Enabled Users in the target.
   - **Contact** – Users in the source will be Contacts in the target. This option does not have logon capabilities, but can be used for maintaining mail flow for existing users, contacts and distribution lists.

The **Mail-Enabled User** option creates Active Directory users with logon capabilities in the target domain and all properties from the source’s object, including mail addresses.

Directory Sync will not create Mailbox-Enabled Users in the target directory. Rooms and Resources in Domino are created as User objects in Active Directory.

Due to a sAMAccountName size limit of 20 characters in Active Directory, user objects with calculated sAMAccountName names greater than 20 characters in length are truncated to 20 characters. Truncated sAMAccountNames will be appended with a random number between 1 and 9999 to ensure uniqueness. This does not apply to group objects.

26. Select an option from the **Do not overwrite target Proxy Addresses** drop-down list:
   - **Yes** – Proxy Addresses will only be updated during initial sync if the target object has no proxy addresses. Proxy addresses will not be updated on subsequent syncs.
   - **No** – (default) Proxy Addresses on the target are overwritten.
27. Click the Groups sub-tab.

28. Select an option from the **Create Domino Mail-only and Multipurpose Groups as** drop-down list:
   - **Contact** – Domino Mail-only and Multipurpose Groups will be contacts in the target.
   - **Global Group** – (default) Domino Mail-only and Multipurpose groups in the source will be Global groups in the target.
   - **Universal Group** – Domino Mail-only and Multipurpose groups in the source will be Universal groups in the target.

   **Universal groups must be used if the target group will contain members from other AD Domains, otherwise those members will not be added to the group.**

29. Select an option from the **Create Domino ACL Groups as** drop-down list:
   - **Security Group** – (default) Domino ACL groups will be Security groups in the target.
   - **Global Group** – Domino ACL groups in the source will be Global groups in the target.
   - **Universal Group** – Domino ACL groups in the source will be Universal groups in the target.

   **Universal groups must be used if the target group will contain members from other AD Domains, otherwise those members will not be added to the group.**

30. Select an option for handling group collisions when two groups of the same name are found from the **Group Collisions** drop-down list:
   - **Merge** – If a group with the same name is found in the target domain, the members of the source group will be added to the target group. Group collisions are determined based on Name first, then based on the options selected on the Matching tab of the profile.
   - **Skip** – (default) The group will not be synchronized into the target AD and a warning entry will be entered into the log entry stating that the source group will not be synchronized to the target group. A group that was previously synchronized to the target will fail to sync if a manual /repushpull /resync is run. Before running the /repushpull and /resync commands, administrators should clear the target OU of any previously created objects.
o **Rename** - This allows you to define a prefix or suffix to be added to the name of the group when it is written in the target directory. This option creates a new group and group email address using the existing name and the prefix or suffix to bypass the group collision when selected. Prefix is selected by default. To define a specific value for the prefix or suffix, select the **Specific Value** option and enter the value. To use a value from an internal field, select the **Internal Field** option and select a field from the drop-down list.

If selecting an internal field, a Boolean (True/False) field or an empty field should not be selected.

| The **Merge** and **Rename** collision types are not available when creating groups as contacts. |
| All members in the source group will be synchronized to the target group if they are present in the target AD. If a group member is not synchronized into the target group, a warning message displays in the log explaining the reason why the member was not synchronized. |

31. Select an option from the **Create External Members as Contacts** drop-down list:
   - **Yes** – (default) Group members that don't exist in the Domino Directory are created in AD as contact objects. If Yes is selected, the **Target OU for Contacts** option appears where you must select the target OU where the contacts will be created. The **Contact GAL Visibility** option is also available when Yes is selected.
   - **No** – Group members that don't exist in the Domino Directory are NOT created in AD as contact objects.

32. For the **Target OU for Contacts** option (displayed if Yes is selected for the **Create External Members as Contacts** option), click the **Browse** button and select the target OU where contacts for external members will be created.

   **External Domino Contacts that are created in Active Directory by SMART Directory Sync are not updated or deleted, they are only initially created by SMART Directory Sync.**

33. Select an option from the **Contact GAL Visibility** drop-down list:
   - **Visible** – (default) Contacts are visible in the GAL.
   - **Hidden** – Contacts are hidden in the GAL.
34. Click the **Exchange Target Options** tab.

35. Select an option from the **GAL Visibility** drop-down list:
   - **Visible** – (default) Users and groups are visible in the GAL.
   - **Hidden** – Users and groups are hidden in the GAL.

   **When synching objects into Exchange 2003 (only), the option to hide from the GAL will not function if the Recipient Update Service (RUS) is enabled.**

   **If synching to an Active Directory that does not have Exchange in the environment, select the Hidden option to avoid Active Directory constraint errors.**

36. Select an **Only Update Mailbox Enabled Objects** option, if you select **Yes**, mailbox-enabled objects in the target directory will be updated with values from the source object based on the mapping table settings.

   **USE WITH CAUTION! This is not a commonly occurring preference as the authoritative object is most often where the mailbox is located.**

37. Select **Email Address Policy** options for Users, Contacts, and Groups:
   - **Unselected** – (default) Directory Sync will not enable the target object attribute to ‘Automatically update email addresses based on email address policy’ in Exchange.
   - **Selected** – Directory Sync will enable the target object attribute to ‘Automatically update email addresses based on email address policy’ in Exchange.

   **Directory Sync will only** apply the attribute to ‘Automatically update email addresses based on email address policy’ to the target object. It cannot apply the email address policy.
38. If selected, the **Email Address Policy** option for User, Contacts, or Groups, a drop-down list appears with the following options:
   - Enable email policy for objects created by DirSync
   - Enable email policy for objects updated by DirSync
   - Enable email policy for objects created or updated by DirSync
   - Disable email policy for objects created by DirSync
   - Disable email policy for objects updated by DirSync
   - Disable email policy for objects created or updated by DirSync

39. Click the **Target DCs** tab to define the list of target Domain Controllers (DC’s) to use when Directory Sync is searching for matched objects.

40. Click **Add DC(s)** to open the Active Directory DC Selection window. Click **Refresh DCs** to find all available Domain Controllers. Available options include **Ping Servers** to test the availability of the selected Domain Controllers and **Test Connections** to test the connection to the LDAP server. Select one or more Domain Controllers (use Ctrl+click to select more than one) and click **OK** to add the Domain Controllers to the list of Target DCs.
**If you selected Domain level matching in the Target tab, only select Domain Controllers for the target Domain. No other Domains will be searched.**

If you have selected Forest level matching in the Target tab, you must add at least one Domain Controller for each Domain that should be searched for matched objects. If you do not select at least one Domain Controller for a Domain, that Domain will not be searched during synchronization.

Select more than one Domain Controller in a Domain for failover purposes.

Additionally defined Domain Controllers are now only searched for matches if the previous Domain Controller is unavailable.

41. The Active Directory DC Selection window closes and the selected Domain Controllers appear in the Target DC’s list. The order the domain controllers are used for each Domain can be selected by entering a number value in the Priority column (lowest number = first). If the highest priority DC is unavailable, Directory Sync will use the next DC. Available options include **Ping Servers** to test the availability of the selected Domain Controllers and **Test Connections** to test the connection to the LDAP server.

Domain Controllers with no priority set will be used after those with a priority.

If no priority is set for the servers in a Domain, they will be used in the order listed in the table.

A Domain Controller that is the Global Catalog Server selected on the AD Target tab is given top priority regardless of the value in the Priority field.

No two DC’s in a Domain can have the same priority.

42. Click the **Matching** tab.

43. Select an option from the **Matching Level** drop-down list:
   - **Forest** – (default) Matching is done against the target Forest
   - **Domain** – Matching is done against the target Domain

44. Select an option from the **Matching Action** drop-down list:
   - **Create or Update** – (default) Creates objects that do not have matching objects in the Target and updates objects that have matching objects in the Target.
   - **Create only** – Creates objects that do not have matching objects in the Target. Objects that have matching objects in the Target are NOT updated, unless the object was created by Directory Sync. This means that even during an initial sync or a sync after a reset, objects previously created by Directory Sync will be updated.
   - **Update only** – Updates objects that have matching objects in the Target. Objects that do not have matching objects in the Target are NOT created.

During synchronization, if a source object matches to more than one target object, the source object is skipped and a warning is generated in the log.

45. This defines what fields (Domino) and attributes (AD) Directory Sync will use to match objects in the Source to objects in the Target, as well as the order in which they will be used. The default source to target attribute matching pairs are displayed. The below table displays the default matching attribute pairs:

<table>
<thead>
<tr>
<th>Source</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>ShortName</td>
<td>sAMAccountName</td>
</tr>
<tr>
<td>InternetAddress</td>
<td>mail</td>
</tr>
<tr>
<td>FullName</td>
<td>cn</td>
</tr>
</tbody>
</table>

46. To customize the matching, select attributes from the drop-down lists under Source and/or Target or type in the names of attributes in the fields. The matching pairs are "either/or" statements (not "and" statements) with the first match attempted on the top row pair (Default: ShortName -> sAMAccountName) and then proceeding in descending order to the next row pair and so on. At least one matching pair is required for the profile to be saved.

47. Select an option from the **Re-Link** drop-down list:
   - **Enabled** – (default) SMART Directory Sync will attempt to re-link objects in the target by first looking for an object that has the adminDisplayName stamped with the source object's unique identifier. If an object is found, then those two objects are linked and no other attempts at matching are performed. If an object is not found, then the process attempts to match to an object by searching based on the matching criteria. If a matching object is not found, then a new object is created.
   - **Disabled** – SMART Directory Sync will not attempt to re-link objects in the target and will always match based on the matching criteria.
Whenever SMART Directory Sync creates a new object in the target or matches to an existing object in the target, it stamps the adminDisplayName attribute (for Active Directory) or the $BTSourceDirectoryID property (for Domino) of the target object with the source object's unique identifier (objectGUID for AD objects and UNID for Domino objects). This effectively links these two objects together. This link is also maintained between the two objects in the SQL database and future updates are based on this SQL link. However, when a profile is reset, these SQL records are deleted.

When Re-Link is enabled, performance can be improved by indexing the adminDisplayName attribute. Follow the procedure at https://technet.microsoft.com/en-us/library/aa995762(v=exchg.65).aspx to index AD attributes.

Click the Mapping tab to view the default mapping or to edit how attributes should be translated from the source to the target Active Directory. Review the table and make the appropriate changes for your environment. Double-click a cell in the mapping table select a different field or type from a drop-down list. Double-click on a cell in the Comments column to enter a comment. See Domino Source – AD Target Default Mapping.

To revert to the default mappings, use CTRL+A to select all mappings, delete the mappings (Delete key), and click Yes when prompted to remove all entries.

The default mapping for attributes will be applied unless deleted. When creating custom mapping for an attribute, the default mapping for the attribute should be deleted.

When creating a custom mapping, use a CustomXX field (Custom01 to Custom99) that has not already been used for other mappings or in the overrides. Do not use a BTCustom0XX field. Either review this information in the SMART Directory Sync Mapping and Overrides user interface or in the SQL database.

There are two Target Type columns in the table. This allows you to restrict the type of object in the target directory that can be updated. If you set both types to the same value, then this mapping will only apply to that object type. If you set one to person and the other to group, the mapping will apply user and group objects only. If both are set to any, the mapping is unrestricted and will apply to all object types.

Attribute names in Domino source must contain only valid values in the Active Directory target.

Valid values are: Strings formed with characters from A to Z (uppercase or lowercase), digits from 0 to 9, !, #, $, %, &, , *, +, -, /, =, ?, ^, _, `, {, |, } or ~. One or more periods may be embedded in an alias, but each period should be preceded and followed by at least one of the other characters. Unicode characters from U+00A1 to U+00FF are also valid in an alias, but they will be mapped to a best-fit US-ASCII string in the e-mail address, which is generated from such an alias.
Values that can be used for either mapping or matching can be entered manually or imported from a CSV file in the Mapped Values dialog box.

1. Click the **Mapped Values** button. The Mapped Values window appears.

2. Values can be entered manually by clicking on the first row.

3. Values can also be imported from a CSV file by clicking the **Import** button.

4. Select a CSV file that has Source fields and values, Target fields and values, and the application of the mapping or matching. The final value of each row can be “Match”, “Map”, or “MatchMap”. “MatchMap” applies both matching and mapping.

49. Click **Save** to verify all required fields are populated and save the profile. You can save an incomplete profile as long as it is suspended.
When synchronizing users from Domino to Active Directory where both environments share the same SMTP domain you must utilize the Target Address for objects written to Active Directory to facilitate mail routing. Review Customizing BT_PersonView and BT_GroupsView for more information.

For object types that have a 20 character limit for the sAMAccount Name in Active Directory (all types except groups), Directory Sync automatically truncates the sAMAccount Name and appends a random number from 1 to 9999.

To conform to Active Directory’s 1024 character maximum, Directory Sync truncates values from Domino to 1024 characters.

50. Click **Overrides** to open the table of mapping overrides. These represent default system mappings that apply to all profiles. You may customize Overrides. See Customizing Overrides for more information on editing Overrides.

51. Create additional synchronization profiles as needed. To copy an existing profile, right-click on a profile in the table and select **Copy**. All profile settings will be copied into a new profile that can then be edited as necessary.

New profiles created by copy are suspended by default. Select the profile in the table and click **Activate Profile**.

### 2.3 Adding an Active Directory to Domino Directory Synchronization Profile

Directory Sync requires that all Domino directories that will be searched for matches, updates and collisions be replicated to the Binary Tree Domino server and configured in Directory Assistance. Directory Sync will search all of the directories configured in Directory Assistance, and stop on the first match.
The target Domino directory into which Active Directory object will be written should be created prior to configuring the profile. Binary Tree recommends using a directory separate from the primary Domino Directory (names.nsf), based on a standard Domino Directory template (ntf).

To add an Active Directory to Domino directory synchronization profile:

1. Click **Add Profile**.

2. In the Profile Type Selection window, select **Active Directory to Domino Directory** and then click **OK**.

The following Profile Types are also available:

- **AD Migration/Synchronization** – used for both AD to AD directory synchronization and in support of an Active Directory migration utilizing Binary Tree's SMART Active Directory Migrator product.
- **Exchange Migration** – used in support of an Exchange migration utilizing Binary Tree's EzE Complete product.
- **Domino Directory to Active Directory** – used to synchronize objects from a Domino directory source to an Active Directory target.
- **Window Server Migration** – used in support of a Windows Server migration utilizing Binary Tree's Windows Server Migration product.

3. A new pane appears at the bottom of the console which provides the ability to configure options for synchronization.
4. On the General tab, enter a name to identify the profile in the Name field.

5. Select the status of the profile from the Status drop-down list:
   - **Active** – will synchronize as scheduled as soon as the profile is saved
   - **Suspended** – Not active, will not synchronize

6. Select the logging level of the profile from the Logging drop-down list:
   - **Low** – only errors are logged
   - **Medium** – errors and warnings are logged
   - **High** – all messages (errors, warnings, information, etc.) are logged (should be used for troubleshooting purposes only)

7. Select an Audit Logging option from the drop-down list:
   - **Enabled** – Records object and attribute changes in the Audit Log
   - **Disabled** – Object and attribute changes will not be recorded in the Audit Log

8. For Schedule, select the schedule:
   - **By frequency** – enter the appropriate frequency or the specific time for the synchronization process to run for your environment. Zero (0) is not a valid value for frequency. A minimum interval of 15 minutes is required.
   - **At specific times(s)** – enter one or more specific times or select times from the drop-down list of times.
      - A selected time can be deleted by selecting the time and clicking the **Delete** key.
   - **Manual only** – the synchronization process will not run until it is manually started.

If you choose the **By frequency** option, SMART Directory Sync will initiate a synchronization when an active profile is saved. Select the **At specific time(s)** option and select a time in the future or select the **Manual only** option if you want to save an active profile without it syncing right away. This would be helpful if you wanted to run a Sync Report before the synchronization process begins.
9. Click the AD Source tab enter credentials that have read access to the source Active Directory. The required read access must extend to the Deleted Accounts container, which can require a privileged account.

![Image of AD Source settings]

10. In the User Name field, enter the Active Directory User Name.

   The credential should be entered as a user principal name (for example, jsmith@acmecorp.com)

11. In the Password field, enter the password assigned to the Active Directory user.

12. In the Global Catalog Server field, enter the IP Address or fully qualified domain name of the server (FQDN) for the Global Catalog Server or a Domain Controller that will be used for all read operations.

   The entered credentials and Global Catalog Server/Domain Controller must have access to all Domains and subdomains that are required to synchronize.

13. Select an Attribute Change Detection option from the drop-down list:

   - **Enabled** – Only attributes changed on the source AD will be synchronized
   - **Disabled** – All attributes on the source AD will be synchronized
14. Click **Add OU(s)** to display a list of OU(s) (organizational units) available to synchronize.

15. Select the appropriate source OUs and click **OK**. The selected source OUs are displayed in the Source OUs table.

The synchronized Sub OUs and other checkboxes only display when you select an OU and then click the **Add OU(s)** button.

To deselect an OU from the source, select it and then click the **Remove OU** button or press the **Delete** key.

Public Folder Active Directory objects can be synchronized from AD to a Domino Directory. To synchronize Public Folder Active Directory objects, the Source OU must point to the Microsoft Exchange System Objects container, and the Users Filter value must be objectClass=publicFolder.

The following Source OU fields are displayed:

- **Source OU** – Reflects the OU selected from the tree view.
- **Sub OUs** – Select this option to synchronize Sub-OUs. The checkbox is selected by default. Clear this option if you do not want to synchronize sub-OUs.
- **Groups** – The Groups tab will be disabled if there are no OUs selected for synchronizing groups. The checkbox is selected by default. Clear this option to skip groups from being synchronized.
- **Disabled Users** – Select this option to synchronize a Disabled User. The checkbox is selected by default. Clear this option to prevent Disabled Users from being synchronized.
- **Non-Mail Enabled** – Select this option to synchronize Non-mail enabled objects. The checkbox is not selected by default. Clear this option to skip Non-mail enabled objects from being synchronized.
- **User Filter** – This is a LDAP filter and can be used to filter synchronization to specific object types or those objects exhibiting specific attribute properties. See Using the User and Group LDAP Filters for more information.

- **Group Filter** – This is a LDAP filter and can be used to filter groups based on the entered criteria. See Using the User and Group LDAP Filters for more information.

The default User Filter and Group Filter values can be customized for your environment by editing the configuration file and changing the DefaultUserOUFilter and DefaultGroupOUFilter values. Binary Tree recommends that you test the LDAP filter syntax prior to saving your changes.

16. Click the **Source DCs** tab to define the list of Source Domain Controllers (DCs) to use when Directory Sync is searching for matched objects.

17. Click **Add DC(s)** to open the Active Directory DC Selection window. Click **Refresh DCs** to find all available Domain Controllers. Available options include **Ping Servers** to test the availability of the selected Domain Controllers and **Test Connections** to test the connection to the LDAP server. Select one or more Domain Controllers and click **OK** to add the Domain Controllers to the list of Source DCs.
If your Active Directory forest contains more than one domain it may be necessary to add at least one domain controller from each domain. When SMART Directory Sync attempts to resolve objects, such as group members or a user’s manager, that are in another Domain (than the one specified on the Source tab), it will reference the domain controllers list to find a valid DC to use.

To ensure that group membership and manager/subordinate relationships are properly recreated, it is recommended to add the appropriate DC’s for alternate domains to the Source DC’s tab.

18. The Active Directory DC Selection window closes and the selected Domain Controllers appear in the Source DC’s list. The order the domain controllers are used for each Domain can be selected by entering a number value in the Priority column (lowest number = first). If the highest priority DC is unavailable, Directory Sync will use the next DC. Available options include Ping Servers to test the availability of the selected Domain Controllers and Test Connections to test the connection to the LDAP server.

Domain Controllers with no priority set will be used after those with a priority.

If no priority is set for the servers in a Domain, they will be used in the order listed in the table. A Domain Controller that is the Global Catalog Server selected on the AD Source tab is given top priority regardless of the value in the Priority field.

No two DC’s in a Domain can have the same priority.

19. Click the Domino Target tab.

20. Select the Binary Tree Domino server from the Domino Server drop-down list.

21. Select the Domino directory from the Domino Directory drop-down list.

This is the directory into which the Active Directory objects will be written.

22. In the Foreign Domain field, enter the foreign domain. This must match the domain used in the Foreign Domain document created for routing to Exchange.

23. Select an option from the Create Groups as drop-down list:
- **Person Documents** – (default) Distribution Lists will be created as Person documents (members do not synchronize) in the target.
- **Group Documents** – Distribution Lists will be created as member-populated Mail Only groups in the target directory.

Due to the manner in which Domino Rooms and Resources are managed (requiring a document in the Domino Directory, as well as a corresponding document in the Rooms and Reservations database), rooms and resources will be synchronized as Person documents in the Target Domino directory. All other objects types will be synchronized as follows:

<table>
<thead>
<tr>
<th>Active Directory</th>
<th>Domino</th>
</tr>
</thead>
<tbody>
<tr>
<td>User Objects and Contacts</td>
<td>Person documents</td>
</tr>
<tr>
<td>Distribution Lists</td>
<td>Mail Groups (unless specified as Person documents in the profile)</td>
</tr>
<tr>
<td>Shared Mailboxes</td>
<td>Mail-in databases</td>
</tr>
</tbody>
</table>

24. Click Select an option for handling group collisions when two groups of the same name are found from the **Group Collisions** drop-down list:

- **Merge** – If a group with the same name is found in the target domain, the members of the source group will be added to the target group. Group collisions are determined based on the options selected on the Matching tab of the profile.
- **Skip** – (default) The group will not be synchronized into the target Domino directory and a warning entry will be entered into the log entry stating that the source group will not be synchronized to the target group. A group that was previously synchronized to the target will fail to sync if a manual /repushpull /resync is run. Before running the /repushpull and /resync commands, administrators should clear the target Domino Directory of any previously created objects.
- **Rename** - This allows you to define a prefix or suffix to be added to the name of the group when it is written in the target directory. This option creates a new group and group email address using the existing name and the prefix or suffix to bypass the group collision. This option creates a new group and group email address using the existing name and the prefix or suffix to bypass the group collision. When selected, Prefix is selected by default. This option creates a new group and group email address using the existing name and the prefix or suffix to bypass the group collision. When selected, Prefix is selected by default.
If selecting an internal field, a Boolean (True/False) field or an empty field should not be selected.

Directory Sync will attempt to add a group member to the target if it can find the member in the source. If the member in the source is in a different Domain than the group, the member will only be added to the group in the target if it already exists in the target. If Directory Sync cannot find the member in the source, the member will not be added to the group in the target. Log messages will explain why a member could or could not be synchronized.

Merge and rename are only available when synching groups as member-populated Mail groups.

25. Select an option from the **Preserve Objects in Target** drop-down list to control what happens to target objects when the corresponding source objects are deleted:
   - **No** – (default) When objects are deleted in the source, the corresponding objects will be deleted from the target. This only applies to objects created in the target by SMART Directory Sync.
   - **Yes** – Objects that are deleted in the source will not be deleted in the target.

26. Select an option from the **Preserve Deleted Objects in Target As Is** drop-down list to control what happens to target objects if they are deleted:
   - **No** – (default) If an object previously synchronized is deleted on the target, it will be recreated.
   - **Yes** – If an object previously synchronized is deleted on the target, it will not be recreated.

27. Click the **Matching** tab.

28. Select an option from the **Matching Action** drop-down list:
   - **Create or Update** – (default) Creates objects that do not have matching objects in the Target and updates objects that have matching objects in the Target.
   - **Create only** – Creates objects that do not have matching objects in the Target. Objects that have matching objects in the Target are NOT updated, unless the object was created by Directory Sync. This means that even during an initial sync or a sync after a reset, objects previously created by Directory Sync will be updated.
Update only – Updates objects that have matching objects in the Target. Objects that do not have matching objects in the Target are NOT created.

During synchronization, if a source object matches to more than one target object, the source object is skipped and a warning is generated in the log.

29. This defines what attributes (AD) and fields (Domino) Directory Sync will use to match objects in the Source to objects in the Target, as well as the order in which they will be used. The default source to target attribute matching pairs are displayed. The below table displays the default matching attribute pairs:

<table>
<thead>
<tr>
<th>Source</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>sAMAccountName</td>
<td>ShortName</td>
</tr>
<tr>
<td>mail</td>
<td>Internet Address</td>
</tr>
<tr>
<td>cn</td>
<td>FullName</td>
</tr>
</tbody>
</table>

30. To customize the matching, select attributes from the drop-down lists under Source and/or Target or type in the names of attributes in the fields. Not all fields in Domino are available for matching. Select only from the Domino fields found in the drop-down list or remove a field by clearing if you do not want to match on the field. The matching pairs are “either/or” statements (not “and” statements) with the first match attempted on the top row pair (Default: sAMAccountName -> ShortName) and then proceeding in descending order to the next row pair and so on. At least one matching pair is required for the profile to be saved.

31. Select an option from the Re-Link drop-down list:
   - Enabled – (default) SMART Directory Sync will attempt to re-link objects in the target by first looking for an object that has the $BTSourceDirectoryID stamped with the source object's unique identifier. If an object is found, then those two objects are linked and no other attempts at matching are performed. If an object is not found, then the process attempts to match to an object by searching based on the matching criteria. If a matching object is not found, then a new object is created.
   - Disabled – SMART Directory Sync will not attempt to re-link objects in the target and will always match based on the matching criteria.

Whenever SMART Directory Sync creates a new object in the target or matches to an existing object in the target, it stamps the adminDisplayName attribute (for Active Directory) or the $BTSourceDirectoryID property (for Domino) of the target object with the source object's unique identifier (objectGUID for AD objects and UNID for Domino objects). This effectively links these two objects together. This link is also maintained between the two objects in the SQL database and future updates are based on this SQL link. However, when a profile is reset, these SQL records are deleted.

32. Click the Mapping tab to view the default mapping or to edit how attributes should be translated from the source Active Directory to the target Domino directory. Review the table and make the appropriate changes for your environment. Double-click a cell in the mapping table select a different field or type from a drop-down list. Double-click on a cell in the Comments column to enter a comment. See AD Source – Domino Target Default Mapping.
To revert to the default mappings, use CTRL+A to select all mappings, delete the mappings (Delete key), and click Yes when prompted to remove all entries.

The default mapping will be applied unless deleted. When creating custom mapping for an attribute, the default mapping for the attribute should be deleted.

There are two Target Type columns in the table. This allows you to restrict the type of object in the target directory that can be updated. If you set both types to the same value, then this mapping will only apply to that object type. If you set one to person and the other to group, the mapping will apply user and group objects only. If both are set to any, the mapping is unrestricted and will apply to all object types.

Values that can be used for either mapping or matching can be entered manually or imported from a CSV file in the Mapped Values dialog box.

1. Click the **Mapped Values** button. The Mapped Values window appears.
2. Values can be entered manually by clicking on the first row.
3. Values can also be imported from a CSV file by clicking the **Import** button.

4. Select a CSV file that has Source fields and values, Target fields and values, and the application of the mapping or matching. The final value of each row can be “Match”, “Map”, or “MatchMap”. “MatchMap” applies both matching and mapping.

![CSV mapping example](image)

33. Click **Save** to verify all required fields are populated and save the profile. Incomplete profiles can be suspended and completed at a later time by clicking **Suspend Profile**. You can save an incomplete profile as long as it is suspended.

34. Click **Overrides** to open the table of mapping overrides. These represent default system mappings that apply to all profiles. You may customize Overrides. See Customizing Overrides for more information on editing Overrides.

![Override table](image)

35. Create additional synchronization profiles as needed. To copy an existing profile, right-click on a profile in the table and select **Copy**. All profile settings will be copied into a new profile that can then be edited as necessary. New profiles created by copy are suspended by default. Select the profile in the table and click **Activate Profile**.

### 2.4 Importing and Exporting a Profile

Synchronization profiles can be imported and exported. The Export Profile option exports all of the configuration options for the selected profile and creates a DSProfile file that can be saved for backup purposes. The Import Profile option allows a DSProfile file to be imported and all of the configuration options for a profile restored.

Imported profiles are suspended by default and must be activated before they can be synchronized.
To import a synchronization profile:

1. Click **Import Profile**.
2. Select an import file and click **Open**. The imported profile is suspended by default and must be activated before it can be synchronized.

To export a synchronization profile:

1. When viewing a profile, click **Export Profile**. You can also right-click on a profile in the table and select **Export**.
2. Enter a file name for the export file and click **Save**.

### 2.5 Suspending and Activating a Profile

Suspending a synchronization profile disables the profile from synchronizing. Note that you also cannot manually run a synchronization of a suspended profile using the Sync Profile button, right-click menu, or command line commands. Suspended profiles remain in the list of profiles and can be reactivated at any time.

To suspend an active synchronization profile:

1. Select a profile you wish to suspend.
2. Click **Suspend Profile**. The status of the profile is changed to "Suspended".

To activate a suspended synchronization profile:

1. Select a suspended profile you wish to activate.
2. Click **Activate Profile**. The status of the profile is changed to "Active".

### 2.6 Removing a Profile

Removing a synchronization profile will delete it from the list of profiles. Removed profiles cannot be restored.

To remove a synchronization profile:

1. Select a profile you wish to remove.
2. Click **Remove Profile**.
3. Click **Yes** to confirm. The profile is deleted from the list of profiles.

### 2.7 Resetting a Profile

Resetting a synchronization profile causes the database for the profile to be cleared. This clears the sync database, not the profile properties.

If there are multiple profiles for the same AD Source and one of the profiles is reset, all data for the AD Source is deleted in the SQL database.
To reset a synchronization profile:

1. Select a profile you wish to reset.
2. Click Reset Profile.
3. Click Yes to confirm. The profile is reset.
Section 3. Running Sync Reports

Overview

The Sync Report has two primary functions. The first is as an analytical tool used prior to synchronizing any objects into a target directory, and the second is as a logging feature to view the details of each synchronization.

Prior to synchronizing any object into the target, the source directory(ies) must be analyzed to identify any objects that could be problematic. This is a critical step to a successful sync and should not be overlooked.

The Sync Report reads the source directory(ies) and writes the data into SQL. This is the same action taken if you were to initiate a Push command. The source data is analyzed to determine the result if you were to Pull the data into the target directory. The Sync report should be run prior to the first sync, as well as prior to running a sync after you have made a change to the profile, to confirm the intended results. The Sync Report is populated anytime a Sync Profile is actually run. Information at the top of the Sync Report will differentiate if the Sync Report is a result of a simulation or a synchronization.

Common issues that must be corrected prior to synchronizing Domino to Active Directory

| SMTP Addresses | Missing SMTP Addresses - These objects will be skipped with a warning that there is no InternetAddress. Any object you wish to sync must have a valid and unique SMTP Address. |
|               | Duplicate SMTP Address - These objects will be skipped with a warning that the SMTP address is already in SQL. Any object you wish to sync must have a valid and unique SMTP Address. |
|               | SMTP Address contains space(s) - These objects will be skipped with a warning... |
|               | Missing Local Part - These objects will be skipped with a warning... |

| Unique Match Values | Dirsync allows you to define up to 4 field/attribute pairs to match objects in the source to objects in the target. If the source value matches more than one target object value, Dirsync will skip the object. This must be corrected if you intend for this object to synchronize to the target directory. The Sync Report allows you to see the matched object between the source and target. These should be reviewed to ensure that your match criteria are valid for your environment. |

| External SMTP Addresses in Groups | While Domino will allow you to add external SMTP addresses to a mail group, Active Directory requires that all group members exist as objects in Active Directory. These external members must either be created in Domino (and synched over) or created in Active Directory if you intend for these groups members to sync to Active Directory. |
Running a Sync Report

To run a Sync Report:

1. Once you have created a profile, click the **Sync Report** button. This opens the Sync Report window. The example in this section is a Domino to Active Directory profile.

2. Click **Run Simulation** and **Yes** to confirm. Click the **Refresh** button to populate the UI with the most recent data.

A sync report performs a Push into SQL, so it is important that you reset the profile prior to running a sync if you have made any changes to the source data or the profile settings. If you do not clear the profile, the data that is in SQL from the Sync Report will be pulled to the target directory.

**Objects tab**

This contains all of the objects in the source and the action that would have been taken had the profile been synched to the target. All of the columns can be sorted, filtered or reordered (drag and drop). Review any objects that were skipped in the Operations column, as well as any warnings in the Status column. You can double click on any entry to open the details for that object. The Details windows displays all of the details for the object, including the attributes and values that would be written to Active Directory. The Internal Fields tab displays the values that are written to SQL. The below example shows a Sync Report that is filtered to show warning for Users (only). Here you can see examples of the common issues listed above, as well as the warning you would see if the Domino object had Allow Foreign Directory Sync (AFDS) set to No. This issues must be corrected in the source directory before they will sync to the target. Once corrected, you can run another sync report to validate the changes.
Object Issues tab

The **Object Issues** is a filtered list showing all issues that would have occurred during a simulation or all issues that did occur during a synchronization.
**Members tab**

The **Members** tab displays details for group synchronization. Here you can see each member of all of the groups that would be synched to Active Directory. You can filter the Status column for warnings to easily view any issues that should be resolved. The most common reason that a member of a Domino group cannot be added to the group in AD is because the member is an external SMTP address that is not represented in the target directory. The example below illustrates this. The external SMTP address must either be added to the Domino source directory (so in sync to AD), or added to AD as a contact object.

![Members tab screenshot](image.png)

<table>
<thead>
<tr>
<th>Last Updated</th>
<th>Source Group Name</th>
<th>Source Name</th>
<th>Source Type</th>
<th>Source Object</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Print Media</td>
<td>Marco Belgium</td>
<td>User</td>
<td>\dvw\mbelgium,ou=Marketing,dc=DOM,dc=DE,dc=dom</td>
</tr>
<tr>
<td></td>
<td>Print Media</td>
<td>Mauro Belgia</td>
<td>User</td>
<td>\dvw\mbelgia,ou=Marketing,dc=DOM,dc=DE,dom</td>
</tr>
<tr>
<td></td>
<td>Print Media</td>
<td>Helaine Barron</td>
<td>User</td>
<td>\dvw\mbarron,ou=Marketing,dc=DOM,dc=DE,dom</td>
</tr>
<tr>
<td></td>
<td>Print Media</td>
<td>Myles Corner</td>
<td>Contact</td>
<td>\dvw\myles\corner,ou=Marketing,dc=DOM,dc=DE,dom</td>
</tr>
<tr>
<td></td>
<td>Print Media</td>
<td>Nicole Winters</td>
<td>User</td>
<td>\dvw\nwintins,ou=Marketing,dc=DOM,dc=DE,dom</td>
</tr>
<tr>
<td></td>
<td>Print Media</td>
<td>Norma Corner</td>
<td>Contact</td>
<td>\dvw\ncomer,ou=Marketing,dc=DOM,dc=DE,dom</td>
</tr>
<tr>
<td></td>
<td>Print Media</td>
<td>Ophelia Chaney</td>
<td>User</td>
<td>\dvw\ochaney,ou=Marketing,dc=DOM,dc=DE,dom</td>
</tr>
<tr>
<td></td>
<td>Trade Show 2015</td>
<td>Abdul Dows</td>
<td>Contact</td>
<td>\dvw\adows,ou=Marketing,dc=DOM,dc=DE,dom</td>
</tr>
<tr>
<td></td>
<td>Trade Show 2015</td>
<td>Anaestasia Helendo</td>
<td>Contact</td>
<td>\dvw\ahelendo,ou=Marketing,dc=DOM,dc=DE,dom</td>
</tr>
<tr>
<td></td>
<td>Trade Show 2015</td>
<td>Ammarie Garner</td>
<td>User</td>
<td>\dvw\aganner,ou=Marketing,dc=DOM,dc=DE,dom</td>
</tr>
<tr>
<td></td>
<td>Trade Show 2015</td>
<td>Brandon Anthony</td>
<td>User</td>
<td>\dvw\banthony,ou=Marketing,dc=DOM,dc=DE,dom</td>
</tr>
<tr>
<td></td>
<td>Trade Show 2015</td>
<td>Buff Koch</td>
<td>User</td>
<td>\dvw\bkoch,ou=Marketing,dc=DOM,dc=DE,dom</td>
</tr>
<tr>
<td></td>
<td>Trade Show 2015</td>
<td>Calve Cunningham</td>
<td>User</td>
<td>\dvw\ccunningham,ou=Marketing,dc=DOM,dc=DE,dom</td>
</tr>
<tr>
<td></td>
<td>Trade Show 2015</td>
<td>Danielle Mann</td>
<td>User</td>
<td>\dvw\dmann,ou=Marketing,dc=DOM,dc=DE,dom</td>
</tr>
<tr>
<td></td>
<td>Trade Show 2015</td>
<td>Dalia Valenzuela</td>
<td>User</td>
<td>\dvw\dvalenzuela,ou=Marketing,dc=DOM,dc=DE,dom</td>
</tr>
</tbody>
</table>
Member Issues tab

The **Member Issues** is a filtered list showing all issues that would have occurred during a simulation or all issues that did occur during a synchronization.

![Member Issues Table](image1.png)

Object Summary tab

The **Object Summary** tab displays a summary of each object type, the operation performed, the status and the object count.

![Object Summary Table](image2.png)
Members Summary tab

The Members Summary tab displays a summary of group membership synchronization. It displays the number of members added to groups, number of skipped members and the total number of errors or warnings.

Profile tab

The Profile tab lists all of the settings for the profile for which the Sync was run. You can copy the contents to the clipboard to easily export as needed.
**Target DCs**

The Target DCs tab will display all of the Domain Controllers configured in the Target DCs tab. It also shows the priority in which they will be used. The default will always be used unless it is unreachable.
Active Directory to Domino Sync Report

Running a Sync Report on an AD to Domino profile follows the same process as detailed above. The only differences are that there is lack of a Target DCs tab, and the addition of the Source DCs tab.

Source DCs tab

This tab appears on AD to Domino or AD to AD profiles only and displays the Domain Controllers listed in the Source AD tab of the profile.
Section 4. Running Directory Sync

There are four ways to run Directory Sync:

- Scheduling Directory Sync to run programmatically by defining a schedule for the synchronization profile to run. See Configuring Active Directory Synchronization for more info.
- Manually starting synchronization by selecting a profile and clicking the Sync Profile button.
- Manually starting a synchronization process by right-clicking on a profile and selecting a synchronization option.
- Manually run Directory Sync commands from a command line.

4.1 Manually Starting a Synchronization using a Sync Profile

A synchronization or sync report of a profile cannot be started if a synchronization or sync report of the profile is already running.

To manually start synchronization:

1. Select a profile to synchronize.
2. Click Sync Profile. The synchronization is started. This runs a complete sync of the profile (push/pull).

4.2 Manually Starting a Synchronization Process using the Right-Click Menu

A synchronization or sync report of a profile cannot be started if a synchronization or sync report of the profile is already running.

To manually start a synchronization process:

1. Right-click a profile to synchronize.
2. Click one of the following options:
   - Push - Pushes all changed entries in the source to SQL
   - Pull - Pulls all changed entries from SQL to the target
   - Repush - Pushes all source entries regardless of modification date to SQL (the profile is reset prior to running a Push or a full Sync)
   - Repull - Same as a Pull and will only pull changed objects or objects that need to be resynced (for example, because they failed on a prior pull)
   - Repushpull - Combines the Repush and Repull commands into one step (the profile is reset prior to running a Push or a full Sync)
   - Cancel - Cancels a Sync
4.3 Manually Starting a Synchronization Process from a Command Line

A synchronization or sync report of a profile cannot be started if a synchronization or sync report of the profile is already running.

To manually start a synchronization process from a command line:

1. Open a Command Prompt window.
2. Navigate to %Program Files%\Binary Tree\Dirsync

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>binarytree.dirsync.exchange.exe /validate &lt;Profile ID&gt;</td>
<td>Verifies that your settings are correct</td>
</tr>
<tr>
<td>binarytree.dirsync.exchange.exe /push &lt;Profile ID&gt;</td>
<td>Pushes all changed entries in the source to SQL</td>
</tr>
<tr>
<td>binarytree.dirsync.exchange.exe /pull &lt;Profile ID&gt;</td>
<td>Pulls all changed entries from SQL to the target</td>
</tr>
<tr>
<td>binarytree.dirsync.exchange.exe /repush &lt;Profile ID&gt;</td>
<td>Pushes all source entries regardless of modification date to SQL</td>
</tr>
<tr>
<td>binarytree.dirsync.exchange.exe /repull &lt;Profile ID&gt;</td>
<td>Same as a Pull and will only pull changed objects or objects that need to be resynced</td>
</tr>
<tr>
<td>binarytree.dirsync.exchange.exe /repushpull &lt;Profile ID&gt;</td>
<td>Combines the /repush and /repull commands into one step</td>
</tr>
<tr>
<td>binarytree.dirsync.exchange.exe /pushpull &lt;Profile ID&gt;</td>
<td>Combines the /push and /pull commands into one step</td>
</tr>
<tr>
<td>binarytree.dirsync.exchange.exe /sync &lt;Profile ID&gt;</td>
<td>Performs the equivalent of a /pushpull on all saved profiles without prompting the user to select one</td>
</tr>
<tr>
<td>binarytree.dirsync.exchange.exe /resync &lt;Profile ID&gt;</td>
<td>Performs the equivalent of a /repushpull on all saved profiles without prompting the user to select one</td>
</tr>
</tbody>
</table>

Binary Tree recommends that you remove existing objects from the target OU before running Repush, Repull, or Repushpull.

If you do not include a Profile ID in the command, you will be prompted to choose one.
Section 5. Using the SMART Directory Sync Log Viewer to View Logs and Audits

5.1 Using the SMART Directory Sync Log Viewer to View Logs and Audits

The SMART Directory Sync Log Viewer allows you to view, search, export, and clear synchronization logs and audit reports on changes to all items in the target environment.

To open and view logs and audits in the SMART Directory Sync Log Viewer:

1. In the SMART Directory Sync Console, click the View Logs and Auditing button. The SMART Directory Sync Log Viewer opens.
2. Select the Logs tab to view the synchronization logs or the Audits tab to view the audit reports.
3. The Synchronization profile is automatically selected and log entries associated with the profile are displayed. To change the profile, select a different profile from the Profile drop-down list. Click the Refresh icon next to the Profile drop-down list to refresh the list of profiles and the log grid.

5.2 Searching Log or Audit Entries

To search for log or audit entries:

- Enter a search term in the Search field and then click the Find icon. The table refreshes to show the search results.
5.3 Pausing a Log

You can stop the continuous scrolling of the log to allow for easier reading. This feature pauses the display only, not the logging function.

To pause the log:

1. Click the Pause icon.

2. To restart the log display, click the Play icon (next to "Paused").

5.4 Showing or Audit Log Entries for a Time Period

To show all log or audit entries for a time period:

- Select a "Show..." option from the drop-down list near the upper right corner of the console. The table refreshes to show all log or audit entries for the selected time period.
5.5 Filtering the Log or Audits

To filter the log or audit:

1. Click the filter button on any column header to open the filter window.
2. Enter the filter criteria, and then click Filter. The table refreshes to the filtered log entries.

3. Use the Clear Filter button to clear the filter.

5.6 Grouping the Log or Audits by Column

To group the log or audits by a column:

- Drag a column header to the bar above the table to group the log or audits by a specific column. The table refreshes grouped by the selected column.
5.7 Viewing Log or Audit Entry Details

To view log or audit entry details:

- Click the plus icon in the log or audit entry. The entry expands to display the details of the log or audit entry.

Log entries:

- Audit entries:

Audit log displaying one entry:

Audit log displaying modified attributes:
5.8 Exporting Log or Audit Entries
To export the log or audit entries of the currently selected profile:

1. Click Export All.
2. Enter a File name, location, a file type, and then click Save.

5.9 Clearing Log or Audit Entries
To clear old log or audit entries of the currently selected profile:

1. Click Clear. The Clear Log window or Clear Audits window opens.
2. Select a number and time unit (Weeks, Days, or Hours) from the drop-down list to clear the log or audits of older entries and then click OK.
3. Also for Log entries, you have the option to clear the log entries of all profiles older than the selected time automatically by selecting Clear log automatically. The Clear Log Automatically option is not available for Audits.

Binary Tree recommends that the logs be set to clear automatically to prevent the accumulated data from becoming too large.
To clear all log and audit entries of the currently selected profile:

1. Click **Clear All**. All log or audit entries of the currently selected profile are cleared.

If an Audit Log is cleared, the following is an example of the record that will be displayed showing that the entries were removed (cleared).
Section 6. Updating the Groups to Ignore List in SQL

6.1 Updating the Groups to Ignore List in SQL for Domino - Active Directory Synchronization

By default, Directory Sync is configured with a list of typical Active Directory (Exchange) and Domino security groups that will not be synchronized. You can update the Groups to Ignore List in SQL by using either the SQL Server Management Studio (SSMS) or the SQL Import and Export Data tool.

For an AD Source, you may also choose to not synchronize any Security groups via the Group Filter, which will prevent all groups matching the criteria from being entered into SQL. This must be configured before the initial synchronization, or you will have to remove all the security groups from SQL and AD prior to using this option.

6.2 Default List of Groups in the Groups to Ignore List for Domino - Active Directory Synchronization

The default list of groups in the AD Source Groups to Ignore List includes:

- NT Authority
- Dialup
- Network
- Batch
- Interactive
- Logon Session
- Service
- Anonymous
- Proxy
- Enterprise Domain Controllers
- Principal Self
- Authenticated Users
- Restricted Code
- Terminal Server Users
- Remote Interactive Logon
- This Organization
- Local System
- NT Authority
- Administrator
- Guest
- KRBTGT
- Domain Admins
- Domain Users
- Domain Guests
- Domain Computers
- Cert Publishers
- Schema Admins
- Enterprise Admins
- Group Policy Creator Owners
- RAS and IAS Servers
- Administrators
- Users
- Guests
- Power Users
- Account Operators
- Server Operators
- Print Operators
- Backup Operators
- Replicators
- NTLM Authentication
- SChannel Authentication
- Digest Authentication
- NT Service
- Untrusted Mandatory Level
- Delegated Setup
- Discovery Management
- Exchange All Hosted Organizations
- Exchange Organization Administrators
- Exchange Public Folder Administrators
- Exchange Recipient Administrators
- Exchange Servers
- Exchange Trusted Subsystem
- Exchange View-Only Administrators
- Exchange Windows Permissions
- ExchangeLegacyInterop
- Hygiene Management
- Organization Management
- Public Folder Management
- Recipient Management
- Records Management
- Server Management
- UM Management
- View-Only Organization Management
- Updating Groups to Ignore List in SQL
- By default, Directory

The default list of groups in the Domino Source Groups to Ignore List Members includes:

- LocalDomainServers
- OtherDomainServers
- LocalDomainAdmins
- OtherDomainAdmins

### 6.3 Updating the Groups to Ignore List with the SQL Server Management Studio (SSMS)

Perform the following steps from SSMS to add or remove groups from the Groups to Ignore List in SQL. This process is preferred if you have a small number of changes to make. Refer to Updating the Groups to Ignore List via the SQL Import and Export Data Tool for larger updates.

To add or remove groups from the Groups to Ignore List in SQL:

1. Launch the **SQL Server Management Studio**.
2. Navigate to the BTCodex server and database, expand Tables, and then right click on the `dbo.Dirsync_GroupsToIgnore`.
3. Select **Edit Top 200 Rows** from the list.
4. Add new entries at the bottom.

<table>
<thead>
<tr>
<th></th>
<th>NTLM Authentication</th>
<th>Active Directory</th>
</tr>
</thead>
<tbody>
<tr>
<td>41</td>
<td>SChannel Authentication</td>
<td>Active Directory</td>
</tr>
<tr>
<td>42</td>
<td>Digest Authentication</td>
<td>Active Directory</td>
</tr>
<tr>
<td>43</td>
<td>NT Service</td>
<td>Active Directory</td>
</tr>
<tr>
<td>44</td>
<td>Untrusted Mandatory Level</td>
<td>Active Directory</td>
</tr>
</tbody>
</table>

5. If you have more than 200 groups to ignore, you can increase the number of rows shown:
   a. Run the SQL Server Management Studio.
   b. Click Tools -> Options
   c. Select SQL Server Object Explorer. Now you should be able to see the Table and View options:
      o Value for Edit Top Rows Command
      o Value for Select Top Rows Command
   d. Set the Values to 0 to edit and select all the records.
6. The table displays the **Select All Rows** and **Edit All Rows** options.

6.4 Updating the Groups to Ignore List with the SQL Import and Export Tool

To use the SQL Import and Export Data tool to update the Groups to Ignore List in SQL:

1. Expand the Microsoft SQL Server 2008 R2 folder and select **Import and Export Data (32-bit)**.
2. Select the data source from which you want to copy data, and then click **Next**.
3. Select the destination where data is to be copied.

![SQL Server Import and Export Wizard]

4. Select **Copy data from one or more tables or views**, and then click **Next** to continue.

![SQL Server Import and Export Wizard]
5. Choose one or more tables and views to copy, and then click **Edit Mappings**.

![Select Source Tables and Views](image)

6. Select **Append rows to the destination table** and fill in the values in the **Destination** column, then click **OK**.

![Column Mappings](image)
7. Select **Run immediately** and then click **Finish**.

![Image of SQL Server Import and Export Wizard]

### 6.5 Excluding Security Groups from Synchronization with the Group Filter

Select the appropriate Profile and Source OU in the Directory Sync UI and double-click on Group Filter on the AD Source tab.

Replace `(objectClass=Group)` with `(objectClass=Group)(!groupType:=-2147483646)` and click **Save**.

---

**Binary Tree recommends that you use the Active Directory Users and Computers management console to test your filters to prevent Directory Synchronization from failing due to an invalid filter.**
Appendix A: Using the User and Group LDAP Filters

Active Directory provides a powerful way of retrieving data through the use LDAP filters. Directory Synchronization exposes two filters during the creation of a synchronization profile: User OU Filter and Group OU Filter whose defaults are:

- Users: (&(!(adminDescription=Created By DirSync))|(objectClass=Person)(objectClass=room))(!(objectClass=computer))
- Groups: (&!(adminDescription=Created By DirSync))(objectClass=Group)

These filters are per organizational unit and apply to sub-OUs when the Sync Sub-OUs option is selected.

Modifying these filters requires a basic understanding of the attributes, their value representations, and their data types. LDAP filters support any number of options including filtering by date ranges, wildcards, and the use of bitmasks as in the userAccountControl property.

The use of the objectClass and objectCategory properties can greatly reduce the number of records retrieved resulting in improved performance. You may use other attributes to further restrict your results.

The following are common examples of queries and their LDAP query syntax.

- Selecting users that are part of the 'Accounting' department:
  - (&(objectClass=User)(objectCategory=Person)(department=Accounting))
- Selecting mailbox-enabled users:
  - (&(objectClass=User)(objectCategory=Person)(homeMDB=*))
- Selecting mail-enabled users and contacts:
  - (((&(&(objectClass=User)(objectCategory=Person)(!homeMDB=*))(objectClass=Contact)))
- Selecting users created after January 1, 2011:
  - (&(objectClass=User)(objectCategory=Person)(whenCreated>=20110101000000.0Z))
- Selecting distribution lists:
  - (&(objectClass=Group)(groupType=2))

Binary Tree recommends that you use the Active Directory Users and Computers management console to test your filters to prevent Directory Synchronization from failing due to an invalid filter.
Appendix B: Additional Configuration Options

Changing the attribute used for "Created by Dirsync" or "Updated by Dirsync"

By default, the adminDescription attribute (for Active Directory) or $BTAction (for Domino) is stamped on objects on the Target that are created or updated by SMART Directory Sync with "Created by Dirsync" or "Updated by Dirsync" to define which objects can be safely deleted from the Target. An app setting is available in the config file to allow you to define a different attribute/field for this purpose.

To use an attribute other than adminDescription or $BTAction, define a new DirSyncAttribute setting in the <appSettings> section of the config file. For example, the below setting will use adminDisplayName instead of adminDescription:

**Warning:** This must be configured before the initial sync.

```xml
<appSettings>
  <add key="DirSyncAttribute" value="adminDisplayName"/>
</appSettings>
```

Setting msExchRecipientDisplayType and msExchRecipientTypeDetails Exchange attributes

A configuration option to allow you to set msExchRecipientDisplayType and msExchRecipientTypeDetails Exchange attributes based on the value of a configurable attribute is available.

The configuration option must defined in the <appSettings> section of the config file, as shown below. “Value=“ should be contain the attribute to be used. (proxyAddresses shown below). If the value of the attribute is null, msExchRecipientDisplayType and msExchRecipientTypeDetails will be populated. See the list below for the values that will be populated.

```xml
<appSettings>
  <add key="RecipientType_MailEnabledAttribute" value="proxyAddresses"/>
</appSettings>
```

Mail Enabled Users in the source:

- msExchRecipientDisplayType = 6
- msExchRecipientTypeDetails = 128

Room Mailbox in the source:

- msExchRecipientDisplayType = 7
- msExchRecipientTypeDetails = 16

Resource Mailbox in the source:

- msExchRecipientDisplayType = 8
- msExchRecipientTypeDetails = 32
Shared Mailbox in the source:

- msExchRecipientDisplayType = 0
- msExchRecipientTypeDetails = 4

**Allow objects with remote mailboxes to be treated as mailbox-enabled objects**

A setting that allows objects with remote mailboxes to be treated as mailbox-enabled objects is available. To enable this feature, add the RemoteMailboxAsMailboxEnabled option to the `<appSettings>` section of the BinaryTree.DirSync.Exchange.exe.config file as displayed below.

```xml
<appSettings>
  <add key="RemoteMailboxAsMailboxEnabled" value="True"/>
</appSettings>
```

If this setting is set to any value other than True or if omitted from the file, objects with remote mailboxes will be treated as non-mailbox-enabled. If set to True, objects with remote mailboxes will be treated as mailbox-enabled.

**Disable the caching of group members**

A configuration option can be used in the appSettings section of the config file to disable the caching of group members.

This setting should be added to the BinaryTree.DirSync.Exchange.exe.config file.

```xml
<appSettings>
  <add key="OptimizeGroupSyncMemoryUsage" value="true"/>
</appSettings>
```

Valid values are true and false. If this setting is omitted, or set to an invalid value, the value defaults to false. If set to false, group members will be cached during push and pull. If set to true, group members will not be cached during push and pull.

**Disable the initialization of the sync report**

A configuration option can be used in the appSettings section of the config file to disable the initialization of the sync report. If disabled, a sync report will still be recorded, but it will not be initialized between syncs. The result will be that an object will show data from the last time it was processed by SMART Directory Sync, rather than just the most recent time it was processed. In other words, if an object is inserted during a sync, it will show in the sync report as Inserted. Assuming a second sync does not touch this object, then if the sync report is initialized, a second sync will show this object as No Change, but if the sync report is not initialized, the object will still show as Inserted.

This setting should be added to the BinaryTree.DirSync.Exchange.exe.config file.

```xml
<appSettings>
  <add key="DisableSyncReportInitialization" value="true"/>
</appSettings>
```

Valid values are true and false. If this setting is omitted, or set to an invalid value, the value defaults to false. If set to false, the sync report will be initialized. If set to true, the sync report will not be initialized.
Set the maximum number of users and groups synced simultaneously

During pull processing, SMART Directory Sync will sync multiple Active Directory user and group objects simultaneously into the target AD. The maximum number of users and groups synced simultaneously can be changed using the ThreadCount setting in the config file. If this configuration option is not specified, the ThreadCount will be set to the same number of logical processor cores of the server on which SMART Directory Sync is running.

The configuration option is not included by default. To add, modify the BinaryTree.DirSync.Exchange.exe.config file located at C:\Program Files\Binary Tree\DirSync and add a new key to the <appSettings> section as follows:

```xml
<appSettings>
  <add key="ThreadCount" value="4"/>
</appSettings>
```

This option should never be set to a number greater than the number of processor cores on the server. However, you may need to specify a lower number if other applications also running on the server require a specific number of cores set aside for processing. Best practice is to leave the setting at the default value and lower it only if additional processing power is needed for other applications on the server.
Appendix C: Default Mapping

**Domino Source – AD Target Default Mapping**

The below table displays the default values of the Domino Source to AD Target mapping table.

<table>
<thead>
<tr>
<th>Source Field</th>
<th>Internal Field</th>
<th>Target Field</th>
<th>Source Type</th>
<th>Target Type 1</th>
<th>Target Type 2</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>InternetAddress</td>
<td>InternetAddress</td>
<td>mail</td>
<td>any</td>
<td>any</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CompanyName</td>
<td>Company</td>
<td></td>
<td>any</td>
<td>any</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LegacyExchangeDN</td>
<td>legacyExchangeDN</td>
<td></td>
<td>any</td>
<td>any</td>
<td></td>
<td>Created using the source object’s Notes ID as the CN.</td>
</tr>
<tr>
<td>GroupType</td>
<td>GroupType</td>
<td>groupType</td>
<td>group</td>
<td>group</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ListDescription</td>
<td>Comment</td>
<td>info</td>
<td>group</td>
<td>group</td>
<td>contact</td>
<td></td>
</tr>
<tr>
<td>ListName</td>
<td>DisplayName</td>
<td>displayName</td>
<td>group</td>
<td>group</td>
<td>contact</td>
<td>ListName must be empty in Notes or it will be treated as a group by the router.</td>
</tr>
<tr>
<td>ListName</td>
<td>PrimaryAlias</td>
<td>mailNickname</td>
<td>group</td>
<td>group</td>
<td>contact</td>
<td>ListName must be empty in Notes or it will be treated as a group by the router.</td>
</tr>
<tr>
<td>ListName</td>
<td>SAMAccountName</td>
<td>sSAMAccountName</td>
<td>group</td>
<td>group</td>
<td></td>
<td>ListName must be empty in Notes</td>
</tr>
<tr>
<td>Source Field</td>
<td>Internal Field</td>
<td>Target Field</td>
<td>Source Type</td>
<td>Target Type 1</td>
<td>Target Type 2</td>
<td>Comments</td>
</tr>
<tr>
<td>--------------</td>
<td>----------------</td>
<td>--------------</td>
<td>-------------</td>
<td>---------------</td>
<td>---------------</td>
<td>----------</td>
</tr>
<tr>
<td>TargetAddress</td>
<td>targetAddress</td>
<td>group</td>
<td>contact</td>
<td>TargetAddress</td>
<td>TargetAddress</td>
<td>Notes or it will be treated as a group by the router.</td>
</tr>
<tr>
<td>Comments</td>
<td>Comment</td>
<td>comment</td>
<td>shared Mail</td>
<td>shared Mail</td>
<td>contact</td>
<td></td>
</tr>
<tr>
<td>Description</td>
<td>Info</td>
<td>info</td>
<td>shared Mail</td>
<td>shared Mail</td>
<td>contact</td>
<td></td>
</tr>
<tr>
<td>FullName</td>
<td>CommonName</td>
<td>cn</td>
<td>shared Mail</td>
<td>shared Mail</td>
<td>contact</td>
<td></td>
</tr>
<tr>
<td>FullName</td>
<td>PrimaryAlias</td>
<td>mailNickname</td>
<td>shared Mail</td>
<td>shared Mail</td>
<td>contact</td>
<td></td>
</tr>
<tr>
<td>FullName</td>
<td>DisplayName</td>
<td>displayName</td>
<td>shared Mail</td>
<td>shared Mail</td>
<td>contact</td>
<td></td>
</tr>
<tr>
<td>FullName</td>
<td>ProxyAddresses</td>
<td>proxyAddresses</td>
<td>shared Mail</td>
<td>shared Mail</td>
<td>contact</td>
<td>ProxyAddresses contains the InternetAddress as the primary SMTP, the</td>
</tr>
<tr>
<td>Source Field</td>
<td>Internal Field</td>
<td>Target Field</td>
<td>Source Type</td>
<td>Target Type 1</td>
<td>Target Type 2</td>
<td>Comments</td>
</tr>
<tr>
<td>--------------</td>
<td>----------------</td>
<td>--------------</td>
<td>-------------</td>
<td>---------------</td>
<td>---------------</td>
<td>----------</td>
</tr>
<tr>
<td></td>
<td>SAMAccountName</td>
<td>sAMAccountName</td>
<td>shared Mail</td>
<td>shared Mail</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FullName</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>legacyExchange DN of both the source and target as X500 addresses, and any email policies from the target (if enabled).</td>
<td></td>
</tr>
<tr>
<td></td>
<td>TargetAddress</td>
<td>targetAddress</td>
<td>shared Mail</td>
<td>shared Mail</td>
<td>contact</td>
<td>TargetAddress is set to the source object's primary SMTP in the ProxyAddresses, the InternetAddress, or the UserPrincipal Name of the source object.</td>
</tr>
<tr>
<td></td>
<td>Comment</td>
<td>comment</td>
<td>ressource</td>
<td>resource</td>
<td>contact</td>
<td></td>
</tr>
<tr>
<td>Description</td>
<td>Info</td>
<td>info</td>
<td>ressource</td>
<td>resource</td>
<td>contact</td>
<td></td>
</tr>
<tr>
<td>FullName</td>
<td>CommonName</td>
<td>cn</td>
<td>ressource</td>
<td>resource</td>
<td>contact</td>
<td></td>
</tr>
<tr>
<td>FullName</td>
<td>PrimaryAlias</td>
<td>mailNickname</td>
<td>ressource</td>
<td>resource</td>
<td>contact</td>
<td></td>
</tr>
<tr>
<td>Source Field</td>
<td>Internal Field</td>
<td>Target Field</td>
<td>Source Type</td>
<td>Target Type 1</td>
<td>Target Type 2</td>
<td>Comments</td>
</tr>
<tr>
<td>----------------------</td>
<td>-------------------------</td>
<td>--------------------</td>
<td>-------------</td>
<td>---------------</td>
<td>---------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>FullName</td>
<td>CommonName</td>
<td>displayName</td>
<td>resource</td>
<td>resource</td>
<td>contact</td>
<td>ProxyAddresses contains the InternetAddress as the primary SMTP, the legacyExchange DN of both the source and target as X500 addresses, and any email policies from the target (if enabled).</td>
</tr>
<tr>
<td>FullName</td>
<td>ProxyAddresses</td>
<td>proxyAddresses</td>
<td>resource</td>
<td>resource</td>
<td>contact</td>
<td></td>
</tr>
<tr>
<td>FullName</td>
<td>SAMAccountName</td>
<td>sAMAccountName</td>
<td>resource</td>
<td>resource</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ResourceCapacity</td>
<td>msExchResourceCapacity</td>
<td>msExchResourceCapacity</td>
<td>resource</td>
<td>resource</td>
<td>contact</td>
<td></td>
</tr>
<tr>
<td>TargetAddress</td>
<td>targetAddress</td>
<td>targetAddress</td>
<td>resource</td>
<td>resource</td>
<td>contact</td>
<td>TargetAddress is set to the source object's primary SMTP in the ProxyAddresses, the InternetAddress, or the UserPrincipleName of the source object.</td>
</tr>
<tr>
<td>Comments</td>
<td>Comment</td>
<td>comment</td>
<td>room</td>
<td>room</td>
<td>contact</td>
<td></td>
</tr>
<tr>
<td>Source Field</td>
<td>Internal Field</td>
<td>Target Field</td>
<td>Source Type</td>
<td>Target Type 1</td>
<td>Target Type 2</td>
<td>Comments</td>
</tr>
<tr>
<td>---------------</td>
<td>------------------</td>
<td>----------------</td>
<td>-------------</td>
<td>---------------</td>
<td>--------------</td>
<td>-----------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Description</td>
<td>Info</td>
<td>info</td>
<td>room</td>
<td>room</td>
<td>contact</td>
<td></td>
</tr>
<tr>
<td>FullName</td>
<td>CommonName</td>
<td>cn</td>
<td>room</td>
<td>room</td>
<td>contact</td>
<td></td>
</tr>
<tr>
<td>FullName</td>
<td>PrimaryAlias</td>
<td>mailNickname</td>
<td>room</td>
<td>room</td>
<td>contact</td>
<td></td>
</tr>
<tr>
<td>FullName</td>
<td>CommonName</td>
<td>displayName</td>
<td>room</td>
<td>room</td>
<td>contact</td>
<td></td>
</tr>
<tr>
<td>FullName</td>
<td>ProxyAddresses</td>
<td>proxyAddresses</td>
<td>room</td>
<td>room</td>
<td>contact</td>
<td>ProxyAddresses contains the InternetAddress as the primary SMTP, the legacyExchange DN of both the source and target as X500 addresses, and any email policies from the target (if enabled).</td>
</tr>
<tr>
<td>FullName</td>
<td>SAMAccountName</td>
<td>sAMAccountName</td>
<td>room</td>
<td>room</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ResourceCapacity</td>
<td>msExchResourceCapacity</td>
<td>msExchResourceCapacity</td>
<td>room</td>
<td>room</td>
<td>contact</td>
<td></td>
</tr>
<tr>
<td>TargetAddress</td>
<td>targetAddress</td>
<td>room</td>
<td>room</td>
<td>contact</td>
<td></td>
<td>TargetAddress is set to the source object’s primary SMTP in the ProxyAddresses, the</td>
</tr>
<tr>
<td>Source Field</td>
<td>Internal Field</td>
<td>Target Field</td>
<td>Source Type</td>
<td>Target Type 1</td>
<td>Target Type 2</td>
<td>Comments</td>
</tr>
<tr>
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<td>--------------</td>
<td>-------------</td>
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<td>---------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>CellPhoneNumber</td>
<td>CellPhoneNumber</td>
<td></td>
<td>user</td>
<td>user</td>
<td></td>
<td>InternetAddress , or the UserPrincipleName of the source object.</td>
</tr>
<tr>
<td>Comment</td>
<td>Comment</td>
<td></td>
<td>user</td>
<td>user</td>
<td></td>
<td></td>
</tr>
<tr>
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<td>Department</td>
<td></td>
<td>user</td>
<td>user</td>
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<td></td>
</tr>
<tr>
<td>FirstName</td>
<td>FirstName</td>
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<td>user</td>
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<td></td>
</tr>
<tr>
<td>FullName</td>
<td>CommonName</td>
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<td>user</td>
<td>user</td>
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<td></td>
</tr>
<tr>
<td>FullName</td>
<td>DisplayName</td>
<td></td>
<td>user</td>
<td>user</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FullName</td>
<td>ProxyAddresses</td>
<td>proxyAddresses</td>
<td>user</td>
<td>user</td>
<td></td>
<td>ProxyAddresses contains the InternetAddress as the primary SMTP, the legacyExchange DN of both the source and target as X500 addresses, and any email</td>
</tr>
</tbody>
</table>

SMART DIRECTORY SYNC 4.5 COMPREHENSIVE USER GUIDE FOR DOMINO-ACTIVE DIRECTORY SYNCHRONIZATION
<table>
<thead>
<tr>
<th>Source Field</th>
<th>Internal Field</th>
<th>Target Field</th>
<th>Source Type</th>
<th>Target Type 1</th>
<th>Target Type 2</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
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<td>JobTitle</td>
<td>JobTitle</td>
<td></td>
<td>user</td>
<td>user</td>
<td></td>
<td>policies from the target (if enabled).</td>
</tr>
<tr>
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<td>user</td>
<td>user</td>
<td></td>
<td>Sometimes used as a surname.</td>
</tr>
<tr>
<td>Location</td>
<td>Location</td>
<td></td>
<td>user</td>
<td>user</td>
<td></td>
<td>Important, particularly for printers.</td>
</tr>
<tr>
<td>MiddleInitial</td>
<td>Initials</td>
<td></td>
<td>user</td>
<td>user</td>
<td></td>
<td></td>
</tr>
<tr>
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<td>OfficeCity</td>
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<td>user</td>
<td>user</td>
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<td></td>
</tr>
<tr>
<td>OfficeFAXPhoneNumber</td>
<td>OfficeFAXNumber</td>
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<td>user</td>
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</tr>
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</tr>
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<td>Target Field</td>
<td>Source Type</td>
<td>Target Type 1</td>
<td>Target Type 2</td>
<td>Comments</td>
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<td>-------------</td>
<td>---------------</td>
<td>---------------</td>
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</tr>
<tr>
<td>ShortName</td>
<td>PrimaryAlias</td>
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<td>user</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ShortName</td>
<td>ProxyAddresses</td>
<td>proxyAddresses</td>
<td>user</td>
<td>user</td>
<td></td>
<td>ProxyAddresses contains the InternetAddress as the primary SMTP, the legacyExchange DN of both the source and target as X500 addresses, and any email policies from the target (if enabled).</td>
</tr>
<tr>
<td>ShortName</td>
<td>SAMAccountName</td>
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<td></td>
</tr>
<tr>
<td>TargetAddress</td>
<td>targetAddress</td>
<td></td>
<td>user</td>
<td>user</td>
<td></td>
<td>TargetAddress is set to the source object's primary SMTP in the ProxyAddresses, the InternetAddress, or the UserPrincipalName of the source object.</td>
</tr>
<tr>
<td>Resource Type</td>
<td>BTCustom032</td>
<td></td>
<td>resource</td>
<td>resource</td>
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<td></td>
</tr>
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<td>BTCustom033</td>
<td>msExchRecipientDisplayType</td>
<td>resource</td>
<td>resource</td>
<td>contact</td>
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</tr>
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<td>Internal Field</td>
<td>Target Field</td>
<td>Source Type</td>
<td>Target Type 1</td>
<td>Target Type 2</td>
<td>Comments</td>
</tr>
<tr>
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<td>-------------------------------------</td>
<td>-----------------------------------</td>
<td>---------------</td>
<td>---------------</td>
<td>---------------</td>
<td>----------</td>
</tr>
<tr>
<td>BTCustom034</td>
<td>msExchResourceSearchProperties</td>
<td>resource</td>
<td>resource</td>
<td>contact</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BTCustom034</td>
<td>msExchResourceDisplay</td>
<td>resource</td>
<td>resource</td>
<td>contact</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BTCustom035</td>
<td>msExchResourceMetaData</td>
<td>resource</td>
<td>resource</td>
<td>contact</td>
<td></td>
<td></td>
</tr>
<tr>
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<td>BTCustom032</td>
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<td>contact</td>
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<td></td>
</tr>
<tr>
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<td>msExchRecipientDisplayType</td>
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<td>room</td>
<td>contact</td>
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<td></td>
</tr>
<tr>
<td>BTCustom034</td>
<td>msExchResourceSearchProperties</td>
<td>room</td>
<td>room</td>
<td>contact</td>
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<td></td>
</tr>
<tr>
<td>BTCustom034</td>
<td>msExchResourceDisplay</td>
<td>room</td>
<td>room</td>
<td>contact</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BTCustom035</td>
<td>msExchResourceMetaData</td>
<td>room</td>
<td>room</td>
<td>contact</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## AD Source – Domino Target Default Mapping

The below table displays the default values of the AD Source to Domino Target mapping table.

<table>
<thead>
<tr>
<th>Source Field</th>
<th>Internal Field</th>
<th>Target Field</th>
<th>Source Type</th>
<th>Target Type 1</th>
<th>Target Type 2</th>
<th>Comment(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>mail</td>
<td>InternetAddress</td>
<td>InternetAddress</td>
<td>any</td>
<td>any</td>
<td></td>
<td></td>
</tr>
<tr>
<td>company</td>
<td>Company</td>
<td>CompanyName</td>
<td>any</td>
<td>any</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c</td>
<td>OfficeCountry</td>
<td>OfficeCountry</td>
<td>contact</td>
<td>user</td>
<td></td>
<td></td>
</tr>
<tr>
<td>department</td>
<td>Department</td>
<td>Department</td>
<td>contact</td>
<td>user</td>
<td></td>
<td></td>
</tr>
<tr>
<td>displayName</td>
<td>DisplayName</td>
<td>FullName</td>
<td>contact</td>
<td>user</td>
<td></td>
<td></td>
</tr>
<tr>
<td>employeeID</td>
<td>EmployeeID</td>
<td>EmployeeID</td>
<td>contact</td>
<td>user</td>
<td></td>
<td></td>
</tr>
<tr>
<td>facsimileTelephoneNumber</td>
<td>OfficeFAXNumber</td>
<td>OfficeFAXPhoneNumber</td>
<td>contact</td>
<td>user</td>
<td></td>
<td></td>
</tr>
<tr>
<td>givenName</td>
<td>FirstName</td>
<td>FirstName</td>
<td>contact</td>
<td>user</td>
<td></td>
<td></td>
</tr>
<tr>
<td>initials</td>
<td>Initials</td>
<td>MiddleInitial</td>
<td>contact</td>
<td>user</td>
<td></td>
<td></td>
</tr>
<tr>
<td>l</td>
<td>OfficeCity</td>
<td>OfficeCity</td>
<td>contact</td>
<td>user</td>
<td></td>
<td></td>
</tr>
<tr>
<td>mailNickname</td>
<td>PrimaryAlias</td>
<td>ShortName</td>
<td>contact</td>
<td>user</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The following restricted chars will be replaced with underscores: 
( ) @ [] " space: \\ > ;
<table>
<thead>
<tr>
<th>Source Field</th>
<th>Internal Field</th>
<th>Target Field</th>
<th>Source Type</th>
<th>Target Type 1</th>
<th>Target Type 2</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>mobile</td>
<td>CellPhoneNumber</td>
<td>CellPhoneNumber</td>
<td>contact</td>
<td>user</td>
<td></td>
<td></td>
</tr>
<tr>
<td>physicalDeliveryOfficeName</td>
<td>Location</td>
<td>Location</td>
<td>contact</td>
<td>user</td>
<td></td>
<td>Important, particularly for printers.</td>
</tr>
<tr>
<td>postalCode</td>
<td>OfficeZip</td>
<td>OfficeZip</td>
<td>contact</td>
<td>user</td>
<td></td>
<td></td>
</tr>
<tr>
<td>proxyAddresses</td>
<td>FullName</td>
<td>FullName</td>
<td>contact</td>
<td>user</td>
<td></td>
<td></td>
</tr>
<tr>
<td>sn</td>
<td>LastName</td>
<td>LastName</td>
<td>contact</td>
<td>user</td>
<td></td>
<td>Sometimes used as surname.</td>
</tr>
<tr>
<td>st</td>
<td>OfficeState</td>
<td>OfficeState</td>
<td>contact</td>
<td>user</td>
<td></td>
<td></td>
</tr>
<tr>
<td>streetAddress</td>
<td>OfficeStreetAddress</td>
<td>OfficeStreetAddress</td>
<td>contact</td>
<td>user</td>
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<td></td>
</tr>
<tr>
<td>telephoneNumber</td>
<td>OfficePhoneNumber</td>
<td>OfficePhoneNumber</td>
<td>contact</td>
<td>user</td>
<td></td>
<td></td>
</tr>
<tr>
<td>title</td>
<td>JobTitle</td>
<td>JobTitle</td>
<td>contact</td>
<td>user</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>BTCustom001</td>
<td>FullName</td>
<td>contact</td>
<td>user</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c</td>
<td>OfficeCountry</td>
<td>OfficeCountry</td>
<td>group</td>
<td>user</td>
<td></td>
<td></td>
</tr>
<tr>
<td>department</td>
<td>Department</td>
<td>Department</td>
<td>group</td>
<td>user</td>
<td></td>
<td></td>
</tr>
<tr>
<td>displayName</td>
<td>DisplayName</td>
<td>ListName</td>
<td>group</td>
<td>group</td>
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<td></td>
</tr>
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<td>Target Field</td>
<td>Source Type</td>
<td>Target Type 1</td>
<td>Target Type 2</td>
<td>Comment</td>
</tr>
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<td>----------------</td>
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<td>---------------</td>
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</tr>
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<td>EmployeeID</td>
<td>group</td>
<td>user</td>
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<td></td>
</tr>
<tr>
<td>facsimileTelephoneNumber</td>
<td>OfficeFAXNumber</td>
<td>OfficeFAXPhoneNumber</td>
<td>group</td>
<td>user</td>
<td></td>
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</tr>
<tr>
<td>givenName</td>
<td>FirstName</td>
<td>FirstName</td>
<td>group</td>
<td>user</td>
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</tr>
<tr>
<td>info</td>
<td>Comment</td>
<td>ListDescription</td>
<td>group</td>
<td>group</td>
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<td>group</td>
<td>user</td>
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</tr>
<tr>
<td>initials</td>
<td>Initials</td>
<td>MiddleInitial</td>
<td>group</td>
<td>user</td>
<td></td>
<td></td>
</tr>
<tr>
<td>l</td>
<td>OfficeCity</td>
<td>OfficeCity</td>
<td>group</td>
<td>user</td>
<td></td>
<td></td>
</tr>
<tr>
<td>mailNickname</td>
<td>PrimaryAlias</td>
<td>ShortName</td>
<td>group</td>
<td>user</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>The following restricted chars will be replaced with underscores: () @ [] &quot; space: \ &gt;; &lt;</td>
</tr>
<tr>
<td>mobile</td>
<td>CellPhoneNumber</td>
<td>CellPhoneNumber</td>
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<td></td>
</tr>
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<td>Location</td>
<td>group</td>
<td>user</td>
<td></td>
<td>Important, particularly for printers.</td>
</tr>
<tr>
<td>postalCode</td>
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<td>OfficeZip</td>
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<td>user</td>
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</tr>
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<td>Source Field</td>
<td>Internal Field</td>
<td>Target Field</td>
<td>Source Type</td>
<td>Target Type 1</td>
<td>Target Type 2</td>
<td>Comment</td>
</tr>
<tr>
<td>------------------</td>
<td>----------------</td>
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<td>-------------</td>
<td>---------------</td>
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</tr>
<tr>
<td>proxyAddresses</td>
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<td>FullName</td>
<td>group</td>
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<td></td>
</tr>
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<td>SAMAccountName</td>
<td>ShortName</td>
<td>group</td>
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<td></td>
<td>The following restricted chars will be replaced with underscores: + @ [] &quot; / :</td>
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<td>LastName</td>
<td>LastName</td>
<td>group</td>
<td></td>
<td></td>
<td>Sometimes used as surname.</td>
</tr>
<tr>
<td>st</td>
<td>OfficeState</td>
<td>OfficeState</td>
<td>group</td>
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<td></td>
</tr>
<tr>
<td>streetAddress</td>
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<td>group</td>
<td></td>
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</tr>
<tr>
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<td>group</td>
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</tr>
<tr>
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<td>JobTitle</td>
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</tr>
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<td>BTCustom001</td>
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<td>user</td>
<td></td>
<td></td>
<td>To represent group as person.</td>
</tr>
<tr>
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<td></td>
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<td>PrimaryAlias</td>
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<td>user</td>
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</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>( ) @ [ ]&quot; space : &quot;&gt;; &lt;</td>
</tr>
<tr>
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<td>ShortName</td>
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<td>user</td>
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<td>The following restricted chars will be replaced with underscores:</td>
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<tr>
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<td></td>
<td>( ) @ [ ]&quot; space : &quot;&gt;; &lt;</td>
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<td>FullName</td>
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<td>user</td>
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</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>+ @ [ ]&quot; / :</td>
</tr>
<tr>
<td>Source Field</td>
<td>Internal Field</td>
<td>Target Field</td>
<td>Source Type</td>
<td>Target Type 1</td>
<td>Target Type 2</td>
<td>Comment</td>
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<td>--------------</td>
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<td>---------------</td>
<td>---------------</td>
<td>---------</td>
</tr>
<tr>
<td>cn</td>
<td>CommonName</td>
<td>FullName</td>
<td>room</td>
<td>user</td>
<td></td>
<td>? ; = * ,</td>
</tr>
<tr>
<td>displayName</td>
<td>DisplayName</td>
<td>FullName</td>
<td>room</td>
<td>user</td>
<td></td>
<td></td>
</tr>
<tr>
<td>name</td>
<td>LastName</td>
<td>LastName</td>
<td>room</td>
<td>user</td>
<td></td>
<td></td>
</tr>
<tr>
<td>mailNickname</td>
<td>PrimaryAlias</td>
<td>FullName</td>
<td>room</td>
<td>user</td>
<td></td>
<td>The following restricted chars will be replaced with underscores: ( ( @ [ ] &quot; space : &gt; ; &lt; )</td>
</tr>
<tr>
<td>mailNickname</td>
<td>ShortName</td>
<td>ShortName</td>
<td>room</td>
<td>user</td>
<td></td>
<td>The following restricted chars will be replaced with underscores: ( ( @ [ ] &quot; space : &gt; ; &lt; )</td>
</tr>
<tr>
<td>proxyAddresses</td>
<td>FullName</td>
<td>FullName</td>
<td>room</td>
<td>user</td>
<td></td>
<td></td>
</tr>
<tr>
<td>sAMAccountName</td>
<td>SAMAccountName</td>
<td>FullName</td>
<td>room</td>
<td>user</td>
<td></td>
<td>The following restricted</td>
</tr>
<tr>
<td>Source Field</td>
<td>Internal Field</td>
<td>Target Field</td>
<td>Source Type</td>
<td>Target Type 1</td>
<td>Target Type 2</td>
<td>Comment</td>
</tr>
<tr>
<td>--------------</td>
<td>----------------</td>
<td>--------------</td>
<td>-------------</td>
<td>---------------</td>
<td>---------------</td>
<td>---------</td>
</tr>
<tr>
<td>cn</td>
<td>CommonName</td>
<td>FullName</td>
<td>sharedMail</td>
<td>user</td>
<td></td>
<td>chars will be replaced with underscores: + @ [ ] &quot; / :</td>
</tr>
<tr>
<td>displayName</td>
<td>DisplayName</td>
<td>FullName</td>
<td>sharedMail</td>
<td>user</td>
<td></td>
<td></td>
</tr>
<tr>
<td>mailNickname</td>
<td>PrimaryAlias</td>
<td>FullName</td>
<td>sharedMail</td>
<td>user</td>
<td></td>
<td>The following restricted chars will be replaced with underscores: ( ) @ [ ]</td>
</tr>
<tr>
<td>mailNickname</td>
<td>ShortName</td>
<td>ShortName</td>
<td>sharedMail</td>
<td>user</td>
<td></td>
<td></td>
</tr>
<tr>
<td>proxyAddresses</td>
<td>FullName</td>
<td>FullName</td>
<td>sharedMail</td>
<td>user</td>
<td></td>
<td></td>
</tr>
<tr>
<td>sAMAccountName</td>
<td>SAMAccountName</td>
<td>FullName</td>
<td>sharedMail</td>
<td>user</td>
<td></td>
<td>The following restricted chars will be replaced with</td>
</tr>
<tr>
<td>Source Field</td>
<td>Internal Field</td>
<td>Target Field</td>
<td>Source Type</td>
<td>Target Type 1</td>
<td>Target Type 2</td>
<td>Comment</td>
</tr>
<tr>
<td>--------------</td>
<td>------------------</td>
<td>----------------</td>
<td>-------------</td>
<td>---------------</td>
<td>---------------</td>
<td>---------</td>
</tr>
</tbody>
</table>
| c            | OfficeCountry    | OfficeCountry  | user        | user          |               | underscore s: + @ [] "/:|?
|              |                  |                |             |               |               | space  \
| cn           | CommonName       | FullName       | user        | user          |               | The following restricted chars will be replaced with underscores: () @ [] " space  \
<p>|              |                  |                |             |               |               | &lt;       |
| department   | Department       | Department     | user        | user          |               |         |
| displayName  | DisplayName      | FullName       | user        | user          |               |         |
| employeeID   | EmployeeID       | EmployeeID     | user        | user          |               |         |
| facsimileTelephoneNumber | OfficeFAXNumber | OfficeFAXPhoneNumber | user       | user          |               |         |
| givenName    | FirstName        | FirstName      | user        | user          |               |         |
| initials     | Initials         | MiddleInitial  | user        | user          |               |         |
| l            | OfficeCity       | OfficeCity     | user        | user          |               |         |</p>
<table>
<thead>
<tr>
<th>Source Field</th>
<th>Internal Field</th>
<th>Target Field</th>
<th>Source Type</th>
<th>Target Type 1</th>
<th>Target Type 2</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>mailNickname</td>
<td>PrimaryAlias</td>
<td>ShortName</td>
<td>user</td>
<td>user</td>
<td></td>
<td>The following restricted chars will be replaced with underscores: ( ) @ [ ] &quot; space : \ &gt; ; &lt;</td>
</tr>
<tr>
<td>mobile</td>
<td>CellPhoneNumber</td>
<td>CellPhoneNumber</td>
<td>user</td>
<td>user</td>
<td></td>
<td></td>
</tr>
<tr>
<td>physicalDeliveryOfficeName</td>
<td>Location</td>
<td>Location</td>
<td>user</td>
<td>user</td>
<td></td>
<td>Important, particularly for printers.</td>
</tr>
<tr>
<td>postalCode</td>
<td>OfficeZip</td>
<td>OfficeZip</td>
<td>user</td>
<td>user</td>
<td></td>
<td></td>
</tr>
<tr>
<td>proxyAddresses</td>
<td>FullName</td>
<td>FullName</td>
<td>user</td>
<td>user</td>
<td></td>
<td></td>
</tr>
<tr>
<td>sAMAccountName</td>
<td>SAMAccountName</td>
<td>ShortName</td>
<td>user</td>
<td>user</td>
<td></td>
<td>The following restricted chars will be replaced with underscores: + @ [ ] &quot;/ :</td>
</tr>
<tr>
<td>sn</td>
<td>LastName</td>
<td>LastName</td>
<td>user</td>
<td>user</td>
<td></td>
<td>Sometimes used as surname.</td>
</tr>
<tr>
<td>Source Field</td>
<td>Internal Field</td>
<td>Target Field</td>
<td>Source Type</td>
<td>Target Type 1</td>
<td>Target Type 2</td>
<td>Comment</td>
</tr>
<tr>
<td>--------------</td>
<td>----------------</td>
<td>---------------</td>
<td>-------------</td>
<td>---------------</td>
<td>---------------</td>
<td>---------</td>
</tr>
<tr>
<td>st</td>
<td>OfficeState</td>
<td>OfficeState</td>
<td>user</td>
<td>user</td>
<td></td>
<td></td>
</tr>
<tr>
<td>streetAddress</td>
<td>OfficeStreetAddress</td>
<td>OfficeStreetAddress</td>
<td>user</td>
<td>user</td>
<td></td>
<td></td>
</tr>
<tr>
<td>telephoneNumber</td>
<td>OfficePhoneNumber</td>
<td>OfficePhoneNumber</td>
<td>user</td>
<td>user</td>
<td></td>
<td></td>
</tr>
<tr>
<td>title</td>
<td>JobTitle</td>
<td>JobTitle</td>
<td>user</td>
<td>user</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BTCustom001</td>
<td>FullName</td>
<td></td>
<td>user</td>
<td>user</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix D: Customizing Overrides

In SMART Directory Sync, an override is used to transform values in the target directory based upon a formula. The formula language used is T-SQL, used in Microsoft’s SQL Server product line. A valid select statement in T-SQL would be `Select (FirstName + LastName) from BT_Person`. When adding an override you do not need to include a full SQL select statement as portions of the SQL statement are generated for you. Specifically, you are not required to use the select or from commands in the override. It is only required to enter the columns that should be selected. To continue the example above, a valid override would only need to contain the value of `FirstName + LastName`.

To add a View Override:

1. From the **Mapping** tab, click **Overrides**. The View Overrides window appears.

![View Overrides window](image)

2. Click **Add**. The Override dialog appears.

![Override dialog](image)

3. Select a **Person** or **Groups** from the **View** drop-down list.
4. Enter a **Field Name** for the new override. This must be a valid internal field name in SQL.
5. Enter a **Field Value** for the new override. This must be a correctly formatted SQL statement.
6. Enter **Comments** for the new override.
7. Click **Save**.
8. Click **Yes** for the confirmation message.
When you save an override, SMART Directory Sync re-generates the Person or Groups view. It does this by dynamically generating a single SQL statement using the snippet of SQL code that is part of all overrides. The max size for this SQL statement is 8000 total characters. If many new overrides are added, this limit could be exceeded and an error when adding the overrides will occur. In addition to the default overrides, approximately 15-20 more Person and 20-25 Group overrides can be added before hitting the size limit.

To edit a mapping override:

1. From the **Mapping** tab, click **Overrides**. The View Overrides window appears.

![View Overrides window](image)

2. Select an Override and click **Edit**. The Override dialog appears.

![Override dialog](image)

3. Edit the **Field Value** for the override. The View and Field Name cannot be edited.
4. Edit **Comments** for the override.
5. Click **Save**.
6. Click **Yes** for the confirmation message.

To delete a mapping override:

1. From the **Mapping** tab, click **Overrides**. The View Overrides window appears.
2. Select an Override and click **Delete**.
3. Click **Yes** for the confirmation message.

To export all mapping overrides:

1. From the **Mapping** tab, click **Overrides**. The View Overrides window appears.

2. Click **Export All**.
3. Select a location, enter a file name, and click **Save**.
Controlling actions with Overrides

SMART Directory Sync uses the TypeOfTransaction column from the BT_Person table, or the Operation column from the BT_Groups table to determine what action to perform on the target object. These may have overrides applied to them, to control what actions Directory Sync will take for an object. The below image shows an example of this kind of override.

Matching user accounts with Overrides

The values used for matching can have overrides applied to them. This is accomplished by setting up a new override using the field names MatchValue1, MatchValue2, MatchValue3 and MatchValue4. Each MatchValue1-4 corresponds the respective Source and Target pair on the matching tab.

These values are used for matching only. Values that get written to the target are based on the mappings, not the matching.
### Example Overrides

<table>
<thead>
<tr>
<th>Field Name</th>
<th>Field Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TargetAddresses</td>
<td>CASE EntryType WHEN 'user' THEN 'SMTP:' + P.Custom20 + '@domino.contoso.com' ELSE 'SMTP:' + dbo.ReplaceDomain(InternetAddress,'domino.contoso.com') END</td>
<td>This formula will dynamically set the targetaddress value based on the EntryType.</td>
</tr>
<tr>
<td>TargetAddresses</td>
<td>'SMTP:' + dbo.UpdateInternetAddress(InternetAddress,'domino.')</td>
<td>This formula will set the TargetAddress value based on the InternetAddress and prefix the domain with the value specified, in this case &quot;domino.&quot;.</td>
</tr>
<tr>
<td>TargetAddresses</td>
<td>'SMTP:' + dbo.ReplaceDomain(InternetAddress,'domino.contoso.com')</td>
<td>This formula will set the TargetAddress value based on the InternetAddress and replace the domain with the value specified, in this case &quot;domino.contoso.com&quot;.</td>
</tr>
<tr>
<td>TargetAddresses</td>
<td>CASE WHEN InternetAddress LIKE '%@kodak.com' THEN 'smtp:' + dbo.UpdateInternetAddress(P.InternetAddress,'domino.') WHEN InternetAddress LIKE '%@knotes.contoso.com' THEN 'smtp:' + dbo.ReplaceDomain(P.InternetAddress, 'domino.contoso.com') ELSE P.InternetAddress END</td>
<td>This formula will dynamically set the targetaddress value based on the existing InternetAddress domain name value. If the first domain is found then the TargetAddress will be set to one value, if the second domain is found another value will be used and if neither</td>
</tr>
<tr>
<td>Field Name</td>
<td>Field Value</td>
<td>Description</td>
</tr>
<tr>
<td>------------</td>
<td>-------------</td>
<td>-------------</td>
</tr>
<tr>
<td>CommonName</td>
<td>CASE EntryType WHEN 'user' THEN 'do$$' + SourceDirectoryID WHEN 'sharedmail' THEN 'do$$' + SourceDirectoryID ELSE CommonName END</td>
<td>This formula will dynamically set the CommonName value based on the EntryType.</td>
</tr>
<tr>
<td>CommonName</td>
<td>CASE WHEN LEN(CommonName) &gt; 64 THEN LTRIM(RTRIM(LEFT(CommonName,64))) ELSE CommonName END</td>
<td>This formula will limit the CommonName value to 64 characters if it exceeds that limit.</td>
</tr>
<tr>
<td>ProxyAddresses</td>
<td>CASE ProxyAddresses WHEN '' THEN 'smtp:' + dbo.ReplaceDomain(InternetAddress,'@contoso.mail.onmicrosoft.com;smtp:') + dbo.UpdateInternetAddress(InternetAddress,'domino.') ELSE ProxyAddresses + ';smtp:' + dbo.ReplaceDomain(InternetAddress,'@contoso.mail.onmicrosoft.com;smtp:') + dbo.UpdateInternetAddress(InternetAddress,'domino.') END</td>
<td>This formula will set or append to the list of ProxyAddresses values the coexistence routing addresses. This example specifically is designed for Office 365.</td>
</tr>
<tr>
<td>Company</td>
<td>LTRIM(RTRIM(LEFT(company, 50)))</td>
<td>This formula will Trim, then limit the string value by 50 characters.</td>
</tr>
<tr>
<td>Custom001</td>
<td>'this is a string'</td>
<td>This formula will set any string value to the any SQL field.</td>
</tr>
<tr>
<td>Custom001</td>
<td>REPLACE(InternetAddress,'@','.')</td>
<td>This formula will replace the '@' symbol with a period '.' to create a string</td>
</tr>
<tr>
<td>Field Name</td>
<td>Field Value</td>
<td>Description</td>
</tr>
<tr>
<td>------------</td>
<td>-------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td></td>
<td>like so. (i.e. first.last.contoso.com)</td>
</tr>
<tr>
<td>Custom001</td>
<td>LEFT(InternetAddress,CHARINDEX('@',InternetAddress)-1)</td>
<td>This formula will extract the localpart of InternetAddress.</td>
</tr>
</tbody>
</table>
Appendix E: Directory Sync Fields with Special Processing

AD Directory Sync Fields with Special Processing

The below tables include fields with some kind of special processing in Directory Sync. Fields can be have the following characteristics:

- Cannot be mapped
- Can be mapped and have an override
- May be explicitly ignored or changed by Directory Sync if object meets certain conditions, even if mapping and override exists
- Actual attribute may be set via config file

Additional notes are available below for field marked with a *.

Writing Users to AD
Attributes that may be set by SMART Directory Sync regardless of mapping:

<table>
<thead>
<tr>
<th>Field</th>
<th>Cannot be mapped</th>
<th>Can be mapped / have override</th>
<th>May be explicitly ignored</th>
<th>May be set with config file</th>
</tr>
</thead>
<tbody>
<tr>
<td>distinguishedName</td>
<td>•</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>objectClass</td>
<td>•</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>userPassword</td>
<td></td>
<td>•</td>
<td></td>
<td></td>
</tr>
<tr>
<td>unicodePwd</td>
<td></td>
<td>•</td>
<td></td>
<td></td>
</tr>
<tr>
<td>userAccountControl</td>
<td></td>
<td>•</td>
<td></td>
<td></td>
</tr>
<tr>
<td>msExchRecipientDisplayType</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td></td>
</tr>
<tr>
<td>msExchRecipientTypeDetails</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td></td>
</tr>
<tr>
<td>msExchResourceDisplay</td>
<td></td>
<td>•</td>
<td></td>
<td></td>
</tr>
<tr>
<td>msExchResourceSearchProperties</td>
<td>•</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>msExchResourceMetaData</td>
<td></td>
<td>•</td>
<td></td>
<td></td>
</tr>
<tr>
<td>proxyAddresses*</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td></td>
</tr>
<tr>
<td>showInAddressBook*</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td></td>
</tr>
</tbody>
</table>
### Field Map Summary

<table>
<thead>
<tr>
<th>Field</th>
<th>Cannot be mapped</th>
<th>Can be mapped / have override</th>
<th>May be explicitly ignored</th>
<th>May be set with config file</th>
</tr>
</thead>
<tbody>
<tr>
<td>targetAddress*</td>
<td>•</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>msExchMasterAccountSid</td>
<td></td>
<td>•</td>
<td></td>
<td></td>
</tr>
<tr>
<td>msExchPoliciesExcluded</td>
<td>•</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>msExchPoliciesIncluded</td>
<td></td>
<td></td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>userAccountControl</td>
<td>•</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>pwdLastSet</td>
<td>•</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>adminDescription</td>
<td>•</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Special processing if mapped:**

<table>
<thead>
<tr>
<th>Field</th>
<th>Cannot be mapped</th>
<th>Can be mapped / have override</th>
<th>May be explicitly ignored</th>
<th>May be set with config file</th>
</tr>
</thead>
<tbody>
<tr>
<td>mail</td>
<td></td>
<td>•</td>
<td></td>
<td></td>
</tr>
<tr>
<td>assistant*</td>
<td></td>
<td>•</td>
<td></td>
<td></td>
</tr>
<tr>
<td>manager*</td>
<td></td>
<td>•</td>
<td></td>
<td></td>
</tr>
<tr>
<td>managedBy*</td>
<td></td>
<td>•</td>
<td></td>
<td></td>
</tr>
<tr>
<td>altRecipient*</td>
<td></td>
<td>•</td>
<td></td>
<td></td>
</tr>
<tr>
<td>authoring</td>
<td></td>
<td>•</td>
<td></td>
<td></td>
</tr>
<tr>
<td>unauthOrig</td>
<td></td>
<td>•</td>
<td></td>
<td></td>
</tr>
<tr>
<td>dLMemSubmitPerms</td>
<td></td>
<td>•</td>
<td></td>
<td></td>
</tr>
<tr>
<td>dLMemRejectPerms</td>
<td></td>
<td>•</td>
<td></td>
<td></td>
</tr>
<tr>
<td>sAMAccountName</td>
<td></td>
<td>•</td>
<td></td>
<td></td>
</tr>
<tr>
<td>legacyExchangeDN*</td>
<td></td>
<td>•</td>
<td></td>
<td></td>
</tr>
<tr>
<td>mailNickname</td>
<td></td>
<td>•</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Never set:

<table>
<thead>
<tr>
<th>Field</th>
<th>Cannot be mapped</th>
<th>Can be mapped / have override</th>
<th>May be explicitly ignored</th>
<th>May be set with config file</th>
</tr>
</thead>
<tbody>
<tr>
<td>objectGUID</td>
<td>•</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>objectSid</td>
<td>•</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>whenCreated</td>
<td>•</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>whenChanged</td>
<td>•</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>uSNChanged</td>
<td>•</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>name</td>
<td>•</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>cn</td>
<td>•</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Writing Groups to AD**

Attributes that may be set by SMART Directory Sync regardless of mapping:

<table>
<thead>
<tr>
<th>Field</th>
<th>Cannot be mapped</th>
<th>Can be mapped / have override</th>
<th>May be explicitly ignored</th>
<th>May be set with config file</th>
</tr>
</thead>
<tbody>
<tr>
<td>objectClass</td>
<td>•</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>msExchRecipientDisplayType</td>
<td>•</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>msExchVersion</td>
<td>•</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>proxyAddresses*</td>
<td>•</td>
<td></td>
<td>•</td>
<td></td>
</tr>
<tr>
<td>showInAddressBook*</td>
<td>•</td>
<td></td>
<td>•</td>
<td></td>
</tr>
<tr>
<td>targetAddress*</td>
<td>•</td>
<td></td>
<td>•</td>
<td></td>
</tr>
<tr>
<td>msExchPoliciesExcluded</td>
<td>•</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>msExchPoliciesIncluded</td>
<td>•</td>
<td></td>
<td></td>
<td>•</td>
</tr>
<tr>
<td>adminDescription</td>
<td>•</td>
<td></td>
<td></td>
<td>•</td>
</tr>
</tbody>
</table>
Special processing if mapped:

<table>
<thead>
<tr>
<th>Field</th>
<th>Cannot be mapped</th>
<th>Can be mapped / have override</th>
<th>May be explicitly ignored</th>
<th>May be set with config file</th>
</tr>
</thead>
<tbody>
<tr>
<td>mail</td>
<td></td>
<td>•</td>
<td></td>
<td></td>
</tr>
<tr>
<td>assistant*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>manager*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>managedBy*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>altRecipient*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>authOring</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>unauthOrig</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>dLMemSubmitPerms</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>dLMemRejectPerms</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>sAMAccountName</td>
<td></td>
<td></td>
<td>•</td>
<td></td>
</tr>
<tr>
<td>legacyExchangeDN*</td>
<td></td>
<td></td>
<td></td>
<td>•</td>
</tr>
<tr>
<td>groupType</td>
<td></td>
<td></td>
<td>•</td>
<td></td>
</tr>
<tr>
<td>mailNickname</td>
<td></td>
<td></td>
<td>•</td>
<td></td>
</tr>
</tbody>
</table>

Never set:

<table>
<thead>
<tr>
<th>Field</th>
<th>Cannot be mapped</th>
<th>Can be mapped / have override</th>
<th>May be explicitly ignored</th>
<th>May be set with config file</th>
</tr>
</thead>
<tbody>
<tr>
<td>objectGUID</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>objectSid</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>whenCreated</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>whenChanged</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>uSNChanged</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>name</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>cn</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Special processing by Internal Field Name:

<table>
<thead>
<tr>
<th>Field</th>
<th>Cannot be mapped</th>
<th>Can be mapped / have override</th>
<th>May be explicitly ignored</th>
<th>May be set with config file</th>
<th>If this internal field name is mapped and value is empty, actual value comes from different internal field</th>
</tr>
</thead>
<tbody>
<tr>
<td>DisplayName</td>
<td>•</td>
<td>•</td>
<td></td>
<td></td>
<td>•</td>
</tr>
<tr>
<td>PrimaryAlias</td>
<td>•</td>
<td></td>
<td></td>
<td></td>
<td>•</td>
</tr>
<tr>
<td>SAMAccountName</td>
<td>•</td>
<td></td>
<td></td>
<td></td>
<td>•</td>
</tr>
<tr>
<td>InternetAddress</td>
<td>•</td>
<td></td>
<td></td>
<td></td>
<td>•</td>
</tr>
<tr>
<td>Name</td>
<td>•</td>
<td></td>
<td></td>
<td></td>
<td>•</td>
</tr>
<tr>
<td>CommonName</td>
<td>•</td>
<td></td>
<td></td>
<td></td>
<td>•</td>
</tr>
</tbody>
</table>

Additional Notes

1. TargetDN – this column contains the distinguishedName of the target object to be created or the existing distinguishedName of a matched target object. If the object is created, the following values are used:
   a. Non-group objects from Domino sources use the following columns (or override values if specified) in order until a non-NULL value is found:
      i. CommonName
      ii. DisplayName
      iii. PrimaryAlias
      iv. FullName
      v. PrimaryFullName
   b. Groups from Domino sources use the following columns (or override values if specified) in order until a non-NULL value is found:
      i. DisplayName
      ii. Name
      iii. CommonName
      iv. PrimaryAlias
   c. Non-group objects from AD sources use the DN column (or override value if specified) to compute a target object DN. This preserves the sub-OU hierarchy the object may be in from the source.
   d. Groups from AD sources, use the OU column (or override value if specified) to compute a target object DN. This preserves the sub-OU hierarchy the object may be in from the source.
2. LegacyExchangeDN – the legacyExchangeDN of the target object is computed by constructing a value relative to the target Exchange organization.
3. TargetAddress
   a. Uses override value from the TargetAddress column if one is specified.
b. Otherwise uses the primary SMTP from the list of source proxy addresses.

4. ProxyAddresses
   a. Includes all values from the ProxyAddress column (or override value if specified) for the source object.
   b. Adds the InternetAddress from the source. Makes it the primary SMTP address. Makes all others secondary SMTP addresses.
   c. Add an X500 address pointing to the legacyExchangeDN of the source object.
   d. Add an X500 address pointing to the legacyExchangeDN of the target object.
   e. Applies any Exchange email address policies from the target Exchange organization, if the Apply email policies option is enabled. All new addresses are added as secondary SMTP addresses regardless of the policy rules.

5. ShowInAddressBook – unless hiding from GAL is enabled. No override column is available for this field.
   a. Rooms are added to the All Rooms address book, except for Exchange 2003 which doesn’t have rooms or the All Rooms address book.
   b. Users are added to the All Users address book.
   c. Groups are added to the All Groups address book.
   d. All objects are added to the All Global Address Lists (GAL) address book.

6. Manager – all objects except Groups
   a. Uses the Manager column (or override value if specified) for the source object.
   b. Locates the referenced Manager in the target.
   c. If not found and a pending sync is available for the Manager, DirSync will immediately sync it to the target.
   d. If the referenced Manager is a reference to itself, the Manager on the target object will be set on the next sync.

7. ManagedBy – group objects only
   a. Uses the ManagedBy column (or override value if specified) for the source object.
   b. Follows the same process as Manager above.

8. Assistant – all objects
   a. Uses the Assistant column (or override value if specified) for the source object.
   b. Follows the same process as Manager above.

9. AltRecipient – This is not automatically reconciled by Directory Sync.

### Domino Directory Sync Fields with Special Processing

The below tables include Domino fields with some kind of special processing in Directory Sync. Fields can be have the following characteristic:

- On the “reserved” list, meaning any mappings for them will be ignored and overrides cannot be used.
Explicitly set, even without mapping:

<table>
<thead>
<tr>
<th>Field</th>
<th>On the Reserved List</th>
</tr>
</thead>
<tbody>
<tr>
<td>$BTAction</td>
<td>•</td>
</tr>
<tr>
<td>$BTSourceDirectoryID</td>
<td>•</td>
</tr>
<tr>
<td>Form - when DirSync created</td>
<td>•</td>
</tr>
<tr>
<td>Type - when DirSync created</td>
<td>•</td>
</tr>
<tr>
<td>AvailableForDirSync - explicitly set to 0, when DirSync created</td>
<td>•</td>
</tr>
<tr>
<td>MailSystem - explicitly set to 3</td>
<td>•</td>
</tr>
<tr>
<td>MailDomain - set to Foreign Domain given in profile, when DirSync created</td>
<td>•</td>
</tr>
<tr>
<td>CalendarDomain - groups only, set to Foreign Domain given in profile, when DirSync created</td>
<td>•</td>
</tr>
<tr>
<td>GroupType - groups only, explicitly set to 1, set for DirSync created</td>
<td>•</td>
</tr>
<tr>
<td>$GroupType_Help - groups only, explicitly set to 1, set for DirSync created</td>
<td>•</td>
</tr>
<tr>
<td>GroupTitle - groups only, explicitly set to 1, set for DirSync created</td>
<td>•</td>
</tr>
</tbody>
</table>

Never set:

<table>
<thead>
<tr>
<th>Field</th>
<th>On the Reserved List</th>
</tr>
</thead>
<tbody>
<tr>
<td>ResourceType</td>
<td>•</td>
</tr>
</tbody>
</table>

Can be mapped, but will use the given values if they exist (and ignores overrides in that case):

<table>
<thead>
<tr>
<th>Field</th>
<th>On the Reserved List</th>
</tr>
</thead>
<tbody>
<tr>
<td>DisplayName – groups only, set to TargetDisplayName if it has a value</td>
<td></td>
</tr>
<tr>
<td>PrimaryAlias – groups only, set to TargetPrimaryAlias if it has a value</td>
<td></td>
</tr>
<tr>
<td>SAMAccountName – groups only, set to TargetSAMAccountName if it has a value</td>
<td></td>
</tr>
<tr>
<td>InternetAddress – groups only, set to TargetInternetAddress if it has a value</td>
<td></td>
</tr>
<tr>
<td>Name – groups only, set to TargetName if it has a value</td>
<td></td>
</tr>
<tr>
<td>CommonName – groups only, set to TargetCommonName if it has a value</td>
<td></td>
</tr>
</tbody>
</table>
About Binary Tree

Binary Tree provides organizations with the most direct and predictable path to a successful technology transformation. We offer software and services to integrate and migrate corporate email, directory and server environments. Our technology, methodology and expertise is uniquely suited to provide fast and manageable migrations, with low risk, little to no user downtime, and adapted to each customer’s environment and requirements. Since 1993, Binary Tree has enabled thousands of enterprise customers to migrate more than 35 million email users and facilitated some of the most complex technology transformations on the planet. Binary Tree is a Microsoft Gold Partner and a globally preferred vendor for Microsoft Office 365 migrations and solutions. The Company is headquartered outside of New York City with offices in Hong Kong, London, Paris, Stockholm and Sydney. For more information, visit us at www.binarytree.com.

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