

# Active Directory · **ADSync Tool**

Import & Synchronize Active Directory Users with System Galaxy Cardholders

- ◆ GCS Service installation and configuration
- ◆ Mapping AD data fields to cardholder fields
- ◆ Running Active Directory imports and updates
- ◆ Configuring email notifications, and more ...

SG 11.8.4.X (or older) | 2024



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# Introduction to the ADSync Tool

This procedure covers using Galaxy's *ADSync Tool* to import and update System Galaxy (SG) Cardholders from the Windows® Active Directory (AD) user population. Installation and setup required. IT/AD Admin support is required.

## ADSync / Auto-sync Process Overview

The main components of the **ADSync / Auto-sync process** are the *GCS ADSync Tool*, the *GCS ADSync Service*, the *Active Directory*, and the *System Galaxy Database*.

- The **ADSync Tool** supports *importing Users* from Active Directory into the **System Galaxy (SG) database as Cardholders**. (Initial setup and mapping of user *data fields* are required.)
- The **ADSync Service** runs the **auto-sync process**, which updates the correlating *SG cardholders* based on field mapping when changes are detected in Active Directory (i.e., add/modify/disable) for user groups that have been configured and synced in the tool. The ADSync service treats Active Directory as the master record set/*data source*.
- Opening the **ADSync Tool** will interrupt the ADSync Service. The **ADSync Service** will resume the auto-sync process when the ADSync Tool is closed.

When the initial *ADSync setup* is performed, it will include retrieving AD User Groups (data fields), setting up default SG Cardholder options, mapping the AD data fields to SG fields, and defining the unique record lookup criteria. Once the initial set up and mapping is done, the initial User import must be manually performed.

After the initial manual user import has been completed, the ADSync Service will continue running the auto-sync process at the designated time intervals that were set in the tool.

NOTICE: You must allow enough time between intervals for the **ADSync Service** to scan the Active Directory.

If the auto-sync process detects a more than one duplicate record that meets the lookup criteria, an email notification will be generated that instructs the administrator to paste a unique key-code into a designated data field so that ADSync can detect which cardholder should be mapped to the AD User.

New AD-Users are imported as a *new cardholder* in System Galaxy, provided the user is added to a group that has already been configured and synced. Any changes to existing AD-Users will be updated in the correlating SG cardholder record. If any AD-Users are removed or disabled in Active Directory, the correlating SG Cardholder record will be disabled. The auto-sync process will not delete SG cardholders so that the system audit tracking will remain intact.

- Specific field mapping is required.
- Card codes must be valid (See *Requirements and the Mapping sections* in this guide.) SG will reject attempts to insert invalid card codes at the database level.
- If ADSync is not used to import card codes, badges, or photographs, then the conventional *access card enrollment* and *badging* will be performed by System Galaxy enrollment operator using the integrated badging solution.

NOTICE: ADSync should not be configured to assign **badge templates** or map **thumbnail photographs** if you are going to use an *integrated badging solution* to enroll credentials – such as idProducer.

See *System Galaxy User Guide* for information on enrolling cardholders and assigning access permissions. See the appropriate *Badging Guide* for badging solutions.

## Requirements and Stipulations

### BEFORE YOU INSTALL

The following System Galaxy requisites must be met before you install ADSync Service.

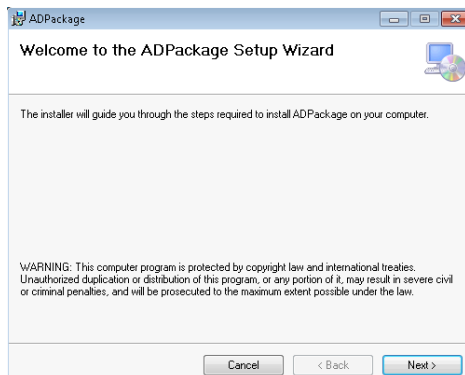
1. System Galaxy (SG) must already be installed, registered, and working before you install the ADSync Service/ADSync Tool. This also applies to the Badging solution (if used).
2. The SG *system programming* must already be completed to support the *Default Cardholder Options* that are used by the ADSync Service (this includes *Access Profiles*, *Departments*, *Customers*, and *Badges*). NOTE: The ADSync Tool will pick up changes or additions to these droplists at the time the tool is started/launched.
3. (recommended) System Galaxy should have at least one *master SG Operator login* that is not affiliated with an AD User on the network domain. This is a security measure so that an administrator/operator can still sign-in to System Galaxy in the case Active Directory or the network domain become unavailable.
4. You must create an SG Operator login for the ADSync Tool. This login must have the full editing permissions for cards and cardholders. The login should be dedicated for the ADSync Tool to prevent conflation with other SG Operator audit events.

### ADSYNC SERVICE

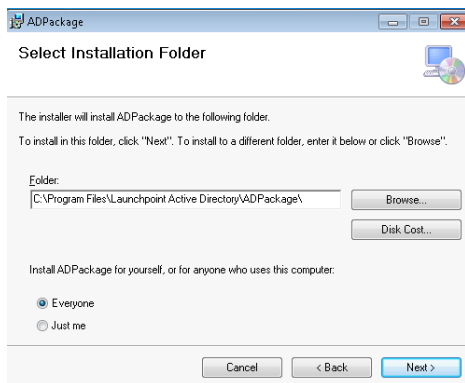
5. The **GCS ADSync Service** uses LDAP authentication for its connection to Active Directory.
6. The **GCS WebAPI Service** and **GCS ADSync Service** must be running for the auto-sync to occur.
7. The **ADSync Tool must be closed** for the **ADSync Service** to perform its timed syncs. All auto-syncs and checks are suspended while the tool is open to prevent data conflicts. The auto-syncs and checks resume their timed intervals counting from the date/time the Tool is closed.
8. Two Logon/Sign-in Credentials must be created before you begin your first-time startup:
  - a) **ADSync Service account:** This *domain account* must have permission to read the Active Directory. Galaxy recommends this account be reserved as a *dedicated service account* that is not shared with other *Galaxy API applications* or used for other user domain logins - to prevent exposing the Active Directory and safeguard from future account deactivation or demotion of permissions, which adversely affect operation.
  - b) **ADSync Tool login:** The *tool's sign-in account* must be a valid *System Galaxy Operator account* with the full editing privileges of the Cardholder and Card data. Galaxy recommends that this login credential is not shared with operator tasks in System Galaxy – to prevent conflation with SG auditing tasks.
9. When you launch the ADSync Tool for the first time, you must **run as administrator**.
10. You must click the **[Search]** button to retrieve the Organizational Units and to unlock the Mapping button.
11. The following must be completed in the ADSync Tool before you can import any users into System Galaxy.
  - a) **Fetch User Data:** the first-time startup, you must fetch user data from a User Group to pull in the AD Fields. You also must fetch user data every time you import any User Group into System Galaxy from the ADSync Tool.
  - b) **Mapping Data Fields:** mapping AD to SG data fields must be completed before you can import any User Groups into System Galaxy. And before you can map the AD to SG data fields, you must fetch users (Get Users) for an AD User Group in order to populate the data mapping droplists.
  - c) **Setting up Default Cardholder/Card options:** before you can import each User Group, you must configure their Default Cardholder/Card options.
12. NOTICE: if a User is removed from Active Directory, the ADSync Tool only disable the cardholder instead of deleting the cardholder: Disabling a cardholder ensures the related *system activity* for the cardholder/card are preserved in System Galaxy.

## Installing the ADSync Utility

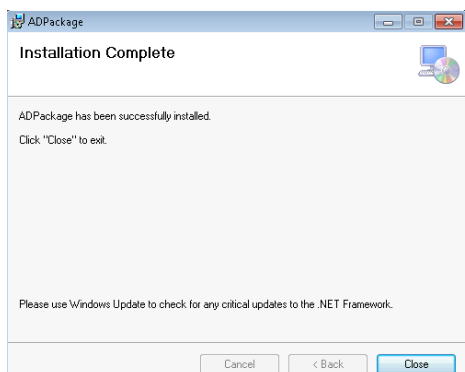
1. Run the installer program called ADPackage.



2. Accept the *default install location* or Browse to a preferred location, then click NEXT.



3. Close the program after the installation is complete.



*Continue to the next section.*

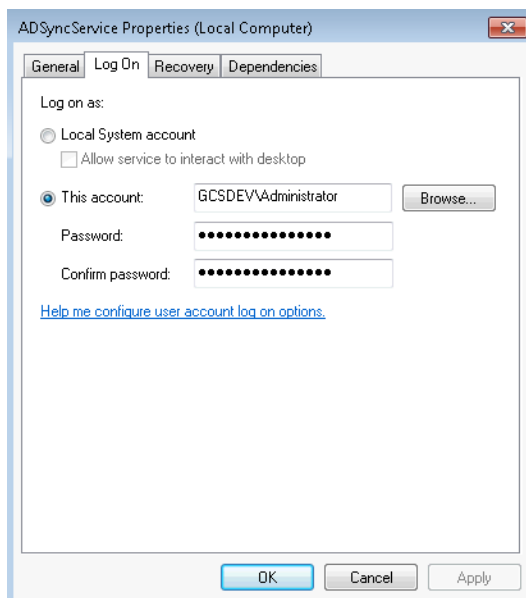
## Configure the ADSync Service Properties

This section describes how to add a *domain account* to the Logon properties of the *GCS ADSync Service*. This also causes the *log folders* to be created for the ADSync Service.

### IMPORTANT PREREQUISITES

- ▶ The *domain account* must have permission to read the Active Directory.
- ▶ Galaxy recommends using a dedicated *service account* to prevent exposing the Active Directory and safeguard the ADSync Service from future deletion/demotion of the domain account.

1. **Open the Services App.** You can type "services" into the Search box in the Windows Task bar.
2. **Stop the service.** Select (highlight) the **GCS ADSync Service** and click **Stop** in the Services window.
3. **Open the service properties.** Right-click the *ADSync Service filename* and select 'Properties' from the menu.
4. **Enter the domain login credentials as follows ...**
  - a) Select 'This Account' option in the 'Log On' tab.
  - b) Enter the **domain account name** (use correct syntax "**domain\_name\user\_name**").
  - c) Enter the **password** in the Password and Confirm Password fields.
  - d) Click the **Apply** button to save your settings.
  - e) Click the **OK** button to close the Properties screen.
5. **Start the service.** Select (highlight) the *GCS ADSync Service* and click Start in the Services window.



*Continue to the next section.*

## ADSync Tool First-Time Login and Initial Setup

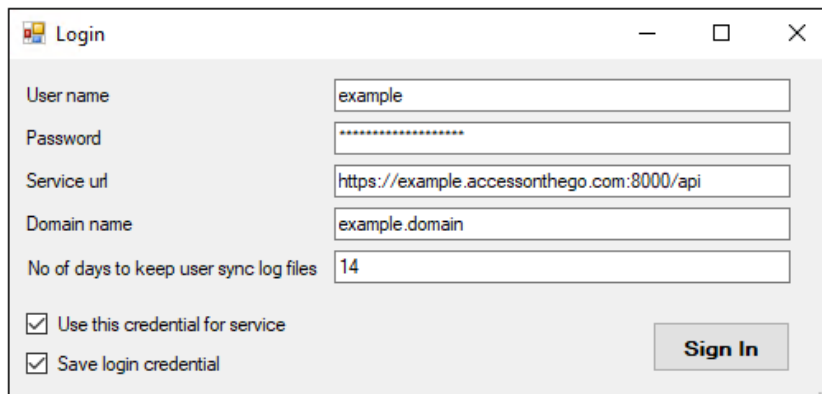
This section describes the steps to use the ADSync Tool for the following ...

- ▶ First-time Login to ADSync Tool
- ▶ Retrieving Data Fields from Active Directory
- ▶ Configuring the ADSync Service Actions and Settings.
- ▶ Mapping Data Fields from Active Directory to System Galaxy

### First-time Login to the ADSync Tool

This login will initially insert the Web API credentials and configure the domain name, service url, and other key settings.

1. Run the ADSync Tool as an administrator (i.e. right-click and select Administrator from the context menu).
2. Enter your valid **Login credentials** that you were required to add to System Galaxy operators.
  - a) **Username:** enter the valid *SG Operator Login* (required for ADSync to connect to GCS WebAPI Service).
  - b) **Password:** enter the valid password for the login.
  - c) **Service URL:** enter the location of the GCS WebAPI Service  
Example: <http://localhost:8000/api> (where *localhost*, you may substitute the *machine name* or *IP Address* of the computer that is hosting the *GCS WebAPI Service*).
  - d) **Domain Name:** enter the correct domain name used by Active Directory.
  - e) **No. of days to keep user sync log files:** enter a number. Files are purged after the number of days set here.  
NOTE: A backup is created every time the *ADSync Service* runs a check against the Active Directory database.
  - f) **Use this Credential for Service:** you must enable (check) this option on the first-time login when supplying the GCS WebAPI Login credentials.  
NOTE: This inserts the *WebAPI's login credentials* into the *ADSync Service* to run automated background syncing process. Once this is initially set, it should not need to be *checked* again, unless the WebAPI login credentials change.
  - g) **Save login credential [remember login]:** (optional) you can enable (check) this option if you want the application to remember your login on subsequent startups.



3. Click the **Sign In** button to insert the login credentials.
4. This completes the initial setup of the login parameters and sign-on credentials.

## ADSync Initial Setup and Retrieving AD Groups

### Retrieving Data Fields from Active Directory (mandatory)

This describes *how to do the first-time search and fetch* - which is mandatory to unlock Mapping screen and populate the mapping droplists with the Active Directory fields.

#### SEARCH ACTIVE DIRECTORY

1. Click on **Search** button to retrieve the list of Organizational Units from your Active Directory. Organizational Units can have multiple User Groups below them. There can be multiple Organizational Units in the Active Directory.

The screenshot shows the AD Sync Tool interface. On the left, under 'Select groups to read', 'Entire Directory' is selected. Below it, 'Check Active Directory groups to import' is checked. In the center, 'Default Card Holder and Card options' are configured. On the right, 'Sync Service' is set to '5 Minutes'. The 'Actions' section on the far right includes a 'Search' button, a 'Mapping' button, and a 'Retrieve Card holder' button. A 'Sync' button with a green plus icon is at the bottom right.

#### RETRIEVE A USER GROUP FOR INITIAL FIELD MAPPING

2. In the [Select Organizational Unit] droplist, you can choose "Entire Directory" or an Organizational Unit name.

RESULT: All *User Groups* that belong to the selected Organizational Unit will display in the 'Groups to Import' listbox. You have not imported any groups yet, you have only retrieved the *User Group list* for the selected Organizational Unit.

3. Place a checkmark beside a *User Group name* that you want to fetch for mapping AD Fields.
4. Click on [Get Users] button, to fetch User Data (*mandatory to populate the AD Fields in Mapping screen*).

RESULT: The *User Data tab* will populate with a list of Users and the Mapping screen will now be populated with AD Fields.

The screenshot shows the AD Sync Tool interface with the 'Get Users' button clicked. The 'Records found: 39' message is displayed. Below the message, a table of user data is shown. The table has columns for 'Operation', 'USERGUID', 'USERGROUPS', 'admincount', 'samaccountname', 'cn', 'pwdlastset', 'whencreated', 'badpwdcount', 'lastlogon', 'samaccounttype', 'countrycode', 'objectguid', and 'lastlogontimestam'. The first row shows a 'Check Duplicate' operation for a user with GUID '42b811e1-7e1b-4...' and group 'Test Group 3'. The 'Get Users' button is highlighted in the bottom left.

Operation	USERGUID	USERGROUPS	admincount	samaccountname	cn	pwdlastset	whencreated	badpwdcount	lastlogon	samaccounttype	countrycode	objectguid	lastlogontimestam
Check Duplicate	42b811e1-7e1b-4...	Test Group 3		john.d.jackson	john.d.jackson	1321649127298...	10/25/2019 3:34...	0	0	805306368	0	42b811e1-7e1b-4...	
Check Duplicate	73ed544b-0e3b-4...	Test Group 3		erin.r.eicher	erin.r.eicher	1321649127330...	10/25/2019 3:34...	0	0	805306368	0	73ed544b-0e3b-4...	
Check Duplicate	a8864428-2d42-4...	Test Group 3		robert.a.stoker	robert.a.stoker	1321649127355...	10/25/2019 3:34...	0	0	805306368	0	a8864428-2d42-4...	
Check Duplicate	ecdfaf6b-7712-4d...	Test Group 3		craig.a.bourg	craig.a.bourg	1321649127377...	10/25/2019 3:34...	0	0	805306368	0	ecdfaf6b-7712-4d...	
Check Duplicate	9b4d555a-5e50-4...	Test Group 3		rodney.p.nichols	rodney.p.nichols	1321649127444...	10/25/2019 3:36...	0	0	805306368	0	9b4d555a-5e50-4...	
Check Duplicate	20bde65-eef1-4...	Test Group 3		alma.s.patt	alma.s.patt	1321649137580...	10/25/2019 3:36...	0	0	805306368	0	20bde65-eef1-4...	
Check Duplicate	ac55a36d-ee5c-4...	Test Group 3		agnes.p.martin	agnes.p.martin	1321649137609...	10/25/2019 3:36...	0	0	805306368	0	ac55a36d-ee5c-4...	
Check Duplicate	649247c7-e1f5-4...	Test Group 3		joyce.a.dyson	joyce.a.dyson	1321649137634...	10/25/2019 3:36...	0	0	805306368	0	649247c7-e1f5-4...	
Check Duplicate	6350b7b1-c7ef-4...	Test Group 3		patricia.e.hancock	patricia.e.hancock	1321649137652...	10/25/2019 3:36...	0	0	805306368	0	6350b7b1-c7ef-4...	
Check Duplicate	8976842-948c-4...	Test Group 3		thomas.g.smith	thomas.g.smith	1321649137671...	10/25/2019 3:36...	0	0	805306368	0	8976842-948c-4...	
Check Duplicate	9170f5c3-cd7f-4...	Test Group 3		lucille.k.aldean	lucille.k.aldean	1321649137695...	10/25/2019 3:36...	0	0	805306368	0	9170f5c3-cd7f-4...	
Check Duplicate	b44295c6-e460-4...	Test Group 3		raquel.d.hammond	raquel.d.hammond	1321649137721...	10/25/2019 3:36...	0	0	805306368	0	b44295c6-e460-4...	
Check Duplicate	55725e27f542-4...	Test Group 3		dona.l.reynolds	dona.l.reynolds	1321649137745...	10/25/2019 3:36...	0	0	805306368	0	55725e27f542-4...	
Check Duplicate	8f0baa7-4557-4...	Test Group 3		raymond.e.king	raymond.e.king	1321649137762...	10/25/2019 3:36...	0	0	805306368	0	8f0baa7-4557-4...	
Check Duplicate	e06e49cc-608c-4...	Test Group 3		ceci.d.bonk	ceci.d.bonk	1321649137870...	10/25/2019 3:36...	0	0	805306368	0	e06e49cc-608c-4...	
Check Duplicate	553b729-89a5-4...	Test Group 3		abby.h.arnold	abby.h.arnold	1321649146521...	10/25/2019 3:37...	0	0	805306368	0	553b729-89a5-4...	
Check Duplicate	3389f74-c4b3-4...	Test Group 3		ramon.j.huang	ramon.j.huang	1321649152887...	10/25/2019 3:38...	0	0	805306368	0	3389f74-c4b3-4...	
Check Duplicate	3c8a869-b694-4...	Test Group 3		kyle.c.clarke	kyle.c.clarke	1321649219642...	10/25/2019 3:49...	0	0	805306368	0	3c8a869-b694-4...	

Continue to the next section.



## Configuring the ADSync Service Settings and Actions

The *ADSync Options (main window)* is where you configure the ADSync Service Time Intervals. This is done on the first-time setup.

The screenshot displays the ADSync Options (main window) with the following sections:

- Card Holder and Card options:** Includes dropdowns for Select Access Profile, Select Badge, and Select Badge, along with a Set Default button.
- Sync Service:** Features a Time Interval dropdown set to 5 Minutes and a Set Service Time button.
- Email Settings:** Includes an Email Id field (jmcann@galaxsys.com), a Reminder Start From date/time (08-04-2022 16:30), and buttons for Save Settings, Resend Email, and a Time Interval (Hours) dropdown set to 1.
- Actions:** Includes a Choose Log Type dropdown, a Mapping button, a Retrieve Card holder button, and a Save button.
- Do not Reactivate:** Includes a Disabled checkbox and a Verbose Logging checkbox.
- Sync:** A button with a green plus icon and the text 'Sync'.

NOTICE: Go to the section in this guide for information about [View Logs](#) or [Retrieve Cardholders \( CSV File \)](#).

### SET ADSYNC TIME INTERVAL - (sync frequency for automatic synchronization)

The **Time Interval** droplist sets the frequency that the *ADSync Service* checks for changes from Active Directory. When you click **Set Service Time**, a *popup window* opens to suggest *optimal time intervals* based on a *number of AD Users* to be synced. If your User Group holds between 5000 to 20000 users, the *suggested minimum time* is 15 minutes. You can choose a higher interval if needed.

- In the [Time Interval] droplist, choose a time for the sync frequency for the currently selected User Group(s). *Consider the size of this user group and how frequently you would want this to run.*
- Click the [Set Service Time] button to save this value.

RESULT: The *Time Interval window* opens showing the suggested minimum intervals based on number of users.

- Click [Yes] if you want to accept the time you chose (*otherwise click [No] to return and edit your time*).
- Click **OK** to confirm when you have saved successfully.

### EMAIL SETTINGS

Email Settings are used to configure a *user email notification*. The email will notify the designated user with appropriate instructions if a *duplicate record* has been detected in the SG Cardholders table. This email is automatically generated when the ADSync Service runs. A *duplicate record* occurs when more than one *existing Cardholder record* meets the defined Duplicate Lookup criteria, which is based on the ADSync Lookup Value that was selected in the AD to Cardholder (Mapping screen). First and Last Name are used by default if not other criteria is defined.

- Email ID:** Enter a valid email for the user who should receive the notification.
- Reminder Start From:** choose the date and time to start sending duplicate emails.
- Time interval (Hours):** Enter the interval in number of hours that you want the reminder emails to occur.

NOTICE: The service will send the initial email the first time the auto-sync detects a duplicate record. The email will contain a keycode and the instructions to tell the user which data field to paste the keycode into in order to identify the correct Cardholder record. When ADSync detects the keycode in the designated data field, it will map the AD Record with the SG Cardholder and skip the remaining duplicate records. ADSync will resend reminder emails based on the interval set, until cardholder mapping is corrected. Emails will discontinue once the cardholder is mapped.

- Click **Save Settings** button to save email settings.

### SET ACTION FOR HANDLING DELETED AD-USERS & VERBOSE LOGGING

This controls how an *SG Cardholder Record* is handled when the corresponding *AD User* is disabled or deleted from the AD User Group.

**IMPORTANT:** System Galaxy *disables* the Cardholder Record to preserve cardholder/card activity in the system auditing.

- Place a checkmark in the desired options ...
  - Do not Reactivate Disabled option:** When checked, the AD Tool will not reactivate a SG Cardholder if the correlating AD User is re-enabled or re-added to the AD User Group. When unchecked, the AD Tool will reactivate the SG cardholder if the AD User is reactivated or readded.
  - Verbose Logging:** When checked (default), all transfer data is logged, when unchecked, only the basic logs are kept.
- Click the **Save** button and **OK** to save your settings.

## Mapping AD fields to SG fields (initial setup)

In the *Mapping* screen, you will map the individual *Active Directory* fields to the corresponding *System Galaxy* data field that you want to import data for. When you click the apply button, the fields are mapped and added to the grid.

The screenshot shows the 'Mapping' screen with two main sections: 'AD to Cardholder Mapping' and 'AD to Card Mapping'. Callouts provide additional context:

- AD to Cardholder Mapping:** A table titled 'AD To Cardholder' shows mappings for 'sn' (Last Name), 'givenname' (First Name), and 'employeeid' (CommonID). The 'employeeid' row has the 'IsLookUP' checkbox checked. A callout states: 'The **Lookup** Checkbox lets user designate which field will be used as the **unique lookup value**.' Another callout points to the 'employeeid' row: 'AD to Cardholder mapped fields are added to this grid.'
- AD to Card Mapping:** This section includes dropdowns for 'Select AD Field To Map' (set to 'employeeid') and 'Cardholder Field To Map' (set to 'CommonID'). The 'Check for lookup' checkbox is checked. A callout points to the 'employeeid' dropdown: 'The AD to Card mapped fields are added to this grid.'
- User Defined Value Section:** Includes dropdowns for 'Select AD Field To Map' (set to 'User Defined Value 1') and 'Card Field To Map' (set to 'pick the Card field you want to be filled'). A text box prompts the user to 'type the User Defined Value here'.
- Choose AD field for image:** A dropdown set to 'Do not import photo'. A callout states: 'Choose "Do not import photo" if you are using a badging solution or other image source.'

Buttons for 'Apply', 'Save', and 'Close' are visible at the bottom.

## AD TO SG CARDHOLDER FIELD MAPPING

In this section you are mapping AD fields to SG Cardholder fields (from the *cardholder* table of the SysGal database).

- ▶ **About User Defined Value 1 & 2:** Choosing either of these allows user to map a static value to a selected System Galaxy data field. You must enter the *default value* for the user-defined value in the field provided - see the image above.
- ▶ **About Lookup / Duplicate checking:** By default, ADSync automatically uses the *First* and *Last Name* fields for the Duplicate-checking and the Look-up. When a user-designated field is chosen as the lookup value, this will replace the First & Last Name as the default lookup value. To choose a different Lookup field, you must first map the desired 'AD to SG' data fields you want to use (i.e., EmployeeID & CommonID). To designate another field, the user can enable ("check") the *Check for Lookup* checkbox before applying the mapping. The field will be added with the *IsLookUp* checkbox enabled.

15. Select the desired **AD field** – such as givenname, sn (surname), etc.
16. Select the **SG cardholder field** you want to map to the AD field – such as first name, last name, etc. ...
17. (optional) Only "check" the 'Check for Lookup' option *if you want the field you are currently mapping to be designated as the lookup criteria*. If you add a new field for the Lookup, such as EmployeeID, the 'IsLookup' checkbox will be ON (checked) in the mapping grid and this field will become the only lookup criteria used (the First/Last Name will no longer be used as the default lookup).

**IMPORTANT:** By default, the ADSync will check for First and Last Name. You can map other fields (such as Employee ID/CommonID) by enabling 'Check for Lookup'.

18. (conditional) enter the valid, **user-defined static value** that is expected ONLY IF **System Galaxy User-defined fields** are being used.
19. Click **Apply** button to save/add this to the **AD/Cardholder** listbox.

## AD TO SG CARD FIELD MAPPING

These are the fields found in the card table in the System Galaxy database

- ▶ **User Defined Value 1 & 2:** Choosing either of these allows you to map a static field to a System Galaxy data field.
- 20. Select the desired **AD field** ...
- 21. Select the desired **card field** to map to AD ...
- 22. (conditional) enter the valid, **user-defined static value** that is expected ONLY IF **System Galaxy User-defined fields are being used**.
- 23. Click **Apply** button to save/add this to the AD/Card listbox.

## CHOOSE AD FIELD FOR IMAGE

The image field will map to the System Galaxy cardholder photograph.

- ▶ **About Photo field:** If you are importing images from a badging system or a different image capture solution, ten set 'do not import photo'. You can import an AD Thumbnail for the SG Cardholder photograph if you are not importing images from an alternate source.
- 24. (optional) The *thumbnailphoto* field may be automatically mapped for the photograph field. Edit mapping as needed.

## SAVING THE AD FIELD MAPPING

- 25. Click **Save** button. **You must click Save or the mapping will not be saved.**
- 26. Click **Close** to exit the Mapping screen as needed.
- 27. Click **OK** to confirm you have successfully saved your mapping.
- 28. **At this point you are ready to start importing User Groups** – see the next section.

## Performing Initial AD User Imports

This section describes how to set up the Default Cardholder/Card Options for each User Group and then import the Users.

### IMPORTANT NOTES:

- ▶ You must have already done the **First-Time Setup and Mapping** in the ADSync Tool.
- ▶ You must set up the Default Cardholder/Card Options for every User Group.
- ▶ You must manually import each User Group into SG as appropriate.
- ▶ All *unmatched AD Users* will be imported as a new cardholder. If card enrollment and badging are done separately (as is typical), then you must enroll the credentials *after* the initial sync is completed.

### Fetching AD User Groups (Required)

Unchecked User Groups are not affected.

1. In the [Select Organizational Unit] droplist, select the Organizational Unit you wish to import users from.

RESULT: All *User Groups* that belong to the selected Organizational Unit will display in the 'Groups to Import' listbox. You have not imported any groups yet; you have only retrieved the *User Group list* for the selected Organizational Unit.

2. Place a checkmark beside a *User Group name(s)* that you want to configure and import. This can be multiple User Groups who will have the same Cardholder/Card Options in common.

- a) Select All – checks all user groups in the Organizational Unit.
- b) Clear All – clears all checkmarks from all user groups.

3. Click on [Get Users] button, to fetch User Data (*mandatory to populate the AD Fields in Mapping screen*).

RESULT: The *User Data* tab will populate with a list of Users and the Mapping screen will now be populated with AD Fields.

See [Changing Cardholder/Card Options \(after first import\)](#) if you only need to change these options after you have already done the first sync.

Domain: gcsdev.local

Select groups to read: Select Organizational Unit: Entire Directory

Check Active Directory groups to import: Server Operators, Account Operators, Pre-Windows 2000 Compatible Access, Incoming Forest Trust Builders, Windows Authorization Access Group, Terminal Server License Servers, Allowed RODC Password Replication Group, Denied RODC Password Replication Group, Read-only Domain Controllers, Enterprise Read-only Domain Controllers, Changeable Domain Controllers, Protected Users, Key Admins, Enterprise Key Admins, DnsAdmins, DnsUpdateProxy, TESTING\_SEC\_GRP, Limited Site Testing group, 27e45445-29e5-41d5-9a84-593a36570f8, c8b3e4e1-1bba-4227-999b-e05e69c8b234, General Employees, Managers, Test Group 1, Test Group 2, **Test Group 3**, Test Distribution Group, SQL Server 2005 SQL Browser User\$AD2016TEST, ADSyncAdmins, ADSyncOperators, ADSyncBrowser, ADSyncPermissionsSet

Default Card Holder and Card options: Select Customer: DEV, Select Access Profile: Select Access Profile, Select Department: DE1, Select Badge: Select Badge, Select Card Technology: Select Card Technology, Set Default, Overwrite Department, Overwrite Customer

Sync Service: Time Interval: 5 Minutes, Set Service Time

Email Settings: Email Id: mccann@galaxysys.com, Reminder Start From: 08-04-2022 16:30, Time Interval (Hours): 1, Save Settings, Resend Email

Actions: Choose Log Type: Select, Mapping, Do not Reactivate: Disabled, Verbose Logging: Checked, Sync

Records found: 39

Operation	USERGUID	USERGROUPS	admincount	samaccountname	cn	prelastset	whencreated	badgedcount	lastlogon	samaccounttype	countrycode	objectguid	lastlogonstamp
Check Duplicate	438d11e1-7e1b-4...	Test Group 3		john.d.jackson	john.d.jackson	1321649127298	10/25/2019 3:34	0	0	805306368	0	438d11e1-7e1b-4...	
Check Duplicate	73ed544b-0e9b-4...	Test Group 3		ern.r.eicher	ern.r.eicher	1321649127330	10/25/2019 3:34	0	0	805306368	0	73ed544b-0e9b-4...	
Check Duplicate	a8864429-2642-4...	Test Group 3		robert.a.stoker	robert.a.stoker	1321649127355	10/25/2019 3:34	0	0	805306368	0	a8864429-2642-4...	
Check Duplicate	ecdfafbb-4712-4d...	Test Group 3		craig.a.bourg	craig.a.bourg	1321649127377	10/25/2019 3:34	0	0	805306368	0	ecdfafbb-4712-4d...	
Check Duplicate	9d4555e5-5e50-4...	Test Group 3		rodney.p.nichols	rodney.p.nichols	1321649127444	10/25/2019 3:34	0	0	805306368	0	9d4555e5-5e50-4...	
Check Duplicate	208de65e-eef1-4...	Test Group 3		alma.s.patt	alma.s.patt	1321649137580	10/25/2019 3:36	0	0	805306368	0	208de65e-eef1-4...	
Check Duplicate	ac58a36d-eef5-4...	Test Group 3		agnes.p.martin	agnes.p.martin	1321649137609	10/25/2019 3:36	0	0	805306368	0	ac58a36d-eef5-4...	
Check Duplicate	645247c-7e15-4...	Test Group 3		joyce.a.dyson	joyce.a.dyson	1321649137634	10/25/2019 3:36	0	0	805306368	0	645247c-7e15-4...	
Check Duplicate	5350b1b1-c7ef-4...	Test Group 3		patricia.e.hancock	patricia.e.hancock	1321649137652	10/25/2019 3:36	0	0	805306368	0	5350b1b1-c7ef-4...	
Check Duplicate	8876842-948c-4...	Test Group 3		thomas.g.smith	thomas.g.smith	1321649137671	10/25/2019 3:36	0	0	805306368	0	8876842-948c-4...	
Check Duplicate	91705fc3-cd74-4...	Test Group 3		lucille.k.aldean	lucille.k.aldean	1321649137695	10/25/2019 3:36	0	0	805306368	0	91705fc3-cd74-4...	
Check Duplicate	444295c6-e460-4...	Test Group 3		raquel.d.hammond	raquel.d.hammond	1321649137721	10/25/2019 3:36	0	0	805306368	0	444295c6-e460-4...	
Check Duplicate	55725e27-f542-4...	Test Group 3		dona.l.reynolds	dona.l.reynolds	1321649137745	10/25/2019 3:36	0	0	805306368	0	55725e27-f542-4...	
Check Duplicate	870baa47-4557-4...	Test Group 3		raymond.e.king	raymond.e.king	1321649137762	10/25/2019 3:36	0	0	805306368	0	870baa47-4557-4...	
Check Duplicate	e05e49cc-608c-4...	Test Group 3		cecil.d.bork	cecil.d.bork	1321649137870	10/25/2019 3:36	0	0	805306368	0	e05e49cc-608c-4...	
Check Duplicate	553b5729-89a5-4...	Test Group 3		abby.h.amold	abby.h.amold	1321649146521	10/25/2019 3:37	0	0	805306368	0	553b5729-89a5-4...	
Check Duplicate	3389f74c-4b34-4...	Test Group 3		ramon.l.huang	ramon.l.huang	1321649152887	10/25/2019 3:38	0	0	805306368	0	3389f74c-4b34-4...	
Check Duplicate	3c8a969f-b694-4...	Test Group 3		kyle.c.clafke	kyle.c.clafke	1321649219642	10/25/2019 3:49	0	0	805306368	0	3c8a969f-b694-4...	

## Setting Default Cardholder/Card Options

After you have fetched the desired AD User Data ( 'Get Users' ), you can now configure 'Default Cardholder/Card Options' for **Card Technology**, **Access Profile**, **Customer**, **Department**, and **Badge**. Whatever options you choose will be applied to all the users in the selected User Group(s) that you fetched. These fields are exclusive to System Galaxy and do not exist in Active Directory.

4. In the *Default Cardholder/Card Options* section, you can configure the values you want to populate for the selected users/groups. **These options are not mandatory. Blank is a valid option when saved.** In other words, these fields are available for your convenience because they are not inherently designated in Active Directory.
  - a) **Card Technology:** you must choose a *Card Technology* that applies to your group, if you are using ADSync to populate card information.
  - b) **Customer:** select a *Customer name* (if used). This will filter the other fields as appropriate.
  - c) **Access Profile:** choose an *Access Profile* that applies to your selected User Group(s).
  - d) **Department:** select a *Department name* that applies to your selected User Group(s).
  - e) **Badge:** select a *Badge name* if it applies to your selected User Group(s).
5. Place a checkmark beside *Overwrite Department* and *Overwrite Customer* data as appropriate.
  - When checked, these SG fields will be overwritten no matter if the field is blank or contains data.
  - When unchecked (default), these SG fields will only be overwritten if the SG field is blank.
6. Click [Set Default] button to set these options for your chosen group/unit.

Active Directory Sync Options

Domain: gcsdev.local Search

Service URL: https://setecinc.accessonthego.com:8000/api

Select groups to read

Select Organizational Unit

Entire Directory

Security Groups

Check Active Directory groups to import

Server Operators

Account Operators

Pre-Windows 2000 Compatible Access

Incoming Forest Trust Builders

Windows Authorization Access Group

Terminal Server License Servers

Allowed RODC Password Replication Group

Denied RODC Password Replication Group

Read-only Domain Controllers

Enterprise Read-only Domain Controllers

Default Card Holder and Card options

Select Customer: DEV

Select Access Profile

Select Department: DEV

Select Badge

Select Card Technology

Overwrite Department

Overwrite Customer

Set Default

Sync Service

Time Interval: 5 Minutes

Set Service Time

Email Settings

Email Id: jmcann@galaxsys.com

Reminder Start From: 08-04-2022 16:30

Time Interval (Hours): 1

Save Settings

Resend Email

Actions

Choose Log Type: Select

View

Re

Records found: 39

Operation	USERGUID	USERGROUPS	admincount	samaccountname	cn	pwdlastset	whencreated	badpwdcount	lastlogon
Check Duplicate	428d11e1-7e1b-...	Test Group 3		john.d.jackson	john.d.jackson	1321649127298...	10/25/2019 3:34...	0	0
Check Duplicate	73ed5d4b-0e9b-...	Test Group 3		erin.r.eicher	erin.r.eicher	1321649127330...	10/25/2019 3:34...	0	0
Check Duplicate	a8864428-2d42-...	Test Group 3		robert.a.stoker	robert.a.stoker	1321649127355...	10/25/2019 3:34...	0	0

Continue to the next section.

## Manually Syncing Users

After you have saved the Default Cardholder/Card Options, you are ready to import.

7. Click the **SYNC** button to perform a **manual sync**.

RESULT: the tool will do a *check for duplicates* before it starts the manual sync process. If duplicates are found, a window will appear that lists the duplicate records found.

NOTE: On a new system you should not find any duplicates unless you also separately added credentials for the AD User for some reason.

If the Duplicate Check window finds duplicate records, you need to set the appropriate options.

- a) Set the 'Sync User' checkbox as appropriate:

**Checked = Sync User:** the AD User will be linked to the existing Cardholder (updates the record).

**Unchecked = Don't Sync:** AD User will be imported as a new separate cardholder with a new card – the duplicate cardholder will not be linked or updated.

- b) Set the 'Do not overwrite card data' checkbox as appropriate:

This applies to all the fetched AD User records that are being synced.

**Checked = Does not overwrite existing card data:** A new card record will be created for the Duplicate User who is being matched as a cardholder.

**Unchecked = Overwrites existing card data >** the existing card record will be updated for the Duplicate Users who are being matched as a cardholder.

Also see how to use the **DUPLICATE-CHECK FOR AN INDIVIDUAL USER** on User Data grid.

8. In the *Duplicate Check window* click the **CONTINUE** button to proceed with the manual Sync.

RESULT: the AD Users who are in the selected/fetched User Groups will be inserted into the SG Cardholder/card tables with the appropriate Default Cardholder/Card options.

NOTE: Clicking **Close** will exit without syncing and allow the administrator to investigate unexpected matches. You can also use the **Individual Duplicate Check** on the User Data tab.

9. Click the **OK** button to close the "*Syncing completed ...*" confirmation message.
10. At this point you have completed the setup of the *Default Cardholder Options* and imported your first User Group. You can [View Logs](#) or [Retrieve Cardholders \( CSV File \)](#) as needed verify your sync/import.

## Using the Duplicate Checking Feature

The Duplicate Checking feature can be manually invoked for diagnostic purposes when ongoing use of the service requires administrative operation.

### DUPLICATE-CHECK WINDOW (in Manual Sync)

When you click the **Sync button** the system will always check for duplicates. The Duplicate window will display a list of names that identify which record is flagged as a duplicate. The Administrator can choose how to handle the duplicate cardholder's card data.

#### Sync User checkbox (in the grid)

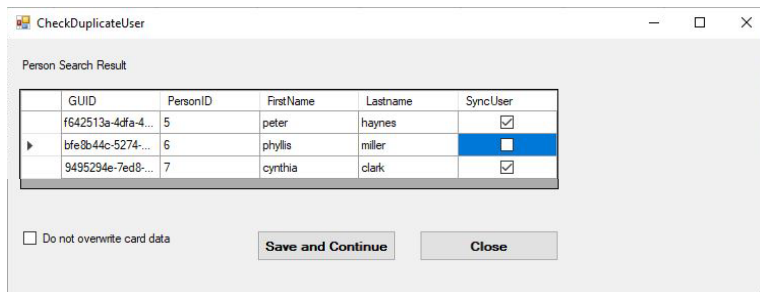
**Checked = Sync User:** the AD User will be linked to the existing Cardholder and will update the record.

**Unchecked = Don't Sync:** AD User will be imported as a new separate cardholder with a new card – the duplicate cardholder will not be updated.

#### Do Not Overwrite Card Data checkbox

**Checked = Does not overwrite existing card data:** A new card record will be created for the Duplicate User who is being updated/synced as a matched cardholder.

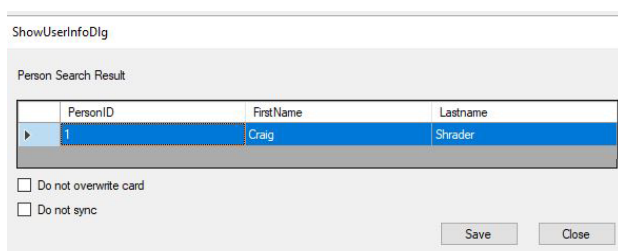
**Unchecked = Overwrites the existing card data > the existing card record will be updated** for the Duplicate Users who are being synced/updated as a matched cardholder.



### INDIVIDUAL USER DUPLICATE-CHECK (from User Data Grid)

When you click the **Check Duplicate button** the system will check for a duplicate cardholder.

1. In the main screen, place a checkmark next to a User Group name and click the **Get User** button.
2. Click the **Check Duplicate** button next to the AD User Name that you want to check/verify. If ADSync finds a matching cardholder it will display in the popup window.
  - **Do not overwrite card data:** When checked, ADSync will not overwrite any existing card data in System Galaxy. Instead, it will make a new card record. When unchecked, ADSync should update/ overwrite the existing card data in System Galaxy cardholder record.
  - **Do not sync:** When checked, ADSync will not sync this User to the duplicate cardholder. A new cardholder record will be created. When unchecked, the system will sync the AD User to the duplicate cardholder.
3. Click **Save** to save your settings for this user.





## View Logs

After every sync, the following logs are available.

- **User Sync Log** – includes information about the syncs done from the ADSync Tool when the Sync button is pressed (manual sync).  
Located in C:\Program Files\GCS Active Directory\ADPackage\UserSyncLog
- **AD to ADSync Log** – includes information about the data pulled in from Active Directory by the ADSync service.  
Located in C:\Program Files\GCS Active Directory\ADPackage\ADToSQLiteLogs
- **ADSync to SG Log** - includes information about the data pushed to System Galaxy by the ADSync service.  
Located in C:\Program Files\GCS Active Directory\ADPackage\SQLiteToGalaxylogs

From the ADSync Tool you can select the desired log and it will open in Notepad. The latest/newest activity is at the bottom of the file. A new file is started at the beginning of the day (i.e. after midnight).

## Retrieve Cardholders ( CSV File )

The ADSync 'Retrieve Cardholders' option queries the *outstanding* and "*non-AD*" cardholder records and allows the Administrator to save them to the chosen folder location. These are all the cardholders that were enrolled or imported through conventional methods. You do not need to *get users* to retrieve this information.

INTENDED USE: You can use this file to find *outstanding* cardholders that you still need to link to an AD User.

NOTICE: You are not required to link every cardholder to an AD User. It is possible to have SG cardholder records that are never linked or synchronized with AD users, such as an ***independent contractor*** that will not have domain privileges, or an ***SG security login*** that can be independently used in any case the AD/Domain is unavailable.

1. Click the **Retrieve Cardholder** button.
2. Browse to the desired folder location and select the folder name. You can create a folder if needed.
3. Click **OK** to save the file.

RESULT: a csv list of all the SG cardholders who are *non AD Users* is created for diagnostic purposes.

This CSV file contains only cardholders that are **not** currently linked to an AD User record.

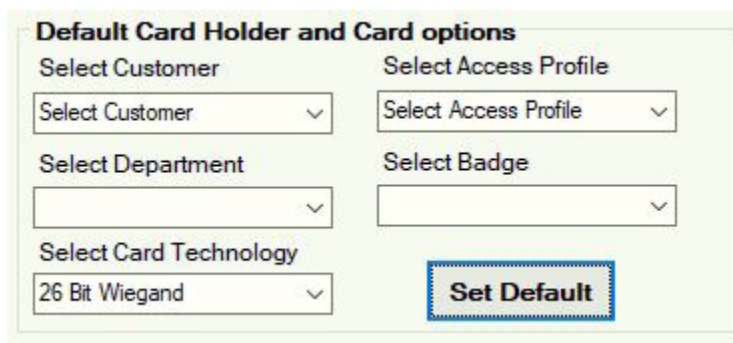
CSV FILE INCLUDES SG CARDHOLDERS ...	CSV FILE EXCLUDES ...
<input checked="" type="checkbox"/> Enrolled using conventional methods	<input checked="" type="checkbox"/> Imported via the <i>ADSync Service</i> (auto, timed, manual)
<input checked="" type="checkbox"/> Imported from other data sources	<input checked="" type="checkbox"/> Linked via <i>ADSync Duplicate Check</i>



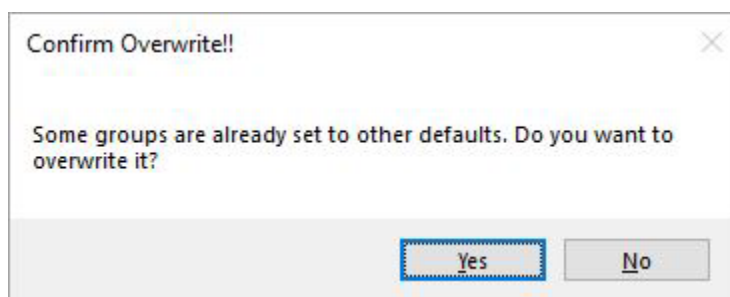
## Changing Cardholder/Card Options (after first import)

This section explains how to update Default Cardholder/Card Options after you have completed the initial user import/sync. You may need to go back later and change these settings. You do not have to fetch data to do this or redo the import/sync. You can simply pick the user group and change the data. The auto-sync process by the ADSync Service will pick up the updates in its next interval sync.

1. Launch and sign-in to the ADSync Tool.
2. Click **Search** to retrieve the Active Directory groups.
3. Select the desired **Organizational Unit**
4. Place a **check** in the desired **User Group** that you want to change Cardholder settings for. You can select all or multiple groups if needed.
5. In the *Default Cardholder/Card Options* section, change the options as desired.
  - **Card Technology:** you must choose a *Card Technology* that applies to your entire site.
  - **Access Profile:** you must choose an *Access Profile* that applies to your selected User Group(s).
  - **Customer:** select a *Customer name* if it applies to your selected User Group(s).
  - **Department:** select a *Department name* that applies to your selected User Group(s).
  - **Badge:** select a *Badge name* if it applies to your selected User Group(s).



6. Click [Set Default] button to set these options for your chosen group/unit.
7. Click **YES** to overwrite the existing setup (this just changes the default card settings for the selected user groups. It does not affect any unselected users. Clicking No will cancel the action and no changes will be made.



8. Click **OK** to close the confirmation box

## History of Changes

DATE	INITS	ACTION TAKEN
11-24-2020	C Roberts	Created the AD Sync Documentation – as-is.
3/23/2022	C Roberts	Corrected a broken bookmark link in the TOC and regenerated the PDF. No content changes occurred. Shared document with Cloud Team.
12-2022	C Roberts	Major overhaul of the guide to support new features like email notifications and the extinction of old features. Screen shots were replaced with updated images. Revisions made to the way the Cardholder reactivation feature was described. Also, the introduction was rewritten to better describe the overall process. Several of the instructional steps were rewritten to accommodate new features and changes in functionality. Explanation was expanded to better reflect what the lookup feature does. Headings were added to help user orientation when navigating the document.