

Microsoft Exchange ESA

This topic will help you understand the capabilities of the Exchange synchronization (Exchange ESA) and how to set up and manage synchronization between the systems.

Requirements

- The Exchange ESA integration of Agiloft works with MS Exchange 2013 and above for the Windows domain using Exchange Web Services (EWS).
- You need to grant an [impersonation role](#) to the Exchange user for this domain.

Add an Exchange ESA Sync in Agiloft

Note that the steps in this section will require you to alternate between your Agiloft instance and MS Exchange.

In MS Exchange

1. Obtain the details of the Exchange user with the [impersonation role](#), who can access and perform actions over other mailboxes in the server.
 - a. Note: some public Exchange servers require a full email (user@domain) as the user name here.
2. Check the Exchange host by navigating to `https://[Exchange Host]/EWS/exchange.asmx`. Note: this will require you to enter your Exchange user credentials.

Service

You have created a service.

To test this service, you will need to create a client and use it to call the service. You can do this using the svcutil.exe tool from the command line with the following syntax:

```
svcutil.exe https://mbx091-el-va-1.exch091.serverpod.net:444/EWS/Services.wsdl
```

This will generate a configuration file and a code file that contains the client class. Add the two files to your client application and use the generated client class to call the Service. For example:

C#

```
class Test
{
    static void Main()
    {
        HelloClient client = new HelloClient();

        // Use the 'client' variable to call operations on the service.

        // Always close the client.
        client.Close();
    }
}
```

Visual Basic

```
Class Test
Shared Sub Main()
    Dim client As HelloClient = New HelloClient()
    ' Use the 'client' variable to call operations on the service.

    ' Always close the client.
    client.Close()
End Sub
End Class
```

In Agiloft

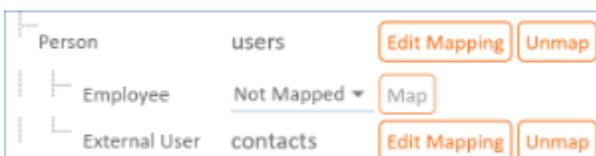
1. In Agiloft, navigate to **Setup > Sync**, then select **New > External Sync** to open the External Sync wizard.
 - a. In the General tab, enter a name, and select the Microsoft Exchange External System Type.
 - b. In Conflicts, select External System should take precedence.
2. Click Next to navigate to the ESA Settings tab.
 - a. Enter the address of the Exchange Host, the full name of the impersonation user, the account password, and the user domain name. Refer to [Exchange ESA Impersonation](#) for guidance if you don't have this information already.
 - b. Select Yes for Collect all user's contacts.

Note: EWS (Exchange Web Services) doesn't provide access to Global Address Lists, and Agiloft needs a single and consistent list of contacts, so the first step in synchronization is for the system to collect all the contacts into the Contact folder of the user with the impersonation role. These contacts are retrieved based on matching emails.

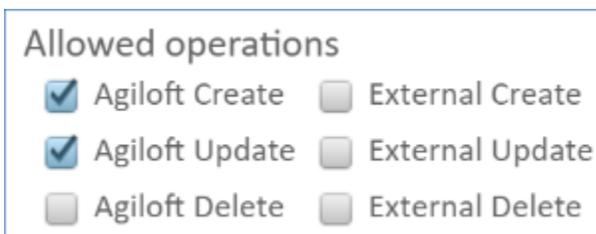
 - i. Contacts who are not in the folder of the user with impersonation role, and without email addresses, won't be synced, as the email is used as a key field.
 - ii. However, contacts who are in the folder of the user with impersonation role and who do not have an email address will be synced correctly if the field mapping is correct - for instance, if the DisplayName is matched to Full Name, where Full Name is used as a second identifying column.
 - iii. There is no specific order in which updates are performed.
 - c. Select the entities to sync. Exchange can sync Exchange users (with mailboxes), those users' contacts, and their calendar events.
3. Click Next. The system will test the connection and if it passes, will open the Mapping tab. If it fails, the error message will provide some guidance.

Add Mappings

1. In the Mapping tab, select the external structure mappings for the defined Exchange attributes such as users, contacts, and calendar events.
 - a. Calendar will match to events.
 - b. Either Person or Employee will match to users.
 - i. Note: If you want to use the Calendar synchronization, it is better to use the People table than the Employees sub-table because the Agiloft calendar is linked to the People table.
 - c. External User will match to contacts.
2. For each entity, click Edit Mapping to set up the field matching.



3. Note that due to EWS restrictions, you can only perform People operations on Agiloft and not the other way around.



4. We can use the following field mappings for the Person details:
 - a. Alias to Login
 - b. CompanyName to Company
 - c. GivenName to First Name
 - d. MailBoxAddress to Email (identifying)
 - e. Manager to Manager Name
 - f. Surname to Last Name

5. We can use the following field mappings for the Contacts/External Users details:
 - a. Alias to Login
 - b. CompanyName to Company
 - c. DisplayName to Full Name (identifying, but not changeable at both ends)
 - d. EmailAddress1 to Email (identifying)
 - e. GivenName to First Name
 - f. Manager to Manager Name
 - g. Surname to Last Name

Note: It is advisable to deselect the flag "Use strict match for identification". Setting it for strict match would prevent the sync of contacts that have no email address.
6. The calendar synchronization will work in both directions, apart from deletions that work only from Agiloft to Exchange due to Exchange restrictions.

You can restrict sync operations for these subtype and structure.	Allowed operations	
	<input checked="" type="checkbox"/> Agiloft Create	<input checked="" type="checkbox"/> External Create
	<input checked="" type="checkbox"/> Agiloft Update	<input checked="" type="checkbox"/> External Update
	<input type="checkbox"/> Agiloft Delete	<input checked="" type="checkbox"/> External Delete

Sync Events

We can use the following field mappings for the Calendar/Events:

1. Duration to Duration
2. Start to Start Time
3. Subject to Description
4. ReminderMinutesBeforeStart to Notification Time

It is important to note that calendar events will sync to the Owner calendar. This mapping is set as the event owner in the Relation Mapping tab. This mapping is generally done automatically if the event Owner is the Agiloft event creator. However, if you as an admin create an event to someone else, the mapping field must be changed accordingly, otherwise the events will not be synced.

Relation Mapping		To	Update	Update
From	Linked Field Set:		Agiloft	External
ContactAttendees				
events / Calendar	External User(External Attendee) ▼	contacts / External User	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
UserAttendees				
events / Calendar	Person(personalinv) ▼	users / Person	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
*event owner				
events / Calendar	* Person(Creator Name, Creator Login, Creator Team) ▼	users / Person	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Event Recurrence

The following fields can also be mapped to specify event recurrence:

1. IsRecurring to Recurrent - a choice field with No/Yes options.
2. Recurrence Pattern to Recurrence Pattern - a choice field with Daily/Monthly/Weekly/Yearly options.
3. RepeatAfter to Repeat After
4. Weekdays to Weekdays - a multi-choice field with the available weekdays listed.
5. EndEventType to End Event Type - a choice field with After Certain Date/After Number Of Events/No End Date options.
6. EndDate to End Date - the end of the event occurrence, used if End Event Type = After Certain Date.
Note that End is not the same as End Date - see below for more details.
7. NoOfOccurrences to No of Occurrences

Note: The fields Start, Duration and End fields are used to set a formula where Start + Duration = End. Do not confuse End with End Date, or the formula will not have a result.

- For a Yearly occurrence, the Start is defined as Month/Day, with an interval of 1.
- For a Monthly occurrence, the Start is defined as DayOfMonth.
- For a Weekly occurrence, the Start is defined as DayOfWeek, if Weekdays does not have a value.

Add Relations

1. Click Next to open the Relation Mapping tab.

2. Set up the linked field relations with Exchange.

General	ESA Settings	Mapping	Relation Mapping	Running	Export																												
Back Next Finish Cancel																																	
<p>This option allows you to map object relations in Agiloft and External System. You may map external relations to LF field sets in Agiloft. For LF fields, you may specify either "direct" mapping (equivalent to manually entering values into fields) or map the whole set of them to some relation in an External System</p> <p>You can't combine the two: if the field is "direct" mapped, the set is unavailable for relation mapping and vice-versa.</p> <p>The linked Agiloft Subtype must also be included into this Synchronization Configuration (or Agiloft will not be able to map external IDs to linked subtype IDs).</p> <p>If it is not Synced, LF will not be updated!</p>		<table border="1"><thead><tr><th colspan="2">Relation Mapping</th><th>From</th><th>Linked Field Set:</th><th>To</th><th>Update Agiloft</th><th>Update External</th></tr></thead><tbody><tr><td colspan="2">ContactAttendees</td><td>events / Calendar</td><td>External User(External Attendee) ▼</td><td>contacts / External User</td><td><input checked="" type="checkbox"/></td><td><input checked="" type="checkbox"/></td></tr><tr><td colspan="2">UserAttendees</td><td>events / Calendar</td><td>Person(personalinv) ▼</td><td>users / Person</td><td><input checked="" type="checkbox"/></td><td><input checked="" type="checkbox"/></td></tr><tr><td colspan="2">*event owner</td><td>events / Calendar</td><td>* Person(Creator Name, Creator Login, Creator Team) ▼</td><td>users / Person</td><td><input checked="" type="checkbox"/></td><td><input checked="" type="checkbox"/></td></tr></tbody></table>				Relation Mapping		From	Linked Field Set:	To	Update Agiloft	Update External	ContactAttendees		events / Calendar	External User(External Attendee) ▼	contacts / External User	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	UserAttendees		events / Calendar	Person(personalinv) ▼	users / Person	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	*event owner		events / Calendar	* Person(Creator Name, Creator Login, Creator Team) ▼	users / Person	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
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Back Next Finish Cancel																																	

3. You can use the standard Calendar to Person table relations

- Person (Creator Name, Creator Login, Creator Team) for Event Owner relation.
Note: This relationship is required, since an Exchange Event cannot exist without an owner. Any calendar events from Agiloft must include the Event Owner person to be synchronized.
- Person (personalinv) for UserAttendees
- For the ContactAttendees relation, create a linked field similar to the Person (personalinv) from External Users to Calendar.

Finish and Save

1. Define the Run Mode, and then click Finish to save the sync.

Test the Exchange Synchronization

The following examples will perform some tests of the Exchange synchronization:

Sync Employees

1. Navigate to the Employees table, and select **Actions > Sync > Run <sync name>**.
2. This will create the Administrator and superimp users in the Agiloft People table.
3. In Exchange, change the superimp user's name and re-run the sync.
4. The user should be visible in the People table.

Sync Contacts

1. Navigate to the External Users table and select **Actions > Sync > Run <sync name>**.
2. This will result in contacts with matching emails being updated and some new contacts created.

Synchronization restrictions with users

It is not possible to retrieve the Last modified date and time of users through EWS, so Agiloft will sync all users whenever it's run.

Additionally, the functions Create / Update / Delete users are not supported using EWS.

Sync contacts not in the Contacts folder of the impersonation user

1. In Exchange, log in as a user other than the impersonation role user, and create a new contact with an email address.

2. Verify that the user doesn't exist in the impersonation user's Contacts folder.
3. Run sync from the External Users table.
4. The user will be created in Agiloft and they will be added to the Contacts folder of the user with the impersonation role.

Delete contacts

1. In Agiloft, delete a contact from the External Users table.
2. Run sync.
3. The user will also be deleted in the Contacts folder of the user with the impersonation role.
Note: Agiloft will sync the delete operation with the Contacts folders of the impersonation user and not any other contact. So if another contact with the same email address exists in another user's contact folder, they will remain untouched.

Create and Update Calendar Events

1. On the Calendar table Actions, run the sync.
2. Check that the new events were added to the Agiloft calendar.
3. In Agiloft, add an event that includes the admin user, and some other contacts. Sync the calendar.
4. Check that the event was added to Exchange.
Note: if a contact does not exist in the user's contacts folder, they will be displayed as emails in the event attendees list.

Event synchronization restrictions

Please note that only the first 1000 events will be synchronized starting from a week ago to two months in the future.