PeopleFluent Learning

Microsoft Exchange Server Integration Guide

Contents

About this Document

Introduction

PeopleFluent Learning supports event synchronization to and from on-premises Microsoft Exchange Server and Office 365 Exchange Online. On-premises versions of Exchange Server support Basic Authentication, while Office 365 Exchange Online supports only OAuth2.

This document describes how to configure Office 365 Exchange Online for OAuth2 authentication and integrate Exchange Server accounts (emails) with the LMS. When Exchange Server is integrated with the LMS, calendar events, such as personal events, class schedules, and facilities and class resources bookings, can be pushed to the Exchange Server to be displayed in corresponding calendars. Events created on the Exchange Server can be synchronized to the calendars in the LMS.

Document Information

This section lists any changes or updates that occur following initial publication.

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Prerequisites

For Microsoft Exchange Server integration, data is synchronized between the LMS and Exchange Server using an administrator account, which must first be created in Exchange Server. For more information, see Create an Exchange Server User Account.

For Office 365 Exchange Online integration, the LMS application must be registered in Azure Active Directory, for which you will need a Microsoft Office 365 account. Alternatively, you can register a developer account via https://developer.microsoft.com/en-us/microsoft-365/dev-program, or one-month free trial account for Office 365 E5 via https://www.microsoft.com/en-us/microsoft-365/enterprise/compare-office-365-plans.

Create an Exchange Server User Account

To create a user account for Exchange Server

1. Go to **Microsoft 365 admin center** (https://admin.microsoft.com/AdminPortal/) and log in as an administrator (if this is the first time logging in) or as another user with permission to create accounts.
2. Click **mailboxes**.
3. Click the **+** icon and select **User mailbox** from the drop-down list. The *new user mailbox dialog* opens.
4. Enter the new user account details and click **Save**.

Configure Client Credentials Grant Flow

Create a New Registration for the LMS

To create a new registration for the LMS

1. Go to **Microsoft 365 admin center** (https://admin.microsoft.com/AdminPortal/) and login with your account.
2. Click **Azure Active Directory** (under *Admin centers* on the left-hand navigation menu). The Azure Active Directory admin center opens.
3. Click **Azure Active Directory** on the left-hand navigation.
4. On the Dashboard page, click **App registrations** (under *Manage* on the left-hand dashboard navigation menu). The *App registrations* page opens.
5. Click **+ New registration**. The *Register an application* page opens.
6. Enter an appropriate name in the Name field, and leave the other fields and options as their default values. The Redirect URI is not required.
7. Click **Register**. The page updates with the registration details.
8. Copy and save to a text file the values for *Application (client) ID* and *Directory (tenant) ID*. They will be needed for registering the Exchange Server account in the LMS.

Update the Manifest

To update the manifest

1. Click **Manifest** (under *Manage* on the left-hand dashboard navigation menu).
2. Scroll down the XML file and locate *requiredResourceAccess* property.
3. Insert the following code after the *Scope* resource access type, adding a comma between the *Scope* resource access type and the *Role* resource access type.

```
{
    "resourceAppId": "00000002-0000-0ff1-ce00-000000000000",
    "resourceAccess": [
        {
            "id": "dc890d15-9560-4a4c-9b7f-a736ec74ec40",
            "type": "Role"
        }
    ]
}
```

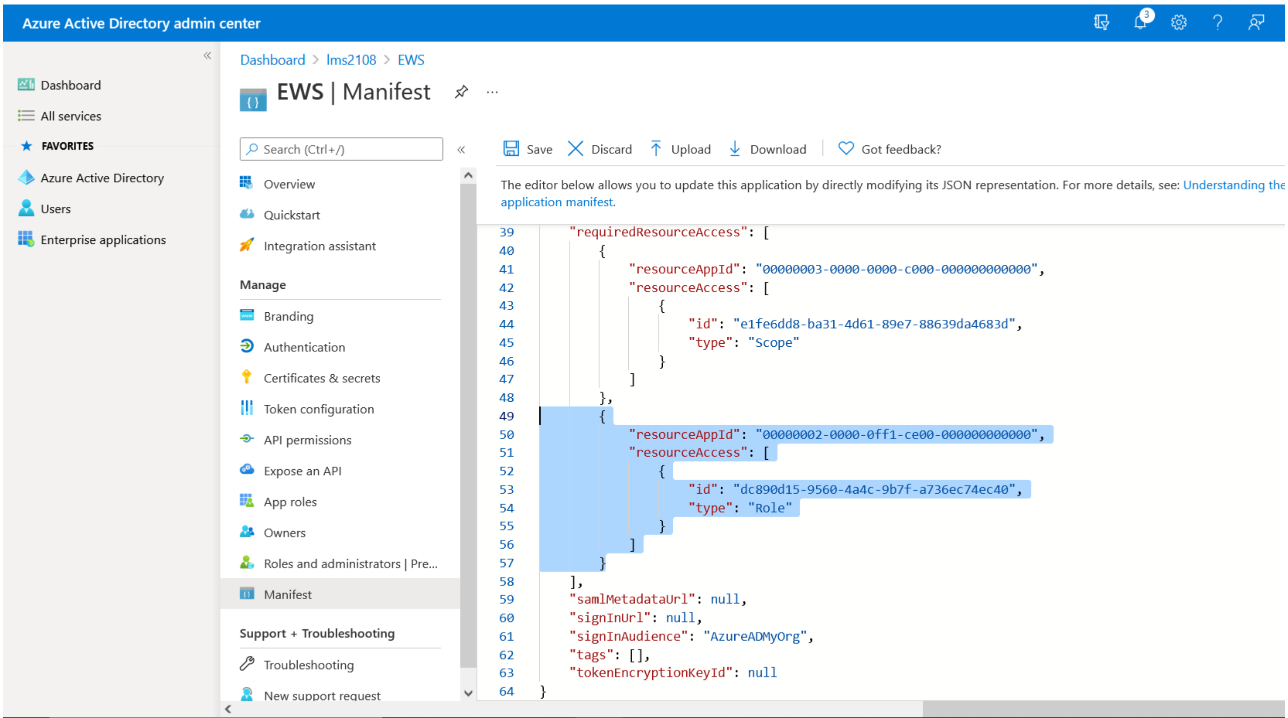

Figure: example manifest after adding the Scope resource

5. Click **Save**.

Configure API Permissions

To configure API permissions

1. Click **API permissions** (under *Manage* on the left-hand dashboard navigation menu). The *API permissions* page opens.
2. Expand *Office 365 Exchange Online.* The *full_access_as_app* permission is shown.
3. Click **Grant admin consent for *[your registered company or organization name]***. The status is updated to *Grant for [your registered company or organization name].*

Configure Certificates and Secrets

To configure certificates and secrets

1. Click **Certificates & secrets** (under *Manage* on the left-hand dashboard navigation menu). The *Certificates & secrets* page opens.
2. Click **+ New client secret**. The *Add a client secret panel* opens.
3. Enter a description and select when it expires.
4. Click **Add**. The client secret is added to the *Certificates & secrets* page.
5. Copy and save the client secret value in the Value column. This will be used as the client secret when registering an Exchange Server account in the LMS.

Register your Application (from the Microsoft page: *Authenticate an EWS application by using OAuth*).

Configure Calendar Permission Delegation

To configure permission delegation

1. Go to **Microsoft 365 admin center** (https://admin.microsoft.com/AdminPortal/) and login with your account.
2. Click **Exchange** (under *Admin centers* on the left-hand navigation menu).
3. To create a normal user account for a personal calendar in the LMS, go to **Users > Active Users** and click **Add a user**.
4. To create a room or equipment resource, go to **Recipients > Resources** and click **Add a resource**.
5. To manage delegates for a resource, select the resource on the Resources page and click **Manage delegates** in the resource dialog.
6. Select the delegated email account (that is, the training center's Exchange Server email account) to access the resource email account.
7. Select **Full access** and **Send on behalf** for the level of permission.

ekp.log may show the following error:

> com.netdimen.appl.exchangeserver.ExchangeWebService.
> fetchAppointmentsFromExchangeServer: null.

For more information, see this Stack Overflow post: Office 365 EWS - GetUserAvailability ID is null.

To resolve this error

1. Open Office 365 and login as the delegated email account (that is, the training center's Exchange Server email account).
2. Open Outlook and add a *Room* email account to the calendar.
3. Select **Sharing and permissions** from the Room's more menu. The *Sharing and permissions* dialog opens.
4. Select the delegated email account and select **Delegate** from the drop-down list.

Add an Exchange Server in the LMS

To configure an Exchange Server in the LMS, the *Enable Exchange Server schedule integration* System Configuration setting must be enabled.

> While Microsoft no longer provides support for Exchange Server 2007 through 2016, the LMS can still integrate with those versions (and 2019) using Basic Authentication.

To configure an Exchange Server in the LMS

1. Go to **Manage Center > System > Exchange Server**. The Exchange Servers page opens with a list of existing Exchange Servers.
2. Click **+ Create New Server**.
3. Enter a name for the Exchange Server configuration in the LMS.
4. Select the **ExchangeOnline_OAuth2** Exchange Server type from the Version drop-down list.
5. Enter the email address for the *lmsadmin* account (that is, the LMS administrator user account added to Exchange Server.
6. Enter the Client ID and Tenant ID copied from *Application (client) ID* and *Directory (tenant) ID* in the *App registrations* page in the Azure Active Directory admin center.
7. Enter the *Client secret* value copied from the *Certificates & secrets* page in the Azure Active Directory admin center.
8. Click **Save**. The new Exchange Server configuration is listed in the Exchange Servers page.
9. To test the connection, click the configuration name and then click **Test Connection**.

Configure Client Credentials Grant Flow

Link Users with Exchange Server

To link a user with Exchange Server

1. On the Exchange Server's Administration Panel, create or identify a user account to be linked to the LMS.
2. Go to **Edit User > Mail Settings > Mailbox permissions > Add Read and Manage Permission to the LMS Admin Account**. Alternatively, enter `Add-MailboxFolderPermission lmsuser:\calendar -User` *`lmsadmin@windowsdomain.com`* `-AccessRights` in Exchange Management Shell.
3. In the LMS, open the user's profile in the User Editor and ensure their email is the same as the Exchange Server email (*lmsadmin@windowsdomain.com* in the example above).
4. Select the Exchange Server configuration name from the Exchange Server drop-down list. Each user can be connected to only one Exchange Server (Web Service).

Link Training Centers with Exchange Server

By linking a training center to an Exchange Server, all bookings and events for the facilities and class resources assigned to the training center are associated with the Exchange Server.

To link a training center with Exchange Server

1. Go to **Variable "manage-center-name" is not defined > Learning > Training Centers**. The Training Centers page opens with a list of existing training centers.
2. Click the name of the training center you want to link to an Exchange Server. The training center details open.
3. Select the Exchange Server you want to link the training center to from the Exchange Server drop-down list.
4. Click **Save**.

Link Facilities with Exchange Server

To link a facility in the LMS with Exchange Server, you must have a *Room* Exchange Server account, and associate the LMS facility to it.

To link a facility to Exchange Server

1. In the Exchange Server's Administration Panel, go to **Resources > Rooms & equipment**.
2. Create or identify an account with the type *Room* to link to the LMS.
3. Add an exchange administrator account as a delegate for the Room account.
4. In the LMS, go to **Variable "manage-center-name" is not defined > Learning > Facilities**. The Facilities page opens with a list of facilities.
5. Create a new facility or click the name of the facility you want to link with Variable "exchange_server" is not defined. The facility's Room Information page opens.
6. In the Outlook Reference field, enter the email address of the *Room* Variable "exchange_server" is not defined account.
7. Complete the other facility details fields as required and click **Save**.

Link Class Resources with Exchange Server

To link a class resource in the LMS with Exchange Server, you must have an *Equipment* Exchange Server account, and associate the LMS class resource to it.

To link a class resource to Exchange Server

1. In the Exchange Server's Administration Panel, go to **Resources > Rooms & equipment**.
2. Create or identify an account with the type *Equipment* to link to the LMS.
3. Add an exchange administrator account as a delegate for the Equipment account.
4. In the LMS, go to **Variable "manage-center-name" is not defined > Learning > Class Resources**. The Class Resource page opens with a list of class resources.
5. Create a new class resource or click the name of the class resource you want to link with Variable "exchange_server" is not defined. The class resource details page opens.
6. In the Outlook Reference field, enter the email address of the *Equipment* Variable "exchange_server" is not defined account.
7. Complete the other class resource details fields as required and click **Save**.

Pulling Events from Exchange Servers

For users and training centers that have been linked to an Exchange Server, Facility, Class Resource, and Instructor calendar events will be loaded from the Exchange Server where applicable.

Users can see them in these LMS pages:

- Resource Planner
- Catalog Editor > Session Properties > Add/Edit Class Schedule Page
- Class Resource Calendar
- Personal Calendar
- Instructor Schedule
- Class Resource Schedule
- Facility Schedule

Local events created within the LMS and events pulled from Variable "exchange_server" is not defined are shown.

Users with unrestricted access to the Resource Planner can view and edit events originally created in the LMS. Users can view but not edit details of events originally created on the Exchange Server Calendar.

The synchronization combines the LMS and Exchange Server calendar events to provide an integrated picture of the availability of people, facilities, and class resources). For example, *Tentative* and *Out of Office* events in Exchange Servers will be treated the same as *Busy* events in the LMS, that is, unavailable. Events with a *Free* status are not visible in LMS calendars.

However, there will not be any further processing of event information from Exchange Servers. For example, declining an invitation in Exchange Server only affects whether that event will appear in LMS Calendars and will not withdraw the Learner from the training.

To hide the details of Exchange Server events in the LMS so they show only as *Busy*, enable the *Show Exchange Server events in Class Resource Manager calendars as 'Busy' only* System Configuration setting.

Troubleshooting

If events are not being pulled from the Exchange Server, check that:

- Each facility or class resource has an Outlook Reference configured
- The relevant training center has the appropriate Exchange Server selected
- Each instructor has both an Outlook Reference and an Exchange Server configured in the User Editor

Pushing Events to Exchange Server

When Exchange Servers have been set up, calendar events created in the LMS will be pushed to the Exchange Servers. This includes creating, updating, or deleting the following:

- Personal events (via Personal Calendar, or Instructor Schedule)
- Facility bookings (via Resource Planner, Class Resources Calendar, or Facilities Schedule)
- Class Resources bookings (via Resource Planner, Class Resources Calendar, or Class Resources Schedule)
- Instructor, Facility, and Class Resources bookings associated with the module session's schedule (via Catalog Editor > Add/Edit Class Schedule Page, Resource Planner, Class Resource Calendar, Facility Schedule, Class Resources Schedule, or Instructor Schedule)

Create Events in Exchange Server

Customers who integrate their local Outlook with Office 365 can create the event in Outlook on their computer, which will sync up to Office 365.

To create an event in Variable "exchange_server" is not defined:

1. Go to https://www.office.com and log in with an Variable "exchange_server" is not defined user account linked with the LMS.
2. Go to Outlook and select the Calendar.
3. Double-click a date on the calendar to create an event.

Link Exchange Resources to the LMS

To enable LMS users to accept and decline resource booking events pulled from Variable "exchange_server" is not defined, you assign the LMS admin user's email address (configured for the Exchange Server in the LMS Variable "manage-center-name" is not defined) as a booking delegate for the resource in the Variable "exchange_server" is not defined Admin Center.

To add an LMS user as a resource booking delegate

1. In Variable "exchange_server" is not defined's Admin Center, click **resources**. The resources page opens with a list of existing resources.
2. Double-click the resource (room or equipment) you want to add the LMS user to. The resource opens in a dialog for editing.
3. Click **booking delegates**.
4. Select **Select delegates who can accept or decline booking requests**.
5. Click the **+** icon to add a delegate.
6. Select the LMS admin user (for example, *lmsadmin*) previously created as a user mailbox in Variable "exchange_server" is not defined.
7. Click **Save**.

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