Data Exchange Framework 2.1 Installation Guide

A guide to installing and upgrading the Data Exchange Framework 2.1

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1. Installation

This chapter guides you through the process of installing Data Exchange Framework.

1.1. Prerequisites

Data Exchange Framework requires Sitecore 9.1 (or greater).

1.2. Installing Data Exchange Framework

This section describes how to install Data Exchange Framework on your Sitecore servers.

1.2.1. Content Management role

Typically, data synchronization runs on a content management (CM) server. This requires the entire Data Exchange Framework product to be installed.

To install the Data Exchange Framework on the CM server:

1. In Sitecore, open the Installation Wizard.

2. Install the Data Exchange Framework package.

3. Install the Sitecore Provider for Data Exchange Framework package.

   > **NOTE**
   > We recommend you install the Sitecore Provider for Data Exchange Framework because it lets you interact with the Sitecore content databases.

4. To confirm the module was installed, open the Content Editor and navigate to the Data Exchange item, `/sitecore/system/Data Exchange`.
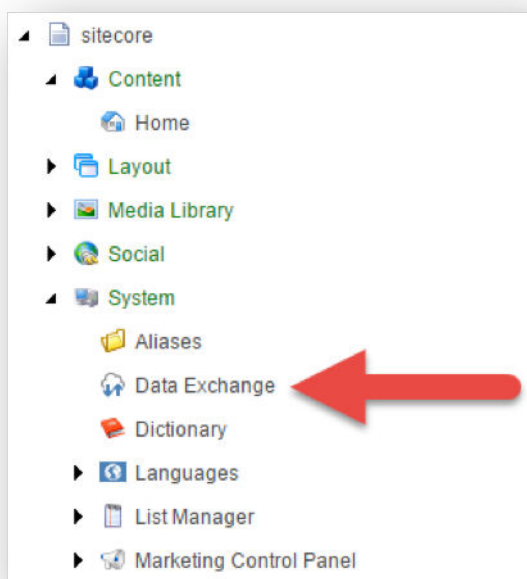
1.2.2. Content Delivery Role

In most cases, data synchronization will not run on Sitecore delivery servers. The data that is synchronized, however, is used on those servers. As a result, you must install all parts of the Data Exchange Framework on Sitecore content delivery (CD) servers.

Specific installation packages are available for CD servers.

1.2.3. Aggregation server installation

If you have a dedicated aggregation server, you must install all parts of the Data Exchange Framework on the aggregation server.

1.2.4. Reporting server installation

If you have a dedicated reporting server, you must install all parts of the Data Exchange Framework on the reporting server.

1.3. Install Tenant Service

This section guides you through the process of installing Tenant Service and dependent modules on a Sitecore server.

1.3.1. Prerequisites

This product requires:

- Sitecore 9.1.0 (or greater).

- configuration of the service on IIS.

1.3.2. Install Tenant Service on a Sitecore server

This section describes how to install Tenant Service (TS) on your Sitecore server.

You can run data synchronization on a content management (CM) server. You must install the entire Data Exchange Framework (DEF) product on the CM server.

1. Download the following packages from the Sitecore Downloads page:

    - Data Exchange Framework

    - Data Exchange Framework SDK

    - Sitecore Data Exchange Tenant Service

    - Sitecore Provider for Data Exchange Framework

2. In Sitecore, in the Control Panel, click on **Install a Package**.

3. Install the *Data Exchange Framework* package.

4. Install the *Sitecore Provider for Data Exchange Framework* package.

> **NOTE**
> This provider is optional, but it is recommended that you install it, as it enables you to interact with Sitecore content databases.

5. Install the *Data Exchange Framework SDK* package.

6. Install the *Sitecore Data Exchange Tenant Service* Sitecore package.

7. You can confirm the Data Exchange Framework is installed by opening Content Editor and locating the item `/sitecore/system/Data Exchange`.
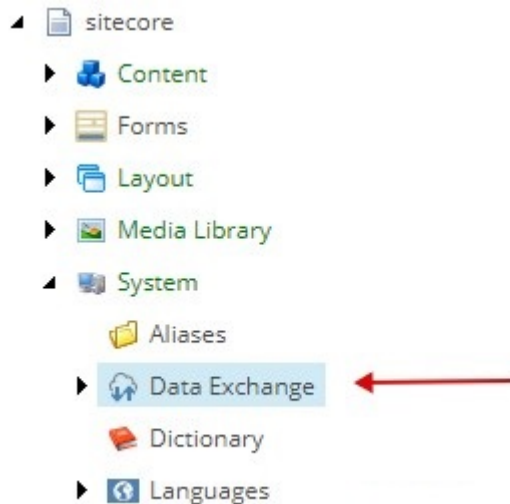
8. You can confirm the Tenant Service is installed by opening Content Editor and locating the item `/sitecore/templates/Data Exchange/Services/Tenant Service`.
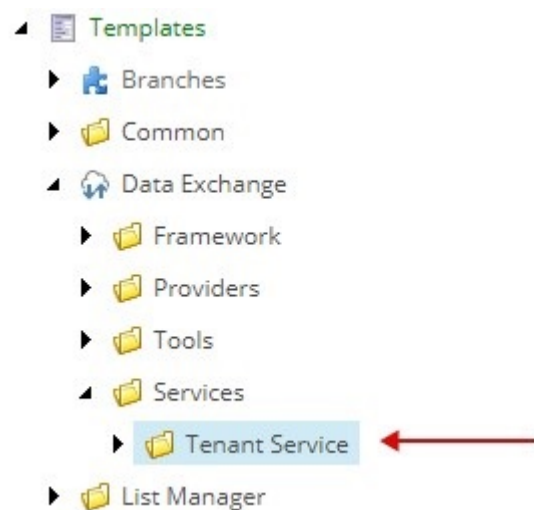
1.3.3. Install the web-component of Tenant Service on IIS

Tenant Service (TS) is a web-based service and must be configured as a web site via IIS. This chapter guides you through the process of installing Web-Based Micro TS. There are two alternative ways of installing TS:

• Manually

• Using PowerShell

Install manually

> **NOTE**
> For information on how to create certificates, please refer to the Set Up Client Certificates section of the Sitecore Experience Platform Installation Guide, available from the Sitecore Downloads page.

To install TS manually:

1. Download the `Sitecore Data Exchange Framework Tenant Service - Web Service` package from the Sitecore Downloads page. It contains the `Sitecore Data Exchange Framework Tenant Service 210 rev 181113scwdp.zip` file.

2. Extract the `.zip` file into the website IIS root folder. By default, this folder is located at `C:\inetpub\wwwroot\[service folder]`.

3. In the `App_Config` folder of the Sitecore installation, open the `ConnectionString.config` file.

4. Locate the connection string named `sitecore`. If it is not there, add it. Update the connection string with the following properties:

Property	Content
database	Name of the database containing the item configuration. The default is `master`.
tenant ID	The tenant item ID. The tenant that the micro service communicates with.
host	The host name of the Sitecore server, without `http`.
user name	A user name that can access the Sitecore server.
password	The user password.

Example:

```
<add name="sitecore"
connectionString="database=master;
    tenant id=[tenant item id];
    host=[hostname];
    password=[password];
    user name=[sitecore\username];
    timeout=20" />
```

5. In the root folder of the Sitecore installation, open the `web.config` file and add the following binding redirect definitions to the `runtime\assemblyBinding` node:

```
<runtime>
    <assemblyBinding>
    ...
        <dependentAssembly>
            <assemblyIdentity name="System.Interactive.Async"
publicKeyToken="94bc3704cddfc263" culture="neutral" xmlns="urn:schemas-
microsoft-com:asm.v1" />
            <bindingRedirect oldVersion="0.0.0.0-3.0.3000.0"
newVersion="3.0.3000.0" xmlns="urn:schemas-microsoft-com:asm.v1" />
        </dependentAssembly>
```

```
    <dependentAssembly>
        <assemblyIdentity name="System.Interactive.Async.Providers"
publicKeyToken="94bc3704cddfc263" culture="neutral" xmlns="urn:schemas-
microsoft-com:asm.v1" />
        <bindingRedirect oldVersion="0.0.0.0-3.0.1000.0"
newVersion="3.0.1000.0" xmlns="urn:schemas-microsoft-com:asm.v1" />
    </dependentAssembly>
    ...
    </assemblyBinding>
</runtime>
```

6. Create and start the site in IIS.

> **NOTE**
>
> When Tenant Service is set up as described above, you can access it by requesting
> `http://[tenantservice]`. If the service is running successfully, you will get a
> response showing the date and time.

Install using PowerShell

To install TS using SIF installation files and PowerShell:

1. Download the `Sitecore Data Exchange Framework Tenant Service` package from
    the Sitecore download page.

2. Download the `tenantservice-xp0.json` and `xconnect-createcert.json` SIF installation
    configuration files from the Sitecore download page.

3. Create a Power shell script and name it, for example, `tenantService.ps1`. Add the following
    code to the script:

```
param
(
    [Parameter(Mandatory=$false )] [string] $scInstanceName = "defdev",
    [Parameter(Mandatory=$false )] [string] $servicePackage = "d:\WDP
\TenantService\ Sitecore Data Exchange Framework Tenant Service 2.1
rev.<rev>.scwdp.zip ",
    [Parameter(Mandatory=$false )] [string] $serverFullName =
"<serverName>",
    [Parameter(Mandatory=$false )] [string] $WDSFolderName = "D:\WDP
\TenantService\"
)
#define parameters
$instanceName = "$scInstanceName.service"
$prefix = "$scInstanceName"
#install client certificate for xconnect
$certParams = @{
    Path = "$WDSFolderName\xconnect-createcert.json"
    CertificateName = "$instanceName"
    RootCertFileName = "TenantServRootCert"
}
Install-SitecoreConfiguration @certParams -Verbose
#deploy xconnect instance
```

```
$tenantServiceParams = @{
    Path = "$WDSFolderName\tenantservice-xp0.json"
    Package = "$servicePackage"
    SiteName = $instanceName
    SSLCert = $certParams.CertificateName
    SitecoreHostName = $scInstanceName
    SitecoreTenantId = "{00000000-0000-0000-0000-000000000000}"
}
Install-SitecoreConfiguration @tenantServiceParams
```

4. In the script, change the `scInstanceName` parameter to the Sitecore site name. The Tenant Service site name is automatically generated by adding `.service` to the Sitecore site name.

5. In the script, change the `SitecoreTenantID` to the Tenant ID.

6. Save the script and run it as an administrator (or a user with granted privileges). Check that no errors appear.

Testing the connection to Tenant Service

To check whether Tenant Service for a configured tenant is connected to the Sitecore server, you use the following request:

```
http://[tenantservice]/api/tenant
```

The response displays the available tenant service endpoints.

1.3.4. Configure Sitecore and Tenant Service on different servers

If you have the Tenant Service installed on a different server than your Sitecore content management server, you must enable communcation between the two servers:

1. On your Sitecore Content Management server, in the `\App_Config\Sitecore\Services.Client\` folder, open the `Sitecore.Services.Client.config` file.

2. Locate the following setting:

```
<setting name="Sitecore.Services.SecurityPolicy" value="Sitecore.Services
.Infrastructure.Web.Http.Security.ServicesLocalOnlyPolicy,
    Sitecore.Services.Infrastructure"/>
```

Change the setting to:

```
<setting name="Sitecore.Services.SecurityPolicy" value="Sitecore.Services
.Infrastructure.Web.Http.Security.ServicesOnPolicy,
Sitecore.Services.Infrastructure"/>
```

The Sitecore ItemService service provides you with an API to read Sitecore items remotely. For example, the Tenant Service can use ItemService to read the configuration.

1.3.5. Configure Tenant service

This topic guides you through the process of configuring Tenant Service (TS) on a Sitecore server.

> **NOTE**
>
> To enable the TS feature on a Sitecore server, you do not need to create a new tenant. You can extend an existing tenant with TS features by following points 5-9 in the procedure below.

To upgrade a tenant with TS:

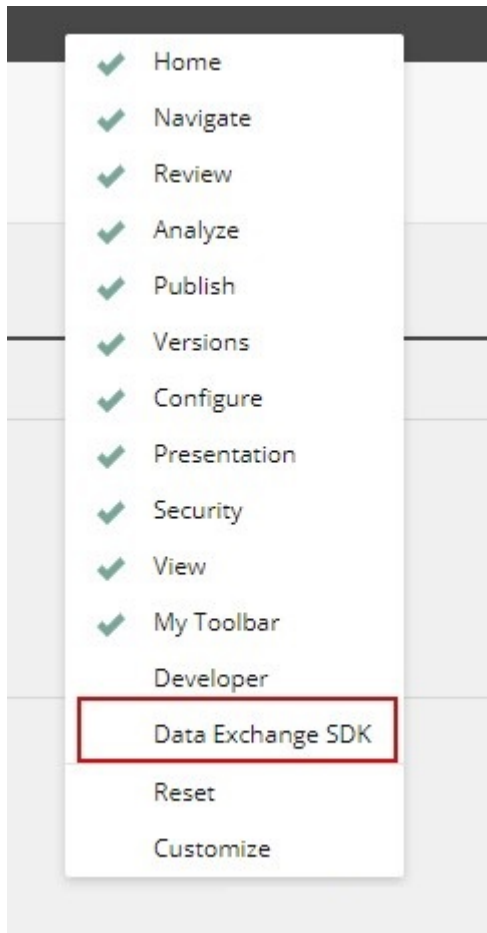1. Select the Data Exchange item **/sitecore/system/Data Exchange**.
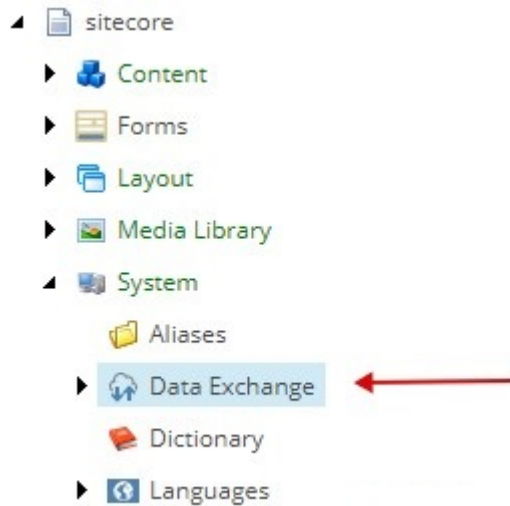
2. Create an **Empty Data Exchange tenant** using the **Insert** option.

> **NOTE**
>
> You can use also extend an already created tenant with the Tenant Service feature.

3. Verify that the **Data Exchange SDK** ribbon tab is enabled.

4. Select the newly created tenant item.
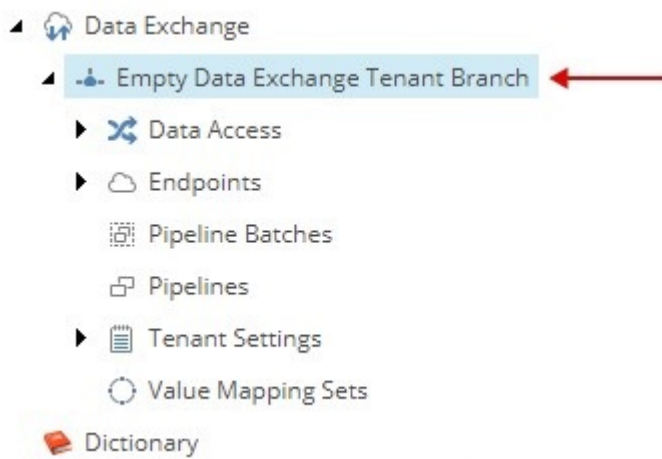
5. On the **Data Exchange SDK** ribbon click the **Upgrade Tenant** button.
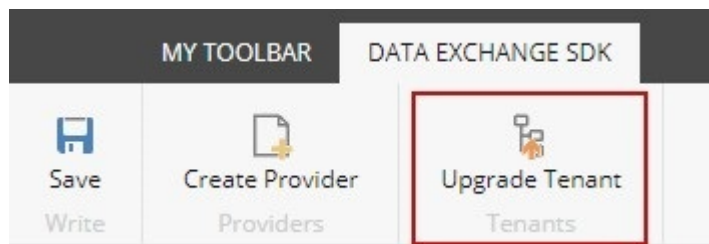
6. In the dialog window select **Tenant Service** in the **Instruction set** drop down menu.
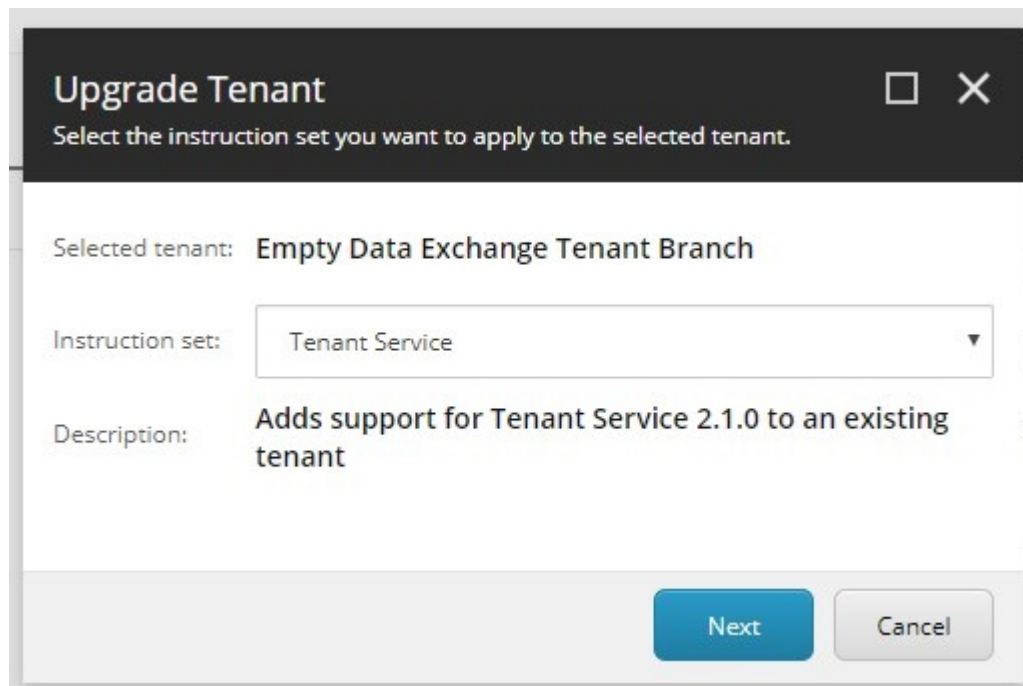
7. Click **Next**.

8. Click **Start Upgrade**.

9. You can confirm the tenant was upgraded by finding the **Tenant Service Endpoints** and **Tenant Service Settings** items under the upgraded tenant.

10. On the server, navigate to the root folder of the Sitecore installation, open the `web.config` file, and add the following `httpProtocol` to the `system.webServer` node:

```
<system.webServer>
    ...
    <httpProtocol>
        <customHeaders>
            <add name="Access-Control-Allow-Origin" value="http://
<tenant.service.hostname>"/>
            <add name="Access-Control-Allow-Headers" value="*" />
            <add name="Access-Control-Allow-Methods" value="*" />
        </customHeaders>
    </httpProtocol>
    ...
</system.webServer>
```
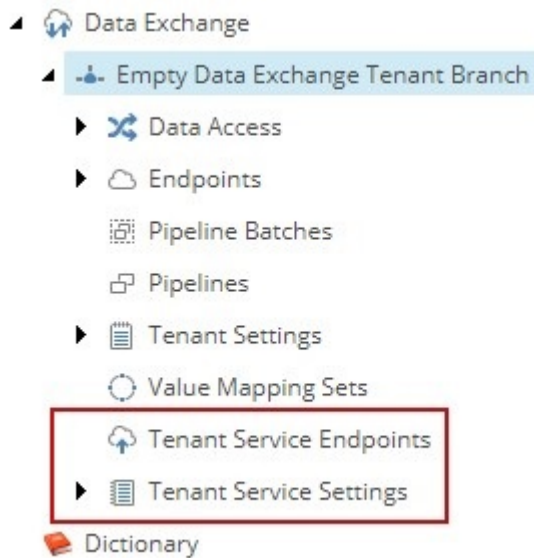
> **NOTE**
> In the example, replace `<tenant.service.hostname>` with the actual hostname of your tenant service.

1.3.6. Caching

Sitecore uses caching to reduce the number of requests to resolve Tenant Service Endpoints. The duration of the caching is set in the `\App_Config\AppSettings.config` file on the xConnect server. By default, Sitecore caches values for 300 seconds.

```
<!-- cache expiration in seconds-->
<add key="cacheExpiration" value="300" />
```

1.4. Installing the Data Exchange Framework Activity for Marketing Automation

The Data Exchange Framework Activity for Marketing Automation extends the Marketing Automation activities.

1.4.1. Prerequisites

This product must be installed on a Sitecore content management server.

This product requires that the following is installed on the server:

- Sitecore 9.1.0 (or greater).

- Data Exchange Framework 2.1 package installed

- Tenant Service for Data Exchange Framework 2.1 package installed

- Tenant Service 2.1 (as a separate service)

In addition, you must download and install the following packages from the Sitecore downloads page:

- Data Exchange Framework Activity for Marketing Automation

- Marketing Automation Extension for Tenant Service

- Sitecore Data Exchange Framework Plugin for Automation Engine role (contains the DEF Action Plugin for Marketing Automation package)

1.4.2. Install the Activity for Marketing Automation

To install the Activity for Marketing Automation:

1. Download the Data Exchange Framework Activity for Marketing Automation from the Sitecore Downloads page.

2. On the CM server, in Sitecore, click **Control Panel**, and in the **Administration** section, click **Install a package**.
    The **Install a package** wizard guides you through the installation process.

3. When the installation is complete, confirm that the Activity was installed by opening the Content Editor and locating the item **/sitecore/system/Settings/Analytics/Marketing Automation/Activity Types/Trigger DEF Sync Process**.
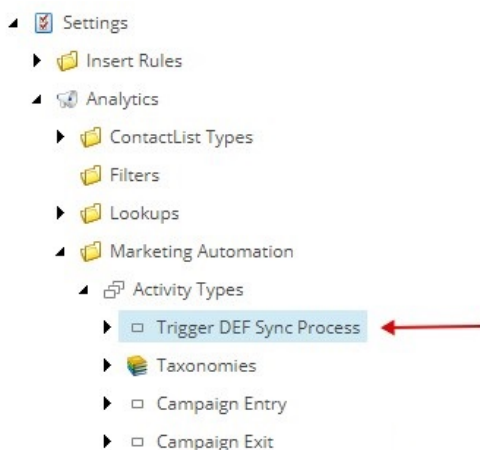
1.4.3. Extending the Marketing Automation Engine Service

This section describes how to update the marketing automation engine service in order to support Data Exchange Framework (DEF) Activity for Marketing Automation.

> **NOTE**
>
> If the Marketing Automation Engine Service is running, stop the service before starting the update.

The manual update requires you to:

1. Download the DEF Activity for Marketing Automation from the Sitecore Downloads page.

2. Copy the `Sitecore.DataExchange.MarketingAutomation.Activity.dll` file from the downloaded package to the Marketing Engine root folder.

3. Navigate to the `<AutomationEngine>/App_data/Config/sitecore/MarketingAutomation` folder.

4. Add a new file, name it `sc.DataExchange.MarketingAutomation.ActivityTypes.xml`, and add the following code to it:

```
<Settings>
    <Sitecore>
        <XConnect>
            <Services>

<DataExchange.MarketingAutomation.Activity.TriggerDEFSyncProcess>

<Type>Sitecore.Xdb.MarketingAutomation.Locator.ActivityTypeRegistration,
Sitecore.Xdb.MarketingAutomation</Type>
                    <LifeTime>Singleton</LifeTime>
                    <Options>
                        <Id>{E866BBD8-DB27-48DF-B3A2-EF4D7F5404D2}</Id>

<ImplementationType>Sitecore.DataExchange.MarketingAutomation.Activity.Tr
iggerDefSynProcess, Sitecore.DataExchange.MarketingAutomation.Activity</
ImplementationType>
                    </Options>
                </
DataExchange.MarketingAutomation.Activity.TriggerDEFSyncProcess>
            </Services>
        </XConnect>
    </Sitecore>
</Settings>
```

5. Add another new file, name it
`sc.DataExchange.MarketingAutomationActivityServices.xml`, and add the following code to it:

```
<Settings>
    <Sitecore>
        <XConnect>
            <MarketingAutomation>
                <Engine>
                    <Services>

<DataExchange.MarketingAutomation.Activity.TriggerDEFSyncProcessService>
```

```
<Type>Sitecore.DataExchange.MarketingAutomation.Activity.TriggerDefSyncPr
ocessService, Sitecore.DataExchange.MarketingAutomation.Activity</Type>

<As>Sitecore.DataExchange.MarketingAutomation.Activity.ITriggerDefSyncPro
cessService, Sitecore.DataExchange.MarketingAutomation.Activity</As>
                        <LifeTime>Singleton</LifeTime>
                    </
DataExchange.MarketingAutomation.Activity.TriggerDEFSyncProcessService>
                </Services>
            </Engine>
        </MarketingAutomation>
      </XConnect>
    </Sitecore>
</Settings>
```

6. Go to the `<AutomationEngine>/App_config` folder, and open the
   `connectionStrings.config` file. Add the Tenant Service connection strings. For example:

   ```
   <add name="def.service" connectionString="https://defdev.service" />
   ```

   > **NOTE**
   > You can add as many connection strings as you need.

7. On the Sitecore server, navigate to the `App_config` folder, open the
   `connectionStrings.config` file, and add the same connection strings you added in the
   previous step.

8. On the Sitecore server, supported Tenant Services are configured in the `App_config/`
   `Sitecore/MarketingAutomation` folder, in the
   `Sitecore.DataExchange.MarketingAutomation.Client.config` file.
   Use a patch file to add the supported Tenant Services. For example:

```
<dataExchange>
    <tenantServices>
        <marketingAutomation>
            <tenantServiceConnectionRepository
type="Sitecore.DataExchange.MarketingAutomation.Activity.Repositories.Ten
antServiceConnectionRepository,
Sitecore.DataExchange.MarketingAutomation.Activity">
                <tenantServices hint="list:AddService">

                    <tenantService>def.service</tenantService>
                    <tenantService>def.ma.service</tenantService>

                </tenantServices>
            </tenantServiceConnectionRepository>
        </marketingAutomation>
    </tenantServices>
</dataExchange>
```

> **NOTE**
>
> The Sitecore server can support a large number of Tenant Services. In order to specify which ones are relevant for Marketing Automation you have to include them as allowed services.

9. Start the Marketing Automation Engine service.

1.4.4. Installing Marketing Automation Extension for Tenant Service

The Marketing Automation Extension allows the *Trigger DEF Sync Process* marketing action to use the Tenant Service to trigger a Data Exchange Framework pipeline.

Before you install the Marketing Automation extension, you must have installed the Tenant Service.

To install the extension:

1. Download the Marketing Automation Extension for Tenant Service from the Sitecore Downloads page.

2. Unzip the package to a folder on your machine. Navigate to the `content\Website\bin` folder. Copy the DLL files to the `Website\bin` folder of your Tenant Service installation.

3. Configure the connection to the Tenant Services as described in Extending the Marketing Automation Engine Service.

1.5. Installing xConnect Provider for Data Exchange Framework

To install the xConnect provider:

1. Download the xConnect provider for Data Exchange Framework from the Sitecore download page.

2. On the Sitecore Launchpad, click **Control Panel**, and in the Administration section, click **Install a package**.
    The **Install a package** wizard guides you through the installation process.

3. Before you close the wizard, select **Restart Server**.

> **NOTE**
>
> You need to restart the Sitecore Server in order to force Sitecore to build/convert the xDB Collection Model as Sitecore items. Read more about how to convert models to Sitecore items in the developer guide.

2. Upgrade

This chapter guides you through the process of upgrading from Data Exchange Framework version 2.0.1 to version 2.1.

2.1. Upgrade prerequisites

Before upgrading, you must have Data Exchange Framework 2.0.1 installed on your Sitecore server.

2.2. Installing an upgrade

You upgrade Data Exchange Framework version 2.0.1 to version 2.1 using a Sitecore update package.

> **NOTE**
> If you have other products based on Data Exchange Framework (such as Sitecore Connect for Salesforce CRM , Sitecore Connect for Microsoft Dynamics 365 for Sales, or xDB Data Migration Tool) installed on your Sitecore server, please use the upgrade instructions for that product. Those instructions include the steps needed to upgrade Data Exchange Framework.

You must install the update package on the following Sitecore server roles:

- Content management
- Content delivery
- Aggregation

> **NOTE**
> This section applies to Sitecore Experience Platform 9.1. Later versions can require slightly different steps, or might involve different screens.

2.2.1. Update the Data Exchange Framework

To update the Data Exchange Framework:

1. Use the Sitecore Update Installation Wizard to install the following update package:

    - Data Exchange Framework 2.1.0.update

2. You must run the package analysis. The analysis will report that potential problems were found. Ignore this warning.

3. Click **Install the package** to continue.

After the wizard finishes, the installation results will report that potential problems were encountered. This is the expected result.

> **NOTE**
> The exact number of problems depends on the number of tenants you have defined, providers you have installed, and the languages you have configured. This is expected behavior.

2.2.2. Update Sitecore Provider for Data Exchange Framework

If you do not have the Sitecore provider installed on your Sitecore server, skip this section.

To update the Sitecore Provider:

1. Use the Sitecore Update Installation Wizard to install the following update package:

    • Sitecore Provider for Data Exchange Framework 2.1.0.update

2. You must run the package analysis. The analysis will report that potential problems were found. Ignore this warning.

3. Click **Install the package** to continue.

After the wizard finishes, the installation results will report that potential problems were encountered. This is the expected result.

> **NOTE**
> The exact number of problems depends on the number of tenants you have defined, providers you have installed, and the languages you have configured. This is expected behavior.

2.3. Post installation steps

Because of the highly customizable nature of the Data Exchange Framework, the update process can include manual steps that you must complete to successfully update the product.

2.3.1. Existing tenants

You might have tenants that were configured prior to upgrading your Sitecore server.

The upgrade process updates the templates and files that are included in the Data Exchange Framework, but it does not change items under any tenants that you previously created. This means that some new functionality is available to those tenants (such as features inherited from standard values), but not all.