

SharePoint Online App Model Guidance

Applies to: Office 365 Dedicated – Legacy Release

Topic Last Modified: 2014-08-08

The following topics provide an overview of the App Model for SharePoint Online Dedicated, with links to how to create app-based solutions, Tenant admin permissions and site provisioning solution support, and common tasks involving apps and their deployment, implementation, and governance.

- [Creating App-based Solutions using the App Model](#)
- [Tenant Admin Permissions and Site Provisioning Solution Support](#)
- [Common Tasks](#)

Creating App-based Solutions using the App Model

Topic Last Modified: 2014-08-07

The following topics cover how to create app-based solutions for SharePoint Online Dedicated using the App Model.

- [App Model Overview](#)
- [Developing Apps as Custom Solutions](#)
- [Required Policies for Solution Deployment](#)
- [App Creation and Deployment Best Practices](#)
- [Related Configuration Requests](#)
- [Further Resources](#)

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App Model Overview

Topic Last Modified: 2014-08-15

This provides an overview of what the App Model is and how it is now used to develop and deploy custom solutions for SharePoint Online Dedicated.

Moving on from fully trusted code

SharePoint Online Dedicated is moving away from fully trusted code for custom solution development and implementation. As new development scenarios become supported in the service, most will only be available by using the App Model.

The App Model supports the self-service deployment of apps, making them easier to deploy, administer, and govern for your users. You should start focusing your development efforts on the same model so that you can enjoy the benefits as soon as possible.

The App Model method

SharePoint 2013 introduces the App Model, which reduces the need for code running on SharePoint Server 2013. This enables greater app-deployment flexibility and back-end server and service stability. SharePoint Online Dedicated now supports the App Model as its default custom solution building method.

Benefits of using the App Model

What does the App Model offer to SharePoint Online Dedicated customers like you?

- **Self-service agility** You can now deploy solutions based on your own project schedule with no dependency on the SharePoint Online Dedicated support schedule.
- **Solution development and deployment on your own terms** There's no longer any server-side code running on the SharePoint Online Dedicated farm. This means you have full control of the solution development and deployment processes. No SharePoint Online review is required.
- **A lower custom-upgrade support cost** The separation of the platform update from your solution upgrade lowers the total cost of ownership for custom solution maintenance and support.

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- **The empowerment of developers with common web development skills** The App Model reduces developer ramp-up time by offering a familiar Web development experience. This helps reduce the dependency on the knowledge of core SharePoint concepts when writing extension code.

App Model custom solutions

Previously, developers had to use fully trusted code to deploy custom solutions. The App Model is now used for custom solution deployment, because custom solutions are now apps.

When we say custom solutions, we mean:

- Solutions and products that are developed by third parties.
- Solutions developed in-house by customers.



Note:

For more information about the relationship between SharePoint-based apps and solutions, see [Apps for SharePoint compared with SharePoint solutions](#).

You can deploy app-based custom solutions to any Web application in SharePoint Online Dedicated, including:

- Portal
- Team Sites
- OneDrive for Business
- Partner Access

However, there is currently one other method of customizing a SharePoint Online environment that this doesn't apply to:

- **Declarative solutions.** This type of customization is done using a Web-based mechanism (like applying style sheets, Extensible Stylesheet Language Transformations (XSLT) and out-of-the-box Web Parts, and other SharePoint Designer 2013 declarative solutions).



Important:

Sandboxed solutions based on server code have been replaced by apps for SharePoint in SharePoint 2013. Although sandboxed solutions that contain only declarative markup and JavaScript (also known as no-code sandboxed solutions, or NCSS) are still viable, Microsoft has deprecated the use of custom managed code within the sandboxed solution. For more information, see [Deprecation of Custom Code in Sandboxed Solutions](#).

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Developing Apps as Custom Solutions

Topic Last Modified: 2015-03-09

There are a number of steps that are generally involved in the development of App Model-based custom solutions. We talk about them in the following sections.

Governance decisions

Before you start to build custom apps, there are some governance decisions to make. Each decision point is supported by the SharePoint Online Dedicated platform in one of the following ways:

- As part of the farm build, by using the Configuration Request (CR) process.
- By using self-service configuration options.

 **Note:**

See [Further Resources](#) for more guidance.

Building app-based solutions

The following table lists tasks, the roles of the people who perform those tasks, and the responsibilities involved in building app-based solutions for SharePoint Online Dedicated.

Tasks	Roles	Responsibilities
Envision and design a solution	Solution architect	Understands the business problem or needs and designs the solution accordingly with supported SharePoint Online Dedicated features
Solution development	Development team	Uses Web application standards and tool set to develop the app solution
Package and publish an app	App Catalog admin	Packages the solution with manifest information and publishes it to the App Catalog
App usage	Site Owner	Discovers, acquires, installs, and launches the app
App management and monitoring	Site Owner, App Catalog admin	Monitors the usage and health of the app as well as maintains the overall app life cycle events, like deployment, upgrade, and removal

Your IT teams and site users perform all of these roles and responsibilities. This architecture gives you control when building customization or exposing rich data, like social feeds and line-of-business (LOB) applications, with your SharePoint Online farm.

 **Note:**

For more information on common tasks and who performs them for app-based solutions, see [Common Tasks](#).

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App configuration: basic and advanced

App configuration for SharePoint Online Dedicated breaks down into two parts, basic and advanced:

- **Basic configuration (applies to all customers)** See the latest [SharePoint Online Dedicated Customer Build Guide](#) for details. The following sections in the Build Guide are directly relevant to app configuration:
 - “Network and DNS Configuration” Use ***.001dspoapp.com** for the SharePoint Apps namespace (sample app domain).
 - “Create Service Applications” Use **New-SPSubscriptionSettingsServiceApplication** for the config subscription service. For more information, see [New-SPSubscriptionSettingsServiceApplication](#).
 - “Configure the App Management Service” Follow all the steps in this section.
- **Advanced configuration (provided on an as-needed basis for customers that require a provider-hosted app)** SharePoint Online Dedicated supports three kinds of provider-hosted apps:
 - Azure
 - On-premises
 - Third-party hosting facilitiesSee [How does SharePoint Online Dedicated support the Provider-hosted Model?](#) for more details.



Important:

You must have an Office 365 SharePoint multi-tenancy site in order to authorize provider-hosted apps on your SharePoint Online Dedicated site. If you want to build a farm to mirror the SharePoint Online Dedicated farm for testing, see [How to: Use an Office 365 SharePoint site to authorize provider-hosted apps on an on-premises SharePoint site](#).

App planning

After you’ve decided on app governance and configuration, you can begin planning. See the following sections for step-by-step coverage for how to plan for apps:

- [Step 1 – Plan the hosting environment](#)
- [Step 2 – Plan the app type](#)
- [Step 3 – Plan app authorization policies and permissions](#)
- [Step 4 – Plan the development environment](#)

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- [Step 5 – Plan for app development](#)
- [Step 6 – Plan for app package and deployment](#)
- [Step 7 – Plan for App Catalog site management](#)
- [Step 8 – Plan for app monitoring and support](#)

Step 1 – Plan the hosting environment

The SharePoint Online Dedicated platform facilitates two broad approaches to hosting your apps for SharePoint: SharePoint-hosted and provider-hosted. For the provider-hosted model, the hosted location can be one of the following:

- On-premises Web servers
- Third-party hosted servers
- Azure servers

These are not exclusive categories. An app for SharePoint can have both SharePoint-hosted and provider-hosted components. Each approach has key features you should consider when deciding how to host your apps.

The following table is a high-level summary of hosting options. For more detailed descriptions of each option and design considerations, please see:

- [Overview of apps for SharePoint](#)
- [Choose patterns for developing and hosting your app for SharePoint](#)

Hosting Model	App Location	Dedicated Supported?	Description	Pros	Cons
SharePoint-hosted app	SharePoint farm (SharePoint Online Dedicated)	Yes	Reuses SharePoint Web elements (lists, pages, out-of-box (OOB) Web Parts, client-side technology, declarative workflows, custom actions, and the Business Data Catalog (BDC) model)	<ul style="list-style-type: none"> • Simple to deploy • No extra server is required • Built-in authentication • Full fidelity between SharePoint Online Multi-Tenant, SharePoint Online Dedicated, and on-premises farms 	<ul style="list-style-type: none"> • Limited to client-side code as no server-side code is allowed • Limited processing power and functionality (caching options, server process, and so on)

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Hosting Model	App Location	Dedicated Supported?	Description	Pros	Cons
Provider-hosted app	On-premises server	Yes	<ul style="list-style-type: none"> Server-side code runs on customer on-premises servers or on servers hosted by third parties The customer has full control over app scaling 	<ul style="list-style-type: none"> Supports server code Created like a Web application that isn't using SharePoint Gets remote events from SharePoint using CSOM, REST, and OAuth Provider-hosted apps can have SharePoint elements, including SharePoint-hosted components, as part of their solutions 	<ul style="list-style-type: none"> Requires additional UI design consideration for the SharePoint-integrated experience Requires OAuth integration when working with SharePoint data

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Hosting Model	App Location	Dedicated Supported?	Description	Pros	Cons
Azure provider-hosted app	Azure server	Yes	<ul style="list-style-type: none"> Server-side code runs on an Azure server The customer can use Azure Infrastructure as a Service (IaaS), Platform as a Service (PaaS), and other capabilities within the Azure stack (such as connectivity, caching, the Access Control service (ACS), web sites, and storage) Scales to unlimited cloud-based storage 	The same as the previous entry	The same as the previous entry



Note:

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SharePoint-hosted apps can't be hosted on Security Assertion Markup Language (SAML)-based Web applications.

For more information, see:

- [SharePoint 2013: Hello World SharePoint-hosted app](#)
- [How to: Create a basic SP hosted app](#)
- [SharePoint 2013: Using the search REST service from an app for SharePoint](#)

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How does SharePoint Online Dedicated support the provider-hosted model?

A SharePoint Online Dedicated farm trusts the Azure Access Control Service (ACS) instance associated with your subscription. ACS then acts as a common authentication broker between the SharePoint Online Dedicated farm and the app and as the online security token service (STS). ACS generates context tokens when the app requests access to a SharePoint resource.

For a provider-hosted app to work on SharePoint Online Dedicated, the app hosting server must be able to talk to ACS in order to perform a token exchange. You might need additional configurations to enable this scenario (like Web proxy settings). For more information, see [How to use an Office 365 SharePoint site to authorize provider-hosted apps on an on-premises SharePoint site](#).

If you decide that your app will use the provider-hosted model and you're hosting it within your own datacenter Web servers, or there is another application hosting this infrastructure under your control (for example, Azure), submit the Configuration Request (CR) [Provided Hosted Apps \[SPOD-13-204\]](#) to your service delivery manager (SDM) to configure provider-hosted app support. This needs to be done only once.



Note:

This configuration applies to both customer-created apps and SharePoint Store apps.



Important:

A [high-trust app](#) is a provider-hosted app for SharePoint for use on-premises, which uses the server-to-server protocol (S2S). SharePoint Online Dedicated does not support the S2S protocol for provider-hosted apps.

Step 2 – Plan the app type

Support for different types of apps is the same across SharePoint Online Multi-Tenant, SharePoint Online Dedicated, and SharePoint 2013 on-premises. The following table describes the types of apps you can create, how to use them, examples of use, and the host locations available for them.

Type	Use Cases	Description	Available Host Locations	Sample Code and Examples of Use
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Type	Use Cases	Description	Available Host Locations	Sample Code and Examples of Use
Immersive (full page app)	<ul style="list-style-type: none"> Line-of-business (LOB) integration The app is hosted on SharePoint, rendering data from an Enterprise Resource Planning (ERP) system 	Launches a full-page app	<ul style="list-style-type: none"> Host web App web Remote web 	SharePoint 2013: Hello World SharePoint-hosted app SharePoint 2013: Mix remote web applications with SharePoint components in apps
App part	Features reusable components, like weather and news parts, that can be embedded within host web pages	This is a type of Web Part that's represented by the ClientWebPart class. It's deployed to the host web and is used like a wrapper for an IFrame that hosts a page of the app.	<ul style="list-style-type: none"> Host web 	SharePoint 2013: Display remote webpage content using the coffeemaker app part
SharePoint extensions	<ul style="list-style-type: none"> Edit Control Block (ECB) actions Ribbon actions 	A custom navigation link leads to a custom solution	<ul style="list-style-type: none"> Host web App web 	SharePoint 2013: Localize the app web, host web, and remote components of an app
SharePoint elements	<ul style="list-style-type: none"> Site columns Content types Modules Workflow* Field type List definition 	SharePoint declarative elements	<ul style="list-style-type: none"> Host web* App web 	SharePoint 2013: Customize a field type by using client-side rendering

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Type	Use Cases	Description	Available Host Locations	Sample Code and Examples of Use
Combination of types	In a custom or mobile app, you can interact with data, like: <ul style="list-style-type: none"> • Lists • Search • Taxonomy • Social • Profile 	A composite app of the various elements described in this table	<ul style="list-style-type: none"> • Host web • App web 	SharePoint 2013: Using the search REST service from an app for SharePoint

*Declarative workflows can only run within the app web.

For more information, see:

- [Important aspects of the app for SharePoint architecture and development landscape](#)
- [Optimizing User Experience of Apps for SharePoint 2013](#)
- [Host webs, app webs, and SharePoint components in SharePoint 2013](#)
- [Apps for SharePoint compared with SharePoint solutions](#)

Step 3 – Plan app authorization policies and permissions

App authentication in SharePoint 2013 is a separate process than user authentication. Specifically, SharePoint users don't use a sign-in authentication to access and use apps.

App authentication uses the [Open Authorization \(OAuth\) 2.0 protocol](#). This means it doesn't add to the set of existing user authentication or sign-in protocols, like WS-Federation. As a result, app authentication and OAuth don't appear in the list of identity providers.

App authorization policies

The authorization policy determines whether the app accesses SharePoint resources based on a current user's context, the app's security context, or a combination of both. SharePoint Online Dedicated supports these types of policies:

- User-only
- App-only
- User+app

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See [App authorization policy types in SharePoint 2013](#) for supported authorization policy details and usage guidance.

For an example of app policy development and some related code, see [SharePoint 2013: Make app-only policy type calls in a remote app \(CSOM\)](#).

App permissions

An app for SharePoint has its own identity. This means it has certain permissions and user rights, just like users and groups.

For detailed app permission considerations and design guidance, see [App permissions in SharePoint 2013](#).

The following tables describe the supported and not supported SharePoint app permission requests for scope URIs in terms of SharePoint Online Dedicated.

Supported scope URIs and associated permissions

Scope URI	Permissions
Site collection http://sharepoint/content/sitecollection	Read, Write, Manage, FullControl
Website http://sharepoint/content/sitecollection/web	Read, Write, Manage, FullControl
List http://sharepoint/content/sitecollection/web/list	Read, Write, Manage, FullControl
http://sharepoint/social/microfeed	Read, Write, Manage, FullControl
http://sharepoint/taxonomy	Read, Write
http://sharepoint/bcs/connection	Read

Scope URIs and associated permissions that are not supported

Scope URI	Permission
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Scope URI	Permission
Tenancy http://sharepoint/content/tenant	Read, Write, Manage, FullControl
http://sharepoint/social/tenant	Read, Write, Manage, FullControl
http://sharepoint/social/core	Read, Write, Manage, FullControl
http://sharepoint/search	QueryAsUserIgnoreAppPrincipal
http://sharepoint/userprofiles	Read

For more information, see:

- [Plan for app authentication in SharePoint 2013](#)
- [SharePoint 2013: Perform basic data access operations by using CSOM in apps](#)
- [App-scoped external content types in SharePoint 2013](#)
- [Get started developing with social features in SharePoint 2013](#)
- [SharePoint 2013: Using the search REST service from an app for SharePoint](#)

The App Catalog admin can control not only the app's own permissions and policy but who or what site can install the apps. See [Step 6 – Plan for app package and deployment](#) for more details.

Step 4 – Plan the development environment

For app development, you have two choices:

- Create and use developer sites in your production (PROD) environment to create and test apps before deploying them to the PROD App Catalog sites.
- Build an on-premises farm using the [SharePoint Online Dedicated Customer Build Guide](#).

App Catalog sites are created as part of the standard SharePoint Online Dedicated farm build. You can create your own developer site collections with the Developer Site template.



Note:

For upgrade customers, SharePoint 2013 site creation must be enabled to access this new SharePoint 2013 site template.

SharePoint Online Dedicated also offers a pre-production environment (PPE) that IT Pro customers use for two primary reasons:

- To perform integration tests on your SharePoint Online Dedicated farm
- To verify that all configuration settings are working

Unlike Fully trusted code-based custom solution development, you don't have to first deploy an app to the PPE before deploying it in your PROD environment. Developers may choose to develop directly in

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the SharePoint Online Dedicated PROD farm using a developer site collection. Doing this isolates an app from all other site collections. Ultimately, you should choose the developer model and software development life cycle that best fits your business.

For more information, see [Developing apps for SharePoint on a remote system](#).



Note:

When deploying an app to a SharePoint Online Dedicated environment, there may be additional network connectivity and Domain Name System (DNS) configuration required. The PPE environment is intended to help you identify those required configurations and validate settings before deploying to the PROD environment.

One of the new features of the App Model is that you can develop App Model solutions on client computers without needing the full SharePoint farm to be installed on your developer computer. This offers great portability and developer agility while also simplifying your development environment support cost.



Important:

If you decide to use a remote installation, you'll need to install the client object model redistributable from the [SharePoint Server 2013 Client Components SDK](#) on the target installation.

To build an on-premises SharePoint Online Dedicated farm for development or integrated testing purposes, refer to the [SharePoint Online Dedicated Customer Build Guide](#) farm build instructions.

To enable provider-hosted app support, you need to set up an ACS trust broker to create the SharePoint Online Dedicated-compatible environment. See [How does SharePoint Online Dedicated support the provider-hosted model?](#) for more details.

Additionally, see [Start: Set up the development environment for SharePoint 2013](#) for further configuration guidance.

The following table provides tools developers can use to create App Model-based solutions.

Tool	Development Needed?	Publish App to SharePoint Online Dedicated?	Download Link
Visual Studio 2012 and SharePoint Developer Tools	Yes	Yes	Office 365 APIs Preview

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Tool	Development Needed?	Publish App to SharePoint Online Dedicated?	Download Link
Napa	Yes*	Yes	Introducing Office 365 APIs Preview
SharePoint Online Dedicated	Yes (declarative workflow)	No	Not applicable

*Napa is a web-based integrated development environment (IDE) that supports SharePoint-hosted app development. You can use Napa and export the app package to Visual Studio for further development. See [Create apps for Office and SharePoint by using "Napa" Office 365 Development Tools](#) for more details.

Step 5 – Plan for app development

App development for SharePoint Online Dedicated follows the same principals as app development for SharePoint 2013 in terms of things like application programming interface (API) selection and data access considerations.

Before you start developing apps, you should get familiar with the following content. It covers topics like the app manifest, data access, user identity interaction, adding SharePoint features to your apps, and localization.

- [Develop apps for SharePoint](#)
- [Apps for Office and SharePoint SDK](#)
- [Choose the right API set in SharePoint 2013](#)
- [Get started with the SharePoint 2013 REST service](#)
- [Data access options for apps in SharePoint 2013](#)
- [Data storage options for apps in SharePoint](#)
- [UX design for apps in SharePoint 2013](#)
- [Adding troubleshooting instrumentation to an app for SharePoint](#)
- [Register app dependencies in SharePoint 2013](#)

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Note:

If you are an app architect, we recommend you also plan for multi-tier architecture design, like the user interface (UI), business logic layers, and data layer allocation.

Keep in mind that apps sometimes have dependencies. See [Register app dependencies in SharePoint 2013](#) for dependency guidance.



Important:

Be aware that not all services are supported on the SharePoint Online Dedicated platform. See **SharePoint Online Service Description** for supported dependency services.

In SharePoint 2013, there is a new site template called the developer site template. The site template is available under the Enterprise template type. This is the only target site collection from which apps can be deployed from Visual Studio directly without an installation in the App Catalog site first.

Step 6 – Plan for app package and deployment

For a provider-hosted app to be able to interact with SharePoint 2013 using [OAuth](#) and then be deployed to a SharePoint Online Dedicated farm, you must register and get an identity for your app.

When you register your app, SharePoint generates:

- The client ID.
- The client secret to assign to the corresponding app display name.
- The app domain.

You can also associate a redirect URI to the app when registering it. (In some cases, this happens by default.)

After you've registered your app, your app has an app identity and is associated with a security principal. See [Publish apps for Office and SharePoint to the Microsoft Seller Dashboard](#) for additional details.

You can use Visual Studio and SharePoint 2013 development tools to create a temporary app identity for use during the app development process. However, to deploy an app to a SharePoint Online Dedicated farm, the app must be registered by using the appregnew.aspx page. For more information, see Guidelines for registering apps for SharePoint 2013 and [Using Visual Studio to Build and Deploy Apps](#).

Before you build your provider-hosted app, you must create an app ID and app secret. To create these values, go to `http://[SharePointWebAppName]/_layouts/15/appregnew.aspx`.

App Information
The app's information, including app id, secret, title, hosting url and redirect url.

App Id:	<input type="text"/>	Generate
App Secret:	<input type="text"/>	Generate
Title:	<input type="text"/>	
App Domain:	<input type="text"/>	
	Example: "www.contoso.com"	
Redirect URI:	<input type="text"/>	
	Example: "https://www.contoso.com/default.aspx"	

App Information page

Because SharePoint Online Dedicated has a configured trust with the Azure Access Control Service (ACS), the same app ID and app secret can be used across the SharePoint Online Dedicated PROD, PPE, and disaster recovery (DR) farms. You only need to register the app once from one of the farms. If you include the app ID in the package, that same package can be deployed across all the farms.

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 **Note:**

If you develop and test SharePoint apps in an on-premises environment first, you'll need to incorporate the SharePoint Online Dedicated app ID and app secret before moving the app package to SharePoint Online Dedicated.

Using Visual Studio to build and deploy apps

If you publish your provider-hosted app using the Visual Studio Publish Wizard, Visual Studio prompts you for a client ID and client secret during the publishing process.

In the **Publish** dialog box, click **Publish**. The resulting app package file (which has the Azure Web Site package inside) has an .app file extension and is saved in the app.publish subfolder located in either the bin\Debug or the bin\Release folder of your Visual Studio project.

For a detailed description of the Visual Studio features that support SharePoint app development, see [What's new in SharePoint development tools in Visual Studio](#).

Build and upload an app package

You can also modify the configuration and manifest files yourself based on the IDs generated from the **appregnew.aspx** page. The IDs for the SharePoint Online Dedicated PPE, PROD, and DR farms are all the same.

 **Important:**

You must acquire these IDs from the target environment.

 **Note:**

For more information on using the **appregnew.aspx** page, see [Guidelines for registering apps for SharePoint 2013](#).

The following is an example of how the *ClientId* value is used in the AppManifest.xml file.

```
<AppPrincipal>  
  <RemoteWebApplication ClientId="a044e184-7de2-4d05-aacf-52118008c44e" />  
</AppPrincipal>
```

In the Web.config file in your Visual Studio project, enter the app ID value as the *ClientId* value.

```
<appSettings>  
  <add key="ClientId" value="a044e184-7de2-4d05-aacf-52118008c44e" />  
  <add key="ClientSecret" value="w7om5dfh zr7k5rnnA551GGp6k6z6XHprjOn8VPm6xFw=" />  
</appSettings>
```

The following is an example of how the values are used in the Web.config file of a Web application:

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```
<configuration>
...
<appSettings>
<add key="ClientId" value="a044e184-7de2-4d05-aacf-52118008c44e" />
<add key="ClientSecret" value="l0z/8TzWN0yQBzMBSEztYts2Vt3Eo/oE3rfCdPaogKQ=" />
</appSettings>
...
</configuration>
```

You can also use Visual Studio to deploy and debug apps on your own farm for testing purposes.



Note:

Only the Developer template works with Visual Studio for deployment or debugging purposes. Other kinds of templates don't work.

To deploy apps to the SharePoint Online Dedicated PPE and PROD environments, use the Visual Studio Publish Wizard or your own integrated build procedure to generate the app package. Next, upload the app package, which contains the specific farm-generated app ID and client secret, to the App Catalog site for deployment. After the app package is uploaded, it's available for installation in the target farm. As mentioned before, the SharePoint Online Dedicated farms (PPE, PROD, and DR) share the same app ID and client secret for the same app.

To install the app on a SharePoint Online Dedicated farm:

1. Log on to the wanted SharePoint Online farm (PPE or PROD).
2. Navigate to the corporate catalog site precreated for your Web application.
3. On the **App Catalog** page, click **upload**, browse to your app package on the **Add a document** form, and then click **OK**. An item property form opens.
4. Fill out the form as needed, and then click **Save**. The app is saved in the catalog.
5. Navigate to any web site in the Web application, and then click **Site Contents**. The **Site Contents** page opens.
6. Click **Add an App**. On the **Add an App** page, find the app. If there are too many pages to scroll through, you can enter any part of the app title that you entered in the AppManifest.xml file into the search box.
7. When you find the app, click **Details**.
8. On the **App Details** page, click **Add It**.
9. You are prompted to grant it permissions. Click **Trust It** in the dialog box.
10. The **Site Contents** page opens and the app is listed.

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For a short time, a message below the title indicates that the app is being added. When this message disappears, you can click the app title to launch it. (You may need to refresh the page before the message disappears.)

Deploying apps

In order to deploy apps, your App Catalog admin should have the proper permissions to the App Catalog site (/sites/appcatalog) as the member of the Site Owners or Designers group for the App Catalog. The Catalog Site admin can choose to grant additional permissions for delegated management tasks.

App deployment scope and deployment destination

Apps built for SharePoint have an app scope. The two possible app scopes are:

- Web scope
- Tenant scope

In a SharePoint Online Dedicated farm, the tenant scope is the Web application host of the catalog site.



Note:

For more information, see [Tenancies and deployment scopes for apps for SharePoint](#).

The scope of the app is decided by an App Catalog admin as well as determined by how the app is installed. For example, after an app is uploaded to the App Catalog of a tenancy, it's immediately available for installation on websites within the tenancy on a website-by-website basis. Apps that are installed this way have a web scope.

Your App Catalog admins can also batch-install the app to a subset of websites within the tenancy. Apps that are installed in this way have a tenant scope.

The Tenant admin can specify which web sites the app is installed on by using one of the following lists:

- Managed paths
- Site templates
- Site collections

You can batch-install an app after you install it at the **Catalog** site. You can also deploy it to various filtered target sites by clicking **Deploy**.

If an app that includes an app web is batch-installed, only one app web is created and shared by all of the host web sites on which the app is installed. The app web is located in the site collection of the corporate App Catalog.

A batch-installed app can be removed by uninstalling it from the **Catalog** site. For batch-deployed apps, a target site collection user can see and access the app. When a user clicks **App Launch**, that user is routed to the App Catalog site, which serves as the host web for the shared app.



Note:

When you uninstall an app, many other items (like artifacts and data within the solution) can be affected.

Even though an app is deployed as a tenant-scoped app, if a Site Owner can see the app, they can also install the app on his or her own site. In this instance, you can see two app links within the site: **shared** and **site collection hosted instance**.

Step 7 – Plan for App Catalog site management

App Catalogs are created for each Web application (for example, [http://\[web application name\]/sites/appcatalog](http://[web application name]/sites/appcatalog)). App Catalog sites can only be accessed by your App Catalog admins who have a Web application policy that grants explicit Full Control rights to all site collections in a Web application. App Catalog admins who have rights can use the standard site permissions UI to grant additional access to users.

Users must be given the Read permission in order to browse the App Catalog from their site collections. You can use permissions to control which users can see the newly deployed apps and install them on their own sites. Once the app is available in the App Catalog, end users can search for them in their own site collections. See [Manage the App Catalog in SharePoint 2013](#) for details on how to add apps and remove apps from the App Catalog.

App Catalog admins can also perform app store purchase-request management tasks within the catalog site. In addition to request management, the license management delegation is also managed within the site. See [Configure app requests and SharePoint Store settings](#) in [Manage the App Catalog in SharePoint 2013](#) for more details.

From the App Catalog site, the App Catalog admin can also manage store app license assignments. See [Monitor and manage app licenses in SharePoint Server 2013](#) for more details.

Step 8 – Plan for app monitoring and support

On your SharePoint Online Dedicated farm, there is an App Catalog for each Web application:

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- Portal
- Team Sites
- OneDrive for Business
- Partner Access

With this in mind, apps are targeted at each Web application. As the App Catalog admin, you can assign separate owners to manage each Web application's corporate App Catalog site. The App Catalog admin can manage app purchase requests, license allocation, and license delegation; purchase store apps; and deploy internal apps to make them available for site collection owners to install within their own site collections.

App Catalog site permission and features: The App Catalog admin

The App Catalog admin can:

- Deploy tenant-scoped apps. This means they can deploy the app at a centralized location and then make the app accessible to many site collections.
- Upgrade apps by deploying newer versions. All site collection owners can then deploy the latest version within their sites.
- Remove apps from the available app list by uninstalling the app. No new instance can be deployed after an app is removed from the App Catalog.

Once an app is deployed at the site collection, the owner of the site collection can monitor the usage and any error associated with the app. The usage data is collected on a daily basis.

SharePoint Store access

Your SharePoint Online Dedicated farm is configured to support app purchases from the SharePoint Store as well as downloads by Site Owners. If you want to require App Catalog admin approval before apps can be downloaded, see [Require apps to be approved for SharePoint Online Site Owners](#) of the [App Catalog Admin Tasks](#) article for more details.

App upgrades and removal

App updates are deployed in the same way that the first version of the app is deployed. The app for SharePoint update process help ensure that the app's data is preserved if the update fails for any reason.

For updates, use the same product ID in the app manifest that you used for the original version. The version number in the app manifest should be greater than the version number of the original app or its

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most recent update. You should also consider data migration and compatibility when updating. For more details, see [App for SharePoint update process](#).

App troubleshooting instrumentation

See [Add troubleshooting instrumentation to an app for SharePoint](#) for more information about how to use the app-monitoring UI to perform troubleshooting and instrumentation support.



Note:

Among the available instrumentation, Internet Information Services (IIS) and ASP.NET tracing can only be configured at the app hosting location, like your app servers or Azure. SharePoint Online Dedicated has its own monitoring in place that can't be customized. See [Debugging ASP.NET Applications in IIS](#) for more details.

Required Policies for Solution Deployment

Topic Last Modified: 2015-03-09

This covers the policies required for SharePoint Online Dedicated customers to deploy App Model-based custom solutions to their SharePoint Online environment.

Deployment

The following table describes the deployment paths available in terms of mapping solution sources to solution targets for SharePoint Online Dedicated.

Solution Source	Solution Target
On-Premises SharePoint Online Dedicated Build Farm	SharePoint Online Dedicated Pre-Production Environment (PPE) Farm Developer site(s)
On-Premises SharePoint Online Dedicated Build Farm	SharePoint Online Dedicated Production (PROD) Farm Developer site(s)
SharePoint Online Dedicated PPE Farm Developer site(s)	SharePoint Online Dedicated PPE Farm App Catalog Site(s)
SharePoint Online Dedicated PROD Farm Developer site(s)	SharePoint Online Dedicated PROD Farm App Catalog Site(s)
On-Premises SharePoint Online Dedicated Build Farm	SharePoint Online Dedicated PPE Farm App Catalog Site(s)
On-Premises SharePoint Online Dedicated Build Farm	SharePoint Online Dedicated PROD Farm App Catalog Site(s)

Maximum limits and boundaries for solutions

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The following table provides recommended guidelines for Web app deployment in your SharePoint Online Dedicated environment. You use this to determine whether your planned deployment falls within acceptable performance and capacity limits and to appropriately configure limits in your environment.



Note:

To learn about the tested performance and capacity limits of SharePoint 2013 and how those limits relate to acceptable performance, see [Software boundaries and limits for SharePoint 2013](#).

Limit	Maximum value	Limit Type	Details
Apps displayed on the Manage Licenses page	2,000	Boundary	Up to 2,000 apps (purchased from the store) can be displayed on the Manage Licenses page. You can still manage the license of any app by going to the All Site Contents page of the site where the app is installed and clicking Licenses or by searching for the app using Marketplace search.
Number of app licenses per tenant	1 million	Supported	The maximum supported number of licenses (purchase of apps from the store) for a single SharePoint deployment, either on-premises or SharePoint Online. Exceeding this limit can cause severe performance degradation.

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Limit	Maximum value	Limit Type	Details
Number of apps displayed on the Add an App page	240	Boundary	After this limit is reached, only the first 240 apps are displayed, and you are prompted to search specifically for your app.
Number of managers per app license	30	Boundary	Only 30 people can manage a license. License managers can add or remove users or delete a license.
Number of app licenses assigned to a user viewable by that user	2,000	Boundary	When more than 2,000 licenses are assigned to you, you no longer see any apps on the Add an App page. Instead, you are prompted to search in the App Catalog or the SharePoint Store.
Number of apps in the App Catalog viewable by a single user	500	Boundary	When more than 500 apps from your corporate App Catalog are available to you, you no longer see any apps on the Add an App page. Instead, you are prompted to search in the App Catalog or the SharePoint Store.

Severity level assignment

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Apps that don't function properly or that cause problems are assigned severity levels. These apps are sequestered to a separate Web application that can be hosted either locally or remotely. This limits the impact to your SharePoint farm.

If an app impacts the stability and service uptime levels of your SharePoint Online farm, Microsoft reserves the right to remove the app from the App Catalog in order to contain the impact.

Break-fix policy

If an app has production issues, your App Catalog admin can remove the app from the App Catalog to prevent it from further deployment and usage. You are responsible for the deployment and removal of the app.

If the app has already been deployed to your site collections, each Site Collection admin can do the following for his or her specific site:

- Monitor app instance usage
- View error information
- Uninstall the app



Note:

For SharePoint 2013, there is currently no ability for the batch removal of apps installed in several site collections.

System monitoring

With the new App Model, both the server code and the core solution logic either run on the client side or are hosted on the application server. SharePoint Online Dedicated consistently monitors the health of your farm to support your solutions. However, you need to monitor the health, performance, and capacity of the application servers hosting your app.

The specific monitoring tools and process vary depending on your Web application implementation.

For more information about Microsoft Web application stacks, see the following:

- [Azure Metrics Hub Monitoring](#)
- [Best Practices for the Design of Large-Scale Services on Azure Cloud Services](#)
- [Monitoring .NET Applications](#)

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Log requests

Due to confidentiality concerns, Microsoft doesn't provide any of the following logs to customers:

- Unified Logging Service (ULS)
- Internet Information Services (IIS)
- Application
- Security
- System

If you have an issue affecting your deployment environment that might require the examination of such logs, SharePoint Online Dedicated provides assistance when you:

- Submit a Service Request (SR) for the issue.
- Provide detailed steps so that Microsoft can reproduce the issue. Microsoft then makes use of the appropriate log information to resolve the issue.

ISV and SharePoint Store support

SharePoint Online Dedicated supports both independent software vendor (ISV)-created and SharePoint Store solutions. For more details, see [Guidelines for registering apps for SharePoint 2013](#).

Known issues

The following is a list of App Model issues and their solutions and workarounds.

- **“This content cannot be displayed in a frame” error message** This is caused by cookie sharing across different Internet Explorer zones. For more information, see [IFraming SharePoint-hosted pages in apps](#).
- **Encountering multiple sign-in prompts when using an app** To correct this, add the following App Management URL domains to your local intranet zones:
 - *.xxxdspoapp.com to local intranet sites
 - *.xxxdspodapp.com to local intranet sites



Note:

The placeholder xxx is a unique number assigned to each customer. Contact your service delivery manager (SDM) for more information.

- **Security Assertion Markup Language (SAML) claim authentication support** SharePoint-hosted apps can't be hosted on SAML-based Web applications.

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- **App removal** When you remove an app, you are not only uninstalling the app itself but the whole app web and the content it contains.
- **App permission request scope** See [App Permissions in SharePoint 2013](#) for details.
- **An aggregated app monitoring view is not currently supported** Site Collection admins can access each site collection to view app instance usage.
- **Apps for Office don't start** This can happen when you disable **Protected Mode** in the **Internet** zone in Internet Explorer. For more information, see [Apps for Office 2013 do not start if you disable protected mode for the Internet zone in Internet Explorer](#).
- **The batch removal of apps from multiple site collections isn't supported** Windows PowerShell can be used for batch operations performed on on-premises farms. Currently, SharePoint Online Dedicated doesn't support this feature. For more information, see [Remove app for SharePoint instances from a SharePoint 2013 site](#).

App Creation and Deployment Best Practices

Topic Last Modified: 2014-08-18

The following is a list of best practices for SharePoint Online Dedicated app creation and deployment. For a more comprehensive list for SharePoint 2013, see [SharePoint 2013 Best Practices](#).

App versioning

App upgrades must have incremented versions to enable existing users to download the newest version. Versions are in this format: 1.0.0.0.

If you don't increment the version in either the new or the upgrade XML file within the app package, Site Owners won't download the new app to their site.

Authentication and authorization

For an app hosted on SharePoint, authentication and authorization is not an issue, because all your app resources (for example, pages and lists) are stored in the app-web scope and SharePoint Online takes care of it. However, for provider-hosted apps, the app resources are stored either on the developer-hosted server or on Azure.

At that point, *you need to protect the apps yourself and deal with situations when access is needed to the host Web resources*. Therefore, authentication and authorization considerations are important when using the provider-hosted app method.

UI design

Apps are a new concept for SharePoint, empowering Site Owners to add new functionality to their sites while also helping ensure security and reliability for the SharePoint site itself. Creating a good app requires more than fantastic functionality (although that's obviously important). You also must ensure that the app looks right and fits seamlessly into the site where it's installed.

SharePoint Online Dedicated provides methods to make your UI follow the SharePoint Online Dedicated style, as described in the following sections.

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Chrome controls

To add SharePoint 2013 chrome controls to your page:

1. Add the following reference to your JavaScript:
`https:///_layouts/15/sp.ui.controls.js;`
2. Add the following **div** section in your page content:
`<div id='chromeControlContainer'></div>`
3. Set the options in your JavaScript.
4. Set the host site URL dynamically in your code. You need to do this because you don't know where the app will be installed during your development.

CSS reference

For Cascading Style Sheets (CSS), you need to reference `defaultcss.ashx` in your page. This means you need to find the host web URL and then use this URL when you generate your HTML.



Note:

This doesn't guarantee a theme change for the host web's theme because the CSS is cached by the browser.

Logging and tracing

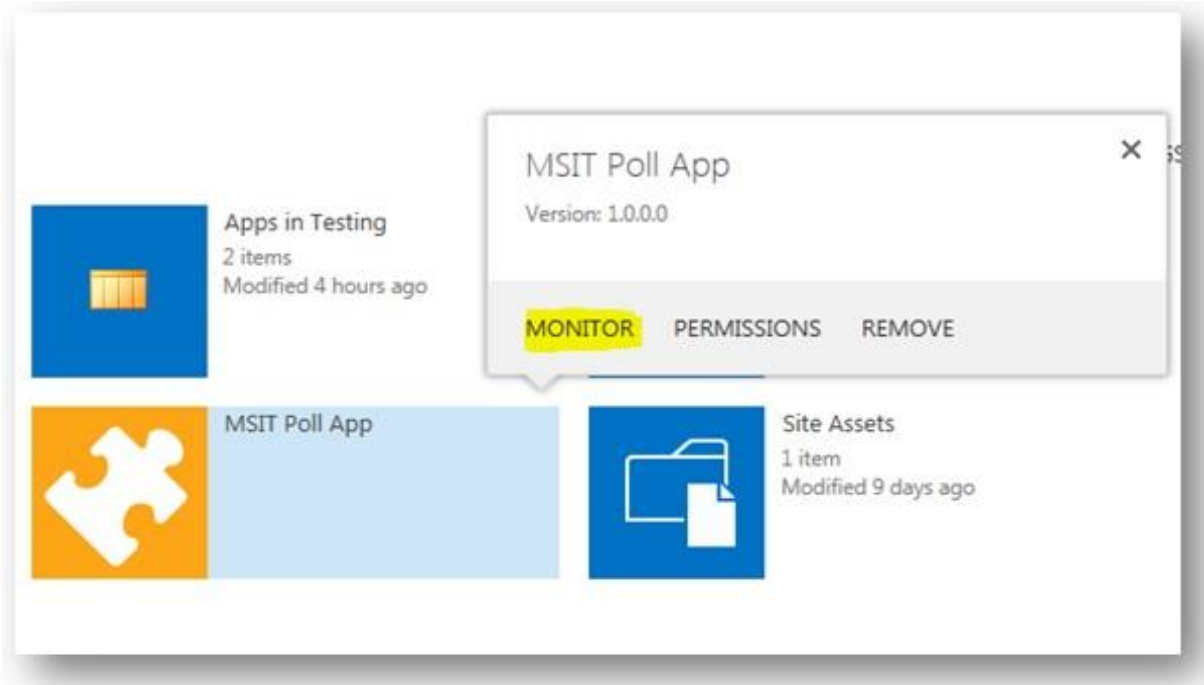
Server-side code for your apps is provider-hosted. This means you are responsible for implementing your own logging and tracing on the host servers.



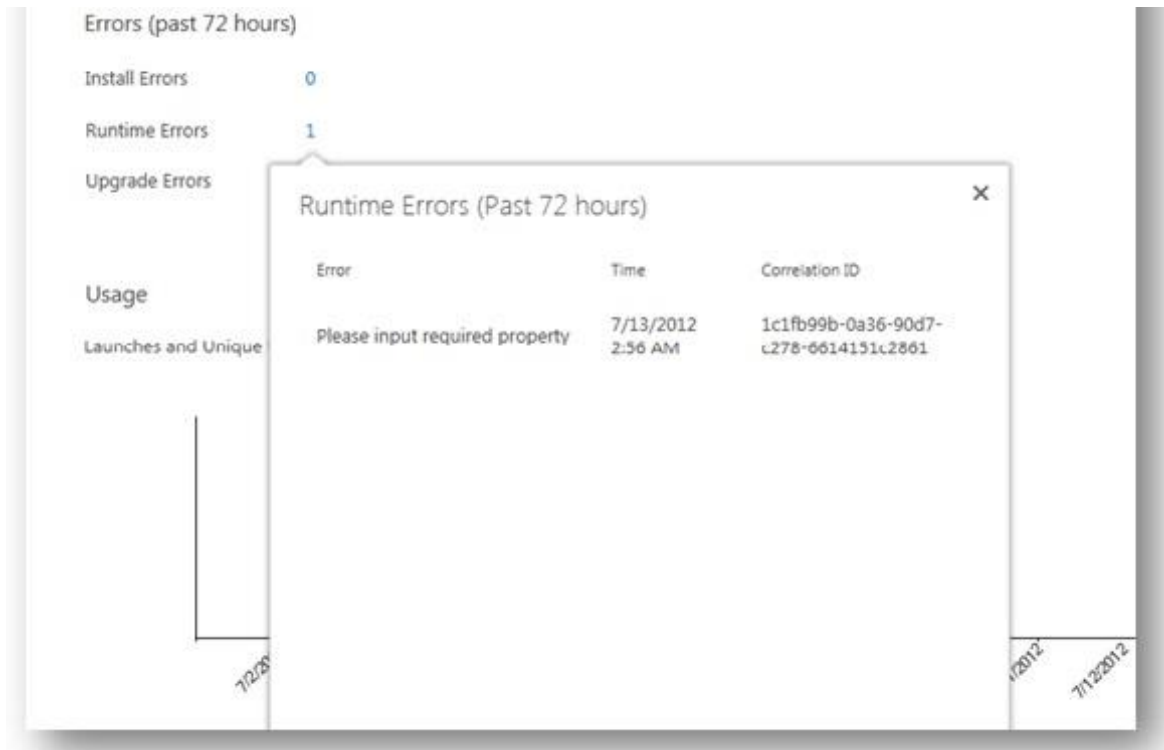
Note:

If you encounter SharePoint Online Dedicated-based issues, provide a Fiddler trace to your service delivery manager (SDM) for further support. For more information about using a Fiddler trace, see the "High-trust apps (server-to-server apps) on-premises" section of [Tips and FAQ: OAuth and remote apps for SharePoint](#).

This application programming interface (API) is available for all hosting methods. For example, your Site Collection admin can use the **Monitor** callout to check runtime errors, like the app callout illustrated here.



Monitor callout used to check runtime errors



Monitor callout used to check runtime errors (continued)

For the client-side object model (CSOM)-based API, you need to use [Open Authorization \(OAuth\) 2.0 protocol](#) to communicate with the SharePoint site to make the API call.

To do this:

1. Get the refresh token from the context token.
2. Use the refresh token to get the access token.
3. Use the access token to get the client context.
4. Use the client context to call the Logging API.

For a more detailed look at how to work with CSOM, see [SharePoint 2013: Hello World SharePoint-hosted app](#).

App updates

You need to update an app if you:

- Add functionality.
- Fix a related bug.

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- Make a security update.

App updates are deployed in app for SharePoint packages in the same way that the first version of the app is deployed. The app for SharePoint update process helps ensure that the app's data is preserved if the update fails for any reason.

For more on the app upgrade process, see [App for SharePoint update process](#).

For SharePoint-hosted apps, if you have defined module files in the app web, you need to:

1. Add the **ReplaceContent** attribute to replace the contents of existing files during an upgrade as shown here:

```
<Module Name="Module1">  
  <File Path="Module1\someFile.txt" Url="Module1/someFile.txt"  
  ReplaceContent="TRUE" />  
</Module>
```

2. Add an Upgrade Actions section in your feature.xml. This allows **ElementManifests** to run during an upgrade as shown here:

```
<UpgradeActions>  
  <VersionRange EndVersion="2.0.0.0">  
    <ApplyElementManifests>  
      <ElementManifest Location="Module1\Elements.xml" />  
    </ApplyElementManifests>  
  </VersionRange>  
</UpgradeActions>
```

If you have a Client Web Part defined in the app web, you need to keep the feature ID the same as that of the previous version to help ensure its not deleted after the upgrade.

If the app is provider-hosted, you provide the update logic for all the components of the app that are not SharePoint-related. This logic can be used in the Post Update Web service or during the first run after you update the app logic.

Troubleshooting App Model development

Troubleshooting App Model development for SharePoint Online Dedicated environments can be broadly divided into three distinct categories:

- App Model
- HTTP
- Client-side object model (CSOM)

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For each of these categories, a knowledge of Web development principals, techniques, and tools is required along with a firm understanding of the SharePoint app development process. For more details, see [Build apps for SharePoint](#).

App Model troubleshooting

The App Catalog is a repository for the available apps that can be deployed throughout your environment. You can perform basic troubleshooting of the App Catalog to identify and resolve a number of potential issues, such as:

- *Are you seeing inconsistent behaviors among Web applications?* Each Web application uses a different App Catalog. This can lead to different apps being available at different URLs. If you are seeing an inconsistency of app availability across different Web applications, consider uploading the required apps to the App Catalog defined for each Web application.
- *If some users can't see specific apps, they may not have access to the right App Catalog site collection for the Web application.* Item-level security may also be preventing them from accessing specific items from the App Catalog. Verify that the users who are attempting to add the app have access to the correct App Catalog site collection via the SharePoint permissions check.
- *If you allow apps to be added to your SharePoint environment from the SharePoint Store, you may need to manage the licenses associated with these apps.* Typically, one or more license managers are assigned to handle these activities. It is important that you maintain adequate licenses for each app to support your usage patterns. For more details, see [Manage app licenses](#).
- *From time to time, it may be necessary to monitor app usage, run-time errors, or upgrade errors.* If you are a site collection owner, you'll be able to see the total number of app instances and any potential errors they experienced during installation, during run-time, or while upgrading from the Site Apps Usage page. Using the **App Error** list, you can determine if you want to remove the app due to the number of errors it causes or because the app is not working as expected.

HTTP troubleshooting

Sometimes, you need to use tools outside of SharePoint to inspect, detect, and correct errors in apps or in the supporting technologies required to operate apps successfully. These tools can help inspect the flow of HTTP requests and responses from the client computer between either the SharePoint Online Dedicated SharePoint host web and app web or the SharePoint Online Dedicated SharePoint host web and provider-hosted app web. One such example is Internet Explorer Developer Tools. For more information, see [Discovering Windows Internet Explorer Developer Tools](#).

Internet Explorer Developer Tools can take network captures that can provide a great deal of information about the app behavior and cross-Web communications.

To perform a network capture using Internet Explorer Developer Tools:

1. In Internet Explorer Developer Tools, navigate to the **Network** tab, and then click **Start Capture**.

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2. Access your app and track the HTTP requests and responses made during app execution.
3. Stop the capture once your app has loaded and executed.

Once a capture is finished, verify that the HTTP requests and responses are as expected. In particular:

- Pay attention to the HTTP status codes.
- With the exception of initial authentications that request handshaking, items with a 401 status code require further investigation.
- Status codes in the 500s indicate an app or web-based problem and should be investigated.

CSOM troubleshooting

The App Model utilizes SharePoint CSOM, and a high proportion of CSOM used by apps uses JavaScript.

By using the [Internet Explorer F12 developer tools](#), app developers can inspect, interact, and debug JavaScript scripts and functions in real time.

Related Configuration Requests

Topic Last Modified: 2015-03-09

The following table includes Configuration Requests (CRs) specific to the App Model and SharePoint Online Dedicated.



Note:

For more information on using and submitting CRs, contact your service delivery manager (SDM).

Standard Configuration List (SCL) Type	SCL Subtype	Configuration Number	Configuration Name	Description
App Model	App Store Request Setting	SPOD-13-202	Allow Site Owners to install apps directly from SharePoint Store	Specifies whether Site Owners can get apps from the SharePoint Store. See Require apps to be approved for SharePoint Online Site Owners of the App Catalog Admin Tasks article for more details.

Standard Configuration List (SCL) Type	SCL Subtype	Configuration Number	Configuration Name	Description
App Model	Configure ACS Provider-Hosted apps	SPOD-13-204	Provider-Hosted Apps	Enables you to configure a provider-hosted app that uses ACS as the trust broker. See How does SharePoint Online Dedicated support the provider-hosted model? for more details.

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Further Resources

Topic Last Modified: 2014-08-15

The following list provides more resources for the App Model and SharePoint 2013:

- [Code samples for SharePoint 2013](#)
- [Apps for Office and SharePoint blog](#)
- [CodePlex: Office/SharePoint 2013 Continuous Integration with TFS 2012](#)
- [SharePoint Developer Support Team Blog](#)
- [Building mobile apps for SharePoint 2013](#)
- [CodePlex: SharePoint 2013 App Development](#)
- [Mobile devices and SharePoint 2013 – Part I: Overview](#)
- [CodePlex: Responsive SharePoint](#)
- [Developing, testing, and production debugging for SharePoint](#)
- [How to: Use an Office 365 SharePoint site to authorize provider-hosted apps on an on-premises SharePoint site](#)
- [Configure app authentication in SharePoint Server 2013](#)
- [Office Dev Center: Office 365 APIs Preview](#)

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Tenant Admin Permissions and Site Provisioning Solution Support

Topic Last Modified: 2014-09-25

This provides an overview of enhancements made for SharePoint Online Dedicated in terms of Tenant admin permissions and site provisioning solutions when using the App Model.

Tenant admin permissions

The App Model, new in SharePoint 2013, supports the self-service deployment of apps. When a site owner installs an app to a site, they see a list of permissions required by the app. The site owner then decides whether to trust the app. However, the site owner can only grant the needed permissions if they have those permissions themselves.

Previously, if an app required tenant-scoped permissions to be deployed in a SharePoint Online Dedicated environment, it was a complicated process that required a workaround. This is no longer the case. You can now install and deploy apps that require tenant-scoped permissions.

Tenant admin permissions are now granted to all users and Active Directory groups who have full control over the web application via web application permission policies. This means that site owners can install and deploy apps if they have the proper permissions.

Tenant admin rights apply to each web application, including:

- Portal
- Team Sites
- OneDrive for Business
- Partner Access



Note:

Only users and groups with Tenant admin permissions can install apps requiring such permissions. This applies to both custom and SharePoint Store apps.

For more information, see:

- [App permissions in SharePoint 2013](#)

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- [Manage permission policies for a web application in SharePoint 2013](#)

How to determine if you have Tenant admin permissions

There are two ways you can test to see if you have Tenant admin permissions. You can:

- Search for a SharePoint Store app, like the AvePoint meeting app. This type of app is a provider-hosted app. This means it won't work for you if Configuration Request (CR) [SPOD-13-202: Allow Site Owners to install apps directly from the SharePoint Store](#) has been filed and you are required to get App Catalog admin approval before either buying or sharing apps on your site (see [Require apps to be approved for SharePoint Online Site Owners](#) of the [App Catalog Admin Tasks](#) article for more details), or if you don't allow Internet access to your farm. If you can install the app, you have Tenant admin permissions.
- Use your own custom app to test this. See [Step 5 – Plan for app development](#) of [Developing Apps as Custom Solutions](#) for more details.



Note:

If you are a member of an Active Directory group who has full control over the web application via web application permission policies, you are automatically granted Tenant admin permissions.

For more information, see:

- [Build apps for SharePoint](#)
- [How to: Create a basic provider-hosted app for SharePoint](#)

Site provisioning

We now provide full support for creating new site collections by using the App Model. This is done using client-side object model (CSOM) –based application programming interfaces (APIs) and self-service deployment for users with Tenant admin permissions.

A Tenant admin site is now created by SharePoint Online Dedicated for each of your web applications to support the site provisioning solution—for example, <https://yourwebappurl/msotenantcontext/>. Users with Tenant admin permissions now go to the app inventory page to modify app permissions—for example, https://yourweburl/sites/appcatalog/_layouts/15/appinv.aspx.

For more information, see:

- [SharePoint 2013: Make app-only policy type calls in a remote app \(CSOM\)](#)
- [Guidelines for registering apps for SharePoint 2013](#) (See the “Retrieving app registration and app principal information” and “Retrieving app registration information after registering with appregnew.aspx” sections of this article.)

Tips for site provisioning for SharePoint 2013 on-premises and SharePoint Online Dedicated environments

The following are tips and resources for site provisioning development and deployment for both SharePoint 2013 on-premises and SharePoint Online Dedicated environments when using the App Model.

Developer tips

- We strongly recommend that you use an asynchronous pattern to create sites:
 - For examples on how to use an asynchronous pattern (also known as *remote timer jobs*) and using a workflow to create site collections, see [SharePoint 2013: Provision dedicated and on-premises sites with the app model](#).
- Use CSOM to create site collections on SharePoint Online Dedicated or on-premises farms ([Vesa "vesku" Juvonen's blog](#)).
- Use a workflow to provision a site (multi-tenant code based). See:
 - [SharePoint 2013: Use workflow to provision a SharePoint site \(app web\)](#)

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- [SharePoint 2013: Use workflow to provision a SharePoint site \(host web\)](#)
- SharePoint Online Dedicated and SharePoint 2013 both reference the Office 15 assembly version. This is located in the `Microsoft.Online.SharePoint.Client.Tenant.dll 15.x` assembly, which is located in the `\Program Files\SharePoint Online Management Shell\Microsoft.Online.SharePoint.PowerShell` folder.

Important:

You can only access the assembly if you either:

- Install the [SharePoint Online Management Shell](#).
- Get the latest assembly version from [GitHub](#).
- You don't need web UI to create a site collection. You can also use a console app (like a Windows Service Worker role) to do so by using your browser to grant the console app app-only permissions. This allows the console app (or any other solution) to connect to the SharePoint Online Dedicated site without installing the specific app file.

To use a console app to create a site collection:

- Register the *AppId* and *AppSecret* in the SharePoint Online Dedicated Tenant Context site collection ([https:// yourwebapplication/_layouts/appregnew.aspx](https://yourwebapplication/_layouts/appregnew.aspx)).
- Grant the appropriate permissions to the app in the SharePoint Online Dedicated Tenant Context site collection (https://yourwebappurl/_layouts/appInv.aspx).
- Use the *AppId* and *AppSecret* keys created during app registration.

Core API code samples

The following API code samples are helpful for site provisioning development. If you use them, be sure to enter your specific SharePoint Online Dedicated Tenant admin site URL as the value for

TenantAdminSiteUrl for the web application, for example,

<https://yourwebappurl/msotenantcontext/>.

```
var tenantAdminUri = new Uri(TenantAdminSiteUrl);
string realm = TokenHelper.GetRealmFromTargetUrl(tenantAdminUri);
var token = TokenHelper.GetAppOnlyAccessToken(TokenHelper.SharePointPrincipal,
tenantAdminUri.Authority, realm).AccessToken;
using (var adminContext =
TokenHelper.GetClientContextWithAccessToken(tenantAdminUri.ToString(), token))
{
var tenant = new Tenant(adminContext);
var properties = new SiteCreationProperties()
{
Url = webUrl,
Owner = adminAccount, Title = title, Template = template
};
// Start the SharePoint online operation to create the site.
SpoOperation op = tenant.CreateSite(properties);
```

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```
adminContext.Load(op, i => i.IsComplete); adminContext.ExecuteQuery(); }
```

For more site provisioning and branding code samples, see [Branding and Site Provisioning Code Samples](#).

Deployment tips

- Site provisioning solutions used for creating site collections require Tenant admin permissions.
- You need to be a part of the Tenant admin group to successfully deploy a site provisioning solution.

Common Tasks

Topic Last Modified: 2014-08-07

The following topics cover common tasks involving apps and their deployment, implementation, and governance in SharePoint Online Dedicated.

- [App Catalog Admin Tasks](#)
- [Site Owner Tasks](#)

App Catalog Admin Tasks

Topic Last Modified: 2014-08-13

This provides guidance for common App Catalog admin tasks performed in a SharePoint Online Dedicated environment.

Require apps to be approved for SharePoint Online Site Owners

As an App Catalog admin, you can require Site Owners to get your approval before either buying or sharing apps on their sites. To do so:

- Request Configuration Request (CR) [SPOD-13-202](#): *Allow Site Owners to install apps directly from the SharePoint Store* from your service delivery manager (SDM) and then submit it to SharePoint Online. This CR determines whether Site Owners can download and install apps directly from the SharePoint Store or whether approval will be required. By default, Site Owners are permitted to download and install apps without approval.

After this is received by SharePoint Online, all SharePoint Store app requests go through the request management process controlled by you. Doing this means that *all Site Owners will need your permission* in order to buy and then share those apps on their sites. This might impact your organization in terms of timely app sharing with your Site Owners and users.

Approve a requested app for a site

If you're an App Catalog admin and your SharePoint environment is set to require approval for all apps, you will need to approve them on a case-by-case basis.

To approve a requested app:

1. On the **App Catalog** page, find the app that needs approval, and then click the **Edit** icon next to it.
2. In the **Approved By** box, type your name.
3. Set the **Status** to **Closed as Approved**.
4. Add comments as wanted, and then click **Save**.

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To purchase the app and add it to the App Catalog:

1. On the site where you want to add an app, go to **Settings** > **Add an app**.
2. Click **SharePoint Store**.
3. On the **SharePoint Store** page, use **Categories** to filter the selection and browse for the app that you want. Or, if you already know the name or tag for the app you want, you can type that into the search box and search for it directly.
4. Click the app you want to add. Click **Details** or **Reviews** to learn more about the app.
5. If you're buying this app, use the drop-down list under the price to specify whether you're buying it for your own use or for use by several people. If you need to, type the number of user licenses you want to buy.



Note:

Leave the **Add to the App Catalog** check box selected.

6. To buy the app, click **Buy It**. (If it's a free app, click **Add It**.)
7. Follow the steps to sign in with your [Microsoft account](#) to buy the app.
8. When you're asked if you want to trust the app, review the Terms & Conditions and the Privacy Statement from the app developer, and then click **Trust It**.
9. The app now appears on the **Site Contents** page. The Site Owner can go to the app by clicking it on the page.

Manage app licenses for a SharePoint Online environment

As the App Catalog admin, you can use the App Catalog to manage licenses for apps purchased from the SharePoint Store, whether you or someone else purchased those apps.

All apps available from the SharePoint Store have built-in licenses that SharePoint Online recognizes. An app license provides digital verification of a user's right to use an app.

To learn about managing app licenses, see [Manage app licenses](#).



Note:

You must be an App Catalog admin or a designated License Manager for an app to manage that app's license.

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Site Owner Tasks

Topic Last Modified: 2015-03-09

This provides guidance for common Site Owner tasks performed in a SharePoint Online Dedicated environment.

Add an app to a site if approval isn't required

Apps for SharePoint are small, easy-to-use, stand-alone applications that perform tasks or address specific business needs. For example, you can add apps that:

- Perform general tasks, like time and expense tracking.
- Perform various document-based tasks, like opening and editing a Word 2013 document.
- Display news or information from third-party websites.
- Connect to social websites.

Places you can get an app

You may be able to add apps to your site from a variety of sources:

- If your organization has developed custom apps for internal business use, you can add these from your organization's App Catalog by browsing the apps under **From Your Organization**.
- You can buy apps from third-party developers by browsing the SharePoint Store.
- If you've worked with previous versions of SharePoint, native SharePoint features, like lists and document libraries, are now considered *built-in apps*. You add them by using the **Add an app** command.



Note:

Apps can be added from only two places: your organization and the SharePoint Store.

To add an app to a site if approval isn't needed:

1. On the site where you want to add an app, go to **Settings > Add an app**.
2. On the **Your Apps** page, do one of the tasks in the following table.

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TO DO THIS

Add a built-in SharePoint app, such as a document library.

DO THIS

1. In the search box, type the name of the built-in app you want to add (for example, **document library**). Press Enter.
2. Click the app to add it, and then provide any required information.

Keep in mind:

- You can add multiple instances of a built-in app to a site to meet different needs.
- You must have at least Designer permissions to add a built-in app.

Add an app from your organization.



Important:

You can only add an app from your organization if the app is available in the catalog. For more information about making apps available in the catalog, see [Use the App Catalog to make custom business apps available for your SharePoint Online environment.](#)

1. Click **From Your Organization**.
 2. Browse the filtered list of apps, and then click the one you want to add.
 3. When you are asked if you want to trust the app, review the information about what the app will do, and then click **Trust It** to add the app.
-

TO DO THIS

Download an app from the SharePoint Store.

DO THIS

1. Click **SharePoint Store**.
2. On the **SharePoint Store** page, use **Categories** to filter the selection and browse for the app that you want. Or, if you already know the name or tag for the app you want, you can type that into the search box and search for it directly.
3. Click the app you want to add. Click **Details** or **Reviews** to learn more about the app.
4. If you're buying this app, use the drop-down list under the price to specify whether you are buying it for your own use or for use by several people. If required, specify the number of user licenses you want to buy.
5. To buy the app, click **Buy It**. (If it's a free app, click **Add It**.)
6. Follow the steps to sign in with your [Microsoft account](#) to buy the app.
7. When you're asked if you want to trust the app, review the Terms & Conditions and the Privacy Statement from the app developer, and then click **Trust It**.
8. The app now appears on the **Site Contents** page. You can go to the app by clicking it on the **Site Contents** page, which will take you to the app.

Keep in mind:

- **You must have Full Control permissions to add apps from the SharePoint Store.** You already have these if you are a Site Owner.
 - **A Microsoft account is not the same thing as an Office 365 account.** If you're an Office 365 customer and you don't already have a Microsoft account, you can sign up for one using your Office 365 email address.
 - **Some apps in the SharePoint Store are free, whereas others are available for purchase.**
 - **If your admin has not configured your site to allow users to buy apps, you may still be able to request an app.** The App Catalog admin (the person who manages the App Catalog site) can approve or deny requests for purchasing apps.
-

After you've installed an app, you can get to it by using the **Site Contents** page. Go to **Settings > Site contents**, and then click the app to view the app page for the app.

Depending on what task the app performs, it may also do things like:

- Add commands to the ribbon in libraries.
- Add commands to the functionality of the item callout in both lists and libraries.
- Include an App Part you can add to a page.

Add an app to a site if approval is required

In some cases, an app must be approved by the App Catalog admin before it can be added to a site.

To add an app to a site if approval is needed:

1. On the site where you want to add an app, go to **Settings > Add an app**.
2. Click **SharePoint Store**.
3. On the **SharePoint Store** page, use **Categories** to filter the selection and browse for the app that you want. Or, if you already know the name or tag for the app you want, you can type that into the search box and search for it directly.
4. Click the app you want to add. Click **Details** or **Reviews** to learn more about the app.
5. Click **Request It**. Fill in the subsequent dialog box as desired, and then click **Request**.
6. Now you wait for approval. You can see the pending request on the Your Requests page. After that request is no longer there, click **Your Apps**, and then verify you can see the app is available.

Keep in mind:

Some apps in the SharePoint Store are free, whereas others are available for purchase.