ArcGIS Server on Microsoft Azure

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ArcGIS Server on Microsoft Azure allows you to deploy an ArcGIS for Server site on Microsoft Azure virtual machines.
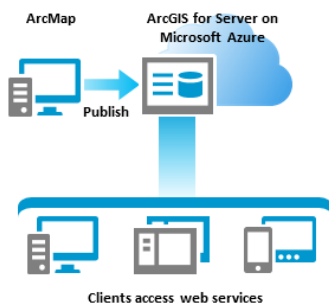
The advantages of deploying on Microsoft Azure include the following:

- You don't have to maintain hardware infrastructure.
- You can create or remove sites as demand requires.

With each release of ArcGIS Server on Microsoft Azure, more pieces of the ArcGIS platform and additional functionality will be added. At this public preview release, ArcGIS Server on Microsoft Azure allows you to create Azure images and deploy sites that contain the following:

- A single-node ArcGIS 10.2.2 Server site on a Windows server
- An enterprise geodatabase in Windows Azure SQL Database

Once you create an ArcGIS Server site on Microsoft Azure, you can publish from local ArcMap clients to ArcGIS Server. Web services you publish to ArcGIS Server on Azure can be consumed by ArcGIS and custom clients.

If you choose to, you can register an enterprise geodatabase in Windows Azure SQL Database as ArcGIS Server's managed database. When your ArcGIS Server site has a managed database, feature service data is copied to the managed database when you publish.

See Create and deploy ArcGIS Server on Microsoft Azure for instructions on setting up your site.

Create and deploy ArcGIS Server on Microsoft Azure

Download ArcGIS Server on Microsoft Azure Starter Package and run scripts from a local Windows machine to create an Azure image containing ArcGIS for Server, and deploy an ArcGIS for Server site.

What you need to get started

You need the following to use ArcGIS Server on Microsoft Azure:
- A Microsoft Azure subscription and subscription file.

- A Microsoft Azure storage account.

- A local Windows machine with PowerShell 3.0 or a later release and Windows Azure PowerShell installed

- An ArcGIS for Server setup file, which you can download from My Esri

- An ArcGIS for Server Standard or Advanced license file

- The ArcGIS Server on Microsoft Azure Starter Package, which you can download from ideas.arcgis.com

Prepare a local client

You will need a local Windows machine from which to run the scripts to create an instance and deploy a site.

The following operating systems are supported: Windows 7, Windows 8.1, Windows Server 2008 R2, Windows Server 2012, Windows Server 2012 R2.

Steps:

1. If they are not already installed, install PowerShell 3.0 or later and Windows Azure PowerShell on the local Windows machine. The scripts you will run to create an image and deploy a site require this software.

   Tip: Most Windows operating systems come with PowerShell, but you will still need to install Windows Azure PowerShell.

2. Create a Microsoft Azure storage account.

3. Make sure you have access to an ArcGIS for Server Standard or Advanced provisioning file.
   This file was created when you provisioned your software on My Esri.

4. Create a folder on your local Windows machine to hold the files you will run to create and deploy ArcGIS Server on Microsoft Azure.

5. Download a subscription file from Microsoft Azure to your local Windows machine.
   Windows Azure PowerShell uses this file to connect to your subscription when running the ArcGIS Server on Microsoft Azure Starter Package scripts.

6. Copy the ArcGIS for Server installation file from My Esri or your installation media to the local folder.
   Do not run the setup file; the file will be used by the ArcGIS Server on Microsoft Azure Starter Package to create an image that includes ArcGIS for Server.

7. Download the ArcGIS Server on Microsoft Azure Starter Package from ideas.arcgis.com and extract it to your local folder.

Create an Azure image

Run the Create-Image.bat file to create an Azure image with a Windows Server 2012 R2 operating system and ArcGIS for Server installed and licensed.

Steps:

1. Open the folder on your local Windows machine where you extracted the ArcGIS Server on Microsoft Azure Starter Package, and browse to the Server folder.
   For example, if you extracted to `C:\setupazure`, browse to `C:\setupazure\esri-starter-package\Server`.

2. Double-click the Create-Image.bat file to run it in a Command Prompt.

3. Provide the required information at the command line when prompted.
   - **SubscriptionName**—Type the name of your Azure subscription. This can be found in your Microsoft Azure subscription file or by going to **Settings** > **Subscriptions** in the Microsoft Azure Management portal.

- **PublishSettingsFile**—Type the path to and name of your Microsoft Azure subscription file (`*.publishsettings`).

- **AGSSetupPath**—Type the path to and name of the ArcGIS for Server installation executable. For example, if you placed the setup executable, ArcGIS_Server_Windows_1022_140520.exe, in `C:\setupazure`, type `C:\setupazure\ArcGIS_Server_Windows_1022_140520.exe`.

- **AGSLicensePath**—Type the path to and name of the ArcGIS for Server provisioning (`.prvc`) file.

- **StorageAccountName**—Type the name of the Microsoft Azure storage account you want to use to store the image.

- **Location**—Specify in which Microsoft Azure region to create the image. This must be the same region as your Storage Account.

- **ResultImageName**—Specify a name for the Azure image that the script creates.

It takes approximately 25 to 30 minutes to create an image, depending on your Internet connection. The image is saved in your Azure image gallery.

If you encounter problems with image creation, see the create-site log, which is created in `<ArcGIS Server on Microsoft Azure Starter Package directory>\Server\logs`.

Once the image exists, deploy a site.

Deploy a site from the image

Run the Deploy-Site.bat file to deploy the Azure image you just created.

Steps:

1. Double-click the Deploy-Site.bat file in the `<ArcGIS Server on Microsoft Azure Starter Package>\Server` directory.
   The Deploy-Site script opens in a Command Prompt.

2. Provide the required information at the command line when prompted.
   - **SubscriptionName**—Type the name of your Azure subscription. This can be found in your Microsoft Azure subscription file or by going to **Settings** > **Subscriptions** in the Microsoft Azure Management portal.

   - **PublishSettingsFile**—Type the path to and name of your Microsoft Azure subscription file.

   - **CloudServiceName**—Type a name for the cloud service to be created.

   - **StorageAccountName**—Type the name of the Microsoft Azure storage account you used to create the image.

   - **ImageName**—Type the name of the Azure image you created using the Create-Image.bat file.

   - **Location**—Specify in which Microsoft Azure region to deploy the image. You must deploy in the same region you as your storage account and the image.

   - **VMachineName**—Type a name to be used for the virtual machine to create for the deployed site.

   - **VMAdminAccountName**—Type a name to use for the virtual machine administrator account. Note that you cannot use the name admin for this account.

   - **VMAdminAccountPassword**—Type a password for the virtual machine administrator account.

   - **AGSSiteAdminUserName**—Type a name to use for the ArcGIS Server primary site administrator account.

   - **AGSSiteAdminPassword**—Type a password to use for the ArcGIS Server primary site administrator account.

It takes approximately 15 minutes to deploy a site from the image.

If you encounter problems deploying a site, see the deploy-site log, which is created in `<ArcGIS Server on Microsoft Azure Starter Package directory>\Server\logs`.

When the site deploys, ArcGIS Server Manager opens. Log into ArcGIS Server Manager to confirm your site properly deployed.

Register a Microsoft Azure SQL Database (optional)

If you want to run a managed database in the cloud, run the Register-EGDB.bat file included in the ArcGIS Server on Microsoft Azure Starter Package to create an enterprise geodatabase in Microsoft Azure SQL Database and register it as your ArcGIS Server site's managed database.

The Register-EGDB script creates a 10 GB Business Edition SQL Database. If you want a different size, you can pre-create it and specify that database when running the Register-EGDB.bat file, or you can let the script create the database and change the size and edition through the Azure Management portal.

Steps:

1. To run the Register-EGDB script, double-click the Register-EGDB.bat file in the ArcGIS Server on Microsoft Azure Starter Package Server directory.

2. Provide the required information at the command line when prompted.
   - **SubscriptionName**—Type the name of your Azure subscription. This can be found in your Microsoft Azure subscription file or by going to **Settings** > **Subscriptions** in the Microsoft Azure Management portal.
   - **PublishSettingsFile**—Specify your Microsoft Azure subscription file.
   - **StorageAccountName**—Type the name of the Microsoft Azure storage account you used for your image and site.
   - **CloudServiceName**—Type the name of the ArcGIS Server site cloud service with which you want to use the SQL Database.
   - **SiteAdminUserName**—Type the ArcGIS Server primary site administrator's user name.
   - **SiteAdminPassword**—Type the password of the ArcGIS Server primary site administrator.
   - **DatabaseServerName**—If you want to use an existing SQL Database server, type the name of the existing server here. If you want a new database server, do not type anything and press Enter to go to the next parameter.
   - **DatabaseName**—Type the name for the SQL Database. If a database with that name does not exist on the database server, it will be created.
   - **DatabaseServerAdminUserName**—If you are using an existing SQL Database, type the existing server administrator's user name. If you want the script to create a SQL Database server, type the name you want to use for the database server administrator.
   - **DatabaseServerAdminPassword**—If you are using an existing SQL Database, type the existing server administrator's password. If you want the script to create a SQL Database server, type a password for the database server administrator the script will create.
   - **Location**—Specify the same Microsoft Azure region you used for your image and site.

When registration completes, ArcGIS Server Manager opens. Log in to ArcGIS Server Manager using the ArcGIS Server primary site administrator account and confirm the geodatabase is registered as a managed database. Go to **Site** > **Data Store** and confirm the database you specified is listed under **Registered Databases**.

If you encounter problems registering an enterprise geodatabase in SQL Database with your ArcGIS Server site, see the register-EGDB log, which is created in `<ArcGIS Server on Microsoft Azure Starter Package directory>\Server\logs`.

Next steps

Now that you have an ArcGIS for Server site running on Azure, you can publish services from a local ArcMap installation or server definition (`.sd`) files. For information on publishing, see the ArcGIS for Server help.

Troubleshoot ArcGIS Server on Microsoft Azure

The scripts in the ArcGIS Server on Microsoft Azure Starter Package generate log files you can use to troubleshoot issues. These files are created in `<ArcGIS Server on Microsoft Azure Starter Package directory>\Server\logs`.

Listed below are some suggested solutions to help you troubleshoot issues you may encounter when setting up or using ArcGIS Server on Microsoft Azure:

Beta: Issues and resolutions still being gathered.

- When Deploy-Site finishes, ArcGIS Server Manager prompts me to create or join a site.
- I cannot make a Remote Desktop Connection to the Microsoft Azure virtual machine.

When Deploy-Site finishes, ArcGIS Server Manager prompts me to create or join a site.

The Deploy-Site.bat file should result in an ArcGIS for Server site on Microsoft Azure; you should not have to create a site using ArcGIS Server Manager. If you are prompted to create or join a site when the Deploy-Site.bat file finishes running, ArcGIS Server site creation failed. The most common reason for an ArcGIS Server site to fail to create is software authorization failure.

To determine if authorization failure prevented the creation of your ArcGIS Server site, log in to the ArcGIS Server virtual machine on Microsoft Azure and see if the keycodes file was created. The keycodes file is created in the `\\Program Files\ESRI\License<release#>\sysgen` folder on the ArcGIS Server machine. If the keycodes file is not present, authorization of ArcGIS for Server failed.

Possible causes of authorization failure include:
- You specified an invalid provisioning file (`.prvc`) file when deploying the site.
  Confirm your file is valid for the ArcGIS Server release (10.2.2) and edition (enterprise), and that the file has not expired.

- The Esri authorization site was temporarily unavailable.
  If your provisioning file is valid, it is possible that a temporary network or Internet glitch prevented Esri from confirming your authorization. Delete the invalid image and site from Microsoft Azure and try again.

I cannot make a Remote Desktop Connection to the Microsoft Azure virtual machine.

Confirm you typed the correct login and password. You should log in with the VMAdminAccountName and VMAdminAccountPassword you specified when you ran the Deploy-Site.bat file.

If you typed the login and password correctly but still cannot make a Remote Desktop Connection, it is likely that your organization's firewall is blocking access. Contact your network administrator to allow access to Microsoft Azure virtual machines through the firewall.