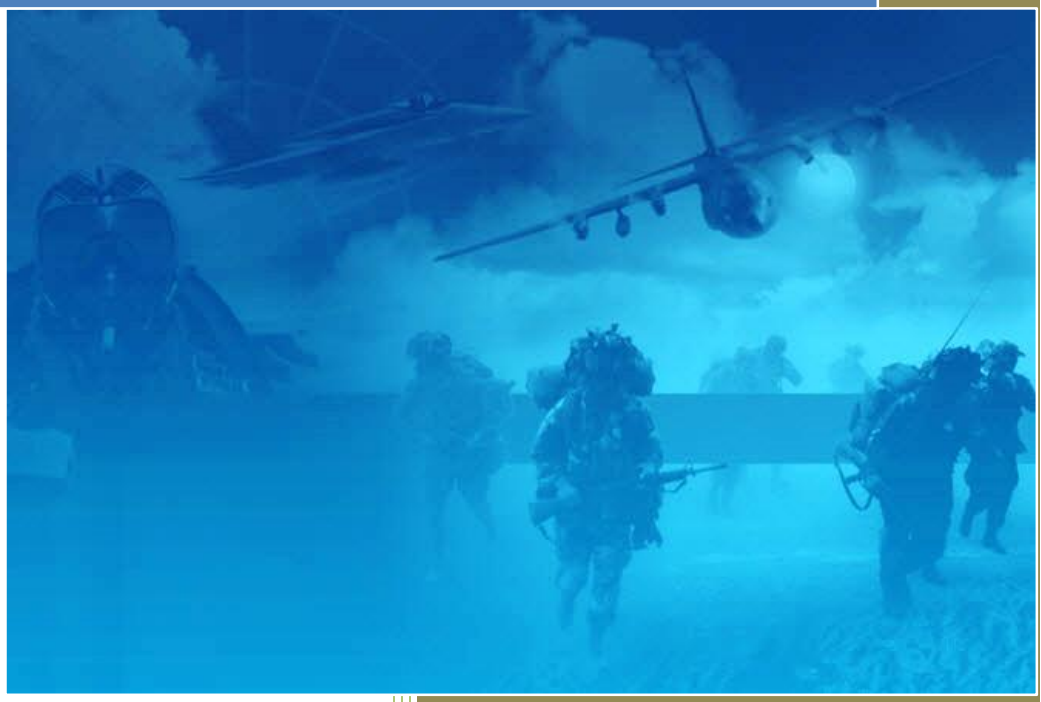
2016

Ops Server Installation Guide



30 September, 2016

Install Guide ver. 10.4.1.1

Ops Server ver. 10.4.1.1

Change Number	Change Date	Change
10.3.1.1 Rev. 1	27 October 2015	Updated the following sections: ▪ *Installation Prerequisites* ▪ *Uninstall existing software*
10.4.1.1	30 September 2016	Updated the following sections: ▪ *Installation prerequisites* ▪ *Uninstall existing software* ▪ *Copy application and template downloads* ▪ *Configure portal settings* ▪ *Configure Geoevent* Added the following sections: ▪ *Publish hosted scene services* ▪ *Build hosted scene service cache* ▪ *Deploy custom Web App Builder widgets (Optional)*

Contents

Introduction

This installation guide walks you through the installation of the Esri ArcGIS for Military Operations Server (Ops Server). An Ops Server consists of software, data, services, portal content and web applications.

- Software:
  - Internet Information Server (IIS)
  - .NET Framework 3.5.1 & 4.5
  - PostgreSQL 9.3.5
  - ArcGIS Server 10.4.1
  - Geoevent Extension for ArcGIS Server 10.4.1
  - Portal for ArcGIS 10.4.1
  - ArcGIS WebAdaptor for IIS 10.4.1
  - ArcGIS Data Store 10.4.1
  - Portal Resources for Esri Maps for Office 4.1 (Beta)
  - ArcGIS Predictive Analysis Web Services 1.1.0
  - Operations Dashboard
  - Message Simulator
  - Openfire 3.10.2 (chat server)
- Content:
  - Data to support ArcGIS Server services
  - ArcGIS Server services
  - Portal content

The process of installing/configuring Ops Server and publishing ArcGIS Server services and portal items is automated using batch files and Python scripts; installation of the chat server is a manually process, which is also described in the installation guide.

Intended Audience

While many of the steps in this guide are automated, some basic level of familiarity with Windows Server and ArcGIS is required. Users of this guide should be familiar with the following:

- ArcGIS Desktop
  - Opening an SDE Geodatabase from a connection string
  - Copying datasets
- ArcGIS Server and Portal
  - Basic Administration
  - Start/Stop Map Services
- IIS
  - Basic configuration
- Windows Server
  - Basic administration
  - Start/Stop Windows Services

Ops Server System Requirements

Ops Server System Requirements			
Operating System (OS)	Microsoft Windows Server 2012 R2 64-bit Microsoft Windows Server 2008 R2 Standard SP1 64-bit		
Memory	Minimum 16 GB – with all services started, memory use is approximately 15.5 GB with no users accessing the server. Therefore some services will need to be shutdown to free memory. Recommended minimum 24 GB.		
Disk space		**Estimated* Size (GB)**	**Drive location**
OS		50	C:\
Ops Server	Software/Databases/Portal content/Web App	18	C:\
	Data (OpsServer\Data folder)	151	Can be stored on any drive (see note below)
	Service Caches (arcgisserver\arcgiscache folder)	128	Can be stored on any drive (see note below).
	Solutions Template Downloads	8	C:\inetpub\wwwroot
	Total:	305	
OS + Ops Server	**Total disk space (single drive configuration):** **Recommend using drive no smaller then 500 GB**	**355**	

* The numbers in the table above are estimates and will depend on a number of factors specific to your deployment such as the amount of published content and the total number of map services running/started. They are provided as general guidance for configuring a minimum system.

NOTEs:

- **(OS) The Ops Server installation scripts have only been tested on Windows Server 2008 R2 and 2012 R2 using a system locale of "English (United States)"**
- **(Memory)** Memory requirements for Server machine is partial based on having a minimum of two instances per service.
- **(Disk space)** You can install Ops Server on a single drive or multiple drives.
    - The Ops Server install scripts are configured to install software and databases only to the system drive (C:\).
    - The Ops Server data (i.e. OpsServer\Data folder) and service cache (i.e. arcgisserver\arcgiscache folder) folders, which are created by the install scripts, can be located on any drive. The drives where these folders are created is specified by the variable "ops_dataDrive" and "ops_cacheDrive" located in the `InstallSettings.bat` file.

Prepare for Ops Server Installation

Installation Prerequisites

- The server you are installing Ops Server on should have internet access to complete the installation and configuration process.
- ArcGIS for Desktop 10.4.1 is installed on a client machine; used to manually republish any services that don't publish using the publishing scripts (see topic Publish the ArcGIS Server services).
- Uninstall existing ArcGIS software; see section below for more information.
- A web browser must be installed. Certain elements of the installation require you to configure software through a web browser. We have encountered a few issues with Internet Explorer. Chrome or Firefox is preferred.
- An Advanced Enterprise license for ArcGIS Server 10.4.1 (must include license for Geoevent Extension for ArcGIS Server). NOTE: license information for ArcGIS Server (and ArcGIS Server extensions) and Portal for ArcGIS must exist in separate ecp/prvc files.
- A license for Portal for ArcGIS 10.4.1 with a minimum of 5 users (there are 2 Ops Server specific users with this release, plus an administrator account and you probably want at least a couple of extra accounts). NOTE: license information for ArcGIS Server (and ArcGIS Server extensions) and Portal for ArcGIS must exist in separate ecp/prvc files.
- A SSL certificate for Portal (ether CA-signed certificate or domain certificate).
- (Optional) Code signing certificate for your organization for use in Ops Server Deployment Utility. A certificate has been provided, but you may want to use certificate signed by your organization (see topic Install software).
- Microsoft .NET Framework 4.5 must be installed. This is required to run the Operations Dashboard Deployment Utility (executed by the InstallOpsServer.bat file). The installer for .NET 4.5 can be found at the Microsoft Download Center.
- A text editor, such as NotePadd++, that can handle non-windows line-break formats. Some files you need to edit have Line-Feed (LF)-only (Unix) format.
- NOTE: this installation assumes that the local area Firewall profile on the server is disabled.

CAUTION: Make sure that the account that you are logged in with and using for the Ops Server installation is a member of the local administrator group. You should verify this by going to the Windows Server Manager | Local Users and Groups | Groups | Administrators to check that the installer's account is present in that group.

Uninstall existing software

The Ops Server installation process assumes that you are installing on a clean server and certain software needs to be installed in a particular way or location; therefore, before running the installation scripts you should uninstall the following software if they are already installed (listed in uninstall order):

NOTE: uninstalling Internet Information Services (IIS) is not necessary.

- Portal Resources for Esri Maps for Office/ArcGIS Maps for Office – Uninstall using the Windows "Program and Features" dialog.
- Portal for ArcGIS – After uninstalling using the Windows "Programs and Features" dialog, delete the following:
    - Folder - C:\arcgisportal
    - Folder - C:\Program Files\ArcGIS\Portal
- ArcGIS WebAdaptor (IIS) – ags – Uninstall using the Windows "Programs and Features" dialog.
- ArcGIS WebAdaptor (IIS) – arcgis – Uninstall using the Windows "Programs and Features" dialog,
- ArcGIS GeoEvent Extension for Server – After uninstalling using the Windows "Programs and Features" dialog,, delete the following:
    - Folder - C:\ProgramData\Esri\GeoEventProcessor (NOTE: the C:\ProgramData folder is hidden by default)
    - Folder - C:\OpsServer\GeoEventData
- ArcGIS Predictive Analysis Web Services – After uninstalling using the Windows "Programs and Features" dialog, delete the following:
    - Folder – C:\Program Files\ArcGIS\Predictive Analysis
- ArcGIS Data Store – After uninstalling using the Windows "Programs and Features" dialog,, delete the following:
    - Folder - C:\arcgisdatastore
    - Folder - C:\Program Files\ArcGIS\DataStore
- ArcGIS for Server - After uninstalling using the Windows "Programs and Features" dialog, delete the following:
    - Folder - C:\arcgisserver
    - Folder - C:\Program Files\ArcGIS\Server
- PostgreSQL – After uninstalling using the Windows "Programs and Features" dialog, delete the following:
    - Folder - C:\PostgreSQL (or C:\Program Files\PostgreSQL)
    - OS user - The "postgres" OS user account (the account that PostgreSQL windows service runs as)
- Openfire (Chat Server)
    - Stop and uninstall the openfire windows service:
        - Open a command window (cmd.exe) with administrator privilege (i.e. "Run as administrator" context menu).
        - Change directory to C:\Program Files (x86)\Openfire\bin
        - Execute the following commands from the command prompt:

        - openfire-service /stop
        - openfire-service /uninstall
    - Using the Windows “Programs and Features” dialog uninstall Openfire.
    - After uninstalling Openfire, delete the following:
        - Folder - C:\Program Files (x86)\Openfire
- Web applications “installed” under IIS– To “uninstall”, delete the following:
    - Folder: C:\inetpub\wwwroot\SolutionsWeb
- Esri Solutions templates “installed” under IIS – To “uninstall”, delete the following:
    - Folder: C:\inetpub\wwwroot\Downloads
- Message Simulator – To “uninstall”:
    - Open Windows Task Manager and end all of the ArcGISQtMessageSimulator.exe tasks.
    - Open Windows Computer Management and delete the “MessageSimulator” scheduled task.
    - Delete folder - C:\MessageSimulator
- Ops Server data - delete the following:
    - Folder: C:\OpsServer (this folder contains the “Data” and “DBConnections” folder. NOTE: this folder could be located on another drive)
- Ops Server installation scripts – delete the following:
    - Folder: C:\ops-server-config
- Local OS user account(s) –
    - Delete any local OS user account or accounts that were used to run the ArcGIS Server, Portal for ArcGIS, ArcGIS DataStore, and Geoevent windows services.

Change “Command Prompt” Layout Properties

The install scripts do not capture output to log files, so to make it easier to review the output from the installation scripts and to make sure screen output is not lost because of an insufficient screen buffer size, increase the Screen Buffer Size of the command window. Recommended screen buffer width is at least 220; set the screen buffer height to the maximum value of 9999.

Steps:

1) Open a Command Prompt window.
2) Right-click on the Command Prompt title bar and click “Properties”. Click the “Layout” tab and modify the Width and Height Screen Buffer Size values.

“Install” and configure the Ops Server installation scripts

1) Copy the ops-server-config folder located under the OPSServerInstall\Software folder on your external drive to the C:\ drive of the server where you are installing the Ops Server (i.e. C:\ops-server-config).

   CAUTION: The ops-server-config folder must be located directly under C:\; certain sections of code expect this folder to be located at this location.

2) Edit the variables in the DOS batch file C:\ops-server-config\Install\InstallSettings.bat. These variables are used by various install scripts, such as the InstallIIS.bat and InstallOpsServer.bat and control various aspects of the installation.

   CAUTION: The InstallSettings.bat file contains important information about what the variables store and any restrictions or limitations about the variable values; please read thoroughly.

   The first half of the variables are for setting the name of the server, paths to the license files for the Esri software, the root folder of the installers on your external drive, the installed web browser, etc.

Variable name	Purpose
ops_FQDN	Defines the fully qualified domain name (FQDN) of the server that ArcGIS Server and Portal for ArcGIS are being installed.
ops_softwareRoot	Defines the path of the OPSServerInstall\Software folder on your external drive.
ops_rdbmsServiceAccount	Defines the account that will run the PostgreSQL windows service. Default set to “postgres”.
ops_rdbmsServiceAccountPassword	Defines the password for the account running the PostgreSQL windows service.
ops_agsServiceAccount	Defines the account that will run the ArcGIS Server windows service. Default set to “AFMAGS” (i.e. ArcGIS for the Military ArcGIS Server).
ops_agsServiceAccountPassword	Defines the password for the account running the ArcGIS Server windows service.
ops_dsServiceAccount	Defines the account that will run the ArcGIS Data Store windows service. Default set to “AFMDataStore”.
ops_dsServiceAccountPassword	Defines the password for the account running the ArcGIS Data Store windows service.
ops_portalServiceAccount	Defines the account that will run the Portal for ArcGIS windows service. Default set to “AFMPortal”.
ops_portalServiceAccountPassword	Defines the password for the account running the Portal for ArcGIS windows service.
ops_userName	Defines the user name for the ArcGIS Server site administrator user and the Portal for ArcGIS’s initial administrator account. Default set to “admin”.
ops_passWord	Defines the following passwords: PostgreSQL superuser, ArcGIS Server site administrator, Portal for ArcGIS initial administrator account, and the "sde" user password that owns the ops server geodatabases.
ops_cacheDrive	Defines the drive where the ArcGIS Server site cache directory will be created.
ops_dataDrive	Defines the drive where the Ops Server Data directory will be created.

ops_AGSAuthFile	Defines the path and name of the ArcGIS Server (AGS) authorization file
ops_PortalAuthFile	Defines the path and name of the Portal for ArcGIS authorization file
ops_webBrowserExePath	Defines which web browser to use for installation steps which require you to work within a web browser. Default set to path of Chrome.exe.

The second half of the variables are for defining which install or configuration processes that the InstallOpsServer.bat will execute, which are listed in the table below.

The variables are listed in the order that the processes are executed in the InstallOpsServer.bat file. All processes should be executed, and executed in the order that they are defined in the InstallOpsServer.bat file.

NOTE: some of the installation/configuration processes that are executed by the InstallOpsServer.bat will require human interaction and are identified in the table below. When interaction is required, the appropriate interface/dialog will be opened for you and instructions provided in the command window.

Variable name	Purpose	Human interaction required during execution	Execution dependencies
ops_install_rdbms	Install the rdbms (PostgreSQL)	No	
ops_install_server	Install and authorize ArcGIS Server	No	ops_install_rdbms
ops_create_ags_site	Create the ArcGIS Server site, create the SDE geodatabases, SDE connection files	No	ops_install_server
ops_install_webadaptor	Install the ArcGIS WebAdaptor for IIS	Possible	InstallIIS.bat
ops_change_ags_security	Change the ArcGIS Server security configuration to "HTTPS Only"	Yes	ops_install_server, ops_create_ags_site
ops_register_ags_https	Register ArcGIS Server with the WebAdaptor (using https)	No	ops_install_server, ops_create_ags_site, ops_install_webadaptor
ops_install_ags_datastore	Install ArcGIS Data Store	No	
ops_create_ags_datastore	Creates an ArcGIS Data Store and registers' as ArcGIS Server site managed database	Possible	ops_install_server, ops_create_ags_site, ops_install_webadaptor, ops_register_ags_https
ops_install_message _simulator	Copies Message Simulator and related files and creates a Scheduled Task	No	
ops_install_portal	Install Portal for ArcGIS	No	
ops_install_em4o_webcontent	Install Portal for ArcGIS Resources for Esri Maps for Office	No	ops_install_portal
ops_create_opsdashboard _installer	Create Operations Dashboard ClickOnce Application and	Yes	ops_install_portal

	deploy to portal folders		
ops_create_portal_admin _account	Create the Portal for ArcGIS initial administrator account	Yes	ops_install_portal
ops_register_portal	Register Portal for ArcGIS Server with the WebAdaptor	No	ops_install_webadaptor, ops_install_portal, ops_create_portal_admin _account
ops_federate_ags	Federate the ArcGIS Server with portal, set SSL properties, set Utility Service URLs	Yes	ops_install_server, ops_create_ags_site, ops_install_webadaptor, ops_change_ags_security, ops_register_ags_https ops_install_portal, ops_create_portal_admin _account
ops_install_geoevent	Install Geovent Extension for ArcGIS Server	No	ops_install_server, ops_create_ags_site, ops_install_webadaptor, ops_change_ags_security, ops_register_ags_https ops_install_portal, ops_create_portal_admin _account ops_register_portal ops_federate_ags
ops_install_predictive_analysis	Install Predictive Analysis tools	No	ops_install_server, ops_create_ags_site, ops_install_webadaptor, ops_change_ags_security, ops_register_ags_https ops_install_portal, ops_create_portal_admin _account ops_register_portal ops_federate_ags

Install Internet Information Services (IIS) and enable SSL

Install Internet Information Services (IIS)

The ArcGIS Web Adaptor for IIS requires that Microsoft Internet Information Services (IIS) is installed with specific IIS components and that the .NET Framework 3.5 and 4.5 is installed. You will use the included InstallIIS.bat batch file to:

- Enable the IIS role and specific IIS components.
- Enable the .NET Framework 3.5 feature.
- Configure the IIS default document.
- Add a MIME type for .json files (required by certain Ops Server web applications).

- NOTE: you will have to enable .NET framework 4.5 manually.

Prerequisites:

- All previously installed software has been removed (see topic Uninstall existing software).

Steps:

1) Open a command window (cmd.exe) with administrator privilege (i.e. "Run as administrator" context menu).

2) Within the command window, change directory to the C:\ops-server-config\Install folder and run the InstallIIS.bat file by typing the following at the prompt:

```
InstallIIS.bat
```

3) At the "Enter the number of your choice:" prompt, enter 1 to start script execution (or 0 to quit).

IMPORTANT: Follow the instructions provided by the batch file in the Command Prompt.

NOTEs:

- The batch file will attempt to add the .json MIME type to IIS, however, depending on the version of IIS, the .json MIME type may already exist. You can ignore the error "ERROR (message:New mimeMap object missing required attributes. Cannot add duplicate collection entry of type 'mimeMap' with unique key attribute 'fileExtension' set to '.json'".
- When the installation is complete, the .bat file will open the Microsoft Server Manager console so that you can enable SSL on the web server (see section Enable SSL on the web server below).

Enable SSL on the web server

To enable SSL on the web server you will need to obtain a SSL certificate and bind the certificate to the website that will host the ArcGIS Web Adaptor for IIS.

There are three types of SSL certificates: Certificate authority (CA) signed certificates, domain certificates, and self-signed certificates. For Ops Server you should only use CA signed or domain certificates.

The Internet Information Services (IIS) Manager provides dialogs/wizards for you to manage the certificates and bind the certificate to a web site. The general process is outlined below, based on the type of certificate you are going to use.

- **CA signed certificate**:

  For more detailed information see http://www.sslshopper.com/article-installing-an-ssl-certificate-in-windows-server-2008-iis-7.0.html.

  - Use the "Create Certificate Request" to generate a certificate request file (CSR).
  - Use the information in the CSR file to order a SSL certificate from a Certificate Authority (CA).
  - Use the "Complete Certificate Request" to install the SSL certificate you have received from the Certificate Authority.
  - Bind the certificate to the website that is going to host the web adaptor (bind to port 443).

- **Domain certificate**

  For more detailed information see the "Administering Portal for ArcGIS" | "Enabling SSL on your web server" topic in the Portal for ArcGIS Installation Guide, located on your external drive (i.e. OPSServerInstall/Software/PortalForArcGIS/SetupFiles/Documentation/install_guides/portal/index.html)

  - Use the "Create Domain Certificate" to create a domain certificate.
  - Bind the certificate to the website that is going to host the web adaptor (bind to port 443).

Install Ops Server software

In this section you will be installing and configuring the majority of the software required by Ops Server using the InstallOpsServer.bat file. As mentioned in the topic "Install" and configure the Ops Server installation scripts, the variables in the InstallSettings.bat file control which install/configuration processes are executed by the InstallOpsServer.bat file.

Install software

Listed below are all the installation and configuration processes executed by the InstallOpsServer.bat:

- Install the rdbms (PostgreSQL).
- Install the ArcGIS WebAdaptor for IIS.
- ArcGIS Server:
  - Install and authorize ArcGIS Server.
  - Create the ArcGIS Server site, create the SDE geodatabases, and create the SDE connection files.
  - Change the ArcGIS Server security configuration to "HTTPS Only".
  - Register ArcGIS Server with the WebAdaptor (using https).
  - Install Geoevent Extension for ArcGIS Server
  - Install Geoevent Extension for ArcGIS Server group layer patch
- ArcGIS Data Store:
  - Install ArcGIS Data Store
  - Create an ArcGIS Data Store
  - Register the ArcGIS Data Store as the ArcGIS Server site managed database.
- Install the Message Simulator and create a Scheduled Task.
- Portal for ArcGIS:
  - Install Portal for ArcGIS.
  - Create Operations Dashboard ClickOnce Application and deploy to portal folders
  - Create the Portal for ArcGIS initial administrator account.
  - Register Portal for ArcGIS Server with the WebAdaptor.
  - Federate the ArcGIS Server with portal, set SSL properties, set Utility Service URLs.
- Install Portal for ArcGIS 10.3 Resources for Esri Maps for Office.
- Install ArcGIS Predictive Analysis Web Services

Prerequisites:

- You have edited the InstallSettings.bat file (see topic "Install" and configure the Ops Server installation scripts).
- Internet Information Services (IIS) is installed and any other ArcGIS Web Adaptor for IIS prerequisites have been met; and SSL has been enabled on your server (see topic Install Internet Information Services (IIS) and enable SSL).
- (Optional) A code signing certificate has been provided for use in the Operations Dashboard Deployment Utility, but if you want/need to use a certificate created for your organization then you will made to make the following modifications before you run the `InstallOpsServer.bat` script.

- Copy your code signing certificate to the OPSServerInstall\Software\OpsDashboardUtility\Certificate folder on your external drive.
- Edit the parameters of the OperationsDashboardUtility.exe under the "Run the Operations Dashboard Deployment Utility" section in the C:\ops-server-config\Install\OpsDashboardUtility\CreateOneClickInstaller.bat file:
  - Edit the name of the .pfx file specified in the "/certpath %ops_softwareRoot%\OpsDashboardUtility\Certificate\DefenseSolutions.pfx" to match your code signing certificate.
  - Edit the "/password" parameter to match the password of your code signing certificate.

Steps:

1) Close any web browsers that you may have open. Some of the steps below will need to open a new browser instance in order to "pause" for user interaction/input.

2) Open a command window (cmd.exe) with administrator privilege (i.e. "Run as administrator" context menu).

3) Within the command window, change directory to the C:\ops-server-config\Install folder and run the InstallOpsServer.bat file by typing the following at the prompt:

```
InstallOpsServer.bat
```

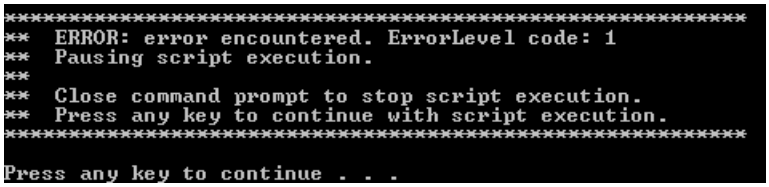
4) At the "Enter the number of your choice:" prompt, enter 1 to start the installation process (or 0 to quit).

IMPORTANT: Follow the instructions provided by the batch file in the Command Prompt.

NOTEs:

- Some of the installation/configuration processes that are executed by the InstallOpsServer.bat will require human interaction (see variable table in topic "Install" and configure the Ops Server installation scripts). When interaction is required, the appropriate interface/dialog will be opened for you and instructions provided in the command window.

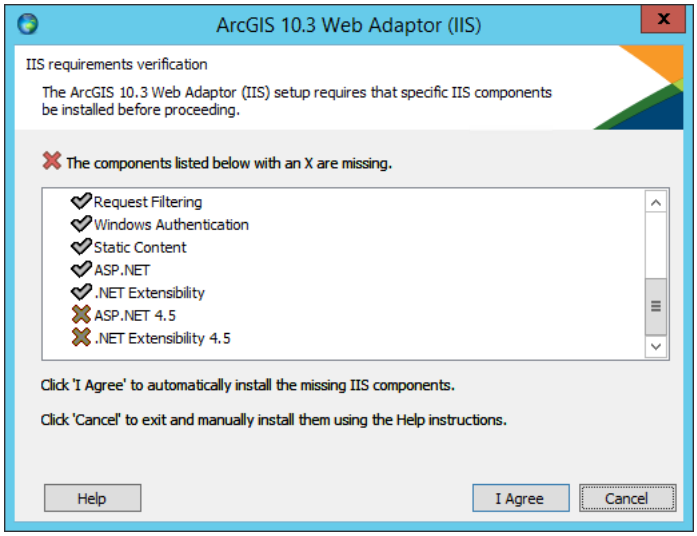
- With this version of the Ops Server installation we have included functionality to "trap" for errors and pause script execution when errors are encountered. When script execution has been paused, you will see the following dialog:



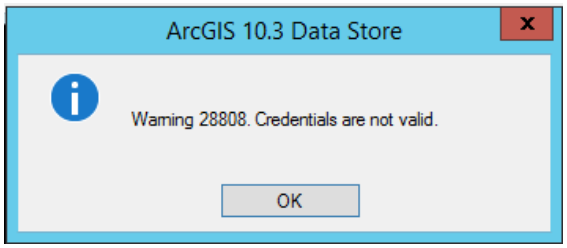
At this time you can assess the error and take corrective action. After you have fixed the issue you can then press any key and the execution of the InstallOpsServer.bat file will continue. If you can't fix the issue and want to halt execution, enter Ctrl-C within the command prompt or just close the command prompt window.

CAUTION: although error trapping has been provided, we can't guarantee that all errors will be identified and trapped. It is recommended that you review the script output for errors.

- During installation of the ArcGIS Web Adaptor for IIS if the following "IIS requirements verification" dialog is displayed, click "I Agree".



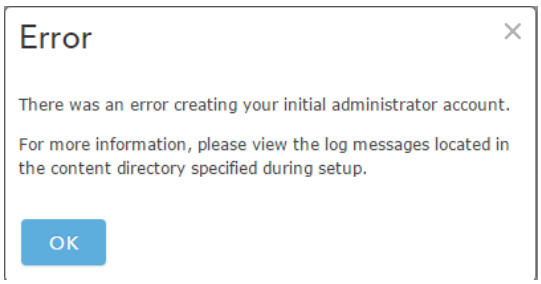
- During installation of the ArcGIS Data Store if the following warning message dialog is displayed, click "OK" and the installation will continue.



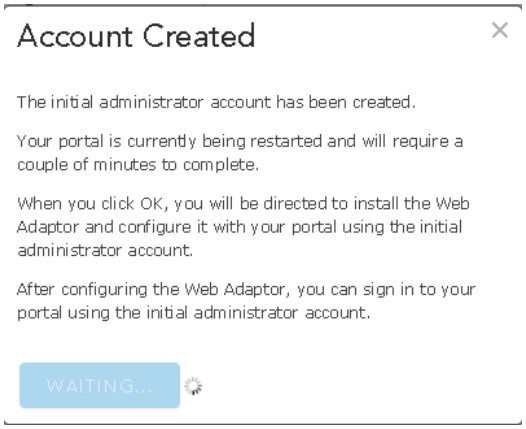
- During the execution of the Operations Dashboard Deployment Utility, when the following “Importing a new private signature key” dialog is displayed, click “OK” and execution will continue.

- During the “Create the Portal for ArcGIS initial administrator account” step…

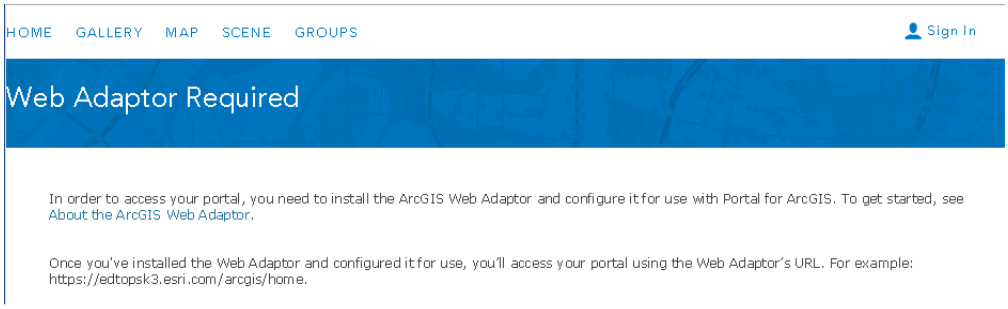
  - If you receive the following error during the creation of the initial administrator account, click “OK”, then refresh the web page (i.e createadmin.html page) and reenter the account information.



  - If the account was created successfully the “Account Created” dialog will display as shown below.



- After clicking “OK” on the “Account Created” dialog, the “Web Adaptor Required” web page will be displayed. You can ignore this message, as the portal will be registered with the web adaptor in subsequent steps; continue the sign in process by clicking “Sign In”.



- **WARNING: if the password you specified in the InstallSettings.bat file is an invalid password for the portal administrator account and you use a different value, you will need to reset the ArcGIS Server primary site administrator password to match. For Ops Server, the ArcGIS Server and Portal administrator usernames and passwords must match for publishing content and services to succeed. You can reset the password in ArcGIS Server Manager on the Security > Settings tab under “Primary Site Administrator Account”.**

Validate software installation

After the execution of the InstallOpsServer.bat file has completed, you should validate the installation using the following check list (note that many of these checks have already been completed during the software install, but have been included in this list for completeness).

Prerequisites:

- Software has been installed and configured using the InstallOpsServer.bat file (see topic Install software).

Steps:

NOTE: unless otherwise specified the user and password values to use in the validation steps are the ops_userName and ops_passWord variable values set in the InstallSettings.bat file

1) Open Control Panel > Programs > Programs and Features and verify that the following software programs are listed:
    a. ArcGIS 10.4.1 Data Store

b. ArcGIS 10.4.1 for Server
c. ArcGIS 10.4.1 Geoevent Extension for ArcGIS Server
d. ArcGIS 10.4.1 Web Adaptor (IIS) – ags
e. ArcGIS 10.4.1 Web Adaptor (IIS) – arcgis
f. ArcGIS Predictive Analysis Web Services
g. Portal for ArcGIS 10.4.1
h. Portal Resources for Esri Maps for Office 4.1 (Beta)
i. PostgreSQL 9.3

2) PostgreSQL
   a. Verify that you can log in to the PostgreSQL administrator management console.
      i. Open **pgAdmini III**. Start > All Programs > PostgreSQL 9.3 > pgAdmin III -or- Search for "pgAdmin" if your version of Windows does not have a Start Menu.
      ii. Under the **Servers** node double-click on PostgreSQL 9.3
      iii. When prompted for the **postgres** user password enter the variable `ops_passWord` value stored in the InstallSettings.bat file.
   b. Expand the **Databases** node and verify that the following databases exist:
      - allsource
      - currentoperations
      - humint
      - imint
      - intelassessments
      - intelfoundation
      - military
      - physicalnetworks
      - sigint
      - tds

3) ArcGIS Server
   a. Verify that you can sign in to the ArcGIS Server manager (i.e. https://server.domain/ags/manager).
   b. Verify that you can sign in to the ArcGIS Server REST API (https://server.domain/ags/rest). Click the "Login" link and follow the instructions.
   c. Verify that you can sign in to the ArcGIS Server Administrator Directory (i.e. https://server.domain/ags/admin).

4) Portal for ArcGIS
   a. Verify that you can sign in to the Portal for ArcGIS home page (https://server.domain/arcgis/home).
   b. Verify that you can sign in to the Portal for ArcGIS REST API (https://server.domain/arcgis/sharing).

5) ArcGIS Data Store

Sign in to the ArcGIS Server manager (i.e. https://server.domain/ags/manager) and verify that the following data store entry exist (Site > GIS Server > Data Store):

a. Register Databases
    i. ArcGIS_Data_Store
    ii. Allsource
    iii. CurrentOperations
    iv. Humint
    v. Imint
    vi. IntelAssessments
    vii. IntelFoundation
    viii. Military
    ix. PhysicalNetworks
    x. Sigint
    xi. TDS
b. Registered Folders
    i. OpsServerData
c. After verifying these data stores exists, you may also select “Validate All” from this page.

6) Geoevent Extension for ArcGIS Server
    a. Verify that you can sign in to the ArcGIS GeoEvent Manager (i.e. https://server.domain:6143/geoevent/manager)

Post-Ops Server software installation modifications

Increase Portal file upload limits

The instructions below describe how to increase the maximum portal file upload limit. The default is 250 MB; in order to successfully publish the Ops Server portal content these limits need to be increased.

Prerequisites:

- Portal for ArcGIS has been installed using the InstallOpsServer.bat file and installation has been validated (see topic Install Ops Server software).

Steps:

1) Open Notepad++ or other text editor (other than Windows Notepad) with "Run as administrator" permission.
2) Within the text editor browse to and open the file `C:\Program Files\ArcGIS\Portal\webapps\arcgis#sharing\WEB-INF\classes\resources\gw-config.properties`
3) Change the value for the property "`config.default-max-file-upload-size`" to 2048 (to match the property "`content.max-file-upload-size`" value.
4) Save the file and exit the text editor.
5) Restart the **Portal for ArcGIS** window service (stop and start).

Increase ArcGIS Data Store limits

The instructions below describe how to increase the maximum number of connections that the ArcGIS Data Store will allow.

Prerequisites:

- ArcGIS Data Store has been installed using the InstallOpsServer.bat file and installation has been validated (see topic Install Ops Server software).

Steps:

1) Open a command window (cmd.exe) with administrator privilege (i.e. "Run as administrator" context menu).
2) Change directory to `C:\Program Files\ArcGIS\DataStore\tools`.
3) Run the `changedbproperties` tool to increase the number of database connections to 300 using the following syntax:

```
changedbproperties --max-connections 300
```

Publish Ops Server content

In the context of this installation guide, Ops Server content refers to the portal items, ArcGIS Server services and data to support these services.

There are three major steps in publishing content to the Ops Server:

- Copy the Ops Server data to your server.
- Publish the ArcGIS Server services to your server using the provided service definition files.
- Publish the provided portal items to your portal.
- Publish the hosted services

Instructions for completing these steps are described in the sections below.

Copy Ops Server data

The sections below describe how to copy the Ops Server data from the external drive to your server using provided Python scripts.

The Ops Server data includes:

- File based data and datasets.
- ArcGIS Server caches.
- Enterprise geodatabase data.

Prerequisites:

- Software has been installed/configured using the InstallOpsServer.bat file and installation has been validated (see topic Install Ops Server software).

Copy file based data and datasets

Copy the file based data and datasets from the external drive to the Ops Server.

Steps:

1) Open a command window (cmd.exe) with administrator privilege (i.e. “Run as administrator” context menu).

2) Within the command window, run the ROBOCOPY copy utility that is provided in Windows to copy the contents of the “Data” folder from the external drive to the OpsServer\Data folder on the Ops Server using the following syntax:

   ```
   robocopy <SourceFolder> <DestinationFolder> /E /R:3 /W:5
   ```

   Where:

`<SourceFolder> (required): path of source folder to copy` **(i.e. the OPSServerInstall\Server\Staging\Data folder on the external drive)**.

`<DestinationFolder> (required): path of folder where source folder will be copied` **(i.e. <ops_dataDrive variable>\OpsServer\Data)**.

Example (replace drive letters as appropriate for your configuration):

```
robocopy G:\OPSServerInstall\Server\Staging\Data
C:\OpsServer\Data /E /R:3 /W:5
```

3) After robocopy has finished the copy, review the copy statistics for any errors.

Update mosaic dataset paths

Update the mosaic dataset paths to match your Ops Server configuration.

NOTE: the paths in the mosaic datasets have been set to C:\OpsServer\Data. You will only need to update the mosaic dataset paths if the OpsServer\Data folder is not located on the C drive, or you want to reference the dataset paths in the mosaic datasets using a UNC path.

Prerequisites:

- File based data and datasets has been copied to the Ops Server (see topic Copy file based data and datasets).

Steps:

1) Open a command window (cmd.exe) with administrator privilege (i.e. "Run as administrator" context menu).

2) Within the command window, change directory to the `C:\ops-server-config\Publish\Server` folder and run the `RepairMosaicDatasets.py` Python script using the parameters described below.

   `RepairMosaicDatasets.py <RootFolderToSearch> <RemapPathsList>`

   Where:

   `<RootFolderToSearch> (required): the root folder path to search for mosaic datasets` **(i.e. <ops_dataDrive variable>\OpsServer\Data)**.

   `<RemapPathsList> (required): a list of paths to remap. Include the current path stored in the mosaic dataset and the path to which it will be changed."`

   Examples (replace drive letters as appropriate for your configuration):

Example 1: Change C:\OpsServer\Data paths to

```
RepairMosaicDatasets.py C:\OpsServer\Data "C:\OpsServer\Data
<ops_dataDrive variable>\OpsServer\Data"
```

```
RepairMosaicDatasets.py C:\OpsServer\Data "C:\OpsServer\Data
\\server.domain\OpsServer\Data"
```

NOTE: you would have to share the OpsServer folder.

3) After Python script has finished, review script output for errors.

Copy ArcGIS Server caches (non-hosted services)

Copy the ArcGIS Server caches for non-hosted services from the external drive to the Ops Server.

CAUTION: do not copy the caches for the hosted services. These files will be copied to the Ops Server after the hosted services have been published. If these caches exist prior to publishing the hosted services, the publishing operation will fail.

Steps:

1) Open a command window (cmd.exe) with administrator privilege (i.e. "Run as administrator" context menu).

2) Within the command window, run the ROBOCOPY copy utility that is provided in Windows to copy the contents of the "Caches" folder from the external drive to the "arcgiscache" folder on the Ops Server using the following syntax:

   ```
   robocopy <SourceFolder> <DestinationFolder> /E /R:3 /W:5
   ```

   Where:

   <SourceFolder> (required): path of source folder to copy **(i.e. the OPSServerInstall\Server\Staging\Caches folder on the external drive)**.

   <DestinationFolder> (required): path of folder where source folder will be copied **(i.e. < ops_cacheDrive variable>\arcgisserver\directories\arcgiscache)**.

   Example (replace drive letters as appropriate for your configuration):

   ```
   robocopy G:\OPSServerInstall\Server\Staging\Caches
   C:\arcgisserver\directories\arcgiscache /E /R:3 /W:5
   ```

3) After robocopy has finished the copy, review the copy statistics for any errors.

Copy enterprise geodatabase datasets

Copy the file geodatabase datasets located on the external drive to the PostgreSQL enterprise geodatabases on the Ops Server.

Steps:

1) Open a command window (cmd.exe) with administrator privilege (i.e. "Run as administrator" context menu).

2) Within the command window, change directory to the C:\ops-server-config\Publish\Server folder and run the `CopyGDBs.py` Python script using the parameters described below.

   `CopyGDBs.py <SourceFolder> <DestinationFolder>`

   Where:

   `<SourceFolder> (required): folder path of SDE connection files/file geodatabases` **(i.e. the OPSServerInstall\Server\DistributionEntGDBs folder on the external drive)**.

   `<DestinationFolder> (required): folder path of SDE connection files/file geodatabases` **(i.e. <ops_dataDrive variable>\OpsServer\DBConnections)**.

   Example (replace drive letters as appropriate for your configuration):

   ```
   CopyGDBs.py G:\OPSServerInstall\Server\DistributionEntGDBs
   C:\OpsServer\DBConnections
   ```

3) After Python script has finished, review script output for errors.

Publish portal content

The instructions below describe how to publish the Ops Server portal items contained on your external drive to your portal using the Python script `PortalContentPost.py`.

Prerequisites:

- Software has been installed/configured using the InstallOpsServer.bat file and installation has been validated (see topic Install Ops Server software).
- The Portal for ArcGIS file upload limits have been increased (see topic Increase Portal file upload limits).
- Write access to the OPSServerInstall\Portal\PortalContent folder on your external drive (the `PortalContentPost.py` script requires write access to this folder).

NOTEs:

- Portal content can be published independently of the ArcGIS Server services (i.e. before or after publishing services).
- Deleting portal content:
  - If you need to republish the portal content you can use the Python script `PortalContentDestroyer.py` to delete the existing portal content.
  - If you have published the ArcGIS Server services, but haven't run the `RemapIDsOnServices.py` script (see topic Re-map portal item ids on ArcGIS Server services) you will need to manually delete the portal items owned by the user that published the services.
- If you need to re-run the `PortalContentPost.py` script, make sure to delete the OPSServerInstall\Portal\PortalContent\PortalPostLogs\"*ServerName"* folder on the external drive (the `PortalContentPost.py` script creates files in this folder that store the mapping between the original portal item ids and the new ids).

Steps:

1) Change passwords for portal users.

   The portal user names and their associated passwords are stored within the userfile.txt file located in the OPSServerInstall\Portal\PortalContent folder on your external drive. The PortalContentPost.py script used to publish the OpsServer portal items to your Portal uses the information in this file to create the users in your portal.

   a. Open Windows Explorer and navigate to the OPSServerInstall\Portal\PortalContent folder on your external drive.
   b. Open the userfile.txt file in a text editor.
   c. Change the TargetPassword values for the users by searching for and replacing the default value "MyDefault4Password!".
   d. Save the file and exit the text editor.

2) Open a command window (cmd.exe) (do not need to "Run as administrator).

3) Within the command window, change directory to the C:\ops-server-config\Publish\Portal folder and run PortalContentPost.py Python script using the parameters described below.

   ```
   PortalContentPost.py <PortalURL> <AdminUser> <AdminPassword>
   <ContentFolderPath> {UsersToPost} {GroupsToPost} {IdMappingFile}

   Where:

   <PortalURL> (required): URL of Portal to post content (i.e.
   https://fully_qualified_domain_name/arcgis)
   ```
   (where

"fully_qualified_domain_name" is the variable "ops_FQDN" value set in the InstallSettings.bat file; also include the port number 7443, i.e. https://fully_qualified_domain_name:7443/arcgis)

`<AdminUser> (required): Portal user that has administrator role.` **(i.e. what the variable "ops_userName" is set to in the InstallSettings.bat file)**

`<AdminPassword> (required): Password for AdminUser.` **(i.e. what the variable "ops_passWord" is set to in the InstallSettings.bat file)**

`<ContentFolderPath> (required): Folder path containing portal content to post.` **(i.e. this is the OPSServerInstall\Portal\PortalContent folder on the external drive)**

`{UsersToPost} (optional):` allows you to publish only portal items owned by specific users by specifying a list of users. **(NOTE: do NOT use this parameter until a future release of the Ops Server portal content and ArcGIS Services)**

`{GroupsToPost} (optional):` allows you to publish portal items that have been shared with a specific portal group or groups. **(NOTE: do NOT use this parameter until a future release of the Ops Server portal content and ArcGIS Services)**

`{IdMappingFile} (optional):` **(Do NOT use this parameter)**

Example:

```
PortalContentPost.py https://server.domain:7443/arcgis admin password
G:\OPSServerInstall\Portal\PortalContent
```

4) When script has completed, review script output for errors.

NOTE: Please ignore the error "ERROR:portalpy:Item 'nnnnnnnnnnn' does not exist in this folder." **You can ignore this error in any script that is executed.**

Publish the ArcGIS Server services

The instructions below describe how to publish the Ops Server ArcGIS Server services using the Python script PublishToOpsServer.py.

Prerequisites:

- Software has been installed/configured using the InstallOpsServer.bat file and installation has been validated (see topic Install Ops Server software).
- The Ops Server data has been copied to your server (see topic Copy Ops Server data).
- The ArcGIS Data Store limits have been increased (see topic Increase ArcGIS Data Store limits).

Steps:

1) Open a command window (cmd.exe) with administrator privilege (i.e. "Run as administrator" context menu).

2) Within the command window, change directory to the C:\ops-server-config\Publish\Server folder and run the PublishToOpsServer.py Python script using the parameters described below.

```
PublishToOpsServer.py <Server_FullyQualifiedDomainName> <Server_Port>
<User_Name> <Password> <Use_SSL: Yes|No> <Start_Service: Yes|No>
<Service_Definition_Root_Folder_Path> {OwnersToPublish}
{GroupsToPublish}
```

Where:

<Server_FullyQualifiedDomainName> (required parameter) Fully qualified domain name of ArcGIS Server.

<Server_Port> (required parameter) ArcGIS Server port number; if not using server port enter '#' **(specify the port number 6443)**

<User_Name> (required parameter) ArcGIS Server site administrator user name **(i.e. what the variable "ops_userName" is set to in the InstallSettings.bat file)**

<Password> (required parameter) ArcGIS Server site administrator password **(i.e. what the variable "ops_passWord" is set to in the InstallSettings.bat file)**

<Use_SSL: Yes|No> (required) Flag indicating if ArcGIS Server requires HTTPS. **(the install scripts have you configure the ArcGIS Server security configuration as "HTTPS Only" so enter Yes for this parameter)**

<Start_Service: Yes|No> (required) Flag indicating if the service should be started after publishing. **(specify NO. Not starting the services will significantly decrease the time to run the RemapIDsOnServices.py. You will be starting the services later using a Python script)**

<Service_Definition_Root_Folder_Path> (required parameter) is the path of the root folder containing the service definition (.sd) files to upload (publish) **(i.e. this is the OPSServerInstall\Server\ServiceDefinitions folder on the external drive)**

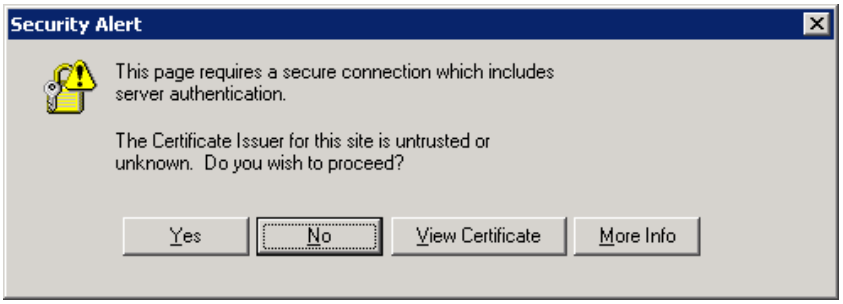
{Owners_To_Publish} (optional parameter) allows you to publish only ArcGIS Server services that are owned by a specific user or users.

{Groups_To_Publish} (optional parameter) allows you to publish only ArcGIS Server services that belong to a specific portal group or groups.

Example (G is the drive letter of the external drive in this example):

```
PublishToOpsServer.py server.domain 6443 admin password Yes
No G:\OPSServerInstall\Server\ServiceDefinitions
```

NOTE: if you are prompted with the following "Security Alert", click "Yes".



3) After Python script has finished, review script output for errors.

Re-map portal item ids on ArcGIS Server services

In a federated server, the ownership and access permissions of ArcGIS Server services are based on the user that owns the associated portal service items and the sharing settings on those items. The association between the service and it's service item(s) is stored within the service json information, an example is shown below. Note that the owner value is not stored within the json, just the portal item types and the itemID's of the portal items.

When you published the services using the PublishToOpsServer.py script you used the portal administrator user, so this user currently "owns" the services and the associated portal items (default items were created during the publishing of the services). We now want to assign the ownership back to the original portal users that owns the portal items that you posted to your portal using the PublishContentPost.py script earlier. We will re-assign the services using the RemapIDsOnServices.py script. This script will reset the portal item ids in the service json to match the corresponding portal service item for all of the ArcGIS Server services.

Prerequisites:

- The ArcGIS Server services have been published (see topic Publish the ArcGIS Server services).
- The portal content has been published (see topic Publish portal content).

Steps:

1) Open a command window (cmd.exe) with administrator privilege (i.e. "Run as administrator" context menu).

2) Within the command window, change directory to the C:\ops-server-config\Publish\Portal folder and run the `RemapIDsOnServices.py` Python script using the parameters described below.

```
RemapIDsOnServices.py <Server_FullyQualifiedDomainName> <Server_Port>
<User_Name> <Password> <Use_SSL: Yes|No>
```

Where:

<Server_FullyQualifiedDomainName> (required): the fully qualified domain name of the ArcGIS Server/Portal for ArcGIS machine. **(i.e. what the variable "ops_FQDN" is set to in the InstallSettings.bat file)**

<Server_Port> (required): the port number of the ArcGIS Server (specify # if no port). **(Specify the port number 6443)**

<User_Name> (required): ArcGIS Server/Portal for ArcGIS site administrator. **(i.e. what the variable "ops_userName" is set to in the InstallSettings.bat file)**

<Password> (required): Password for ArcGIS Server/Portal for ArcGIS site administrator user. **(i.e. what the variable "ops_passWord" is set to in the InstallSettings.bat file)**

<Use_SSL: Yes|No> (required) Flag indicating if ArcGIS Server requires HTTPS. **(the install scripts have you configure the ArcGIS Server security configuration as "HTTPS Only" so enter Yes for this parameter)**

Example:

```
RemapIDsOnServices.py server.domain 6443 admin password Yes
```

3) **IMPORTANT**: After executing this script, log into the portal as the admin user and share all portal items owned by the admin (i.e. the items that could not be remapped to original owner) with "Everyone." To do this, navigate to https://MyServer.doamin.com/arcgis/home , sign in and click on the "My Content" tab. Select the items and click "Share."

Publish hosted services

The sections below describe how to publish the Ops Server hosted services.

Prerequisites:

- The Ops Server portal content has been published to Portal for ArcGIS site (see topic Publish portal content).

Publish hosted feature/tile services

The hosted services are published from the service definition items that were added to your Ops Server when you published the portal content. The instructions below describe how to publish the Ops Server hosted services using the Python script PublishHostedServices.py.

Prerequisites:

- The Ops Server portal content has been published to Portal for ArcGIS site (see topic Publish portal content).

Steps:

1) Open a command window (cmd.exe).

2) Within the command window, change directory to the C:\ops-server-config\Publish\Portal folder and run the `PublishHostedServices.py` Python script using the parameters described below.

   ```
   PublishHostedServices.py <PortalURL> <AdminUser> <AdminUserPassword>
   {GUID{,GUID...}}
   ```

   Where:

   `<PortalURL> (required): URL of Portal (i.e. https://fully_qualified_domain_name/arcgis)` **(where "fully_qualified_domain_name" is the variable "ops_FQDN" value set in the InstallSettings.bat file; also include the port number 7443, i.e. https://fully_qualified_domain_name:7443/arcgis)**

   `<AdminUser> (required): Primary portal administrator user.` **(i.e. what the variable "ops_userName" is set to in the InstallSettings.bat file)**

   `<AdminUserPassword>` (required): Password for AdminUser. **. (i.e. what the variable "ops_passWord" is set to in the InstallSettings.bat file)**

   `GUID{,GUID...}} (optional): GUIDs of source items to publish` **(i.e. you can use this parameter to selectively republish hosted services if there are publishing failures; the**

GUID is the id of the service definition item on the portal for the hosted service you want to publish)

Example:

```
PublishHostedServices.py https://server.domain:7443/arcgis admin
password
```

4) After Python script has finished, review script output for errors. Republish any hosted services that failed to publish.

Publish hosted scene services

The hosted scene services are created from the hosted feature services published in the previous section. The instructions below describe how to publish the Ops Server hosted scene services using the Python script PublishHostedSceneServices.py.

Prerequisites:

- The Ops Server hosted feature services have been published to Portal for ArcGIS site (see topic Publish hosted feature/tile services).

Steps:

3) Open a command window (cmd.exe).

4) Within the command window, change directory to the C:\ops-server-config\Publish\Portal folder and run the `PublishHostedSceneServices.py` Python script using the parameters described below.

```
PublishHostedSceneServices.py <PortalURL> <AdminUser>
<AdminUserPassword> <SceneServiceParameterFolder> {GUID{,GUID...}}
```

Where:

`<PortalURL> (required): URL of Portal (i.e. https://fully_qualified_domain_name/arcgis)` **(where "fully_qualified_domain_name" is the variable "ops_FQDN" value set in the InstallSettings.bat file; also include the port number 7443, i.e. https://fully_qualified_domain_name:7443/arcgis)**

`<AdminUser> (required): Primary portal administrator user.` **(i.e. what the variable "ops_userName" is set to in the InstallSettings.bat file)**

`<AdminUserPassword>` (required): Password for AdminUser **(i.e. what the variable "ops_passWord" is set to in the InstallSettings.bat file)**

`<SceneServiceParameterFolder> (required): folder containing the scene service publishing parameter json files` **(use the OPSServerInstall\Portal\SceneServiceDefs folder located on the external drive)**

`{GUID{,GUID...}} (optional): GUIDs of hosted feature services associated with hosted scene services` **(i.e. you can use this parameter to selectively republish hosted scene services if there are publishing failures; the GUID is the id of the feature service item on the portal associated with the hosted scene service you want to publish)**

Example (G is the drive letter of the external drive in this example):

```
PublishHostedSceneServices.py https://server.domain:7443/arcgis
admin password G:\OPSServerInstall\Portal\SceneServiceDefs
```

5) After Python script has finished, review script output for errors. Republish any hosted scene services that failed to publish. Use the hosted feature service GUID listed in the script output for the GUID parameter when you rerun the script.

Create hosted service id map

The portal contains resources, such as Web Maps, that may reference the GUIDs of the original hosted service portal items, i.e. those items published by the PortalContentPost.py script. These GUIDs need to be updated to reference the new hosted service portal items that were created by the PublishHostedServices.py script. Using the instructions below, you will run a script to create a JSON file containing the GUID mapping between the original and new hosted service portal items, which you will use as a parameter to the UpdatePortalGUIDs.py script.

Prerequisites:

- The hosted services have been published to Portal for ArcGIS site (see topic Publish portal content).

Steps:

1) Open a command window (cmd.exe).

2) Within the command window, change directory to the C:\ops-server-config\Publish\Portal folder and run the `FindOrphanedHostedServices.py` Python script using the parameters described below.

```
FindOrphanedHostedServices.py <PortalURL> <AdminUser>
<AdminUserPassword> {delete_orphaned_items}
```

Where:

`<PortalURL> (required): URL of Portal (i.e. https://fully_qualified_domain_name/arcgis)` **(where "fully_qualified_domain_name" is the variable "ops_FQDN" value set in the InstallSettings.bat file; also include the port number 7443, i.e. https://fully_qualified_domain_name:7443/arcgis)**

`<AdminUser> (required): Primary portal administrator user.` **(i.e. what the variable "ops_userName" is set to in the InstallSettings.bat file)**

`<AdminUserPassword>` (required): Password for AdminUser. **.(i.e. what the variable "ops_passWord" is set to in the InstallSettings.bat file)**

`{delete_orphaned_items}(optional): NO_DELETE | DELETE` **(use the NO_DELETE option)**

Example:

```
FindOrphanedHostedServices.py https://server.domain:7443/arcgis
admin password NO_DELETE
```

CAUTION: Make sure to specify NO_DELETE for the {delete_orphaned_items} parameter or leave blank and the script will default to NO_DELETE.

NOTE: the GUID mapping information is written to the file `C:\ops-server-config\Publish\Portal\hosted_service_item_mapping.json`.

Update portal item guids

Using the UpdatePortalGUIDs.py script you will update references to the hosted service portal items.

Prerequisites:

- The hosted service GUID mapping file has been created (see topic Create hosted service id map).

Steps:

1) Open a command window (cmd.exe) with administrator privilege (i.e. "Run as administrator" context menu).

2) Within the command window, change directory to the C:\ops-server-config\Publish\Portal folder and run the `UpdatePortalGUIDs.py` Python script using the parameters described below.

```
UpdatePortalGUIDs.py <PortalURL> <AdminUser> <AdminUserPassword>
<IdMappingFile> {SearchQuery}
```

Where:

`<PortalURL> (required): URL of Portal (i.e. https://fully_qualified_domain_name/arcgis)` **(where "fully_qualified_domain_name" is the variable "ops_FQDN" value set in the InstallSettings.bat file; also include the port number 7443, i.e. https://fully_qualified_domain_name:7443/arcgis)**

`<AdminUser> (required): Primary portal administrator user.` **(i.e. what the variable "ops_userName" is set to in the InstallSettings.bat file)**

`<AdminUserPassword>` (required): Password for AdminUser. **(i.e. what the variable "ops_passWord" is set to in the InstallSettings.bat file)**

```
<IdMappingFile> (required): file containing the item id mapping
information (i.e. output file C:\ops-server-config\Publish\Portal\
hosted_service_item_mapping.json created by the
FindOrphanedHostedServices.py script)
```

```
{SearchQuery} (optional): Portal search query
```

Example:

```
UpdatePortalGUIDs.py https://server.domain:7443/arcgis admin password
C:\ops-server-config\Publish\Portal\ hosted_service_item_mapping.json
```

NOTEs:

- The script will prompt you if you want to continue with the update after it finds all the portal items to update.
- Ignore the error "ERROR:portalpy: item does not exist in this folder".

Delete original hosted service items

After you have updated the portal GUIDs, there is no reason for the original hosted service items to exist, so use the FindOrphanedHostedService.py script with the delete parameter to delete these items .

Prerequisites:

- The portal item guids have been updated (see topic Update portal item guids)

Steps:

1) Open a command window (cmd.exe).

2) Within the command window, change directory to the C:\ops-server-config\Publish\Portal folder and run the `FindOrphanedHostedServices.py` Python script using the parameters described below.

```
FindOrphanedHostedServices.py <PortalURL> <AdminUser>
<AdminUserPassword> {delete_orphaned_items}
```

Where:

<PortalURL> (required): URL of Portal (i.e. https://fully_qualified_domain_name/arcgis) **(where "fully_qualified_domain_name" is the variable "ops_FQDN" value set in the InstallSettings.bat file; also include the port number 7443, i.e. https://fully_qualified_domain_name:7443/arcgis)**

<AdminUser> (required): Primary portal administrator user. **(i.e. what the variable "ops_userName" is set to in the InstallSettings.bat file)**

<AdminUserPassword> (required): Password for AdminUser. **(i.e. what the variable "ops_passWord" is set to in the InstallSettings.bat file)**

{delete_orphaned_items}(optional): NO_DELETE | DELETE **(use the DELETE option)**

Example:

```
FindOrphanedHostedServices.py https://server.domain:7443/arcgis admin
password DELETE
```

Update hosted feature service definitions

After the hosted feature services are published, the editing, export data, sync, and track edits properties will need to be updated using the script `UpdateHostedServiceDefinitions.py`.

Prerequisites:

- The original (i.e. orphaned) hosted service items have been deleted (see topic Delete original hosted service items).

Steps:

1) Open a command window (cmd.exe).

2) Within the command window, change directory to the C:\ops-server-config\Publish\Portal folder and run the `UpdateHostedServiceDefinitions.py` Python script using the parameters described below.

```
UpdateHostedServiceDefinitions.py <Server_FullyQualifiedDomainName>
<Server_Port> <User_Name> <Password> <Use_SSL: Yes|No>
<Hosted_Service_Definition_File>
```

Where:

<Server_FullyQualifiedDomainName> (required): the fully qualified domain name of the ArcGIS Server/Portal for ArcGIS machine. **(i.e. what the variable "ops_FQDN" is set to in the InstallSettings.bat file)**

<Server_Port> (required): the port number of the ArcGIS Server (specify # if no port). **(Specify the port number 6443)**

<User_Name> (required): ArcGIS Server/Portal for ArcGIS site administrator. **(i.e. what the variable "ops_userName" is set to in the InstallSettings.bat file)**

<Password> (required): Password for ArcGIS Server/Portal for ArcGIS site administrator user. **(i.e. what the variable "ops_passWord" is set to in the InstallSettings.bat file)**

<Use_SSL: Yes|No> (required) Flag indicating if ArcGIS Server requires HTTPS. **(the install scripts have you configure the ArcGIS Server security configuration as "HTTPS Only" so enter Yes for this parameter)**

<Hosted_Service_Definition_File> (required) the json file containing the hosted service definitions (created by WriteHostedServiceDefinitions.py) **(use the OPSServerInstall\Portal\hosted_service_definitions.json file located on the external drive)**

Example (G is the drive letter of the external drive in this example):

```
UpdateHostedServiceDefinitions.py server.domain 6443 admin
password Yes
G:\OPSServerInstall\Portal\hosted_service_definitions.json
```

3) After Python script has finished, review script output for errors.

Copy hosted tile service caches

Copy the ArcGIS Server caches for hosted tile services from the external drive to the Ops Server.

Prerequisites:

- The hosted tile services have been published to Portal for ArcGIS site (see topic Publish hosted feature/tile services).

Steps:

1) In file explorer, navigate to the <ops_cacheDrive variable>\arcgisserver\directories\arcgiscache folder.

2) **Move any of the "Hosted_*" caches folders that were created during the hosted service publishing step to another folder outside the `arcgiscache` folder (for example <ops_cacheDrive variable>\arcgisserver\directories\original_hosted)**.

3) Open a command window (cmd.exe) with administrator privilege (i.e. "Run as administrator" context menu).

4) Within the command window, run the ROBOCOPY copy utility that is provided in Windows to copy the contents of the "CachesHosted" folder from the external drive to the "arcgiscache" folder on the Ops Server using the following syntax:

   ```
   robocopy <SourceFolder> <DestinationFolder> /E /R:3 /W:5
   ```

   Where:

   `<SourceFolder> (required): path of source folder to copy` **(i.e. the OPSServerInstall\Server\Staging\CachesHosted folder on the external drive)**.

   `<DestinationFolder> (required): path of folder where source folder will be copied` **(i.e. < ops_cacheDrive variable>\arcgisserver\directories\arcgiscache)**.

   Example (replace drive letters as appropriate for your configuration):

   ```
   robocopy G:\OPSServerInstall\Server\Staging\CachesHosted
   C:\arcgisserver\directories\arcgiscache /E /R:3 /W:5
   ```

5) After robocopy has finished the copy, review the copy statistics for any errors.

Build hosted scene service cache

The hosted scene services are created from the hosted feature services published in the previous section. The instructions below describe how to publish the Ops Server hosted scene services using the Python script PublishHostedSceneServices.py.

Prerequisites:

- The Ops Server hosted scene services have been published to Portal for ArcGIS site (see topic Publish hosted scene services).

Steps:

5) Open a command window (cmd.exe).

6) Within the command window, change directory to the C:\ops-server-config\Utilities folder and run the `BuildSceneCache.py` Python script using the parameters described below.

```
BuildSceneCache.py <Server_FullyQualifiedDomainName> <User_Name>
<Password> {SceneService{,SceneService...}}
```

Where:

<Server_FullyQualifiedDomainName> (required): the fully qualified domain name of the ArcGIS Server machine. **(i.e. what the variable "ops_FQDN" is set to in the InstallSettings.bat file)**

<User_Name> (required): ArcGIS Server for ArcGIS site administrator. **(i.e. what the variable "ops_userName" is set to in the InstallSettings.bat file)**

<Password> (required): Password for ArcGIS Server for ArcGIS site administrator user. **(i.e. what the variable "ops_passWord" is set to in the InstallSettings.bat file)**

{SceneService{,SceneService...}} (optional): list of scene services to build scene cache on. **(i.e. you can use this parameter to selectively build hosted scene service cache)**

Example:

```
BuildSceneCache.py server.domain 6443 admin password
```

After Python script has finished, review script output for errors.

Start the published ArcGIS Server services

Start the services using the provided StartStopServices.py Python script.

WARNING: Depending on your system memory, you may not be able to start all services. The file ServiceList.txt, containing a list of all Ops Server services is provided in the OPSServerInstall\Server\ServiceDefinitions folder on your external drive, which you can copy and edit to create service list subsets for use in the {Service_List_File} parameter of the StartStopServices.py script.

1) Open a command window (cmd.exe) with administrator privilege (i.e. "Run as administrator" context menu).

2) Within the command window, change directory to the C:\ops-server-config\Publish\Server folder and run StartStopServices.py Python script using the parameters described below.

```
StartStopServices.py <Server_Name> <Server_Port> <User_Name> <Password>
<Use_SSL: Yes|No> <Start|Stop> {{folder/}service.type,...|
Service_List_File}
```

Where:

<Server_Name> (required) ArcGIS Server server name.

<Server_Port> (required) server port; if not using server port enter # **(specify the port number 6443)**

<User_Name> (required) user with admin or publisher permission. **(i.e. what the variable "ops_userName" is set to in the InstallSettings.bat file)**

<Password> (required) user password **(i.e. what the variable "ops_passWord" is set to in the InstallSettings.bat file)**

<Use_SSL: Yes|No> (required) Flag indicating if ArcGIS Server requires HTTPS. **(specify 'Yes' because security on the ArcGIS Server is configured as 'HTTPS only')**

<Start|Stop> (required) action to perform **(use "Start" in this particular case)**.

{{folder//}service.type,...| Service_List_File} (optional) to Start|Stop specific services, specify comma delimited list of services or specify a path to a file containing {{folder/}service.type entries.

Example:

```
StartStopServices.py server.domain 6443 admin password Yes
Start
```

3) After Python script has finished, review script output for errors.

Configure and deploy web applications

The following section describes the steps required to deploy the Ops Server web applications to the Internet Information Services (IIS) installation on your Ops Server and perform post deployment processing.

Configure and deploy

The following section describes the steps required to configure and deploy the Ops Server web application files.

Prerequisites:

- The portal content has been published (see topic Publish portal content).

Steps:

1) Copy the folder OPSServerInstall\WebApps\wwwroot from your external drive to a temp location on your OpsServer, for example C:\temp_wwwroot.

    a. Create `C:\temp_wwwroot` folder.

    b. Open a command window (cmd.exe) with administrator privilege (i.e. "Run as administrator" context menu).

    c. Within the command window, run the ROBOCOPY copy utility that is provided in Windows to copy the contents of the "OPSServerInstall\WebApps\wwwroot" folder from the external drive to the "C:\temp_wwwroot" folder on the Ops Server using the following syntax:

    ```
    robocopy <SourceFolder> <DestinationFolder> /E /R:3 /W:5
    ```

    Where:

    `<SourceFolder> (required): path of source folder to copy` **(i.e. the OPSServerInstall\WebApps\wwwroot folder on the external drive)**.

    `<DestinationFolder> (required): path of folder where source folder will be copied` **(i.e. C:\temp_wwwroot)**.

    Example (replace drive letters as appropriate for your configuration):

    ```
    robocopy G:\OPSServerInstall\WebApps\wwwroot
    C:\temp_wwwroot /E /R:3 /W:5
    ```

    d. After robocopy has finished the copy, review the copy statistics for any errors.

2) Update the server names and portal application IDs in the URLs of the web application with the server name and portal applications IDs on your Ops Server using the `UpdateWebApps.py` script.

   a. Open a command window (cmd.exe).

   b. Within the command window, change directory to the C:\ops-server-config\SupportFiles folder and run the `UpdateWebApps.py` Python script using the parameters described below.

```
UpdateWebApps.py <RootFolderToSearch> <OldServerName>
<NewServerName> <IDJsonFile>

Where:

<RootFolderToSearch> (required): the path of the root folder to
search for web files to edit.
```
(i.e. the temporary location where you copied the "wwwroot" folder from the external drive, for example C:\temp_wwwroot)

`<OldServerName> (required): the old server name` **(use the value stored in the "source_hostname" variable in the C:\ops-server-config\Publish\Portal\PortalContentPost.py Python script)**

`<NewServerName> (required): the new server name where web apps will running on` **(i.e. what the variable "ops_FQDN" is set to in the InstallSettings.bat file)**

`<IDJsonFile> (required): the` **`fully qualified`** `file path to the .json file containing the old and new portal item ids. (i.e. the file named "oldID_newID.json" that is created by the PublishContentPost.py script within the source portal content folder)` **(the "oldID_newID.json" file is created when you ran the PublishContentPost.py script to publish the portal items to your OpsServer; the file can be found in the OPSServerInstall\Portal\PortalContent\PortalPostLogs\"*ServerName*" folder on the external drive)**

Example:

```
UpdateWebApps.py C:\MyFiles\wwwroot_temp\SolutionsWeb <TODO: add
source server fully qualified name> server.domain
G:\OPSServerInstall\Portal\PortalContent\PortalPostLogs\
server.domain\oldID_newID.json
```

c. Run the `UpdateWebApps.py` script a **second time** using the `C:\ops-server-config\Publish\Portal\hosted_service_item_mapping.json` file created by the `FindOrphanedHostedServices.py` script for the `<IDJsonFile>` parameter.

3) Cut and paste the contents of the temporary wwwroot folder (i.e. C:\temp_wwwroot) to the wwwroot folder of your OpsServer's Internet Information Services (ISS) wwwroot folder (i.e. C:\inetpub\wwwroot)

Copy application and template downloads

The Ops Server release contains the applications and templates from the Esri Products Download site (http://www.esri.com/apps/products/download/index.cfm) for the following domains:

- ArcGIS for Defense

Document Link items have been provided on the Ops Server portal to aid in searching for these downloads. To enable downloading these applications and templates stored locally on the Ops Server from the portal, follow the steps provided below.

Prerequisites:

- The portal content has been published (see topic Publish portal content).

Steps:

1) Create the folder "`Downloads`" in the folder `C:\inetpub\wwwroot`

2) Open a command window (cmd.exe) with administrator privilege (i.e. "Run as administrator" context menu).

3) Within the command window, run the ROBOCOPY copy utility that is provided in Windows to copy the contents of the "OPSServerInstall\Downloads" folder from the external drive to the "C:\inetpub\wwwroot\Downloads" folder on the Ops Server using the following syntax:

```
robocopy <SourceFolder> <DestinationFolder> /E /R:3 /W:5
```

Where:

`<SourceFolder> (required): path of source folder to copy` **(i.e. the OPSServerInstall\Downloads folder on the external drive)**.

`<DestinationFolder> (required): path of folder where source folder will be copied` **(i.e. C:\inetpub\wwwroot\Downloads folder)**.

Example (replace drive letters as appropriate for your configuration):

```
robocopy G:\OPSServerInstall\Downloads
C:\inetpub\wwwroot\Downloads /E /R:3 /W:5
```

4) After robocopy has finished the copy, review the copy statistics for any errors.

Configure portal settings

After you have published the portal items configure your portal settings using the following steps.

Prerequisites:

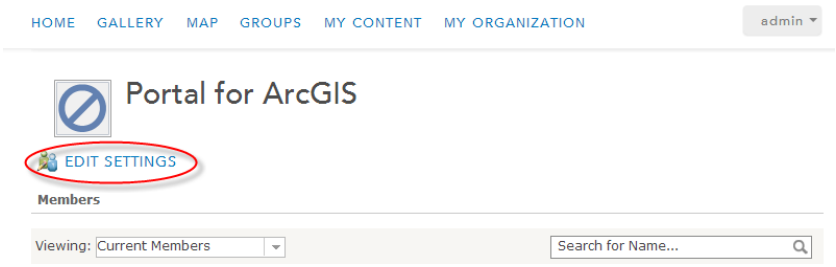
- The portal content must have already been published (see topic Publish portal content).
- The web applications must have already been deployed (see topic Deploy and configure web applications).
- All geocode services must be started.

Steps:

1) Open a web browser and enter the URL to your portal machine (i.e. https://server.domain/arcgis/home).

2) Sign in to the portal using the administrator user **(i.e. the "ops_userName" and "ops_passWord" variable values set in the InstallSettings.bat file)**

3) Click on "My Organization" then Click on "Edit Settings"



4) Click on the "General" tab on the left side of the page.

   a. Edit the "Logo and Name".
      i. The Thumbnail image (thumbnail.png) can be found in OPSServerInstall\Portal\PortalResources folder on your external drive.

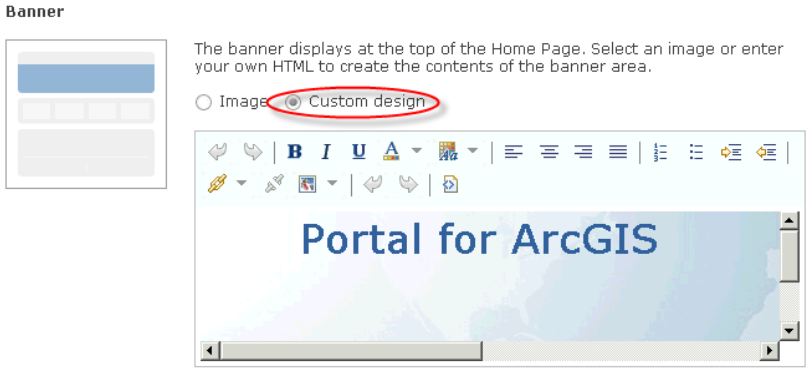
   b. Edit the "Description".
      i. The description text can be found in the description.txt file in the in OPSServerInstall \Portal\PortalResources folder on your external drive. Or use your own description.
      ii. Check the "Show description toward bottom of Home Page" checkbox.

   c. Edit the default language and set to "English - English".

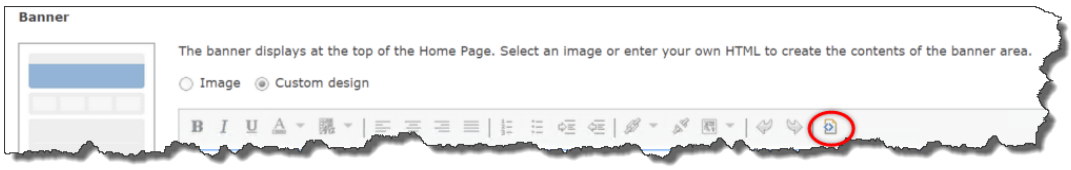
5) Click on the "Home Page" tab on the left side of page.

a. Edit the “Banner”.

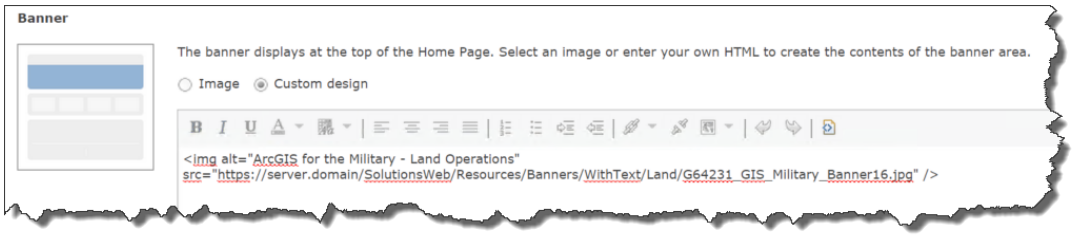
i. Click “Custom design” radio button



ii. Click the “View HTML Source” button



iii. Edit the HTML to display the banner of your choosing. An example of the HTML is shown below:



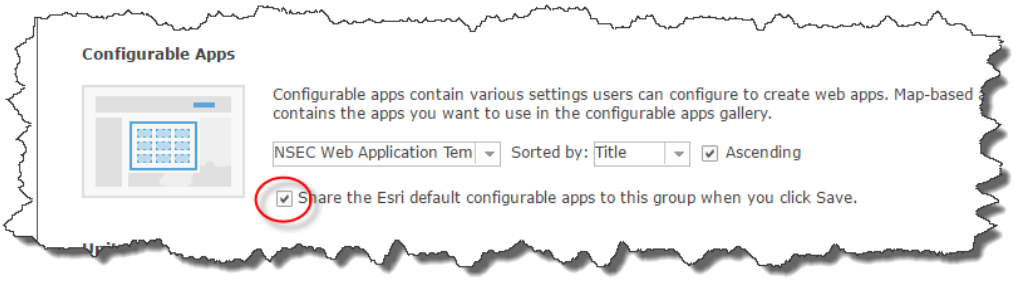
- Change the “alt” property to an appropriate value.
- Change the “server.domain” to your server (i.e. the variable “ops_FQDN” value set in the InstallSettings.bat file).
- Change the .jpg file name URL to the banner of your choosing. Included with the Ops Server are banners (with and without text) for the following domains (the banners are stored in the local C:\inetpub\wwwroot\SolutionsWeb\Resources\Banners folder):
  - Air
  - Domestic
  - Intel
  - Land
  - Maritime

b. Set “Featured Content” group to the “**NSEC Featured Maps and Apps**” group.

6) Click on the “Map” tab on the left side of page.
   a. Set the “Basemap Gallery” group to “**National Security Basemaps**”.

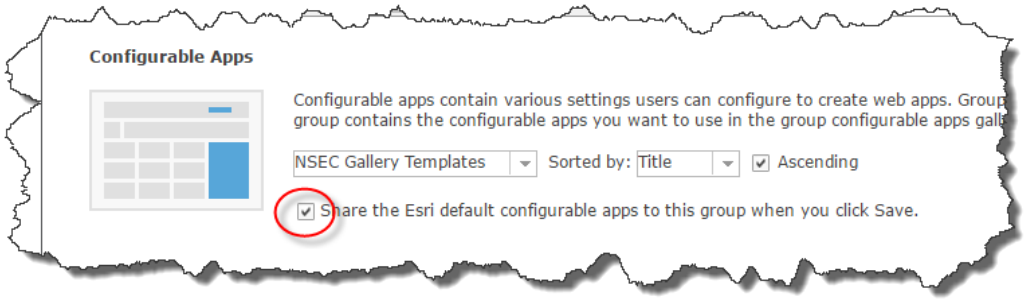
   b. Make sure the “Default Basemap” is set to “Topographic”.

   c. Set the “Configurable Apps” group to “**NSEC Web Application Templates**” and check the “Share the Esri default web application templates to this group when you click Save” option.



7) Click on the “Groups” tab on the left side of the page.
   a. For “Featured Groups” make sure the “**NSEC Featured Maps and Apps**” group is listed under the “Feature Groups” list (you can set this to whatever groups you need to support your demos).

b. Set the "Configurable Apps" group to "**NSEC Gallery Templates**" and check the "Share the Esri default gallery applications to this group when you click Save" option.



8) Configure geocoders
   a. Click on the "Utility Services" tab on the left side of the page.
   b. Add the following geocoders to the portal using the "Add Geocoder" dialog (i.e. click "ADD GEOCODER"):

NOTE: the geocode services must be started prior to adding the geocoders to the portal.

Geocoder URL *	Geocoder Name	Placeholder Text
`https://server.domain/ags/rest/services/NationalIntelligence/GNISNames/GeocodeServer`	`GNIS Name`	`Place name`
`https://server.domain/ags/rest/services/NationalIntelligence/LongitudeLatitude/GeocodeServer`	`Longitude/Latitude`	`Longitude, Latitude decimal degree coordinate`
`https://server.domain/ags/rest/services/NationalIntelligence/MGRS/GeocodeServer`	`MGRS`	`MGRS coordinate`

* Where "`server.domain`" is the fully qualified domain to your server (i.e. the variable "ops_FQDN" value set in the InstallSettings.bat file)

NOTE: Check both the "Allow place finding" and "Allow batch geocoding" checkboxes for each geocoder.

9) Click on the "Save" button on the top left of the page to save your changes.

10) Configure portal to use a local elevation service for use by Scene Services.

   a. Open a web browser and enter the URL to the ArcGIS Portal Directory of your portal machine (i.e. https://server.domain/arcgis/sharing).

b. Log in to the ArcGIS Portal Directory using the administrator user **(i.e. the "ops_userName" and "ops_passWord" variable values set in the InstallSettings.bat file)**

c. Navigate to `https://server.domain/arcgis/sharing/portals/self` URL and click "Update".

d. Within the "Elevation3D Service" textbox enter the following:

```
[{"url": "<new_elevation_service_url>", "id": "globalElevation",
"layerType": "ArcGISTiledElevationServiceLayer"}]
```

Where:
<new_elevation_service_url> is the URL to a cached image service in WGS 1984 Web Mercator (Auxiliary Sphere) projection and uses Limited Error Raster Compression (LERC.

Replace <new_elevation_service_url> with the URL to the NationalIntelligence/WorldElevationCache image service that was published to your ArcGIS Server (i.e. https://server.domain/ags/rest/services/NationalIntelligence/CachedWorldElevation/ImageServer)

e. Click "Update Organization".

Configure Geoevent for Ops Server

Configure Geoevent

Configure Geoevent with the Operations Server geoevent services.

Prerequisites:

- ArcGIS Server, Portal for ArcGIS, Message Simulator, and Geoevent should be installed; ArcGIS Server should be federated with Portal for ArcGIS (see topic Install Ops Server software).
- ArcGIS Server services should be published (see topic Publish the ArcGIS Server services).

Steps:

1) Configure Portal for ArcGIS to use the SSL Certificate from IIS
    a. Export the SSL certificate from IIS
        i. Open Internet Information Services (IIS) Manager
        ii. Click on the server node in the Connections dialog.
        iii. From the “Features View”, double-click on “Server Certificates”.
        iv. Click on the certificate, right-click and select “Export”
        v. Export the certificate to the local file system.
    b. Import the SSL certificate into the Portal for ArcGIS certificate store
        i. Using a web browser, log into the Portal administrator REST API (https://server.domain/arcgis/portaladmin)
        Where “server.domain” is the fully qualified domain to your server (i.e. the variable “ops_FQDN” value set in the InstallSettings.bat file)
        ii. Navigate to https://server.domain/arcgis/portaladmin/security/sslCertificates
        iii. Click “Import Existing Server Certificate” link.
        iv. Enter the password for the certificate in the "Certificate password" textbox.
        v. Provide an alias name for the certificate in the "Alias" textbox; recommend using the Common Name (CN) of the certificate (i.e. the fully qualified name of the server).
        vi. Click on "Choose File" and browse to and select the certificate .pfx file that was exported from IIS Manager.
        vii. Click “Import”. The certificate should now display in the list of SSL certificates.
    c. Configure Portal for ArcGIS to use the imported SSL certificate
        i. On the https://server.domain/arcgis/portaladmin/security/sslCertificates page, click the “Update” link.
        ii. In the "Web server SSL Certificate" textbox, enter the name of the certificate alias you entered in the previous steps.
        iii. Click the “Update” button to apply settings.
        iv. **Restart the Portal for ArcGIS windows service**.

2) Configure ArcGIS Server to use the SSL Certificate from IIS
    a. Import the SSL certificate into the ArcGIS Server certificate store
        i. Using a web browser, log into the Server administrator REST API (https://server.domain/ags/admin)
        Where "server.domain" is the fully qualified domain to your server (i.e. the variable "ops_FQDN" value set in the InstallSettings.bat file)
        ii. Navigate to https://server.domain/ags/admin/machines/<machine_name>/sslcertificates
        iii. Click "importExistingServerCertificate" link.
        iv. Enter the password for the certificate in the "Certificate password" textbox.
        v. Provide an alias name for the certificate in the "Alias" textbox; recommend using the Common Name (CN) of the certificate (i.e. the fully qualified name of the server).
        vi. Click on "Choose File" and browse to and select the certificate .pfx file that was exported from IIS Manager.
        vii. Click "Import". The certificate should now display in the list of SSL certificates.
    b. Configure ArcGIS Server to use the imported SSL certificate
        i. On the https://server.domain/ags/admin/machines/<machine_name> page, click the "edit" link.
        ii. In the "Web server SSL Certificate" textbox, enter the name of the certificate alias you entered in the previous steps.
        iii. Click the "Save Edits" button to apply settings.
    c. **Restart the ArcGIS Server windows service**.

3) Copy the Ops Server GeoEvent data files and jar files to your server:
    a. Copy the `OPSServerInstall\Geoevent\Data` folder on your external drive to the `C:\` drive (i.e. C:\Data).

    b. Copy the `OPSServerInstall\Geoevent\GeoEventData` folder on your external drive to the `C:\OpsServer` folder (i.e. C:\OpsServer\GeoEventData).

        NOTE: you may have to create the `C:\OpsServer` folder if you configured the Ops Server installation process to create the `OpsServer\Data` and `OpsServer\DBConnections` folders on a drive other than the C:\ drive.

    c. Copy all the .jar files from the `OPSServerInstall\Geoevent\jar_files` folder on your external drive to the `C:\Program Files\ArcGIS\Server\GeoEvent\deploy` folder.

4) Import the Ops Server GeoEvent configuration

a. Sign into the GeoEvent Manager (`https://server.domain:6143/geoevent/manager`) using your portal administrator account.

   Where “server.domain” is the fully qualified domain to your server (i.e. the variable “ops_FQDN” value set in the InstallSettings.bat file). The portal administrator account username and password are the “ops_userName” and “ops_passWord” variable values set in the InstallSettings.bat file.

b. In GeoEvent Manager, click on Site > GeoEvent > Configuration Store and then “Import Configuration”. The “Import Configuration” dialog is displayed.

c. Click “Choose File” and in the “Open” dialog, browse to and select the GeoEventConfig.xml file located in the OPSServerInstall\Geoevent folder on your external drive. Click “Open” and click “Next” in the “Import Configuration” dialog.

d. Select “Import Configuration” option and click “Import”.

   You can ignore the following error:

e. Modify the “Default”, “OpsServer”, and “OpsServer-Portal-SpatioTemporal” registered ArcGIS Server data store entries.
   i. Navigate to Site > Data Stores

   ii. Edit the “Default” entry (type: Portal)
      1. Check the "Use Web Tier Authentication" checkbox.
      2. Set the "Web Tier Username" to the administrator portal user (ops_userName variable in the InstallSettings.bat)
      3. Set the "Web Tier Password" to the password for the administrator portal user (ops_passWord variable in the InstallSettings.bat)
      4. Verify that the URL is set to `https://<server.domain>/arcgis/`. Where server.domain is the fully qualified domain to your server (i.e. the variable “ops_FQDN” value set in the InstallSettings.bat)
      5. Click "Register".

   iii. Edit the “OpsServer” entry (type: Server)
      1. Make sure that both the “Use Token” and “Use Web Tier Authentication” checkboxes are UNCHECKED.

2. Change the URL to https://server.domain/ags/. Where server.domain is the fully qualified domain to your server (i.e. the variable "ops_FQDN" value set in the InstallSettings.bat).
3. Click "Register".

NOTE: if the URL https://server.domain/ags/ does not work, an alternative is to use https://server.domain:6443/arcgis/

iv. Edit the "OpsServer-Portal-SpatioTemporal" entry (type: Portal)
    1. Check the "Use Web Tier Authentication" checkbox.
    2. Set the "Web Tier Username" to the administrator portal user (ops_userName variable in the InstallSettings.bat)
    3. Set the "Web Tier Password" to the password for the administrator portal user (ops_passWord variable in the InstallSettings.bat)
    4. Verify that the URL is set to https://<server.domain>/arcgis/. Where server.domain is the fully qualified domain to your server (i.e. the variable "ops_FQDN" value set in the InstallSettings.bat)
    5. Click "Register".

v. These three registered ArcGIS Server data store entries should now validate.

5) Review inputs, services, and outputs and verify that they have started. It may take 5-10 minutes for the services to automatically start.

Deploy message files and start Message Simulator

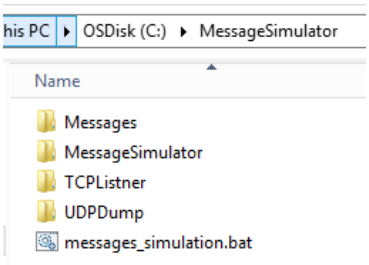
When the Message Simulator schedule task was created during the install of the Ops Server software, it was immediately disabled. Now that the Geoevent extension has been configured with the Ops Server geoevent services, the scheduled task can be run.

Prerequisites:

- The Message Simulator is installed and the schedule task is created (see topic Install Ops Server software).

Steps:

1) To deploy the message files, copy both the Messages folder and the messages_simulation.bat file from the OPSServerInstall\Geoevent\MessageSimulator folder on your external drive directly under the C:\MessageSimulator folder. Your C:\MessageSimulator folder should now look like the following:



2) To start the Message Simulator:
    a. Open a command window (cmd.exe) with administrator privilege (i.e. “Run as administrator” context menu).
    b. Within the command window, run the following commands:

```
SCHTASKS /Change /TN MessageSimulator /ENABLE
SCHTASKS /Run /TN MessageSimulator
```

Verify that GeoEvent extension is updating feature services

You can verify features are being updated by examining the Monitor page in GeoEvent Manager.

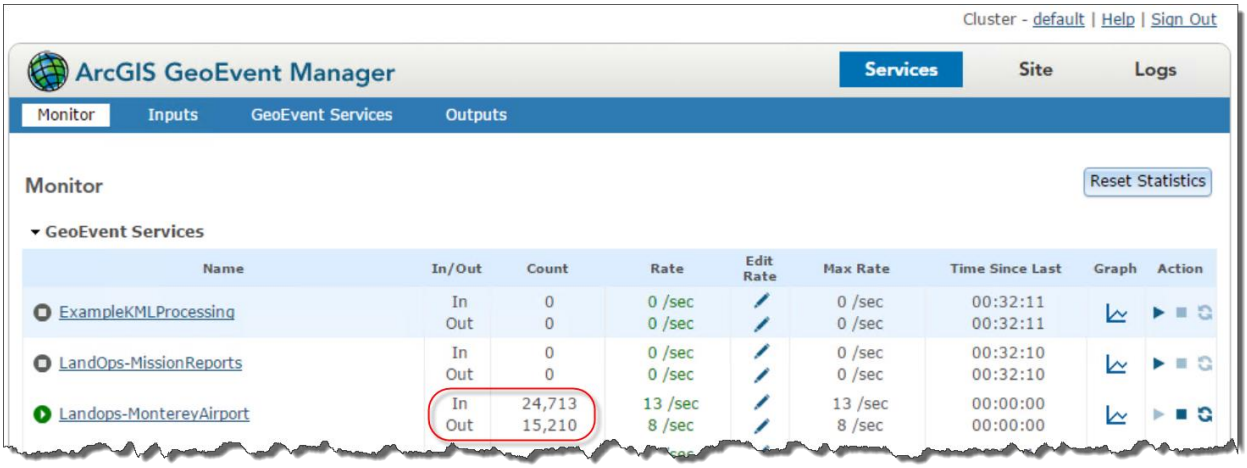
Prerequisites:

- The Ops Server software including Geoevent, and Message Simulator is installed (see topic Install Ops Server software and Configure Geoevent.
- The Ops Server content (ArcGIS Server services and portal content) has been published (see topic Publish Ops Server content).
- The Message Simulator is running (see topic Start Message Simulator).

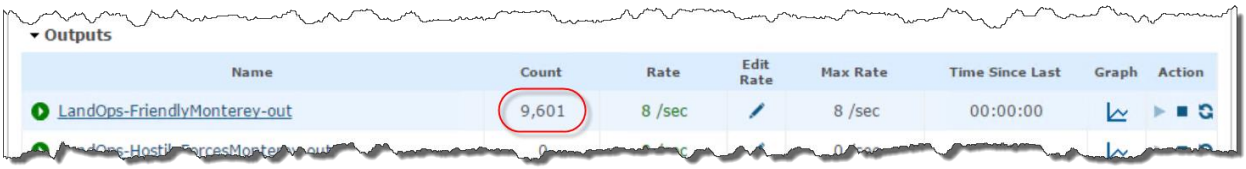
Steps:

1) Open a web browser and log into GeoEvent Manager. Navigate to Services > Monitor.

2) Verify that messages are entering and exiting GeoEvent Services.



3) Verify that the count is increasing on some of the Outputs.



Demo related ArcGIS Server/Geoevent services

Please be aware that there are additional ArcGIS Server and Geoevent services that must be manually published or configured to support demonstrations. Please see the individual demo folders contained in the *DemoAndScripts* folder on the external USB drive.

Deploy custom Web App Builder widgets (Optional)

Included in this release are custom Web App Builder widgets developed for the developer version of Web App Builder. If you would like to deploy these widgets to use with the hosted version of Web App Builder, please see the document ***Adding Custom Widgets to Portal for ArcGIS.*****docx** found in the folder OPSServerInstall\WebAppBuilder\Widgets on the external USB drive; the widgets are also found in this folder.

NOTE: Please note that deploying widgets to the hosted version of Web App Builder that were developed for the developer version of Web App Builder is not supported by Esri.

Chat Server

The chat server is used to demonstrate the chat capability within Operations Dashboard for ArcGIS. The chat server included with the Ops Server installation package is Openfire, an open source chat server from Igniterealtime (http://www.igniterealtime.org/projects/openfire/index.jsp).

Install and configure Openfire

You can install Openfire on the Ops Server or on a client machine.

Prerequisites:

- None.

NOTEs:

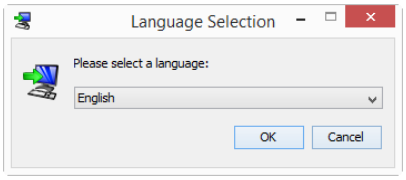
- There is a port conflict between Portal for ArcGIS and Openfire; both use port 7443 for SSL communication. If you install Openfire on your Ops Server, make sure to modify the SSL port number (see instructions below).

Steps:

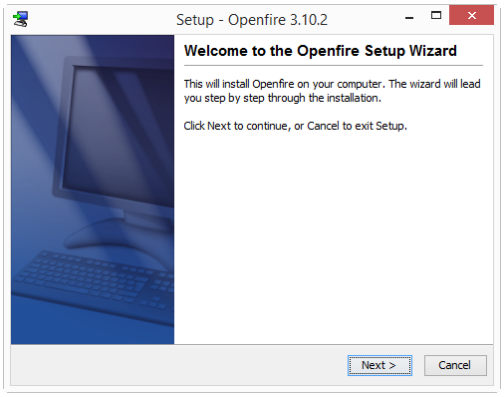
4) Open Windows Explorer and navigate to the folder OPSServerInstall\Software\ChatServer\OpenFire on your external drive.

5) Right-click the openfire_3_10_2.exe file and select "Run as administrator" to start the install process.

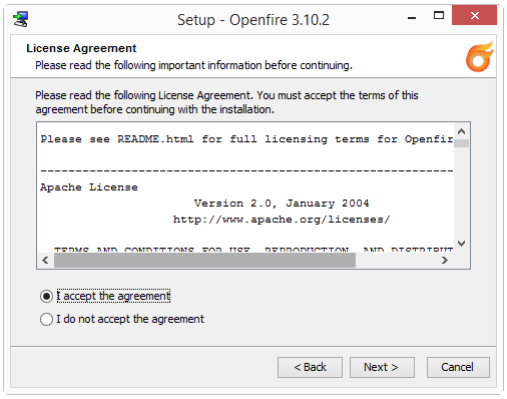
6) On Installer language dialog, please select "English" and click "OK" button.



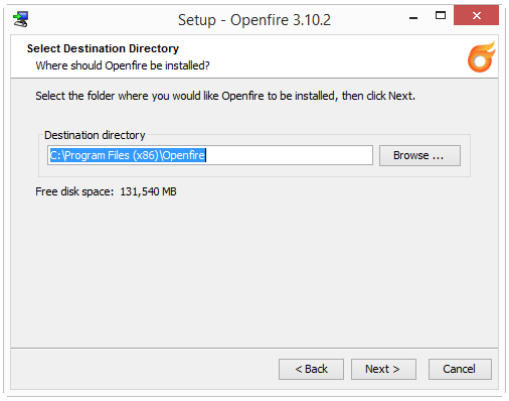
7) On welcome dialog, click “Next” button.



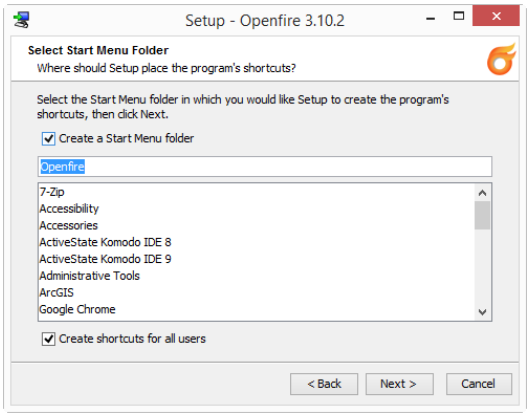
8) On the license agreement dialog, select “I accept the agreement” and click “Next” button.



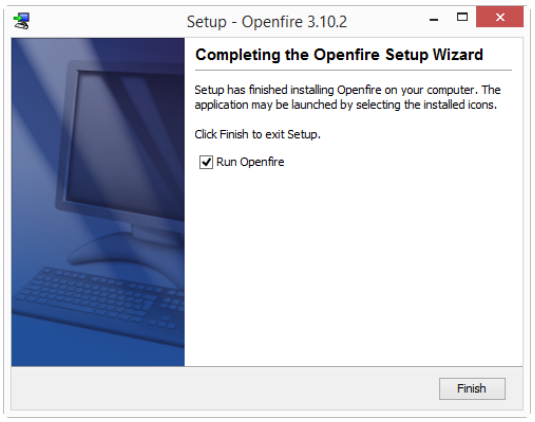
9) On the Select Destination Directory dialog, leave as the default and click “Next” button.



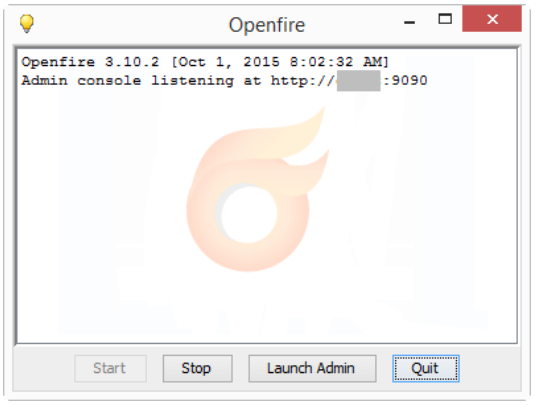
10) On the Select Start Menu Folder dialog, leave all the default values and click “Next” button. The installation will begin.



11) On the Completing the Openfire Setup Wizard dialog, make sure “Run Openfire” checkbox is checked and click the “Finish” button.

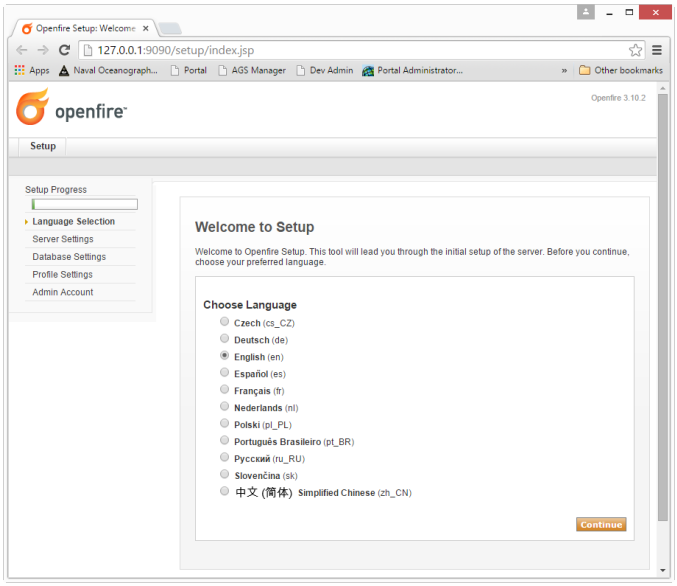


12) On the Openfire dialog, click the “Launch Admin” button (it will take a few seconds for the button to be enabled), which will open the default web browser.

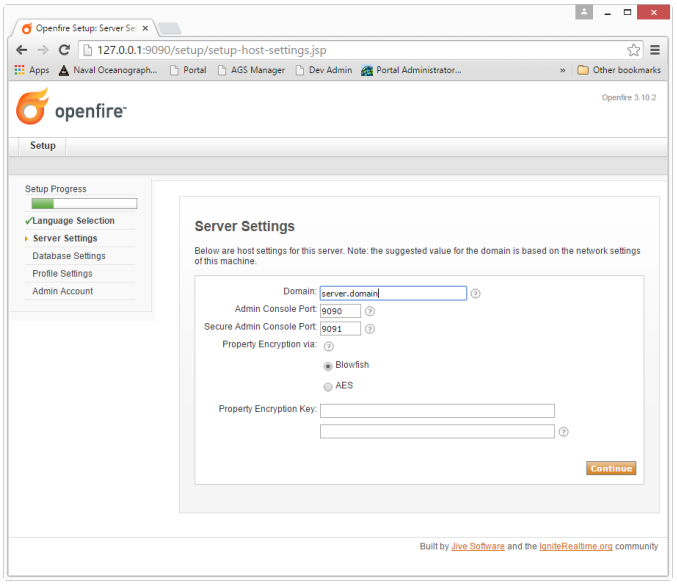


13) In the web browser, you may have to add http://127.0.0.1 to the Trusted sites.

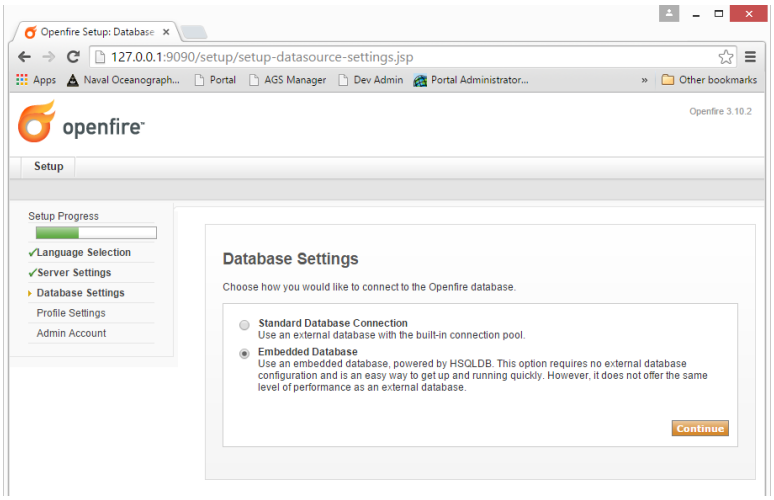
14) On the Choose Language dialog, select “English” and click “Continue”.



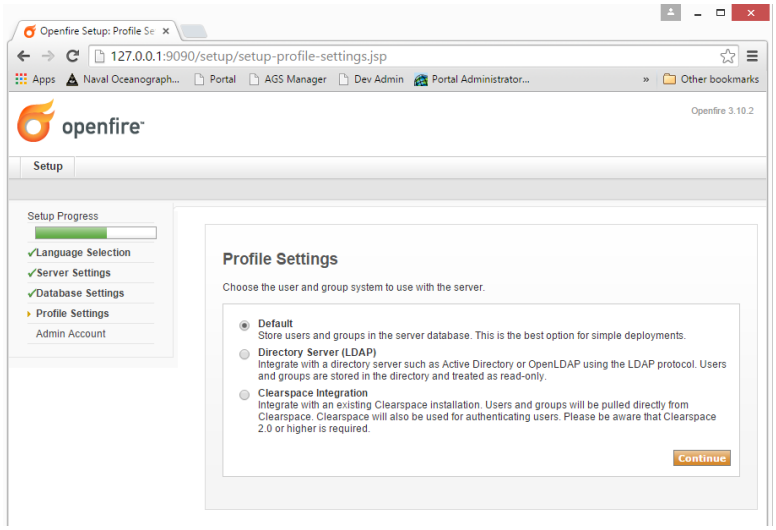
15) On the Server Settings dialog, edit the “Domain” parameter so that it contains the fully qualified domain name of your server (i.e. the ops_FQDN variable value set in the InstallSettings.bat file) and then click “Continue”.



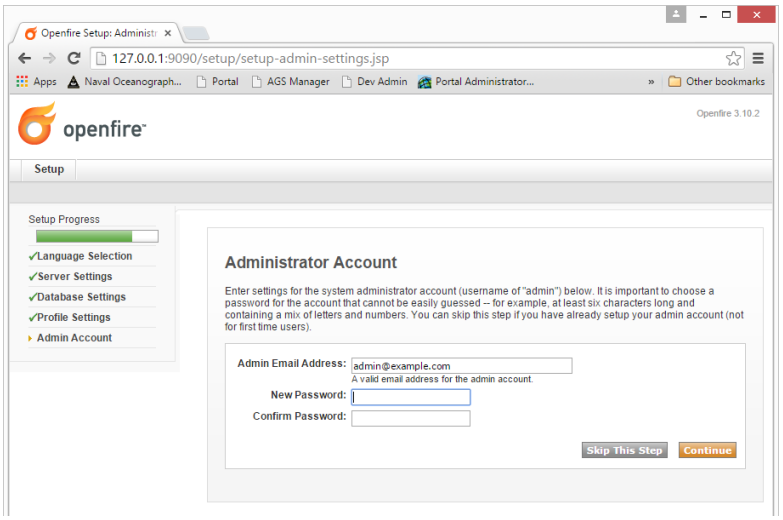
16) On the Database Settings dialog, select the “Embedded Database” option and click “Continue”.



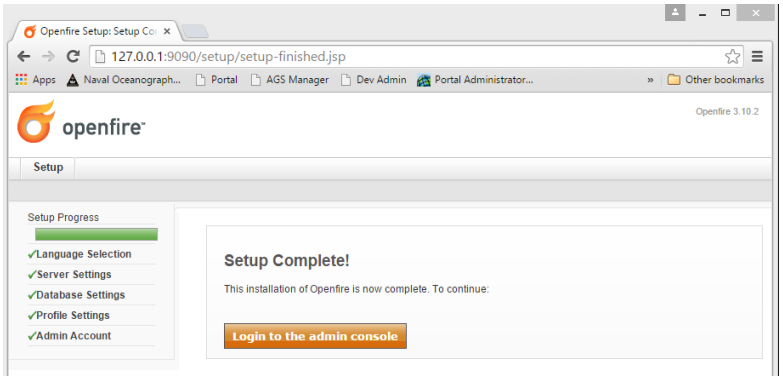
17) On the Profile Settings dialog, select the “Default” option and click “Continue”.



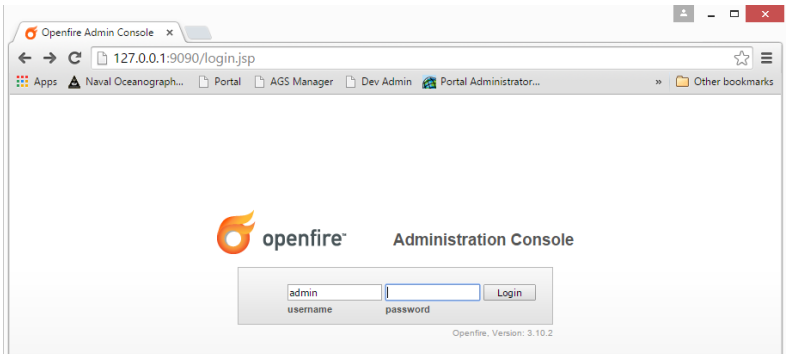
18) On the Administrator Account dialog, specify an email account, and a password (for consistency with other passwords on the server use the ops_passWord variable value set in the InstallSettings.bat file) and then click “Continue”.



19) On the Setup Complete dialog click “Login to the admin console”.



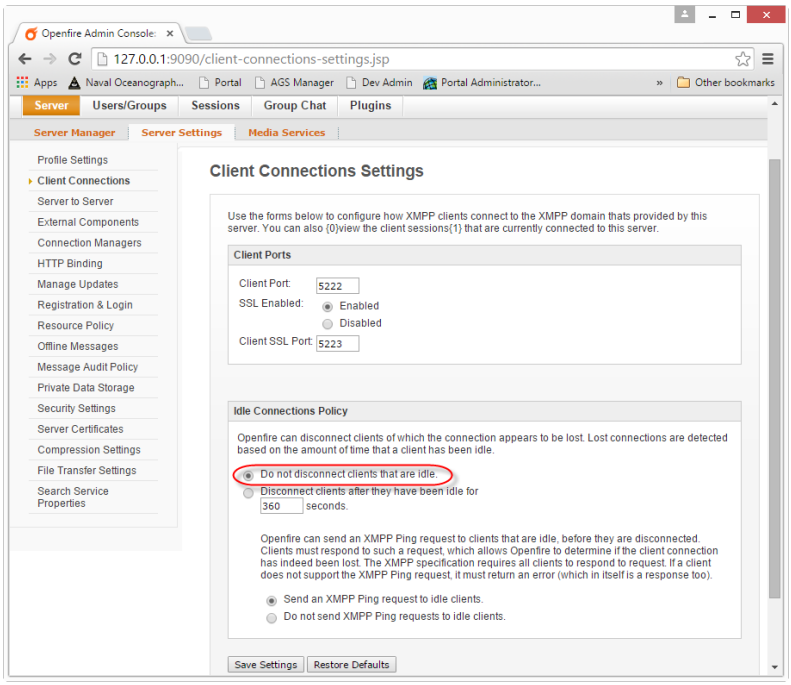
20) Log into the administration console. The username is “admin”, the password is the password you specified on the Administrator Account dialog above.



21) Change the “Idle Connections Policy”.

a. Click “Server Settings” tab and click “Client Connections”.

b. Click on “Do not disconnect clients that are idle.” and then click “Save Settings”.

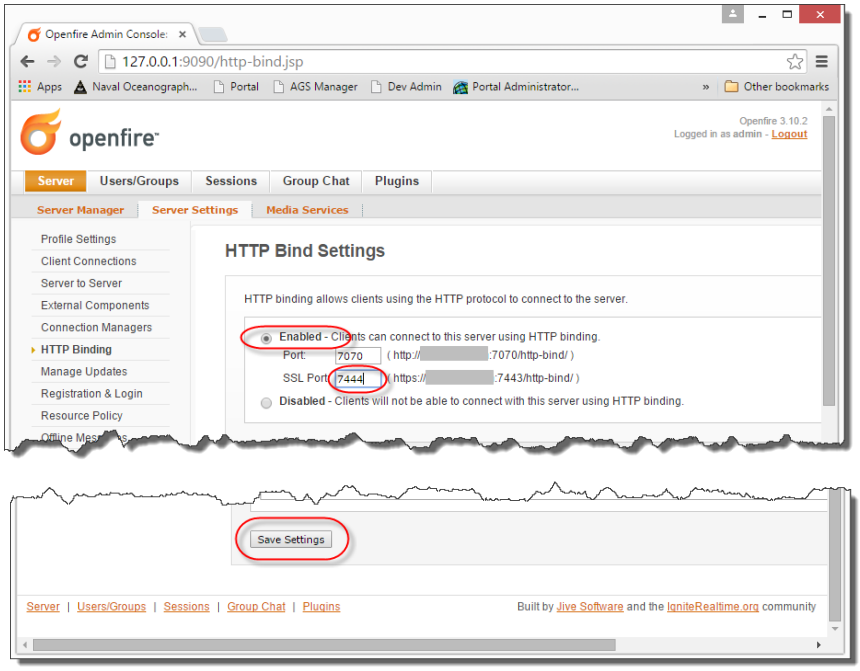


22) Change the “HTTP Bind Settings”.

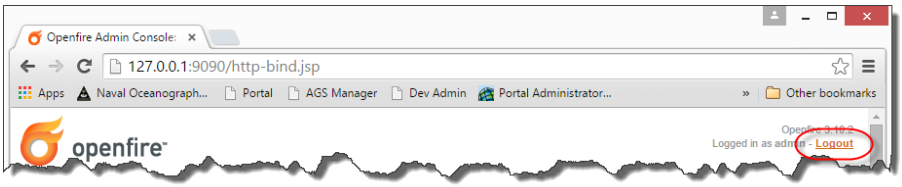
a. Click “HTTP Binding”.

b. Click the “Enabled – Clients can connect to this server using HTTP binding.” option and modify the “SSL Port” to a port that isn’t used by other applications, for example 7444 (the default port used by Openfire for SSL connections is 7443, which is the same port that Portal for ArcGIS uses for SSL communications). For more information on ports used by ArcGIS Server and Portal for ArcGIS, see the topics “Ports used by ArcGIS Server” and “Ports used by Portal for ArcGIS in the respectively administration guides.

Then click “Save Settings”.

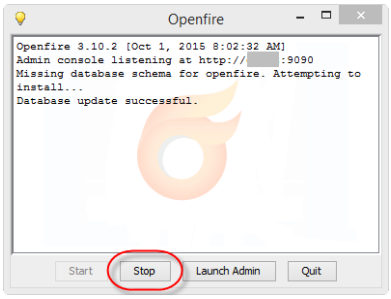


23) Logout of the Admin console.



24) Restart Openfire.

a. Click “Stop”.



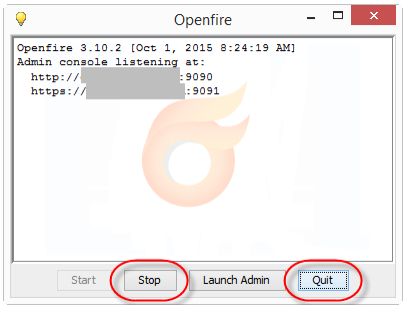
b. Click “Start”.

25) Test the https connection by typing in the following URL in a web browser and make sure you can login to the admin console (NOTE: Openfire installs a self-signed certificate so you will receive security exception warnings in your browser):

```
https://<fully_qualified_server_name>:9091
```

26) Create Openfire windows service.

a. Stop Openfire. Click “Stop” then “Quit”.



b. Open a command window (cmd.exe) with administrator privilege (i.e. “Run as administrator” context menu).

c. Within the command window, change directory to `C:\Program Files (x86)\Openfire\bin`

d. From the command prompt run the following commands (the /install switch will create the windows service; the /start switch will start the windows service):

```
openfire-service /install
openfire-service /start
```

Other Openfire window service commands	
Uninstall the windows service	`openfire-service /uninstall`
Stop the windows service	`openfire-service /stop`

e. Verify that the Openfire windows service is working by logging into the admin console through a web browser with the following URL:

```
https://<fully_qualified_server_name>:9091
```

Create Openfire users

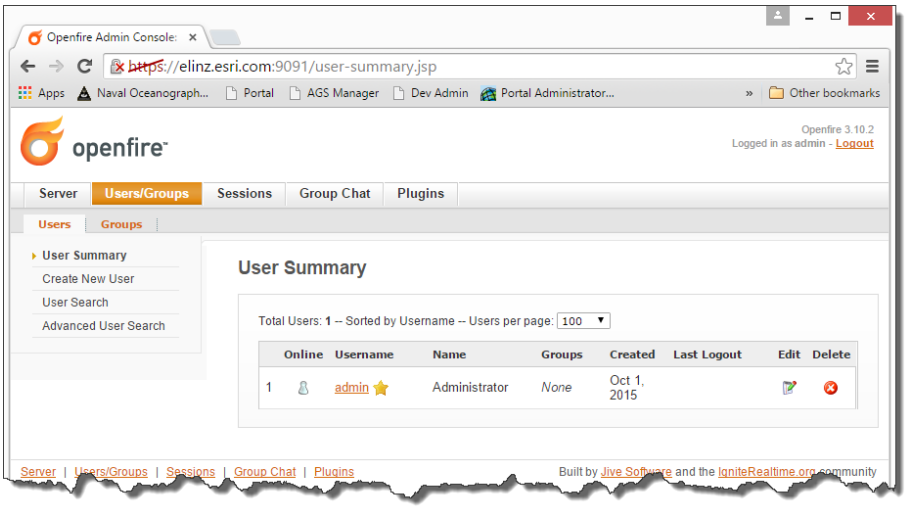
Create Openfire users as necessary for your demonstrations. For example, the "Operations Center" has the capability to consume chat server feeds; in order to support this capability you will need to create Openfire users.

To create Openfire users:

1) Log into the Openfire Admin Console by typing in the following URL in a browser. The username is "admin"; the password is the password you specified on the Administrator Account dialog when you installed Openfire.

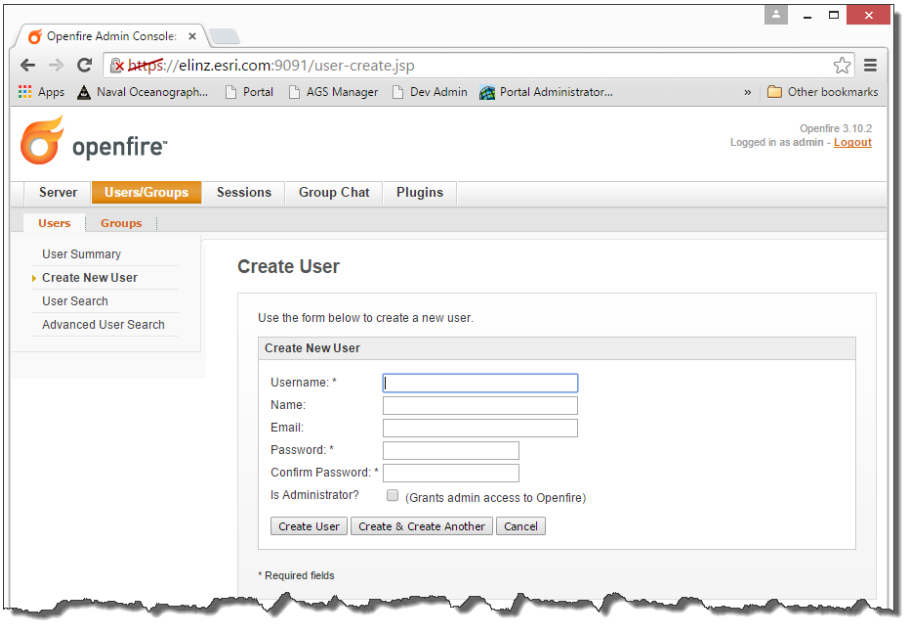
```
https://<fully_qualified_server_name>:9091/login.jsp
```

2) Click on the “Users/Groups” tab at the top of the page.



3) Click on the “Create new User” link on the left side of the page.

4) Enter values for the new user and click “Create User”.



Appendices

Appendix A: URLs and Passwords

Software	Interface	URL	User/password
Portal	To sign in as the initial administrator	https://<server.domain>/arcgis/home	User=ops_userName variable value. Password=ops_passWord variable value.
ArcGIS Server	Manager	https://<server.domain>/ags/manager https://<server.domain>:6443/arcgis/manager	User=ops_userName variable value. Password=ops_passWord variable value.
ArcGIS Server	REST	https://<server.domain>/ags/rest https://<server.domain>:6443/arcgis/rest	User=ops_userName variable value. Password=ops_passWord variable value.
Geoevent Manager	Manager	https://<server.domain>:6143/geoevent/manager	User=ops_userName variable value. Password=ops_passWord variable value.
PostgreSQL	pgAdmin	N/A	Password=ops_passWord variable value.
Openfire	Administration Console	http://<server.domain>:9090 https://<server.domain>:9091	User=admin. Password=ops_passWord variable value.

NOTEs:

- Varaibles noted in table are set in the C:\ops-server-config\Install\InstallSettings.bat file.
- <server.domain>=ops_FQDN variable value

Appendix B: Message Simulator
(Server side)

The process for installing and creating the message simulator OS Scheduled Task is automated and run during the installation of Ops Server software (see Install Ops Server software). However, if you need to run the Message Simulator manually or need to manually create the OS Scheduled Task the instructions are provided below.

The Message Simulator is an application used to simulate message broadcasts. It reads in a XML file containing messages structured in the GeoMessage format and broadcasts these messages using the UDP protocol. The GeoEvent Processor services process these messages and updates/inserts features in various feature services.

To run the Message Simulator manually (i.e. DOS console):

Prerequisites:

- The Message Simulator has been installed.

Steps:

1) Open a command window (cmd.exe) with administrator privilege (i.e. "Run as administrator" context menu).
2) Change directory to `C:\MessageSimulator`.
3) At the command prompt, type the following:
   `messages_simulation.bat`
4) To stop the .bat file execution, enter Ctrl+C within the command window.

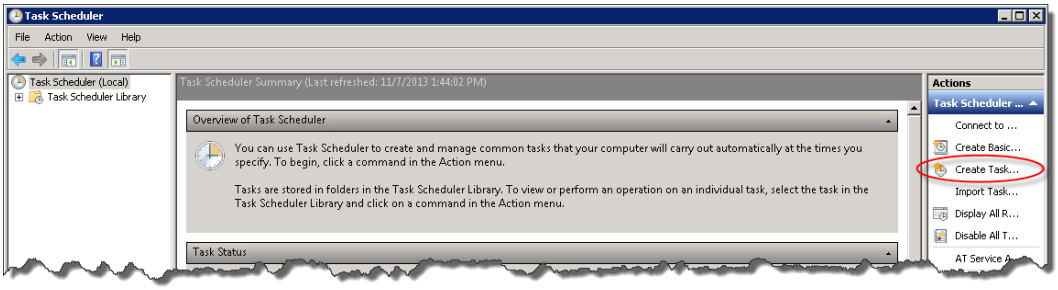
To run the Message Simulator as a Windows scheduled task:

Prerequisites:

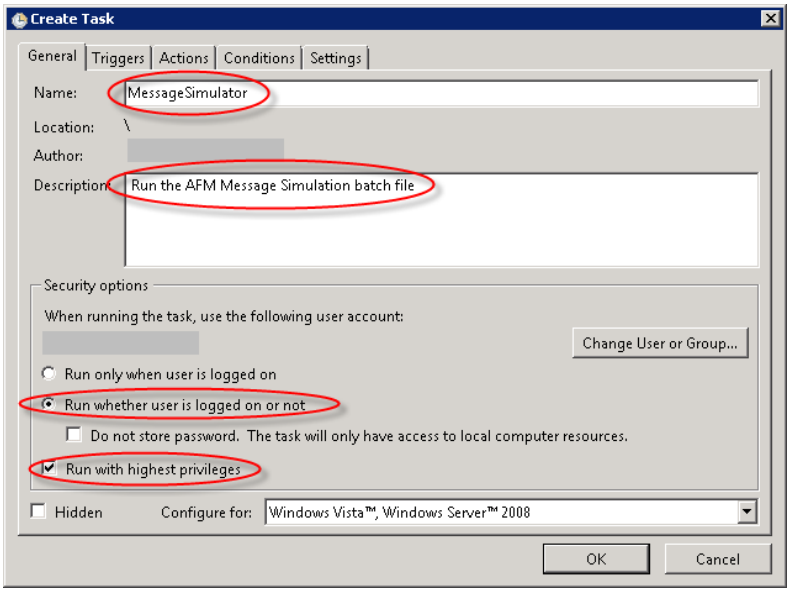
- The Message Simulator has been installed (see topic Install Message Simulator).

Steps:

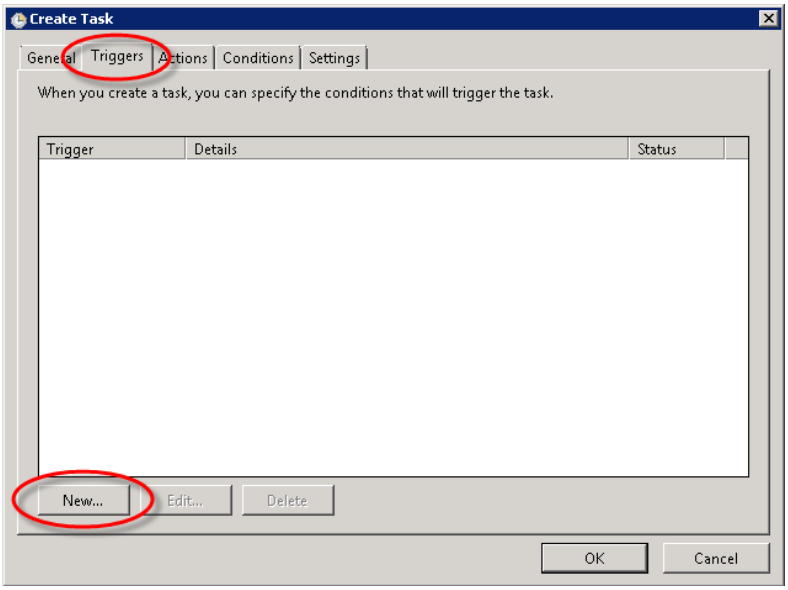
1) Go to Start > Administrator Tools > Task Scheduler and click "Create Task".



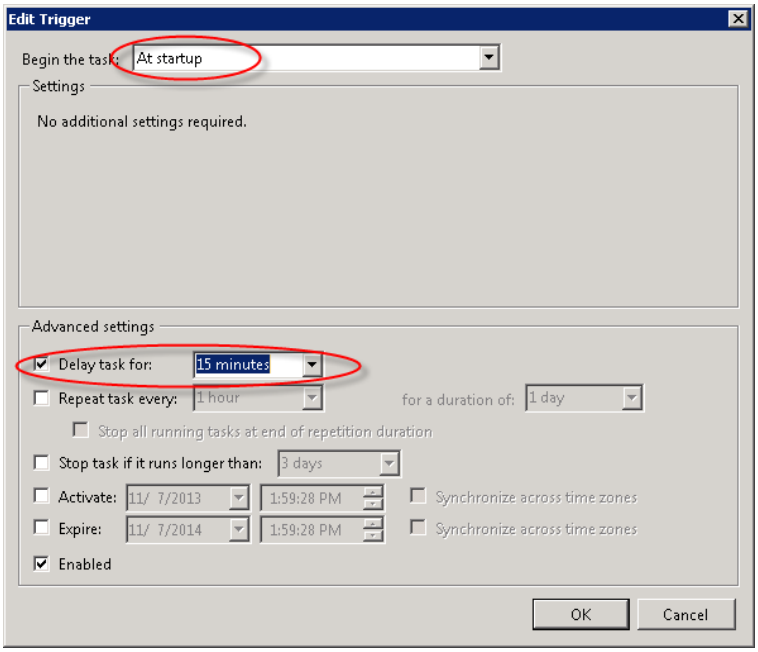
2) On the “Create Task” dialog:
    a. Set the Name to “MessageSimulator”.
    b. Set the Description to “Run the NSEC Message Simulation batch file”.
    c. Select the option to “Run whether user is logged on or not”.
    d. Check the “Run with highest privileges” checkbox.



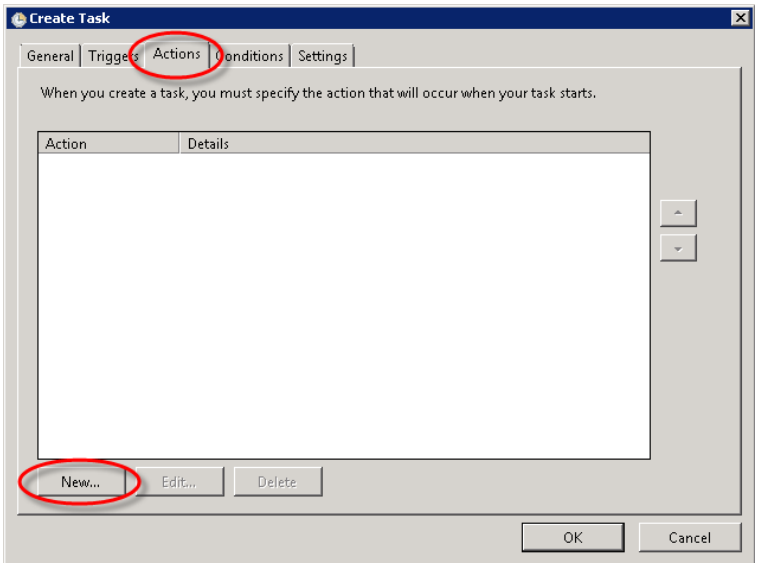
3) Click the “Triggers” tab and click “New”.



4) On the “New Trigger” dialog:
    a. Set the “Begin the task” property to “At startup”.
    b. Check the “Delay task for” checkbox and select “15 Minutes”.
    c. Click OK.



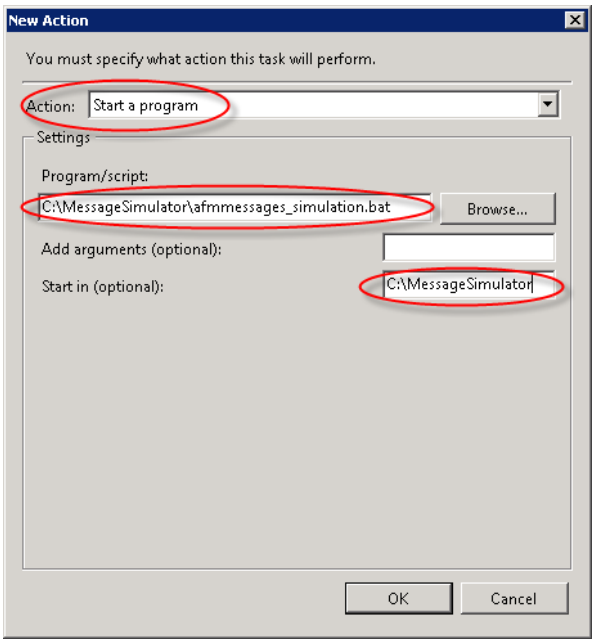
5) Click the “Actions” tab and click New.



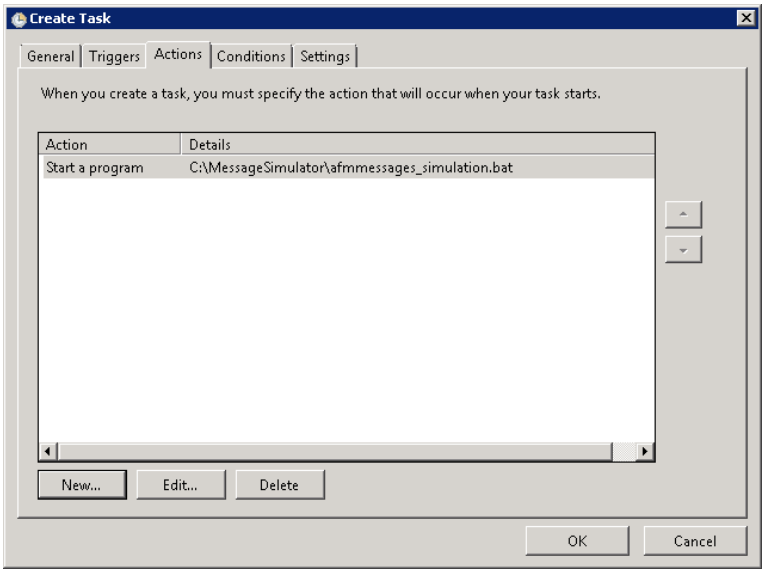
6) On the “New Action” dialog:
    a. Set “Action” property to “Start a program”
    b. Set “Program/script” property to:
    `C:\MessageSimulator\messages_simulation.bat`

c. Set “Start in” property to :
`C:\MessageSimulator`

d. Click “OK”.

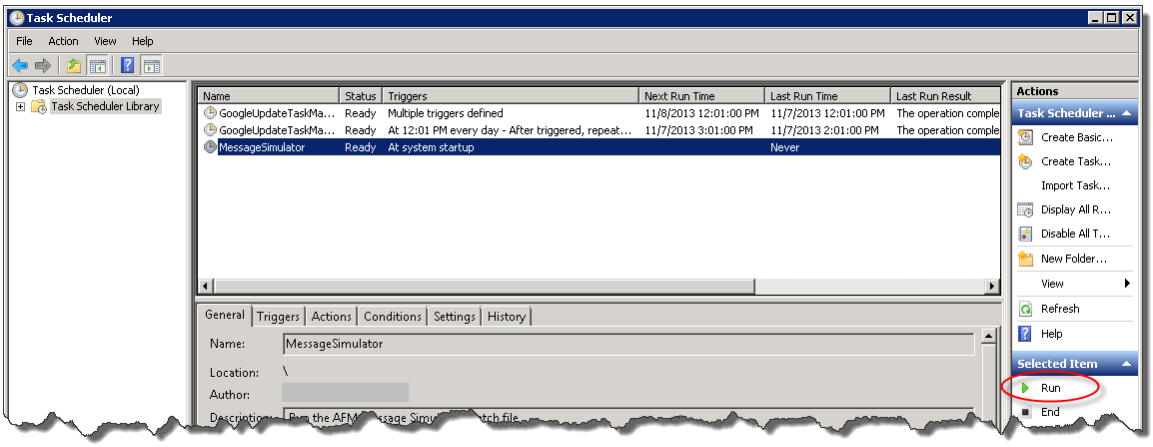


7) The new action should now be listed in the “Actions” list. Click OK to exit the “Create Task” dialog.



8) When prompted, enter the credentials for the account that will run this task.

9) “The MessageSimulator” task should now be listed in your Task Scheduler Library. Click “Run” if you would like to start task right now; otherwise, you will need to reboot the system to start the task.



Appendix C: Operations Dashboard
(Client side)

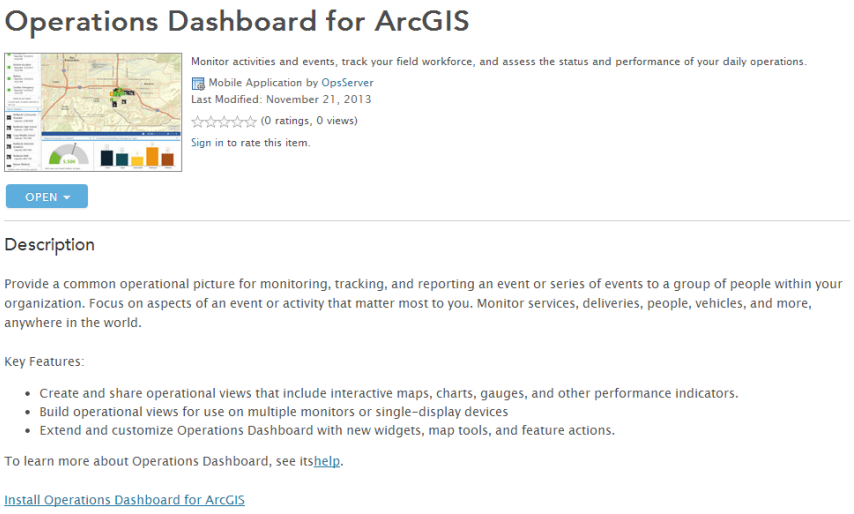
Install “Operations Dashboard” on your client machines as necessary.

Prerequisites:

- Portal for ArcGIS is installed on your OpsServer (see section “Install ArcGIS Software”).
- The portal items are published to your OpsServer; more specifically the “Operations Dashboard for ArcGIS” item owned by the user ‘OpsServer’ (see section “Publish portal items”).
- The Operations Dashboard “ClickOnce” application has been created and deployed to the portal on your OpsServer (see section “Install ArcGIS Software”).
- Microsoft .NET Framework 4.5 is installed on your client machine. You can download the installer from the Microsoft Download Center.

NOTE: running Operations Dashboard on a virtual machine is not supported.

The Operations Dashboard is installed by running the “Click Once” application which can be found on your portal by searching for “Operations Dashboard for ArcGIS” (i.e. the portal item owned by “OpsServer” account). The Operations Dashboard that is installed by the “Click Once” application is already configured to point to your portal. An additional feature of the Operations Dashboard is that if a user accesses a dashboard view without the Operations Dashboard being installed, it will detect this and automatically install Operations Dashboard. If you are running Internet Explorer, the dashboard view will be opened after Operations Dashboard has finished installing.



Appendix D: Esri Maps for Office

(Client side)

Esri Maps for Office allows you to quickly create dynamic, interactive maps of your Excel data and start exploring it in a whole new way. Esri Maps for Office enables you to uncover patterns and trends not evident in tabular data and charts. Maps can be shared immediately through PowerPoint presentations or by one-click publishing to Esri's mapping platform, ArcGIS Online.

- Getting Started
- Download Esri Maps for Office (Download the version that matches the bit version of Microsoft Office you have installed on your client machine, not the version of your operating system (OS).
- Install Esri Maps for Office
- Configure Esri Maps for Office to connect to your Portal for ArcGIS, see Set your ArcGIS Connection.