Ops Server Installation Guide

**2013**

ESRI

12/1/2013



***This page intentionally left blank.***

Contents

[Introduction 4](#_Toc371436721)

[Ops Server System Requirements 5](#_Toc371436722)

[Prepare for Ops Server Installation 6](#_Toc371436723)

[Installation Prerequisites 6](#_Toc371436724)

[Uninstall existing software 6](#_Toc371436725)

[Change “Command Prompt” Layout Properties 6](#_Toc371436726)

[“Install” and Configure the Ops Server Installation Scripts 7](#_Toc371436727)

[Install Internet Information Services (IIS) and enable SSL 10](#_Toc371436728)

[Install Internet Information Services (IIS) 10](#_Toc371436729)

[Enable SSL on the web server 10](#_Toc371436730)

[Install Esri Ops Server software 12](#_Toc371436731)

[Publish Ops Server content 14](#_Toc371436732)

[Publish ArcGIS Server Services 14](#_Toc371436733)

[Sanity Test ArcGIS Server Services 17](#_Toc371436734)

[Publish portal content 19](#_Toc371436735)

[Re-map portal item ids on ArcGIS Server services 21](#_Toc371436736)

[Deploy and configure the web applications 23](#_Toc371436737)

[Configure portal settings 25](#_Toc371436738)

[Message Simulator 27](#_Toc371436739)

[Install Message Simulator 27](#_Toc371436740)

[Run Message Simulator 28](#_Toc371436741)

[Test ArcGIS GeoEvent Server 34](#_Toc371436742)

[Feature Service “Clean-up” script (no longer needed) 37](#_Toc371436743)

[Chat Server 38](#_Toc371436744)

[Install Chat Server - Openfire 3.7.1 38](#_Toc371436745)

[Create Openfire Users 47](#_Toc371436746)

[Operations Dashboard for ArcGIS 49](#_Toc371436747)

[Install on client machines 49](#_Toc371436748)

[Appendices 50](#_Toc371436749)

[Appendix A: URLs and Passwords 50](#_Toc371436750)

# 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, and services. There are two types of Ops Server installation configurations supported, a single machine, and a two machine configuration, as shown in the diagram below.



Note: The current ArcGIS WebAdaptor for IIS can’t be installed on same machine as portal.

The process of installing/configuring Ops Server and publishing ArcGIS Server services and portal items is automated using batch files and Python scripts, except for installing ArcGIS GeoEvent Server and the Chat Server; the installation/configuration of these components is performed manually and is described in this guide.

# Ops Server System Requirements



NOTE: Memory requirements for Server machine is partial based on having a minimum of two instances per service.

**\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***

**NOTE: The Ops Server installation scripts have only been tested on Windows Server 2008 R2 using a system locale of “English (United States)”**

**\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***

# Prepare for Ops Server Installation

## Installation Prerequisites

* The server you are installing Ops Server on has to have internet access to complete the installation and configuration process.
* Uninstall existing 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 10.2.1 (must include license for GeoEvent Processor Extension for ArcGIS Server).
* A license for Portal for ArcGIS 10.2.1 to support up to 100 users.
* A SSL certificate for Portal (ether CA-signed certificate or domain certificate).
* A SSL certificate for the Openfire Chat server.
* 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](http://www.microsoft.com/en-us/download/details.aspx?id=30653).
* A separate machine to run Openfire chat server. There is a port conflict between Openfire and Portal for ArcGIS.

## Uninstall existing software

The Ops Server installation process assumes that you are installing on a clean server and certain software need 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: ArcGIS Server, ArcGIS WebAdaptor for IIS, Portal, GeoEvent Server for ArcGIS[GeoEvent Processor] (make sure the C:\ ProgramData\Esri\GeoEventProcessor folder), Chat Server (Open Fire), PostgreSQL (make sure the “postgres” user is deleted and the C:\Program Files\PostgreSQL folder is deleted), IIS (make sure the C:\inetpub folder is deleted).

## 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 140; 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.

1. 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\_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\_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, PostgreSQL service account, ArcGIS Server service account, 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 should 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.

|  |  |  |  |
| --- | --- | --- | --- |
| 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\_geoevent | Install GeoEvent Processor Extension for ArcGIS Server and copy various Ops Server configured GeoEvent files. | No | ops\_install\_server, ops\_create\_ags\_site |
| ops\_install\_webadaptor | Install the ArcGIS WebAdaptor for IIS | No | 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\_portal | Install Portal for ArcGIS | No |  |
| ops\_create\_opsdashboard \_installer | Create Operations Dashboard ClickOnce Application and deploy to portal folders | Yes | ops\_install\_portal |
| 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\_configure\_geoevent | Configure GeoEvent Processor Extension for ArcGIS Server - create new administrator user, reset ArcGIS Server connection for registered data store | Yes | ops\_install\_server, ops\_create\_ags\_site, ops\_install\_webadaptor, ops\_change\_ags\_security, ops\_register\_ags\_https |

# 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 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).

*Prerequisites*:

* All previously installed software has been removed (see topic [Uninstall existing software](#_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

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

**NOTE**: 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](#_Enable_SSL_on) 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 “Enabling SSL on your web server” topic in the Portal for ArcGIS Installation Guide, located on your external drive (i.e. OPSServerInstall/Software/Portal/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 Esri Ops Server software

The InstallOpsServer.bat file that you will be running in this section will install and configure: ArcGIS Server, ArcGIS WebAdaptor for IIS, PostgreSQL, IIS, and the .Net framework.

*Prerequisites*:

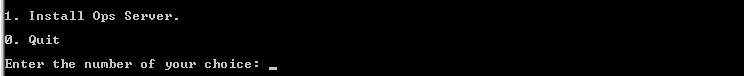
* Internet Information Services (IIS) is installed and any other ArcGIS Web Adaptor for IIS prerequisites have been met (see topic [Install Internet Information Services (IIS) and enable SSL](#_Install_Internet_Information)).

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 InstallOpsServer.bat file by typing the following at the prompt:

InstallOpsServer.bat

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



|  |  |  |
| --- | --- | --- |
|  |  | Comments |
| Installs PostgreSQL; replaces installed | Automated |  |
| Installs and authorizes ArcGIS Server; copies postgreSQL client library files (dlls) to | Automated |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

1. After the execution of the InstallOpsServer.bat file has been completed, review the script output in the command window and check for any errors before hitting any key to exit (which will close the window). Some things to check:
   1. PostgreSQL appears as an installed program.
   2. ArcGIS Server appears as an installed program.
   3. Using a browser, login to the ArcGIS Server manager (i.e. [http://*servername:*6080/arcgis/manager](http://servername:6080/arcgis/manager)) using the credentials provided in the batch file; check the data stores and validate them.
   4. (If portal was installed) Using a browser, login to the portal admin account (i.e. [http://*servername*](http://servername)) to confirm portal installation.

# Publish Ops Server content

## Publish ArcGIS Server Services

1. Copy the required data from the external drive to the server where ArcGIS Server was installed using the provided CopyData.py Python 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 the CopyData.py Python script using the parameters described below.

CopyData.py <SourceDataFolder> <SourceCacheFolder> <SourceDatabaseFolder> <AGSServiceAccount> <DataDriveLetter> <CacheDriveLetter>

*Where*:

<SourceDataFolder> (required parameter): path to the source data folder **(i.e. the OPSServer\Server\Staging\Data folder on the external drive)**.

<SourceCacheFolder> (required parameter): path to the source caches folder **(i.e. OPSServer\Server\Staging\Caches folder on the external drive)**.

<SourceDatabaseFolder> (required parameter): path to the source 'DistributionEntGDBs' folder **(i.e. OPSServer\Server\DistributionEntGDBs folder on the external drive)**.

<AGSServiceAccount> (required parameter): ArcGIS Server service account **(i.e. what the variable “ops\_agsServiceAccount” is set to in the InstallSettings.bat file)**

<DataDriveLetter> (required parameter): the drive letter where the destination OpsServer\Environment\Data folder is located **(i.e. what the variable “ops\_dataDrive” is set to in the InstallSettings.bat file)**.

<CacheDriveLetter> (required parameter): the drive letter where the destination arcgisserver\arcgiscache folder is located **(i.e. what the variable “ops\_cacheDrive” is set to in the InstallSettings.bat file)**

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

CopyData.py G:\OPSServer\Server\Staging\Data G:\OPSServer\Server\Staging\Caches G:\OPSServer\Server\DistributionEntGDBs AFMAGS c c

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

1. Publish the ArcGIS Server services using the provided PublishToOpsServer.py Python 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 the PublishToOpsServer.py Python script using the parameters described below.

PublishToOpsServer.py <Server\_FullyQualifiedDomainName> <Server\_Port> <User\_Name> <Password> <Use\_SSL: Yes|No> <Service\_Definition\_Root\_Folder\_Path> {OwnersToPublish} {OpsServerTypesToPublish}

*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 '#' **(because Web Adaptor is installed, the port number is not needed; specify ‘#’)**

<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)**

<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 OPSServer\Server\ServiceDefinitions folder on the external drive)**

{OwnersToPublish} (optional parameter) allows you to publish only ArcGIS Server service owned by specific users by specifying a list of users.

{OpsServerTypesToPublish} (optional parameter) allows you to publish ArcGIS Server services for specific OpsServer types (Land, Maritime, etc).

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

PublishToOpsServer.py MyAGSServer.esri.com # admin MyPassword Yes G:\OPSServer\Server\ServiceDefinitions

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

NOTE: the RoadNetwork service will not publish successfully from a service definition file. You will have to manually publish this service using ArcGIS for Desktop (which is not installed on the OpsServer). See the desktop topic “*Tutorial: Publishing a network analysis service*” for directions on how to publish this service. Call the network analysis service “RoadNetwork” and publish to the “Environment” folder. The source network to publish is located in the “infrastructure” PostgreSQL database (Infrastructure.sde\infrastructure.sde.RoadNetworkFD\infrastructure.sde.RoadNetwork ) that was copied to your server by the CopyData.py script. A SDE connection file for this database was created during the OpsServer installation process and can be found in the folder OpsServer\DBConnections.

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

***NOTE: you no longer need to run this script; all services now start when they are published.***

* 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}

*Where:*

<Server\_Name> (required) ArcGIS Server server name.

<Server\_Port> (required) server port; if not using server port enter # **(because Web Adaptor is installed, the port number is not needed; specify ‘#’)**

<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} (optional) to Start|Stop specific services, specify comma delimited list of services using.

Where:

‘folder’ – (optional) is the name of folder service resides’

‘service’ – (required) is name of service’

‘type’ – (required) is the type of service; valid values are:

["MapServer", "ImageServer", "GeometryServer", "GeocodeServer", "GPServer"]

Example:

StartStopServices.py MyAGSServer.esri.com # admin MyPassword Yes Start

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

## Sanity Test ArcGIS Server Services

Included on the external drive are a set of tests utilizing Selenium IDE (a framework that provides web browser automation); <http://seleniumhq.org/projects/ide/>), which you can use to perform a sanity test of the ArcGIS Server services you published above (tests all services except for locator and geoprocessing services). These tests do not provide comprehensive testing, they simply confirm whether the service is available and data can be returned from the service.

**\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***

**NOTES:**

* **These tests should NOT be run from your Ops Server machine (run from client machine).**
* **Requirements:** 
  + **Java SDK 1.6 must be installed (1.7 or higher may not work); installer provided on external drive.**
  + **Firefox must be installed (installer not provided).**

**\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***

To install the tests:

1. Copy the Selenium folder located on the external drive under the OPSServer\Testing folder to a local drive (in this

## Publish portal content

The C:\ops-server-config\Publish\Portal folder contains scripts to import Ops Server portal content from your external drive into your Ops Server portal. The following instructions step you through the import process.

*Prerequisites*:

* <TODO>

Steps:

1. Change passwords for 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.

* 1. Open Windows Explorer and navigate to the OPSServerInstall\Portal\PortalContent folder on your external drive.
  2. Open the userfile.txt file in a text editor.



* 1. Change the TargetPassword values for the users by searching for and replacing the default value “MyDefault4Password!”.
  2. Save the file and exit the text editor.

1. Open a command window (cmd.exe) (do not need to “Run as administrator).
2. 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} {OpsServerTypesToPost}

Where:

<PortalURL> (required parameter): 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)**

<AdminUser> (required parameter): Portal user that has administrator role. **(i.e. what the variable “ops\_userName” is set to in the InstallSettings.bat file)**

<AdminPassword> (required parameter): Password for AdminUser.**(i.e. what the variable “ops\_passWord” is set to in the InstallSettings.bat file)**

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

{UsersToPost} (optional parameter): allows you to publish only portal items owned by specific users by specifying a list of users. **NOTE if you use this parameter then you must always include the user ‘OpsServer’ in the list of users.**

{OpsServerTypesToPost} (optional parameter): allows you to publish portal items for specific OpsServer types (Land, Maritime, etc).

1. When script has completed, review script output for errors.

NOTE: Please ignore the error “ERROR:portalpy:Item ‘nnnnnnnnnnnn’ does not exist in this folder.“

## 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.

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). **(because Web Adaptor is installed, the port number is not needed; specify ‘#’)**

<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)**

## Deploy and configure the 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.

*Prerequisites*:

* The portal items must have already been published.

Steps:

1. Copy the folder OPSServerInstallation\WebApps\wwwroot from your external drive to a temp location on your OpsServer. For example C:\temp\_wwwroot.
2. Update the server names and portal application IDs in the URLs of the web application with the the server name and portal applications IDs on your Ops Server using the UpdateWebApps.py script.
   1. Open a command window (cmd.exe).
   2. 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, for example afmcomstaging.esri.com **(use “afmcomstaging.esri.com” for this parameter)**

<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} (optional): the 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 run 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)**

1. Copy 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)

# Configure portal settings

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

1. Open a web browser and enter the URL to your portal machine (i.e. https://portal.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 “Edit Settings”



1. Click on the “General” tab on the left side of the page.
   1. Edit the “Logo and Name”.

The Thumbnail image (thumbnail.png) can be found in OPSServerTEM2013\Portal\PortalResources folder on your external drive.

* 1. Edit the “Description” using the values in the following table.

The description text can be found in the description.txt file in the in OPSServerTEM2013\Portal\PortalResources folder on your external drive.

* 1. Edit the default language and set to “English - English”.

1. Click on the “Home Page” tab on the left side of page.
   1. Edit the “Banner”.

The banner image (banner.jpg) can be found in OPSServerTEM2013\Portal\PortalResources folder on your external drive.

* 1. Set “Featured Content” group to the “AFMI Featured Maps and Apps” group.

1. Click on the “Map” tab on the left side of page.
   1. Set the “Basemap Gallery” group to “AFMI Basemaps”.
   2. Make sure the “Default Basemap” is set to “Topographic”.
   3. Set the “Web App Templates” group to “AFMI Web Application Templates”.
2. Click on the “Groups” tab on the left side of the page/
   1. For “Featured Groups” make sure the “AFMI 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).
   2. Set the “Gallery Applications” group to “AFMI Gallery Templates”.
3. Click on the “Save” button on the top left of the page.

# Message Simulator

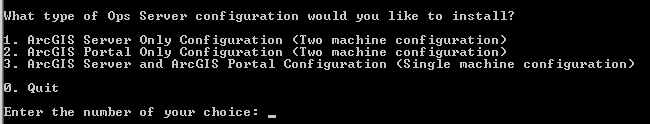
## Install Message Simulator

Install the Message Simulator on the ArcGIS Server/Portal machine or on a client machine

The message simulator requires Microsoft Visual C++ 2008 Redistributable Package (both x64 and x86) be installed.



These packages are installed by the PostgreSQL installer, which is run when you perform the “ArcGIS Server Only Configuration” or the “ArcGIS Server and ArcGIS Portal Configuration” types of installs (i.e. number 1 and 3 shown in screenshot below).



If you are running the message simulator on a machine other than the ArcGIS Server machine, you will need to install these redistributables (downloadable from www.microsoft.com).

**NOTEs**:

* If you are running the message simulator on a client machine, you will need to manually install the Microsoft Visual C++ 2008 redistributables (downloadable from [www.microsoft.com](http://www.microsoft.com)).
* The message simulator must be run on a machine on the same subnet as GeoEvent Server.

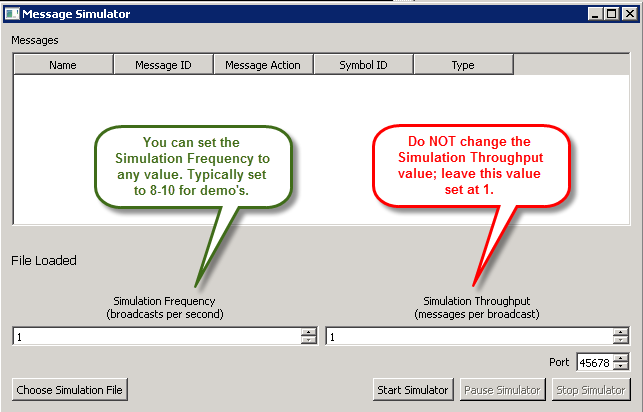
To install the message simulator, copy the OPSServerInstall\Software\MessageSimulator folder from your external drive to the local C:\ drive (i.e. C:\MessageSimulator).

## Run Message Simulator

There are three different ways that the Message Simulator can be run: through the GUI, in console mode (i.e. DOS console), or as a Windows scheduled task.

The Message Simulator has four parameters:

* **Simulation File** - The xml message file which contains the messages to broadcast. The message files are located under the folder C:\MessageSimulator\MessageFiles, and are organized based on Ops type (LandOps, or MaritimeOps).
* **Port** - The port number on which the messages are broadcast. You only need to change this value if there is a conflict with the default port number of 45678.
* **Simulation Frequency** – The number of broadcasts per second. You can set this parameter to any value. Typically set between 8 – 10 for demo’s.
* **Simulation Throughput** – The number of messages per broadcast. Do NOT change this value; leave it set at 1.



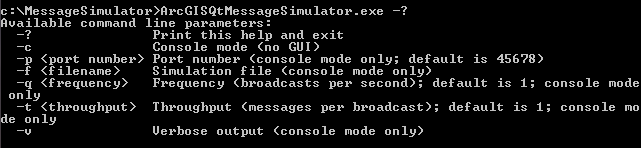
To run the Message Simulator through the GUI:

1. Open a command window.
2. Change directory to C:\MessageSimulator\MessageSimulator.
3. Double-click on the executable ArcGISQtMessageSimulator.exe.

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

1. Open a command window.
2. Change directory to C:\MessageSimulator\MessageSimulator.
3. At the command prompt, type the following to examine the executable parameters:

ArcGISQtMessageSimulator.exe -?

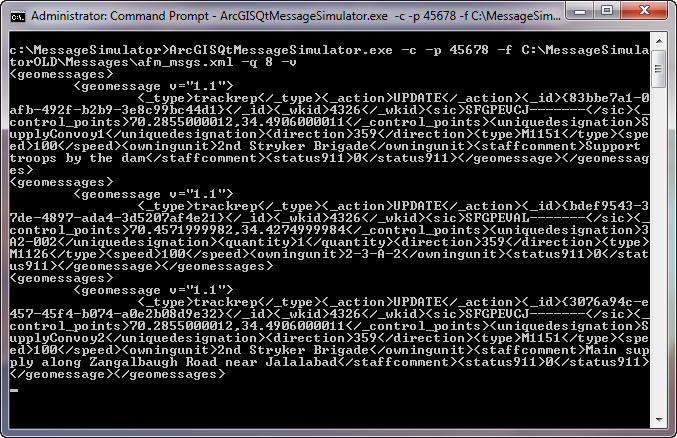


**NOTE: For demonstration purposes a frequency value (-q flag) between 8 -10 is recommended.**

**Also, the flag –v was added to show the verbose output; remove this flag to broadcast silently.**

1. Example of running the Message Simulator in verbose mode:

ArcGISQtMessageSimulator.exe –c –p 45678 –f C:\MessageSimulator\MessageFiles\LandOps\afm\_msgs.xml -q 8 -v

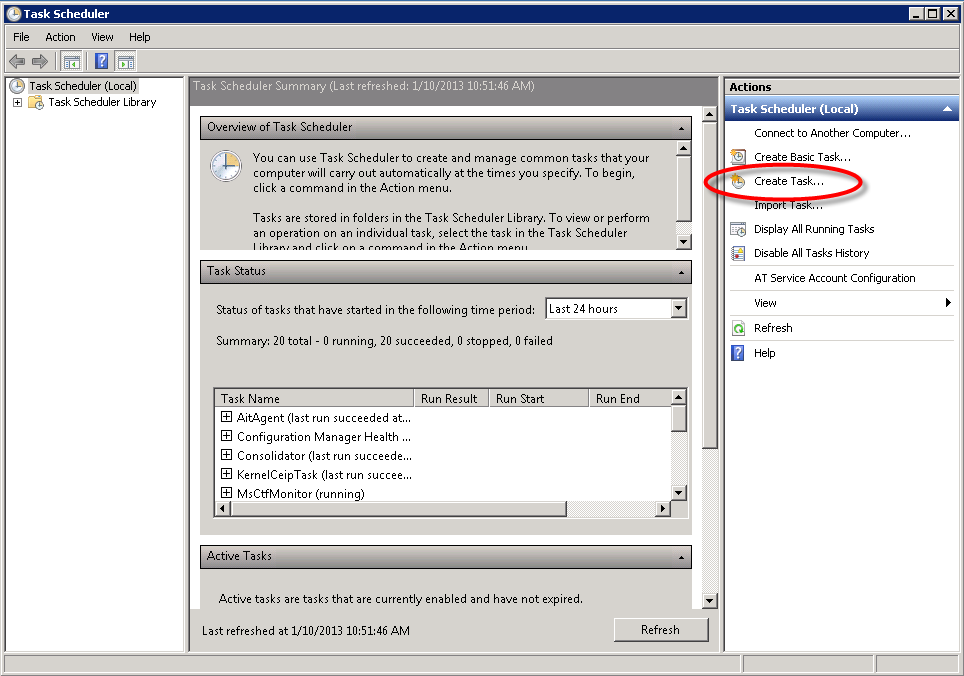


To stop the Message Simulator, press “Ctrl + C” within the command window.

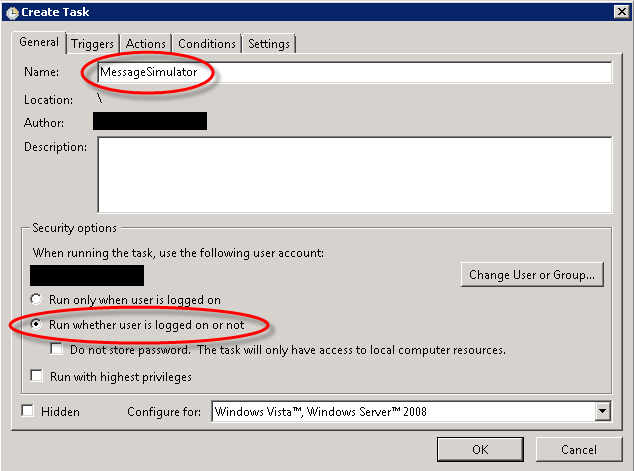
To run the Message Simulator as a Windows scheduled task:

**NOTE: you will need to specify an account that will run this task. This account must have “Log on as batch job” rights, which by default is only assigned to the LocalSystem account. For more information, review the “Task Security Context” topic in the task scheduler Help.**

1. Go to Start > Administrator Tools > Task Scheduler.
2. Click “Create Task”.



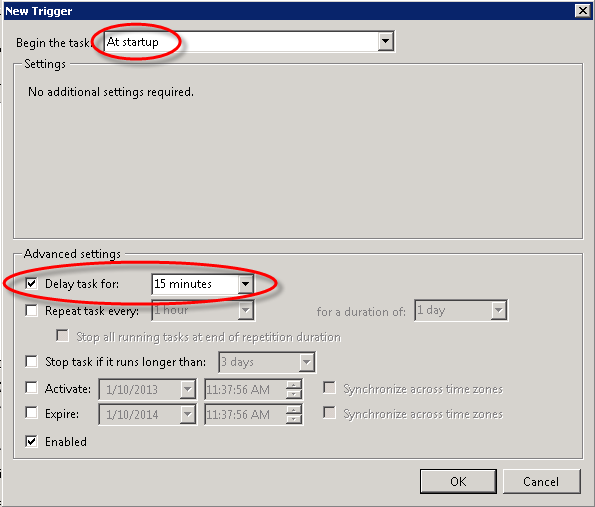
1. On the “Create Task” dialog, set the Name of the application to “MessageSimulator” and select the option “Run whether user is logged on or not”.



1. Click the Triggers tab and click New.



1. On the “New Trigger” dialog, change the “Begin the task” property to “At startup”, and select the “Delay task for” option and select “15 Minutes”. Click OK.



1. Click the “Actions” tab and click New.

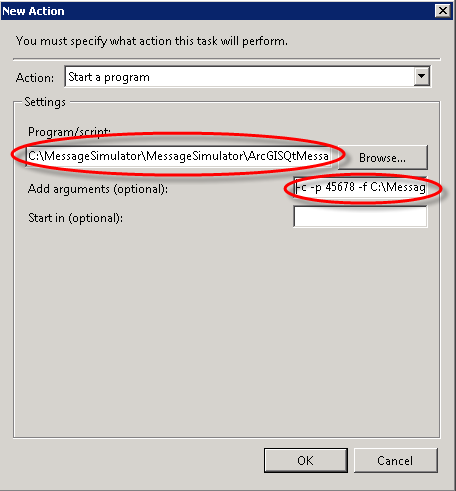


1. On the “New Action” dialog set the following values, then click OK.

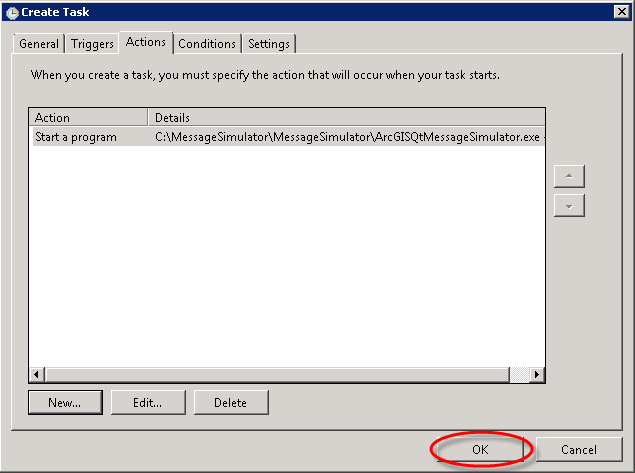
Program/script: C:\MessageSimulator\MessageSimulator\ArcGISQtMessageSimulator.exe

Add arguments: -c -p 45678 -f C:\MessageSimulator\MessageFiles\LandOps\afm\_msgs.xml -q 8

For MaritimeOps Server set the –f flag in the “Add agruments” to C:\MessageSimulator\MessageFiles\MaritimeOps\afm\_msgs\_soh.xml



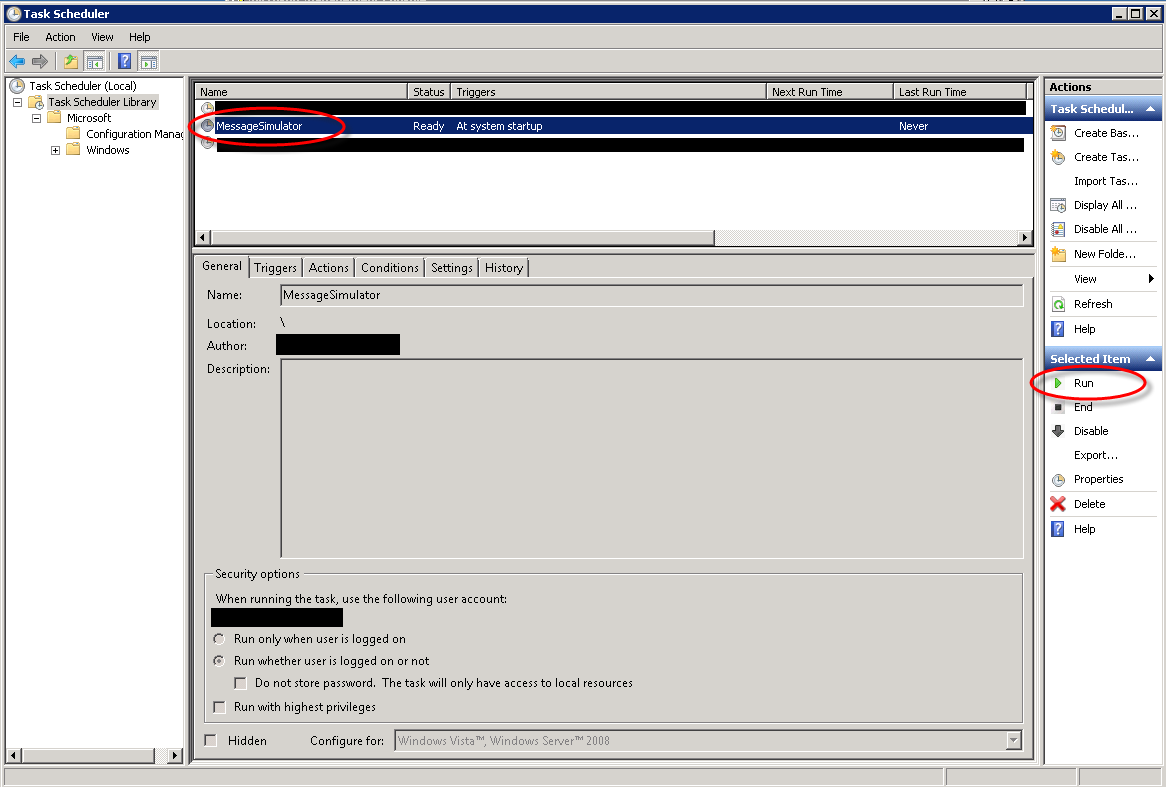
1. The new action should now be present. Click OK to exit the “Create Task” dialog.



1. Enter the necessary windows credentials when prompted.

**NOTE: the account specified to run the task must have “Log on as batch job” rights. For more information, review the “Task Security Context” topic in the task scheduler Help.**

1. The Message Simulator task should now be listed in your Task Scheduler Library. Click “Run” if you would like to start the message simulator right now; otherwise, you will need to reboot the system to start the simulator.



## Test ArcGIS GeoEvent Server

Test GeoEvent Server by running the message simulator and check if features are being written to the Operations feature services.

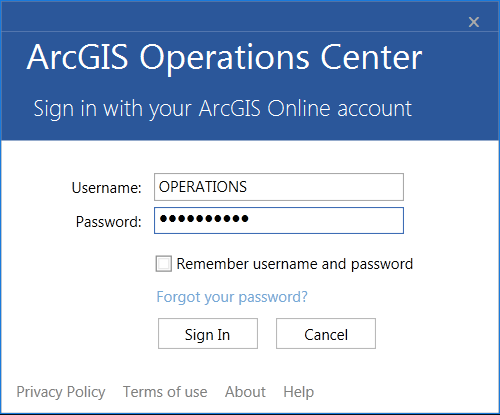
1. Start message simulator by double-clicking the file C:\MessageSimulator\MessageSimulator\ArcGISQtMessageSimulator.exe.
2. Click “Choose Simulation File”, and browse to and select the file C:\MessageSimulator\MessageFiles\LandOps\afm\_msgs.xml (**ONLY** use this .xml file for this test, because the messages in this file will populate the feature service specified in the URL below.
3. Open a browser and cut/paste the following URL into the browser (make sure to edit the ArcGIS Server machine name in the URL). This URL will query the SPOTREPs layer within the Operations\Reporting feature service and return the total number of features in the service at the bottom of the web page:

http://<Fully\_Qualified\_ArcGISServer\_ServerName>:6080/arcgis/rest/services/Operations/Reporting/FeatureServer/5/query?where=objectid+%3E+0&objectIds=&time=&geometry=&geometryType=esriGeometryEnvelope&inSR=&spatialRel=esriSpatialRelIntersects&relationParam=&outFields=&returnGeometry=true&maxAllowableOffset=&geometryPrecision=&outSR=&gdbVersion=&returnIdsOnly=false&returnCountOnly=true&orderByFields=&groupByFieldsForStatistics=&outStatistics=&returnZ=false&returnM=false&f=html

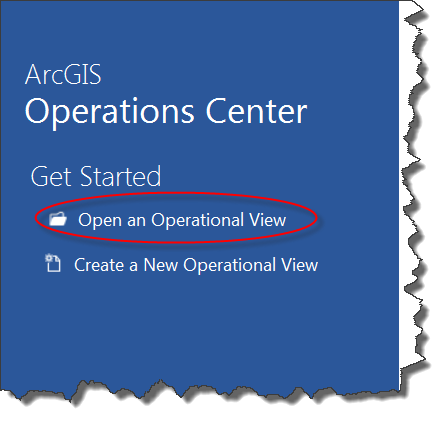
1. Rerun the URL query above a couple of times to verify that the number of features reported is increasing. If the Simulation Frequency value is low, you will need to wait a couple of minutes between executing the queries to see an increase in the number of features; increasing the Simulation Frequency value will decrease the time you have to wait between queries.

Another test you could perform is to install “Operations Center” and visual check that features are moving in the map display.

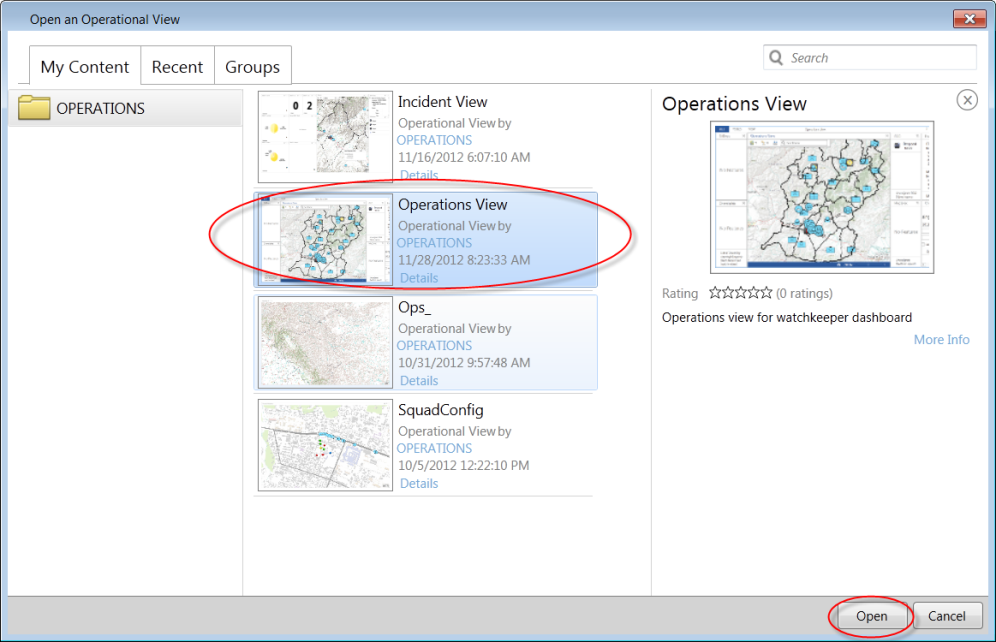
1. Install “Operations Center” using instructions in the “Install Operations Center on client machines” section of this guide.
2. Open “Operations Center” by double-clicking on C:\OperationsCenter\OperationsCenter.exe.
3. When prompted for login, login as the “OPERATIONS” user (password “OPERATIONS”).



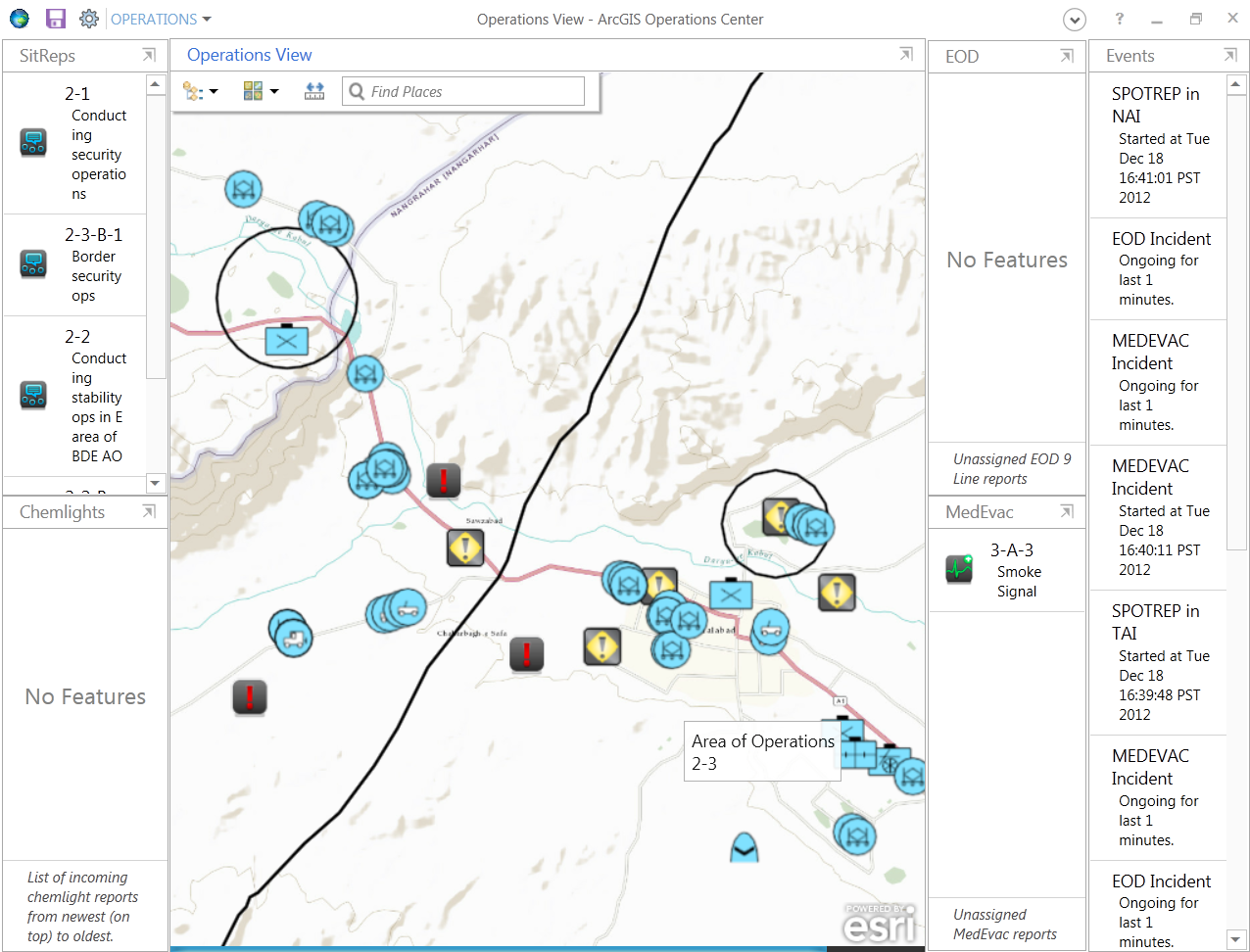
1. Click “Open an Operational View”.



1. Click on “Operations View” and click “Open”.

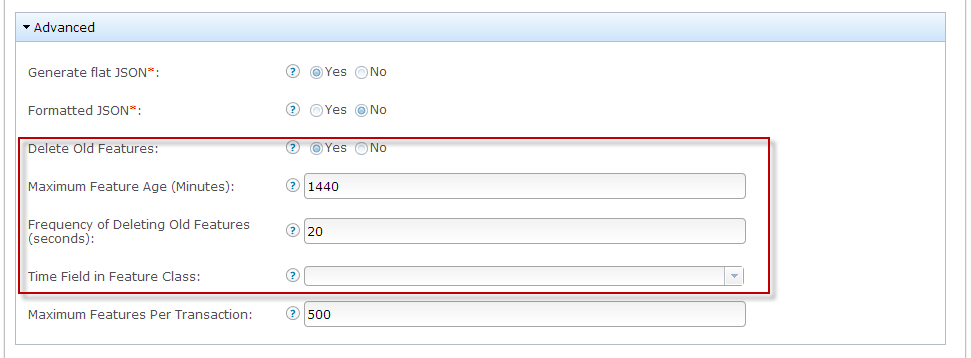


1. Within the map display, verify that features are moving.



## Feature Service “Clean-up” script (no longer needed)

A feature service “Clean-up” script is no longer needed. GeoEvent Processor 10.2.1 has the capability to delete “old features” on the “Output” services. See “Delete Old Features” property on the “Advanced” settings. These settings were configured during the installation of GeoEvent Processor.



# Chat Server

## Install Chat Server - Openfire 3.7.1

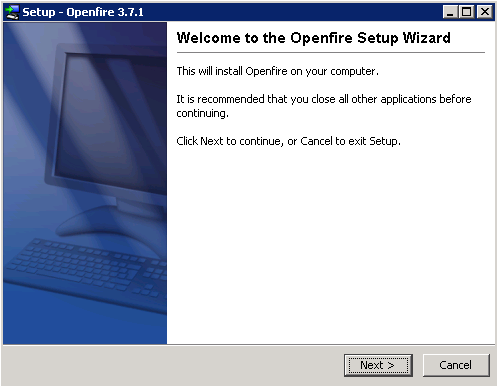
**NOTE: There is a port conflict between Portal for ArcGIS and Openfire. Install Openfire on a machine where you are not running Portal for ArcGIS.**

For more information about Openfire please reference the open fire website: <http://www.igniterealtime.org/projects/openfire/>

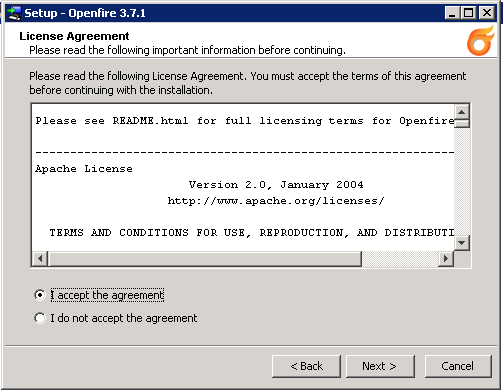
1. Install JavaJDK (if not already installed from previous steps).
   1. Open a Window Explorer and navigate to the OPSServerInstall\Software\JavaJDK folder on your external drive.
   2. Double-click on the jdk-7u7-windows-x64.exe to launch the installer; follow the instructions to finish the install.
2. Install and configure OpenFire.
   1. Open Windows Explorer and navigate to the folder OPSServerInstall\Software\ChatServer\OpenFire on your external drive.
   2. Double-click the openfire\_3\_7\_1(1).exe file to start the install process.
   3. On Installer language dialog, please select “English” and click “OK” button.



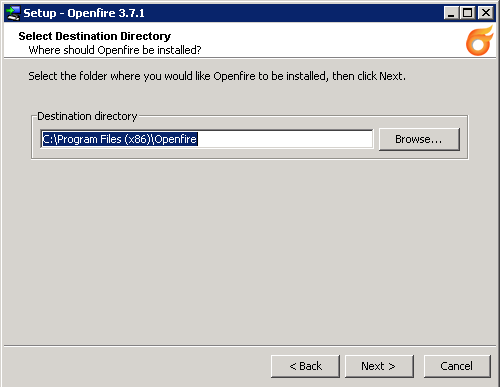
* 1. On welcome dialog, click “Next” button.



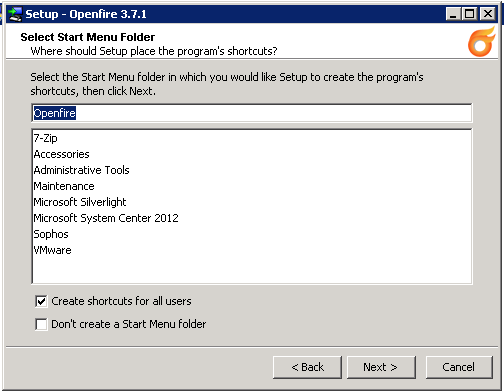
* 1. On the license agreement dialog, select “I accept the agreement” and click “Next” button.



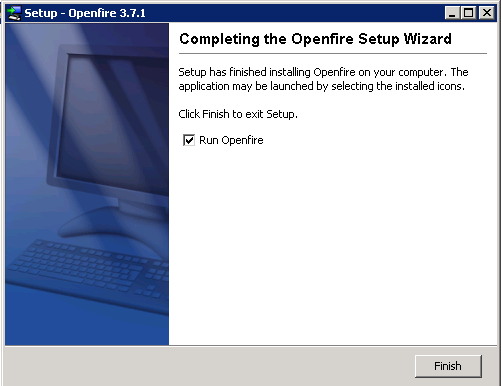
* 1. On the Select Destination Directory dialog, leave as the default and click “Next” button.



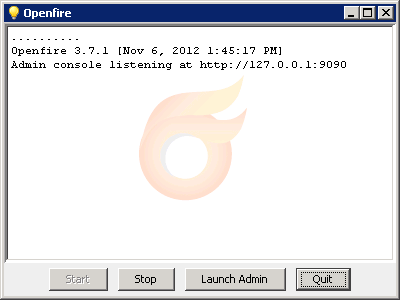
* 1. On the Select Start Menu Folder dialog, leave all the default values and click “Next” button.



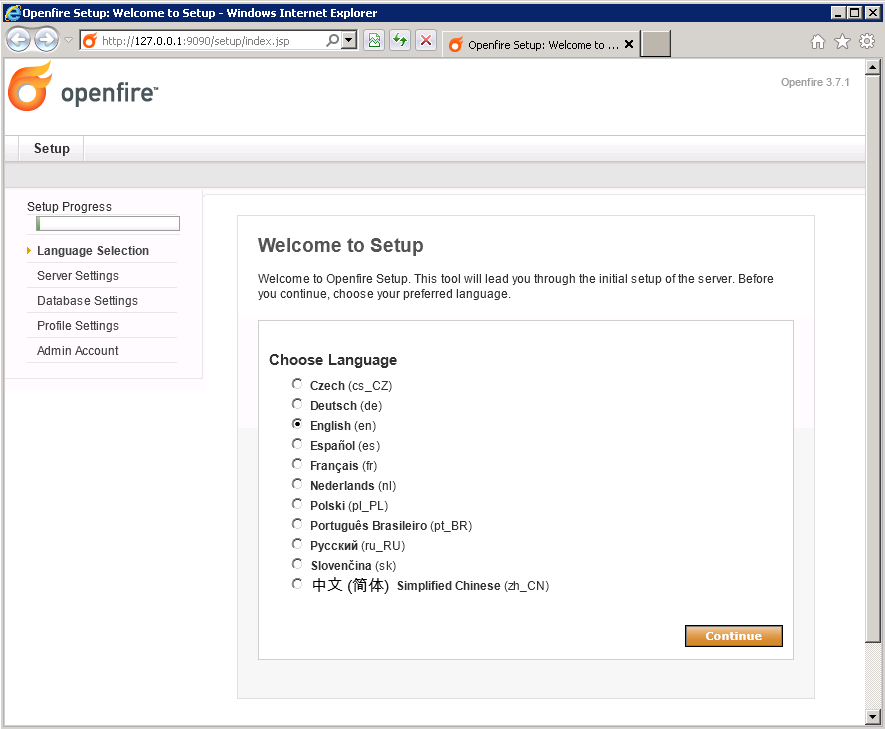
* 1. On the Completing the Openfire Setup Wizard dialog, make sure “Run Openfire” checkbox is checked and click the “Finish” button.



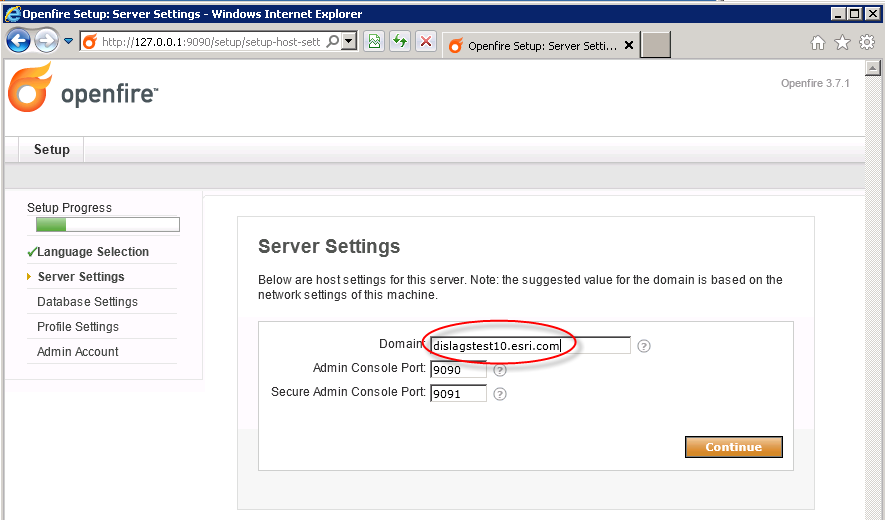
* 1. On the Openfire dialog, click the “Launch Admin” button (it will take a few seconds for the button to be enabled), which will open the default web browser.



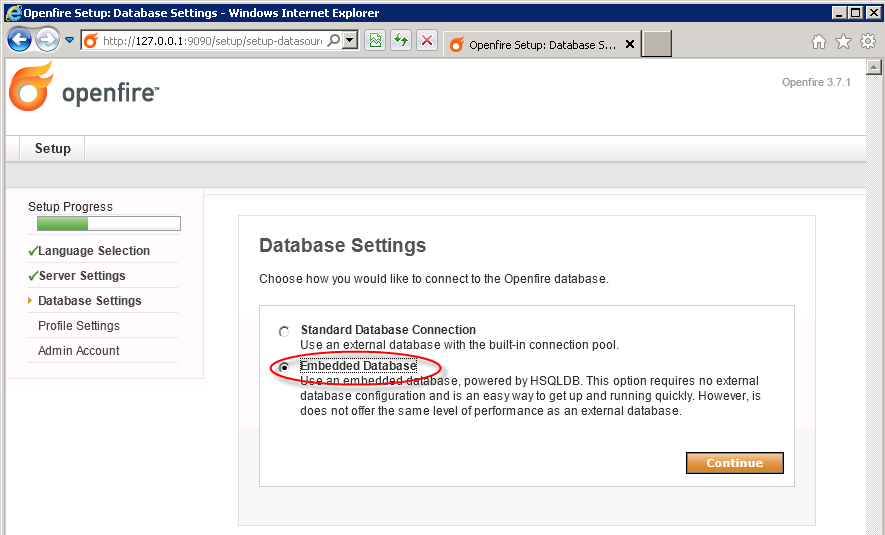
* 1. In the web browser, add <http://127.0.0.1> to the Trusted sites.
  2. On the Choose Language dialog, select “English” and click “Continue”.



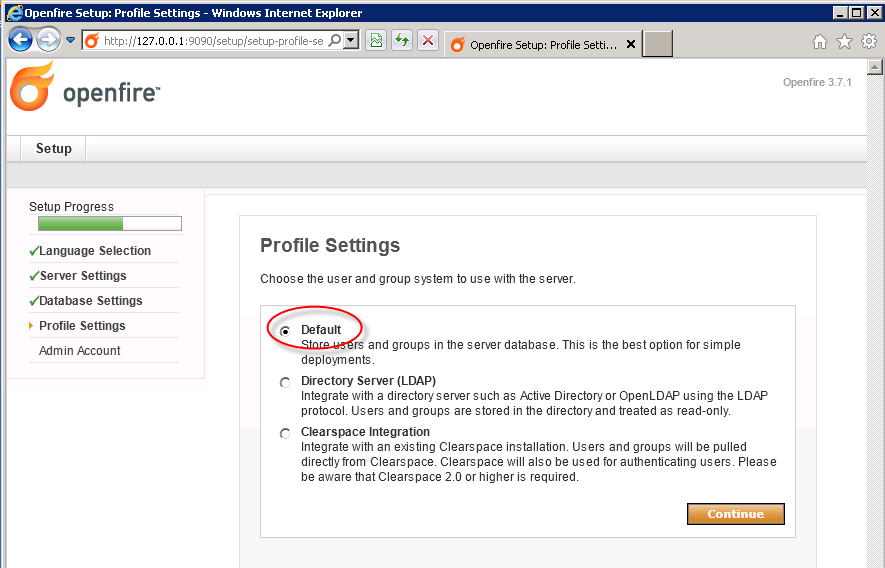
* 1. On the Server Settings dialog, edit the “Domain” parameter so that it contains the fully qualified domain name of your server and then click “Continue”.



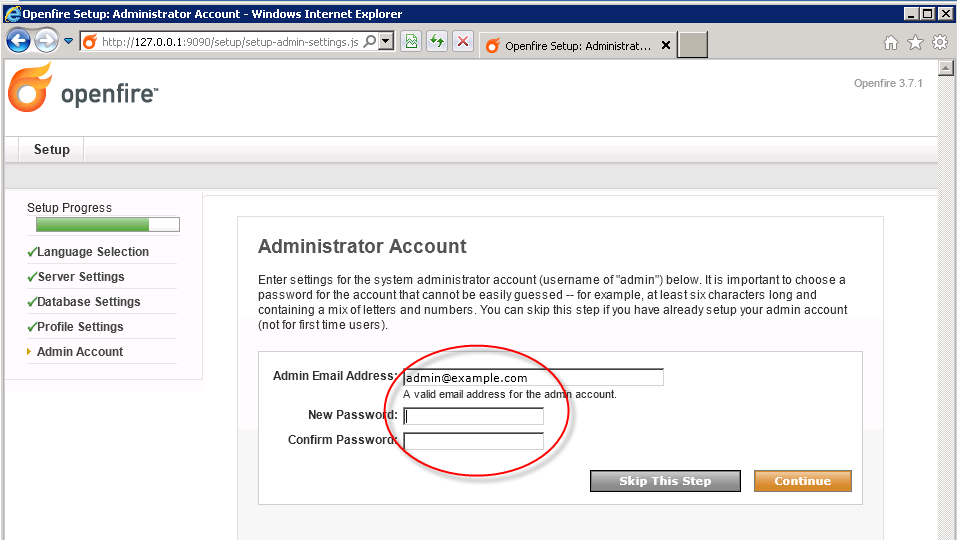
* 1. On the Database Settings dialog, select the “Embedded Database” option and click “Continue”.



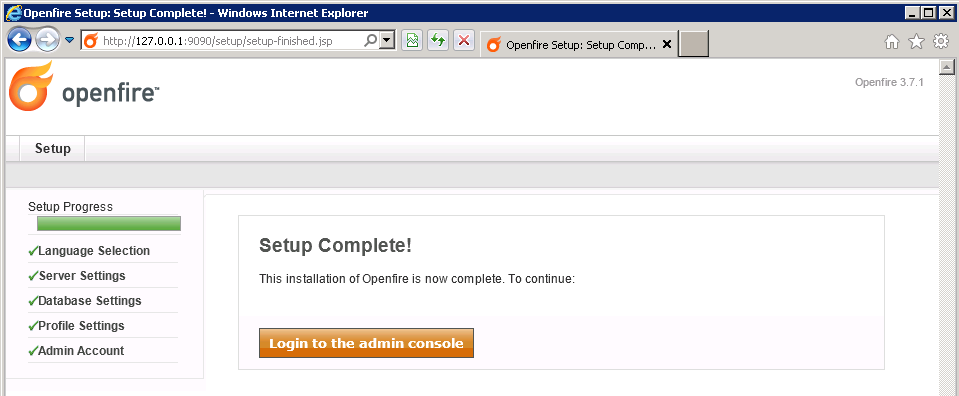
* 1. On the Profile Settings dialog, select the “Default” option and click “Continue”.



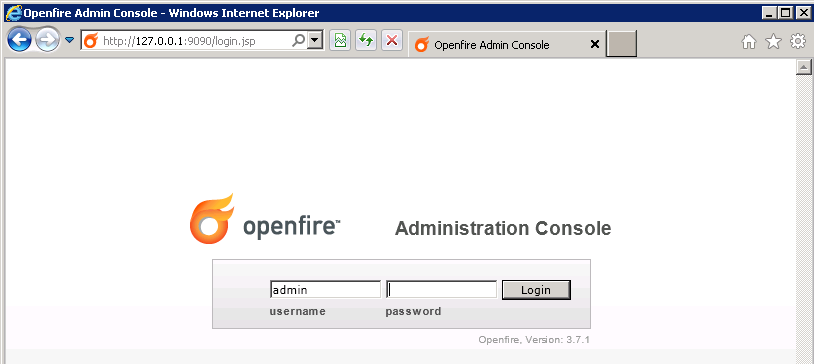
* 1. On the Administrator Account dialog, specify an email account, and a password and then click “Continue”.



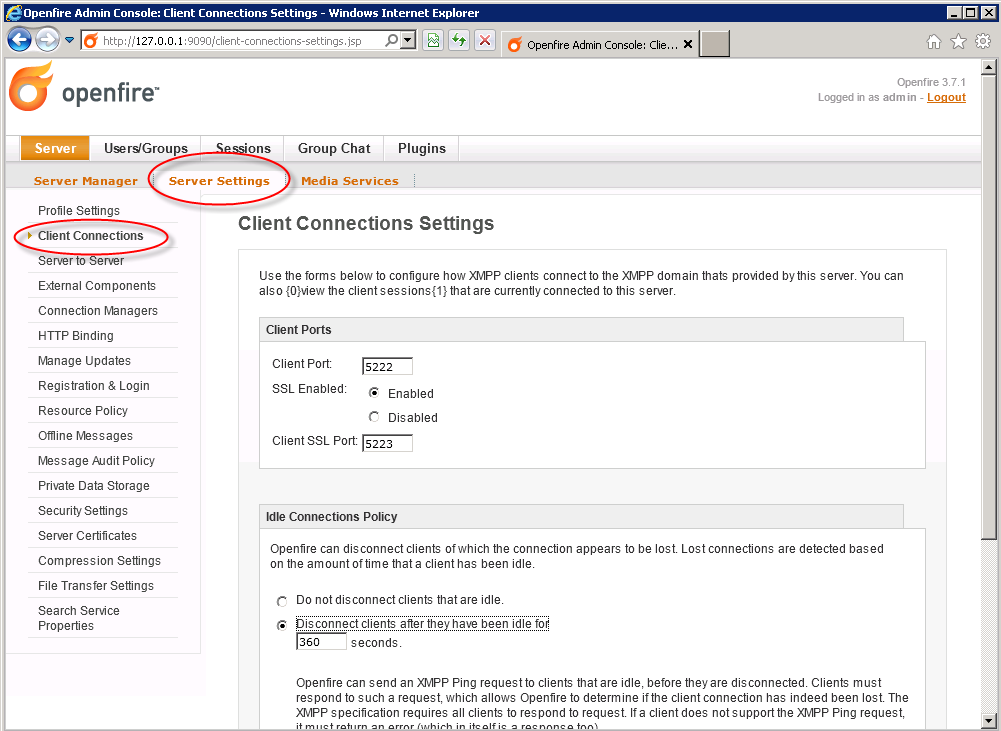
* 1. On the Setup Complete dialog click “Login to the admin console”.



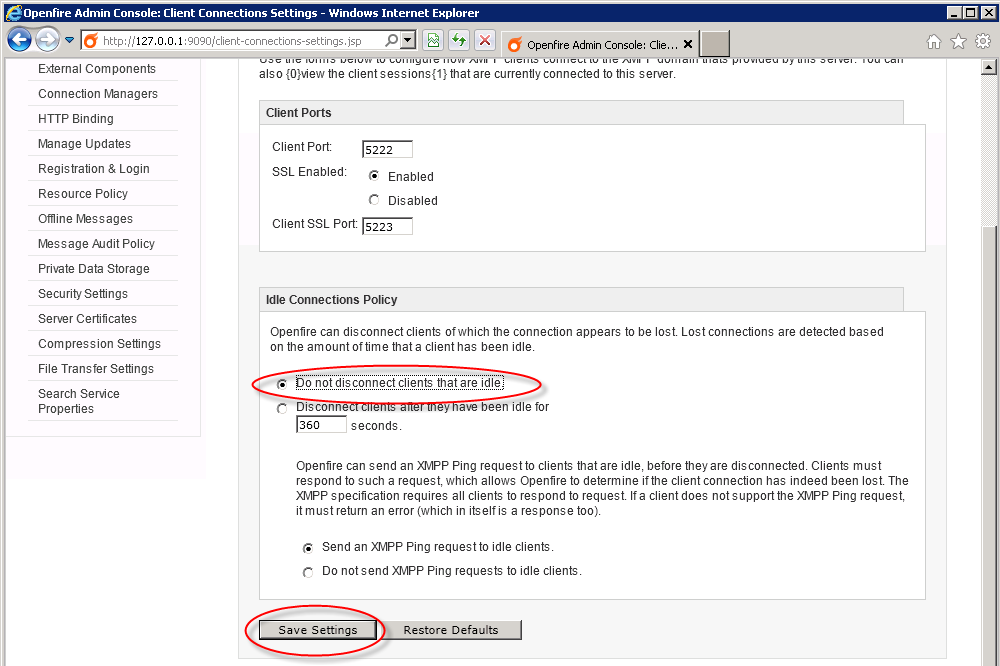
* 1. Log into the administration console. The username is “admin”, the password is the password you specified on the Administrator Account dialog above.



* 1. Change the Idle Connections Policy.
     1. Click “Server Settings” tab and click “Client Connections”.



* + 1. Click on “Do not disconnect clients that are idle.” and then click “Save Settings”.



1. Create and install chat server certificate.

If you don’t have access to the Esri certificate server then see the link <http://www.igniterealtime.org/builds/openfire/docs/latest/documentation/ssl-guide.html> for more information about setting up the certificate; otherwise, follow the instructions below.

* 1. Open a command window (cmd.exe) with administrator privilege (i.e. “Run as administrator” context menu).
  2. Change directory to C:\Program Files (x86)\Openfire\resources\security
  3. Test to see if the “keytool” works by typing keytool at the command prompt.
  4. If the “keytool” command is not recognized as a command, type the following at the command prompt to add the path the Java runtime engine to the system path variable:

path=path;"C:\Program Files\Java\jre7\bin"

* 1. List the current values (should be two) in the keystore by typing the following at the command prompt (you will be prompted for the password, which is “changeit” (default password):

keytool –list –keystore keystore

* 1. Delete the current keystore values by typing the following at the command prompt (use “changeit” for the password):

keytool –delete –keystore keystore –alias <fully\_qualified\_server\_name>\_rsa

keytool –delete –keystore keystore –alias <fully\_qualified\_server\_name>\_dsa

* 1. Verify that the keystore is now empty by typing the following at the command prompt:

keytool –list –keystore keystore

* 1. Open a web browser and go to the Esri certificate server at the following URL: <https://redsrvrfrca.esri.com/certsrv/>
  2. Click the link “Download a CA certificate, certificate chain, or CRL”
  3. Under “CA certificate” listbox, leave the certificate that is selected by default selected.
  4. Under “Encoding method”, make sure “DER” is selected.
  5. Click “Download CA certificate” and save the “certnew.cer” file to the folder C:\Program Files (x86)\Openfire\resources\security
  6. From the command prompt (make sure that it is still in the “security” folder), type the following commands:

keytool -import -keystore keystore -alias cacert -file certnew.cer

(you will be prompted for password: changeit; when prompted “Trust this certificate?” enter yes. If command was successful this message “Certificate was added to keystore”)

keytool -genkey -keystore keystore -alias <fully\_qualified\_server\_name>-rsa -keyalg RSA -dname "CN=<fully\_qualified\_server\_name>, OU=ESRI, O=ESRI, L=Redlands, S=California, C=US"

(you will be prompted for the keystore password: changeit; when prompted “Enter key password for <fully\_qualified\_server\_name-rsa>?” enter return)

keytool -certreq -keystore keystore -alias <fully\_qualified\_server\_name>-rsa -file <server\_name>-rsa.csr -keyalg RSA

(you will be prompted for the keystore password: changeit)

* 1. Open the <server\_name>-rsa.csr file that was created in the previous step (created in C:\Program Files (x86)\Openfire\resources\security) in Notepad and copy the complete contents of the file (i.e. place in Windows buffer).
  2. Open a web browser and go to the Esri certificate server at the following URL <https://redsrvrfrca.esri.com/certsrv/>
  3. Click the link “Request a certificate”.
  4. Click the link “Submit a certificate request by using a base-64-encoded CMC…”
  5. In the “Saved Request” textbox, paste the contents of the <server\_name>-rsa.csr file.
  6. In the “Certificate Template” drop-down list box, select “Web Server” and click “Submit”.
  7. Ensure that the “DER encoded” option is selected and click the link “Download certificate **chain**”
  8. When prompted, save the “certnew.p7b” file to the folder C:\Program Files (x86)\Openfire\resources\security
  9. Install the certificate by issuing the following command in the command prompt:

keytool –import –keystore keystore –alias <fully\_qualified\_server\_name>-rsa –file certnew.p7b –keyalg RSA

(you will be prompted for the keystore password: changeit; if the command was successful the message “Certificate reply was installed in keystore” will be displayed).

* 1. Stop Openfire server if it is running, by double-clicking on the Openfire icon in the taskbar, then click “Stop”.
  2. Delete the file C:\Program Files (x86)\Openfire\embedded-db\openfire.lck
  3. Start Openfire server.
  4. Test the https connection by typing in the following URL and ensure you do not receive any security exception warnings:

https://<fully\_qualified\_server\_name>:9091/login.jsp

1. Create Openfire windows service.
   1. Open a command window (cmd.exe)
   2. Change directory to C:\Program Files (x86)\Openfire\bin.
   3. From the command prompt run the following commands:

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 |

## Create Openfire Users

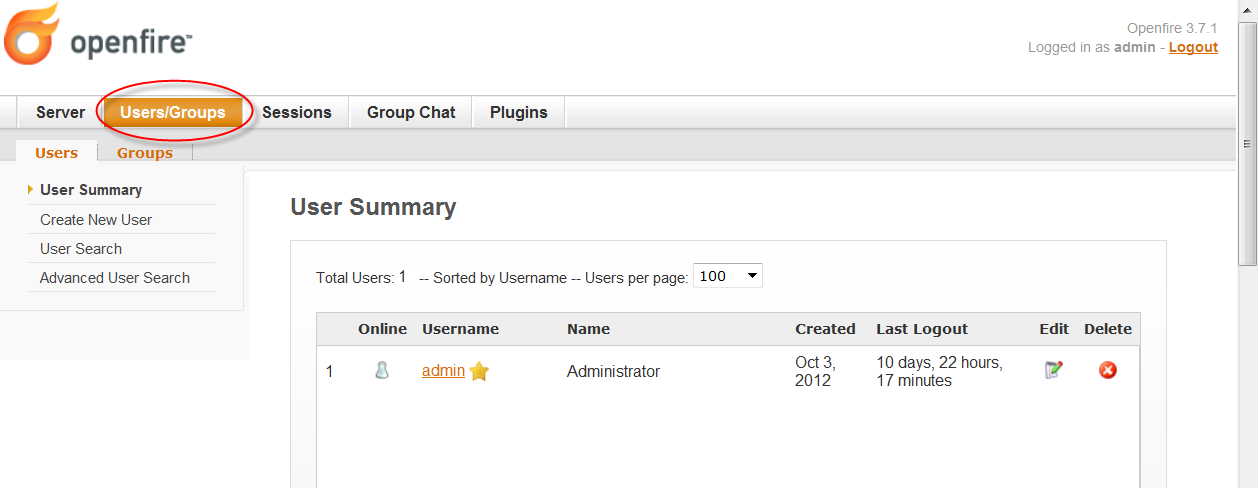
Create Openfire users as necessary for your demonstrations. For example, the “Operations Center” has the capability to consume chat server feeds; in order to support this capability you will need to create Openfire users.

To create Openfire users:

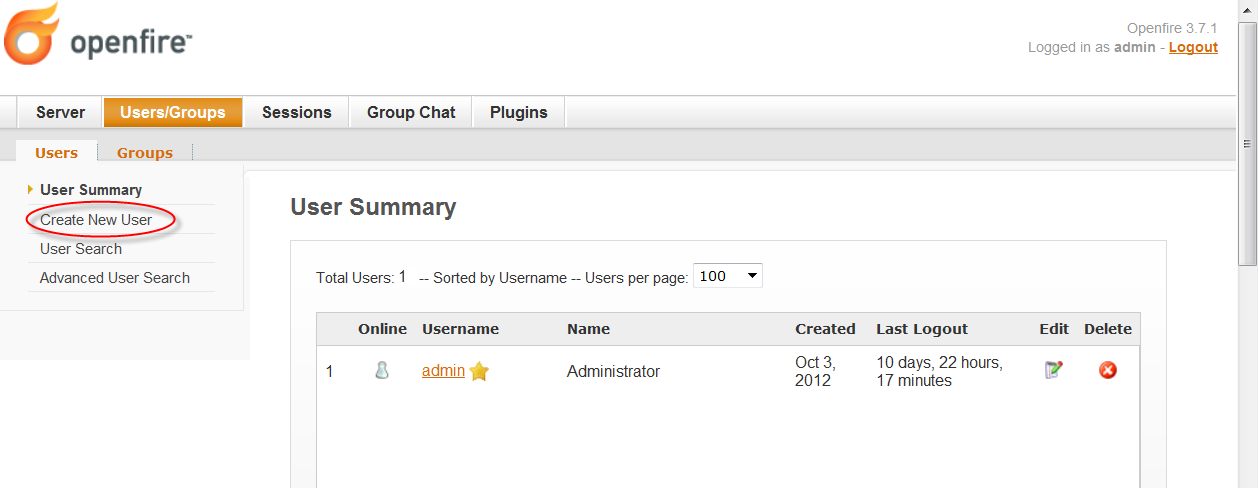
1. Log into the Openfire Admin Console by typing in the following URL in a browser. The username is “admin”; the password is the password you specified on the Administrator Account dialog when you installed Openfire.

https://<fully\_qualified\_server\_name>:9091/login.jsp

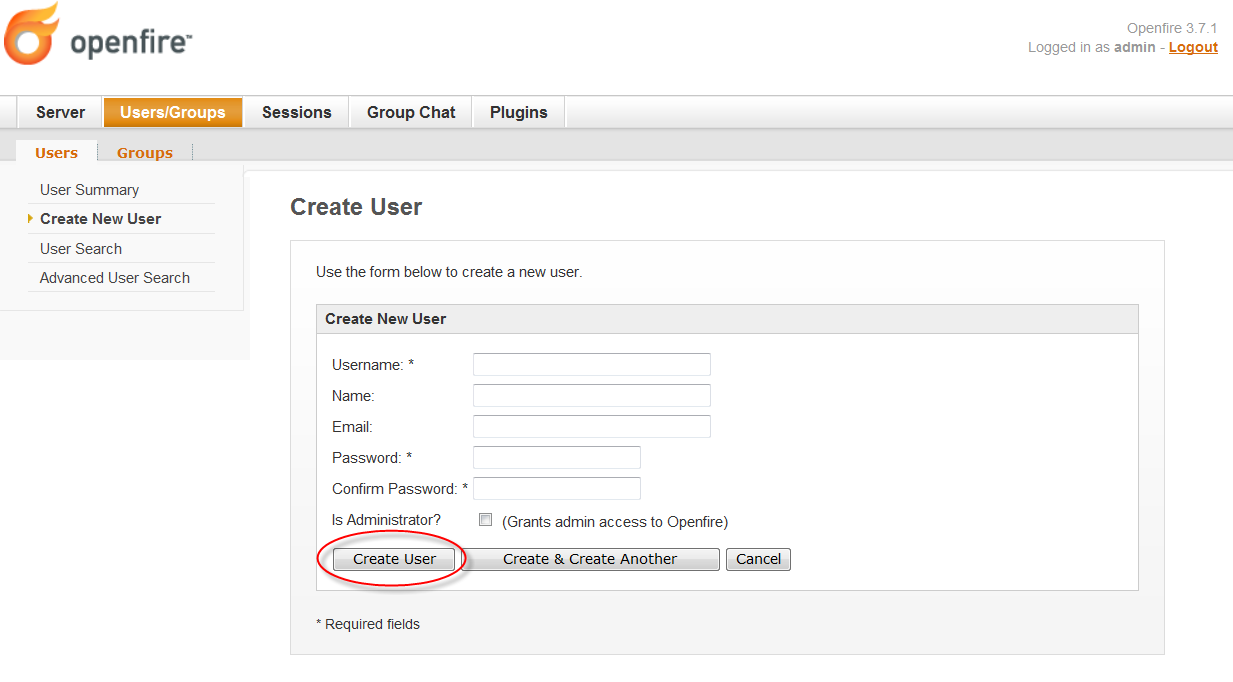
1. Click on the “Users/Groups” tab at the top of the page.



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



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



# Operations Dashboard for ArcGIS

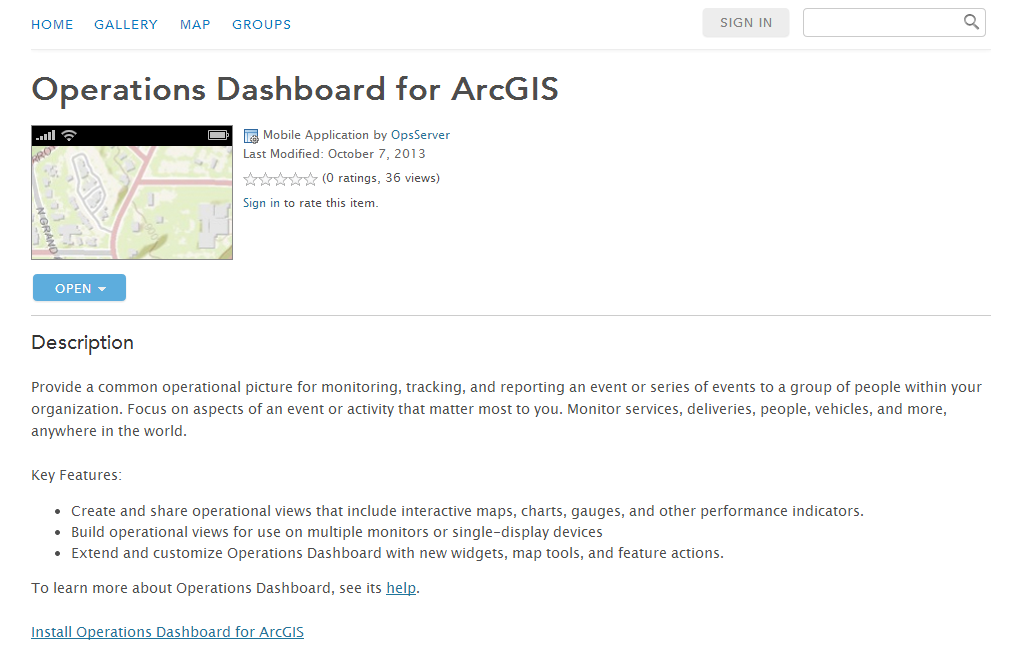
## Install on client machines

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](http://www.microsoft.com/en-us/download/details.aspx?id=30653).

With this version of OpsServer, you no longer install Operations Dashboard by unzipping a zip file, running an .exe and configuring the .exe.config file to point to your portal. The Operations Dashboard is now installed by running the “Click Once” application which can be found on your portal by searching for “Operations Dashboard for ArcGIS”. 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.



# 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>/arcgis/manager  https://<server.domain>:6443/arcgis/manager | User=ops\_userName variable value. Password=ops\_passWord variable value. |
| ArcGIS Server | REST | https://<server.domain>/arcgis/rest | N/A |
| ArcGIS Server | REST | https://<server.domain>/arcgis/rest | User=ops\_userName variable value. Password=ops\_passWord variable value. |
| GeoEvent Processor | Manager | https://<server.domain>:6143/geoevent/manager | arcgis/manager (default after install).  User=ops\_userName variable value. Password=ops\_passWord variable value. |
| Openfire | Administration Console | http://<server.domain>:9090  https://<server.domain>:9091 | admin/<what you specified during the installation> |

NOTEs:

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