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Installing Business Analyst Server

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Introduction

Business Analyst Server 10.7 is a powerful out of the box server-based enterprise solution for business. Business Analyst Server integrates business logic with Geographic Information System (GIS) technology in an enterprise environment with the capabilities to publish and share business data, maps, analyses, workflows, and reports throughout organizations on a server-oriented architecture. Business Analyst Server can integrate with other enterprise systems.

Business Analyst Server combines ArcGIS Server technology developed by Esri with the business analyses using extensive business, demographic, and consumer data, and tools with built-in business intelligence specifically designed to perform spatial-business assessments, providing a complete geointelligent business solution. This server-based solution has the built-in capability to solve business problems using business analysis tools. This solution product allows combining your most commonly used business tools into workflows. Business Analyst Server leverages the business analyses and reporting within browser-based thin client applications. Business Analyst Server extends the three step ArcGIS methodology, Author - Serve - Use, to business users.

Business Analyst Server comes with data and tools; tools that make it easy for you to access your data. The tools are easily accessible in Web browsers. The data is less visible but adds immense value to the product. Click to get more information on Esri Data.

Use this guide to get Business Analyst Server up and running.

Overview

Business Analyst Server at 10.7 is fully integrated with ArcGIS Enterprise, this provides several new benefits and features. To take advantage of these new capabilities it is recommended that a complete implementation of ArcGIS Enterprise is configured; ArcGIS Server, Portal for ArcGIS and ArcGIS Data Store.

• Configure the Geoenrichment utility service in Portal for ArcGIS on-premises in your own infrastructure.

• Enable usage of on-premises apps which leverage the Geoenrichment service such as: the Business Analyst web app, Business Analyst Desktop, the Business Analyst mobile app, ArcGIS Maps for Office, ArcGIS Pro and the enrich layer tool.

• Publish query-enabled Esri US demographic and lifestyle map services and share them in Portal to power thematic mapping (color coded maps) in the Business Analyst web app.

• The Business Analyst web app is included in the setup.

How to install Business Analyst Server 10.7

There are two setup executables that you will run in order to install Business Analyst Server:

• **Business Analyst Server:** A business GIS solution consisting of tools and functions specifically designed to perform spatially enabled business analyses using geointelligent data stored on Web-accessible servers.
  • ArcGIS Server software (enterprise or workgroup level)
  • Business Analyst Server software
  • Business Analyst Desktop
  • Business Analyst 2018 Data
  • Business Analyst Web app

• **Business Analyst 2018 Data:** Business, consumer spending, demographic, and segmentation datasets bundled together to help you analyze markets, profile customers, evaluate competitors, and identify opportunities. This includes a nationwide street network from HERE, Esri Updated Demographic data for multiple levels of geography (block groups, census tracts, ZIP Codes, counties, and so on), an address geocoding service, more than 12 million business locations from Infogroup, an extensive shopping center database, and Esri's USA Tapestry segmentation data. The Tapestry Segmentation data is included at the block group geography level.

Steps to set up Business Analyst Server 10.7

Business Analyst Server will work alongside single-machine and multi-tiered deployments of ArcGIS Enterprise. The Business Analyst web app requires a portal with a hosting server, however, standalone ArcGIS Server implementations of Business Analyst Server are also supported for legacy custom applications.

1. Install Base ArcGIS Enterprise deployment
   • Install ArcGIS Server
   • Install Portal for ArcGIS
   • Install ArcGIS Data Store - Upon setup, this should be configured as a relational data store.
   • Install ArcGIS Web Adaptor (IIS) - One web adaptor installation for traffic to your portal and one for traffic to your ArcGIS Server

- Add licenses for the Business Analyst web app to Portal. See this topic on configuring licenses.

- Manage licenses for the Business Analyst web app and grant access to the Portal administrator.

  📄 **Note:** The portal administrator account needs a license for the BA web app to authenticate when running the post install.

2. Install Business Analyst Data

3. Configure a Network Utility Service – Powers driving and walking study areas in the Business Analyst web app
   - ArcGIS Online or On-premises services are supported.

4. Configure a Geocoder Utility Service
   - ArcGIS Online World Geocoder or an on-premises geocoder service is supported.

5. Install Business Analyst Server (can be installed on the hosting server for an all-in-one single machine deployment or a separate GIS server federated with Portal for ArcGIS)

6. Configure Goenrichment in Portal as a utility service

7. Publish Demographic Map Services

8. Install the Business Analyst web app on Portal for ArcGIS
   - Import Entitlements

   - Manage License

9. Access web application from a portal gallery

Verifying system requirements

This section highlights the software components and prerequisites required to install Business Analyst Server 10.7.

To install Business Analyst Server on a federated server with support for the Business Analyst web app on-premises, you need ArcGIS Enterprise. This includes ArcGIS Server, Portal for ArcGIS, and the ArcGIS Datastore with a hosting server. A standalone ArcGIS Server implementation of Business Analyst Server is still supported for custom applications but will not be allowed for use of the Business Analyst web app on-premises.

⚠ **Caution:** Before installing Business Analyst Server, check that ArcGIS Server and Portal for ArcGIS (optionally) are installed and functioning.

For more information on how to install ArcGIS Server, refer to the ArcGIS Server Installation Guide.

Note: Before reviewing this section and installing Business Analyst Server, you should verify that ArcGIS Enterprise is installed correctly. The Business Analyst Server install assumes ArcGIS Enterprise is installed and running.

Business Analyst Server as a federated server uses Portal for ArcGIS Security. Access to the service is controlled by the sharing capabilities in Portal for ArcGIS. By default the service is not shared with anyone and the sharing must be updated by the Portal administrator for the service to be accessible to users. See this topic for sharing items in Portal.

For a standalone ArcGIS Server implementation, Business Analyst Server uses the security feature of ArcGIS Server. To enable security for Business Analyst Server web applications, you need to implement security using ArcGIS Server Manager.

The Business Analyst Server setup creates a map service with Business Analyst capability for you. However, you are not limited to using only this default map service. You can add additional map services with Business Analyst capability using the Business Analyst Server Post Install.

Preliminary Checklist

Supported platforms

Business Analyst Server is supported on all Windows platforms listed. Logging in with your Esri global account may be required.

.NET version support

- Microsoft .NET Framework 4.5 is a prerequisite for ArcGIS Server, therefore, it is required for Business Analyst Server.

Web servers

Business Analyst Server is supported on the following Microsoft Windows Web servers:

- IIS 7.5 with ASP.NET 2.0 (ASPX) support

- IIS 8 with ASP.NET 2.0 (ASPX) support

- IIS 8.5 with ASP.NET 2.0 (ASPX) support

- IIS 10 with ASP.NET 2.0 (ASPX) support

Securing web applications

The Business Analyst web app is a premium app for Portal for ArcGIS and it will use Portal security. For custom applications the installation guide assumes you're familiar with implementing Web application security in ArcGIS Server Manager. If you want to secure your Business Analyst capable map services used in Business Analyst Server, you need to implement security with users and roles using the Configuring ArcGIS Server Security documentation.

Hardware requirements

The minimum RAM requirement for an all-in-one single machine federated server deployment is 16 GB. These requirements are based on a federated development server with the following environment:

- Business Analyst DefaultMap service (10 maximum instances)

- Eight dynamic map services (Color-coded mapping)

- Geometry service

- PrintingTools service

- ArcGIS Web Adaptor

- ArcGIS Datastore with hosting server

- Portal for ArcGIS

For a production environment, minimum hardware requirements are not listed because the user and business needs of the software may vary. For instance, if network and geocoding utility services are published locally in the environment instead of being consumed from ArcGIS Online this will add to the memory footprint and 32GB may be required. These requirements must be considered in determining hardware needs to meet performance and scalability expectations. For assistance designing an ArcGIS infrastructure that will meet your specific requirements, see System Design Strategies.

Disk space requirements

Business Analyst Server is powered by large datasets downloaded from My Esri, each 7-Zip file size is around 10 GB. Make sure to have about 110 Gb of free space on the disk where these files will be, and another 155 Gb on the disk to where the data will be extracted.

See this topic for installing the Business Analyst data.

Once extracted, you will begin the installation process. If they go to the same disk, then you are going to need another 155 Gb of free space on that disk. After you finish installation of the data, you can delete approximately 155 Gb of setup and 7-Zip files.

Additionally, the service definition files used to publish the demographic map services are roughly 37GB in size, however, when published they are copied to the server and can be deleted after. During publishing, the size increases to roughly 100GB as the files are unpacked. It is important to check the amount of disk space where the `arcgisserver` folder is located. If located on the C: drive, make sure that after publishing, there will be enough room left for allocation of virtual memory to the server.

Repository types

Business Analyst Server at 10.7 includes improved sharing and collaboration features by leveraging shared items in Portal. For example; custom report templates authored in the Business Analyst web app or Business Analyst Desktop. However, the legacy Business Analyst Repository is still supported when a custom installation type is selected during the post install. Business Analyst Server works with no repository, a File-based repository and an ArcSDE repository.

- **No repository**
  Using the No Repository option allows users to perform business analysis without storing outputs from the analysis operations performed. All data and report templates are accessed from the Server data install location. There are no workspaces, projects or item folders available to store your analysis results, report items and features.

- **File-based repository**
  In the file-based repository, the root corresponds to a shared folder on a file server accessible by ArcSOC machines. Each successive lower repository level contains subfolders of its next-highest folder. For example, tasks such as customer layers, analyses, and reports have file folders that correspond to repository folders contained in a higher level project folder. For platform independence, the repository stores output feature classes and tables in shapefile format. Repository root, workspaces, projects, folders, and items folders contain metadata .xml files that have additional information about folder contents. Workspace metadata contains information about data contained in the workspace, such as the selected dataset.

  Project metadata and lower-level metadata contain information such as creation, modification time and comments. Metadata for certain types of items may contain additional information about data inside the folder item. For instance, multilayer metadata keeps references to the main layer file and a list of references to additional layer files.

- **ArcSDE repository**

  The option to create your repository using an ArcSDE geodatabase is available. This allows for secure access to Business Analyst Server analysis results.

  For specific information see What is the geodatabase?

  📝 **Note:** The ArcSDE repository requires additional third-party Relational Database Management System (RDBMS) software. Use the file-based repository if you don't want to install an RDBMS such as SQL Server or Oracle.

Installation conventions

Here are some conventions to use when referring to files and folders.

- By default, Business Analyst Server data installs data to the following folder:

  ```
  <Install Location>\ArcGIS\Business Analyst
  ```

  This folder location may be referred to as <Data> in this document.

- By default, Business Analyst data installs datasets to the following folder:

  ```
  <Install Location>\ArcGIS\Business Analyst\US_2018_Server\Datasets
  ```

  This folder location may be referred to as <Datasets> in this document.

- The location of the **Data** or **Datasets** installation folder is different; use your corresponding folder location whenever <Data> or <Datasets> is specified.

- <Install Media> refers to the Business Analyst Server installation flash drive.

Installing Business Analyst Server

This installation guide provides steps for a typical installation of Business Analyst Server.

> 📒 **Note:** It is assumed that you have installed Business Analyst data using **Business Analyst Server Data Setup** prior to running the following steps.

1. Select Business Analyst Server setup option.
   The **Welcome to the InstallShield Wizard for Business Analyst Server** 10.7 dialog box appears. Click **Next**.

2. The **License Agreement** dialog box appears. Click the **I accept the terms in the license agreement** check box and click **Next**.

3. On the **Ready to Install the Program** dialog box, click **Install**.
   The setup will start installing the selected features.

4. When Business Analyst Server has been successfully installed a dialog box appears stating the installation is successful, click **Finish**.
   The post installation application begins automatically.

   > 📒 **Note:** If a dialog box about restarting the system appears, you may reboot later after the post installation is completed or you may reboot the system and launch the post installation after the reboot.

To enable the management tools, you need to install the Business Analyst Server Desktop Components.

Continue to the Performing the Post Install section of the Business Analyst Server Install Guide.

Installing Business Analyst 2018 data

Overview

The installation process copies the necessary files to your machine so you can work with the Business Analyst Server software. Before installing the 2018 data, close all applications on your computer and verify that your computer meets the system requirements.

Note: Business Analyst Server 10.4, or later, is required to install the 2018 Data Update. Earlier versions are not supported.

Downloading and installing from My Esri

Each 7-Zip file size is around 10 Gb. Make sure you have about 100 Gb of free space on the disk where these files will be downloaded and another 120 Gb on the disk to where the data will be extracted. Once extracted, you will begin the installation process. If they go to the same disk, then you are going to need another 120 Gb of free space on that disk. After you finish installation of the data, you can delete approximately 220 Gb of setup and 7-Zip files.

Note: The 7-Zip open source program is required to extract and automatically reassemble the Business Analyst Data file archives. You will need to install 7-Zip to extract the necessary files from the downloads. Current 7-Zip users will want to install the latest version - ensuring a more efficient extraction process. You may download 7-Zip from the official site: http://www.7-zip.org/.

1. On the My Esri site, click **My Organizations** and click **Downloads**.
   The **Esri Download Manager** web page appears.

2. Verify that you are in the **Products** section. Enter `Business Analyst` or `Business` into the **Quick Search** text box.
   A list of Business Analyst products will be shown under the **Products** heading.

3. Look for **ArcGIS Business Analyst Server with 2018 U.S. Data** and ensure the version is 10.7. Click **View Downloads**.

4. Within the **Download Components** tab, click **Data and Content** to expand the list of files.
   For the 2018 US Data Update there will be ten files. Each will need to be downloaded to a folder on your local drive.

5. Beside the first file, **#1 ArcGIS Business Analyst Server 2018 Data (U.S.A.)**, Click **Download**.
   The **Download Manager** window is launched.

6. Click **Click to download your file now**.

   Note: Depending on your browser you may be prompted to select a location to where you want the file downloaded.

7. Repeat the process for the remaining nine files.
   Your folder will contain the following files:
   • ESRI_BA_Server_2018_US_Data.7z.001

   • ESRI_BA_Server_2018_US_Data.7z.002

   • ESRI_BA_Server_2018_US_Data.7z.003

- ESRI_BA_Server_2018_US_Data.7z.004

- ESRI_BA_Server_2018_US_Data.7z.005

- ESRI_BA_Server_2018_US_Data.7z.006

- ESRI_BA_Server_2018_US_Data.7z.007

- ESRI_BA_Server_2018_US_Data.7z.008

- ESRI_BA_Server_2018_US_Data.7z.009

- ESRI_BA_Server_2018_US_Data.7z.010

8. Right click **ESRI_BA_Server_2018_US_Data.7z.001** and click **7-Zip > Extract Here**.

   📋 **Note:**   You will only need to extract from the first compressed file
   (ESRI_BA_Server_2018_US_Data.7z.001). The extraction process automatically
   extracts and reassembles Files 001, 002, 003, 004, ... and 010 to create a full 2018
   Data Update setup. Do not attempt to extract Files 002, 003, 004, ... or 010.

Once the files are extracted you will have a folder called **ESRI_BA_Server_2018_US_Data** that will contain a setup
installer and all accompanying files.

9. Run the setup installer from ESRI_BA_Server_2018_US_Data folder to install the data components. As you click through
   the install process you will be presented with two installation options:

   - **Typical** - This is the default installation, which will automatically load all Business Analyst data components to your local
     hard drive to a default location, `C:\ArcGIS\Business Analyst\US_2018\Data`

   - **Custom** - The Custom option is recommended for users with limited disk space on the local hard drive where ArcGIS
     Desktop is located or for those who do not need to install all the data components. This option allows you to select which
     data components you wish to install and where you want to install them. You can also choose to not install any data
     components, and run Business Analyst from the USB media or from a network location.
     The following is a list of Business Analyst components and their approximate sizes:

Demographic Data	24 GB
Businesses Data	2.5 GB
Streets Data	22 GB
Streets Data Fast Map	4.9 GB
Geocoding Data for ArcGIS Pro	6.7 GB
Geocoding Data	13 GB
ZIP4 Geocoding Data	0.7 GB

Installing from a thumb drive

If installing directly from a USB drive you will follow the directions above - starting from step 7.

Alternative installation method for Windows 10 users

Windows 10 users experiencing intermittent installation issues may employ an alternative approach to installing the 2018 Demographic Data update. This method uses Command Line and requires a few additional steps of set up but will complete the installation more quickly than the standard process.

To employ this process, please follow the steps below:

1. Create a new folder on your C: Drive titled 2018_Data.

2. Download the data to this folder and unzip.

3. Ensure that your C: Drive contains a `Temp` folder. This folder is where the log file will be created and stored. If there is no `Temp` folder here you will need to create one.

4. In the **Search Windows** search box, enter **Command Prompt** or **cmd**.

   📒 **Note:** The search box is located on the far left side of the task bar.

5. Right-click on **Command Prompt** in the results list and select **Run as administrator**.
   The **Administrator: Command Prompt** window is launched.

6. Enter the following command:
   ```
   start /wait msiexec /i "C:\2018_Data\Unpacked\setup.msi" /qn /norestart /Lv C:\Temp\
   datalog.log
   ```

   📒 **Note:** This command will be installing the full 120 Gb of data and therefore may run for several hours.

7. Click **Enter** to initiate the installation process.

When the processes are finished, the Business Analyst MXDs will be added to your Desktop.

USA address locators

Included in the USA 2018 data update for Business Analyst Server are address locators. The files that support the address locators can be found, after installation, by navigating to `C:\ArcGIS\Business Analyst\US_2018\Data`.

The Business Analyst Server service is optimized to work with the USA Composite address locator (`USA.loc`), which can be found in `<install location>\Data\Geocoding Data`. A new address locator can be found by navigating to `<install location>\Data\Geocoding Data for ArcGIS Pro`.

📒 **Note:** Currently, the **Geocoding Data for ArcGIS Pro** locator is not supported by Business Analyst Server. To use this locator in an ArcGIS Server Geocode Service, you will need to activate your Business Analyst for ArcGIS Pro license. Below, are steps for how to publish the new locator as a Geocode Service using ArcGIS Pro.

To publish the new locator as a Geocode Service, use the following steps:

1. On the **Insert** tab, in the **Project** group, click **Connections** 🗗 and then click **Add Locator** 🏠.

2. In the **Select Existing Locator** dialog box, browse to: `C:\ArcGIS\Business Analyst\US_2018\Data\Geocoding Data for ArcGIS Pro`

3. Click **USA.loc** 🏠 locator, then click **OK**.
   A **Locators** folder 🏠 appears in the **Catalog** pane.

4. In the **Catalog** pane, click to expand the **Locators** folder and click **USA** to highlight the locator.

5. On the **Share** tab, in the **Share As** group, click **Locator** then click **USA**.

6. In the **Share Locator** dialog box, fill in the required fields and click **Publish**.

Business Analyst Server silent install

Business Analyst Server 10.7 can be installed without a user interface (UI) by running the setup using Windows Installer command line parameters. To run the Windows Installer with command line parameters, you execute setup.exe from the command line.

Requirements

• Run **Command Prompt** as administrator.

• Windows Installer version 3.1 must be installed and running on your machine prior to running the setup silently.

• All previous versions must be uninstalled before you proceed with the silent installation.

Command line parameters

Example

```
msiexec /i \\<Path to Business Analyst Server Install>\setup.msi /q
```

Parameter explanations:

Parameter	Description
Path to installer	The path to the setup.msi file.
Command-line options	For a list of options available using Windows Installer in a command line environment, please see: https://msdn.microsoft.com/en-us/library/windows/desktop/aa367988(v=vs.85).aspx.

How to perform a silent installation of Business Analyst 2018 data

Command

```
msiexec /i <full path> /q
```

For installing Business Analyst data in the default configuration.

Command

```
msiexec /i \\<path to data install>\setup.msi /q
```

You can also select which data features will be installed using ADDLOCAL parameter, e.g.:

Command

```
msiexec /i \\<path to data install>\setup.msi /q ADDLOCAL=Businesses_Data
```

Note: In this case only businesses data will be installed locally. For the 2018 Data Setup, the list of the feature names are:

- Demographic_Data

- Businesses_Data

- Streets_Data

- Streets_Data_Fast_Map

- Geocoding_Data_Pro

- Geocoding_Data

- ZIP4_Geocoding_Data

Note:

If you want to change the data install location (default is `C:\ArcGIS\Business Analyst\US_2018`), use INSTALLDIR property:

Command

```
msiexec /i \\<path to data install>\setup.msi /q INSTALLDIR=E:\US2018
```

For setting the custom install folders into separate components, use the following properties:

- DEMOGRAPHIC_DATA

- BUSINESSES_DATA

- STREETS_DATA

- STREETS_DATA_FAST_MAP

- GEOCODING_DATA_PRO

- GEOCODING_DATA

- ZIP4_GEOCODING_DATA

Command

```
msiexec /i \\<path to data install>\setup.msi /q BUSINESSES_DATA=E:\US2018Businesses
```

How to perform a silent installation of Business Analyst Server

To install Business Analyst Server in silent mode, open a command line console and enter the following command:
Command

```
msiexec /i \\<path to Business Analyst Server Install>\setup.msi /qn
```

How to perform the Business Analyst Server Post Install silently

To run the Business Analyst Server Post Install, you will need a JSON file that will help to define the properties of the resulting map service.

Command

```
BAServerPostInstall.exe /readconfig \\<path to configuration
file>\BAServerPostInstallConfig_Repo.json
```

If there are any concerns about the Post Install, a log file is saved: `C:\Users\<user>\AppData\Local\Temp folder`

Business Analyst Server post installation

The Business Analyst Server post installation registers the Business Analyst Server object extensions on ArcGIS Server and allows the configuration of Business Analyst Server settings.

After you complete your Business Analyst Server setup, the post installation dialog box below should automatically appear. If it does not, you can initiate the process by navigating to **Start > All Programs > ArcGIS > Business Analyst Server 10.7 > Business Analyst Server Post Install**.

1. In the **Configure Portal** dialog box select the type of installation. Click **Next**.
   - **Typical Federated with Portal** will allow for leveraging new capabilities at 10.7 such as configuring on-premises Geoenrichment as a utility service in Portal and installing the Business Analyst web app on premises while still supporting legacy methods of Business Analyst Server. A Service with the standard name DefaultMap will be published.
   - **Typical standalone** will publish the standard DefaultMap service with the legacy Business Analyst Server methods.
   - **Custom** will publish a typical standalone service with the option to manually configure Business Analyst settings.

Typical Federated with Portal

1. The Business Analyst Server post install will check if the ArcGIS Server instance associated with Business Analyst Server is federated by Portal for ArcGIS. If the ArcGIS Server instance is not federated, it will present the **Portal Credentials** dialog. Type the portal path in the **Enter Portal url:** text box. Click **Next**.
   Business Analyst Server will verify the URL to the Portal for ArcGIS instance. Once this has been determined, you will be prompted by the **Portal Authentication** dialog.

2. Type in your username and password in the **Username** and **Password** text boxes. Click **Next**.

3. The **Business Analyst Server Post Install Summary** dialog box appears. Click **Next**.

4. The **Export Business Analyst Server Post Install Configuration file** dialog box appears. Click **Next**.

   If you want to save these configurations to a file for reuse, click the **Export Configuration file** check box to export the configurations to a file to be reused. Provide a location and a file name to save the settings.

5. The **Business Analyst Server Post Install Completion Summary** dialog box appears indicating that the post installation is complete. An informative message appears with a reminder to publish the demographic map services needed to power Color Coded Maps in the Business Analyst web app. Click OK, then click **Finish**.

Typical Standalone

1. In the **ArcGIS Server Credentials** dialog box, enter the user name and password for the user that administers ArcGIS Server. Click **Next**.

2. The **Business Analyst Server Post Install Summary** dialog box appears. Click **Next**.

3. The **Export Business Analyst Server Post Install Configuration file** dialog box appears. Click **Next**.

   If you want to save these configurations to a file for reuse, click the **Export Configuration file** check box to export the configurations to a file to be reused. Provide a location and a file name to save the settings.

4. The **Business Analyst Server Post Install Completion Summary** dialog box appears indicating that the post installation is complete. Click **Finish**.

Custom

1. In the **Welcome to Business Analyst Server Post Install** dialog box, you can manually configure the settings for the post installation, specify a path to a configuration file or accept the defaults. Click **Next**.
The **Business Analyst Server Registration** dialog is displayed.

2. Specify the host name of where Business Analyst Server is installed. If this is the local system, type `localhost`. Click **Next**.

3. In the **Portal Credentials** dialog box, type the portal path in the **Enter Portal url:** text box. Click **Next**.

4. In the **Portal Authentication** dialog box, type in your username and password in the **Username** and **Password** text boxes. Click **Next**.

5. In the **Dataset configuration** dialog box, select the dataset that you want associated with the Business Analyst Server map service by clicking the **Make available** check box. Select the default dataset by clicking the **Set as default** radio button. Click **Next**.
If the Business Analyst Server data was installed from the ArcGIS Server Object Manager host machine then the data component location boxes will be populated automatically. If the Business Analyst Server data was not installed, browse to the custom dataset configuration file and data component locations. It is possible to configure the Business Analyst Map Service to use more than one dataset in this dialog box.

6. Specify the Business Analyst dataset configuration.

7. In the **Create Business Analyst Server Map Services** dialog box, specify the name of your Business Analyst Map Service and browse to the MSD file that you want published as your Business Analyst Map Service. By default, the map document used is stored as `[Install]\ArcGIS\Business Analyst\US\Data\Empty.msd`. Click **Next**.

8. Specify the democalc setting to be used by each dataset in your Business Analyst Map Service. Click **Next**.

9. In the **Configure Geocoder** dialog box configure the geocoder that you want to use with Business Analyst Server. If the geocoder is file-based, browse to the address locator file. If the geocoder is a geocode service, specify the host name of the server and the geocode service name. Click **Next**.

10. Specify the Business Analyst Server repository type. Click **Next**.
    a. If you chose the **File-based Repository**, the Business Analyst Server file-based repository location dialog box appears. Browse to the repository location and click **Next**.
    If the Warning dialog box appears, click OK to create a new repository folder structure.

    b. If you chose the **ArcSDE-based Repository**, the Business Analyst Server ArcSDE repository configuration dialog box appears. Enter the ArcSDE connection settings and click **Next**.

11. The **Business Analyst Server Post Install Summary** dialog box appears. Click **Next**.

12. The **Export Business Analyst Server Post Install Configuration file** dialog box appears. Click **Next**.

    If you want to save these configurations to a file for reuse, click the **Export Configuration file** check box to export the configurations to a file to be reused. Provide a location and a file name to save the settings.

13. The **Business Analyst Server Post Install Completion Summary** dialog box appears indicating that the post installation is complete. An informative message appears with a reminder to publish the demographic map services needed to power Color Coded Maps in the Business Analyst web app. Click **Finish**.

Uninstalling Business Analyst Server

To uninstall Business Analyst Server, perform the following tasks:

1. Right-click on Business Analyst Server 10.7 in Programs and Features.

2. Click **Uninstall/Change**.

3. Click **Next** in the **InstallShield Wizard** dialog box.

4. Click **Remove** to uninstall and click **Next**.

5. Enter the **username** and **password** for the ArcGIS Server Manager in the **ArcGIS Server manager credentials** dialog box and click **Next**.

6. Click **Remove** in the **Remove the Program** dialog box.
   The Uninstalling Business Analyst Server 10.7 dialog box appears - indicating the removal of the files.

7. Once the uninstall is complete, click **Finish**.

8. If an **Installer Information** dialog box appears during the uninstallation process, click **OK**.

Authoring and serving content

The overall process

Business Analyst Server is fully integrated with Portal for ArcGIS and can be used to publish and share projects. Projects enable you to organize content relevant to the analysis you are performing. Content within a project includes: Sites, Study Areas, Reports, Custom Data, Custom Report Templates, and more. These projects can be accessed using Business Analyst apps - from Mobile to Web to Desktop or as individual item types by interacting with a Portal instance.

For more information about projects and interacting with projects in your client application, please see the topics below:

• Working with projects in Business Analyst Desktop

• Working with projects in the Business Analyst web app

• Accessing your content in the Business Analyst mobile app

The process for publishing a project to Portal is different subsequent the release of Business Analyst Server 10.7 as compared to previous versions where you would upload a project to Business Analyst Server from Business Analyst Desktop. If you would like to enable the previous method of uploading and downloading projects, follow the directions in this technical article.

Author

Using Business Analyst, users employing the desktop, mobile or web application can design and execute models and analyses locally and publish the results to be viewed and utilized throughout the organization. Publication-quality maps, reports, and analyses output can be combined into market studies and distributed in a ready-to-use, web browser-based application.

Serve

These models and analyses, developed by Business Analyst Desktop users, are now served throughout the organization for consumption by web clients. Application developers can also utilize the services published with Business Analyst on the desktop when building new or customizing existing applications, without having to become GIS experts. For example, an application developer can quickly build an easy-to-use web application for a company's real estate department that will screen potential facility locations. Users can pan and zoom on the map from a citywide view to a street-by-street analysis, all while Business Analyst Server does the geoprocessing behind the scenes.

Use

The integration of Business Analyst Server with a simple reporting application enables users in a marketing department to perform a market-ranking analysis that evaluates the success of a marketing campaign for a series of given cities. From a Business Analyst Server web client, an end user can execute focused applications. These applications often solve site location problems including customer targeting and analyses. End users often need only to accomplish specific tasks, utilizing their unique skills to solve recurring problems.

Working with projects in Business Analyst Desktop

Projects are a way of organizing your work in Business Analyst, making it easier to manage, back up, and share analysis results . Projects in Business Analyst Desktop contain a standardized structure and allow you to conveniently share your work

throughout your ArcGIS organization. For more information regarding projects in Business Analyst Desktop, please review the help topic Using projects in Business Analyst.

Working with projects in the Business Analyst web app

Projects help to organize sites, study areas, reports and more in Business Analyst. Business Analyst Server and Portal for ArcGIS can be used to help share the project within an organization. For more information regarding projects in the Business Analyst web app, please review the Projects topic in the Business Analyst web app help documentation.

Working with projects in the Business Analyst mobile app

Projects are a way of organizing your work in Business Analyst, making it easier to manage, back up, and share analysis results . Projects in Business Analyst Desktop contain a standardized structure and allow you to conveniently share your work throughout your ArcGIS organization. For more information regarding projects in Business Analyst Desktop, please review the help topic Accessing your content.

Uploading a project

To make an existing Business Analyst Desktop project available to Business Analyst Server, upload it to the server using the Upload Project wizard in Business Analyst.

To perform this task, follow these steps:

1. Start a session in **ArcMap**.

2. In **Catalog**, click **Business Analyst Repository**.

3. Right-click the project to be uploaded. Click **Upload Project...**
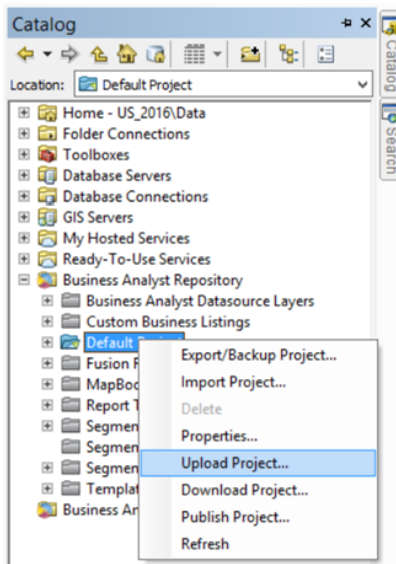
4. In the **Upload Project** check the items you want to upload.
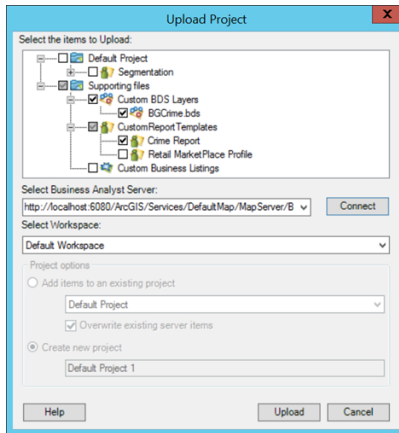
5. In the **Select Business Analyst Server** drop-down list, enter the link to the Business Analyst Map Service to where you want to upload the project. Click **Connect**.

   💡 **Tip:** For help, place the mouse pointer directly over the URL field and a dialog box appears with information.

6. In the **Authentication** dialog box, enter the credentials of a user that is a member of the publisher role for ArcGIS Server.
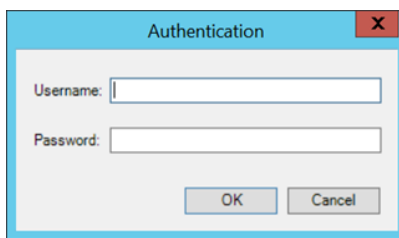
   See Managing roles in Manager for more information.

7. Verify that the items you want to upload have been checked as well as the project to where you want to upload.

   📝 **Note:** Supporting files are not project specific. You aren't required to pick a project to upload.

8. Click **Upload**.

ArcCatalog creates a server version of the project on the specified server and the Business Analyst Server application can use this new version. The upload is complete.

Downloading a project

To make an existing Business Analyst Server project available to Business Analyst Desktop, download it from the server to your desktop system. As with uploading, downloads use the **ArcMap** application.
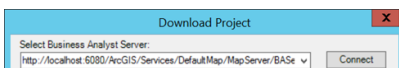
To perform this task in **ArcMap**, follow these steps:

1. Start a session in **ArcMap**.

2. In **Catalog**, click **Business Analyst Repository**.

3. Right-click your destination project. Click **Download Project...**.
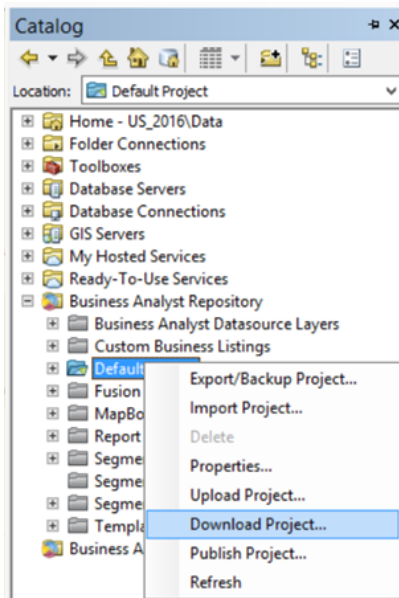
4. In the **Download Project** window click the **Select Business Analyst Server:** drop-down list and specify the URL of the server from which you want to download the project.

This action populates the remaining settings in the dialog box.

5. In the **Select Workspace** drop-down list, select the workspace in which the project resides.

6. In the **Select an Existing Project** drop-down list, choose the project to download.

7. Under **Select the items to Download**, check to enable the items you want to download or disable the items you want to omit.

8. Select an existing project, or specify a new project, for which you want to download the items.

9. Click **Download**.

ArcMap creates a local version of the project from the specified server project. The Business Analyst Desktop application can use this new version. The download is now complete.

Business Analyst Server repository

The Business Analyst Server repository is available to customers who do not use Portal for ArcGIS in order to support a multiuser environment which allows users to share results of their business analyses. The repository consists of user workspaces to avoid users accessing the same projects simultaneously. The Business Analyst Server repository supports persistent storage of analyses and reports, and stores data in a hierarchical structure.

Repository logical structure

The repository is a multilayered storage structure. In the illustration below you can see that the uppermost repository level is the **Repository Root** element. It corresponds to a shared folder or an enterprise, workgroup, or desktop geodatabase workspace accessible by ArcGIS Server. Below the **Repository Root**, the repository provides personal workspaces to store data. Workspaces act as logical elements that can help organize your data into projects that you define. A workspace can contain as many projects as required, but any project name inside a workspace must be unique.
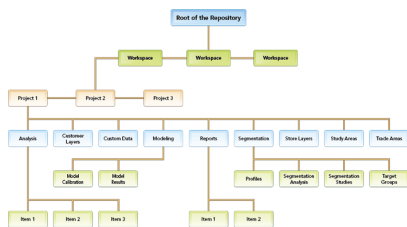
- At the top level of the repository are workspaces. At least one workspace, namely **Default Workspace**, is contained in the repository.
- A workspace is used to group projects. At least one project, namely **Default Project**, is contained in a workspace.
- A project forms the next level of hierarchy and contains folders.
- A folder can contain a number of items such as analyses, store layers, customer layers, trade areas, reports, etc.
- An item makes up the lowest level of the repository.

Types of repositories

Types of repositories you can use include no repository, a file-based and an enterprise geodatabase repository. Descriptions of each are provided below so that you can choose what is best for your organization.

No repository

A **No Repository** option is available to perform business analysis without storing outputs from the analysis operations performed. With the no repository option, you can't upload from Business Analyst Desktop because there is no storage for the projects and supporting files. The `OutputReportItem` parameter and `OutputAnalysisItem` parameter aren't available for use. However, this option can be used to run reports.

File-based repository

In a file-based repository, the root corresponds to a shared folder on a file server accessible by ArcGIS Server machines. Each successive lower repository level contains subfolders of its next-highest folder. For example, tasks such as customer layers, analyses, and reports have file folders that correspond to repository folders contained within project folders. For the purpose of

platform independence, the repository stores output feature classes and tables in shapefile format. Repository roots, workspaces, projects, folders, and items folders contain metadata.xml files which have additional information about folder contents. Workspace metadata contains information about data in the workspace, such as the selected dataset. Project metadata and lower-level metadata contain information such as creation and modification time and comments. Metadata for certain types of items may contain additional information about data inside the folder item. For instance, multilayer metadata keeps references to the main layer file and a list of references to additional layer files.

Enterprise geodatabase repository

Some organizations store their data in RDBMS tables, such as Oracle or SQL Server. Enterprise geodatabase provides easy access to such tables, allowing ArcGIS products, such as Business Analyst Desktop and Business Analyst Server, to access the information indirectly. An enterprise geodatabase repository accesses the data tables on one end and on the other end simulates workspaces for different users and multiple projects in a single enterprise geodatabase workspace. For these purposes, Business Analyst adds several additional system tables to an enterprise geodatabase repository.

Enterprise geodatabase repository system tables

The enterprise geodatabase repository system tables are as follows:
- The **Workspaces** table contains workspace information, including GUID, and metadata contained in an XML field that has additional information. For example, such metadata might contain information about selected dataset, last access time, or modification time.

- The **Projects** table contains information about all projects in the repository. The `WsGUID` field is used to keep reference to the workspace that logically contains the project. The `Metadata` field contains project comments and creation/last modification time.

- The **Folders** table and Items table are similar. They contain information about project elements and reference parent items for logical structure purposes. The `Name` field of the **Items** table consists of an identifiable name for each feature class or table containing Business Analyst analyses. For example, if you define a simple ring trade area and assign it the name `Simple_Ring_01`, the Items table stores this definition in the `Name` field.

- The **Binary Data** table stores all additional item information. For example, it may contain target group data for target group items or segmentation profile data for segmentation profile items.

Deploying Demographic Map Services

Demographic map services power Color-Coded Maps functionality in the Business Analyst web app and in Business Analyst Desktop. Deploying them to your portal is an essential step in the data installation process that should be performed after you install Business Analyst Data.

Prerequisites

- ArcGIS Portal, with ArcGIS Server federated into it and set as Hosting server. It is not required that this is the same instance as used for GeoEnrichment Server. Depending on your configuration and load, you might decide to use a dedicated server for Demographic Map Services.

- It is recommended that you use Portal Administrator account to perform the deployment. You can also use any Publisher account, but in this case you will have to make sure that this account is a member in Esri Demographic Layers group.

- Substantial free disk space in your arcgisserver directory, e.g. `C:\arcgisserver`. Deployed Demographic Map Services require about 110 Gb of space on this drive.

- Enough RAM on the Server machine. With all services started, you will need about 16 Gb RAM minimally to run ArcGIS Server.

During this process you will need to deploy 8 Server Definition (SD) files to Server, spin up 8 ArcGIS Server based Feature Services based on those SDs, share them with Portal, and share them to the Esri Demographic Layers group in Portal.

Deployment Instructions

Make sure you have access to Business Analyst 2018 US Data Install. To achieve optimal performance, it is recommended that you copy this install to a local hard drive on the machine running Server.

1. Start the **<Server Data Install Path>\ ServiceDefinitions\publish.py** Python script.

2. Follow the on-screen instructions. You will be asked to provide the following information:
    - Portal **User Name** (it is recommendation that you use Portal Admin. You can also use any Publisher who is a portal member.
    - Portal User **Password**
    - Portal URL (e.g. `https://webadaptor.domain.com/arcgis`)
    - Server URL (e.g. `https://webadaptor.domain.com/server`)
    - Folder with SD Files (e.g. `F:\ESRI_BA_Server_2018_US_Data\ServiceDefinitions`)

    📋 **Note:** The publishing process might take up to several hours to complete. At the beginning of the process the following checks are performed:
    - Free space in Server's Upload directory
    - Correctness of URLs
   - Necessary permissions on the user account

During actual publishing the script iterates over the Service definition files. For each SD file, it uses an **Upload Service Definition Geoprocessing** tool to publish the file to Server and performs Portal API calls to ensure that the services are accessible to the Server and are discoverable by the Business Analyst web app and by Business Analyst Desktop.

3. Verify the results by checking the execution log. There should be no errors. Below is an example log (in two parts):

4. Verify the results by checking the services in the Esri Demographic Services group. It should look like the following:
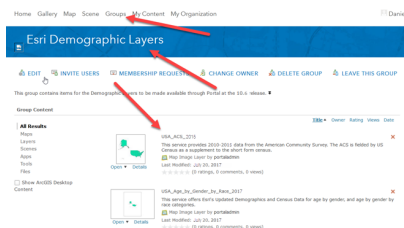
The following map services are expected to be there:
- USA_ACS_2015

- USA_Age_by_Gender_by_Race_2018

- USA_Consumer_Expenditures_2018

- USA_Demographics_and_Boundaries_2018

- USA_MPI_1_2018

- USA_MPI_2_2018

- USA_Retail_Marketplace_2018

- USA_Shopping_Center

Once you verify that the feature services are successfully published, you can proceed with the next steps in the installation process.

Silent Installation

Rather than selecting the parameters interactively, you can enter them in the command line.

The parameters available using the command line are:

Parameter	Usage
-u	Portal for ArcGIS Administrator User.
-p	Portal for ArcGIS Administrator Password.
-s	URL for ArcGIS Server: `https://hostname.domain.com/serverwebadaptor`
-t	URL for Portal for ArcGIS: `https://hostname.domain.com/portalwebadaptor`
-f	Path to folder with Service Definition files to be published. Default = `/ServiceDefinitions`
--force	If specified, this parameter will delete existing services and update them with new services. This will not delete services that are not going to be deployed at the time this script is run.
-k	If specified, this parameter will enable the publish.py script to ignore SSL certificate warnings.

```
publish.py -u PortalAdministrator -p <PortalAdminPassword> -s https://webadaptor.esri.com/
serverwebadaptor -t https://webadaptor.esri.com/portalwebadaptor -f <FolderWithSDFiles> -k --
force
```

Additional notes when using Integrated Windows Authentication

When using Integrated Windows Authentication (IWA) there are additional permissions to navigate when deploying the Demographic Map Services for use with the Business Analyst web app. To help with navigating these permissions, you will need to install the Kerberos protocol.

To install Kerberos and run the publish.py script while IWA is being used you will perform the following steps:

1. Open a command line and navigate to `C:\Python27\ArcGISx6410.6\Scripts`

2. Run the following command:

   ```
   pip install requests_kerberos
   ```

3. In the command prompt, navigate to the **ServiceDefinitions** folder where the GeoEnrichment Server Data install is stored.

4. Run the following command:

   ```
   publish.py -u PortalAdministrator -p <PortalAdminPassword> -s
   https://webadaptor.esri.com/serverwebadaptor -t https://webadaptor.esri.com/
   portalwebadaptor -f <FolderWithSDFiles> -a IWA
   ```

Data Apportionment settings

You can alter the way data is apportioned in Business Analyst Server. Changing different options can affect data aggregation speed, report calculations, and spatial overlays.

To configure the data apportionment methods, follow these steps:

1. Access the Business Analyst service properties by following the steps in Accessing properties of a map service using ArcGIS Server Manager.

2. Under **Business Analyst Configuration**, select the **Democalc** tab. If you are an advanced user, you can modify these parameters; otherwise, it is recommended that you keep the default settings.

3. Select the dataset from the **Active dataset** drop-down list. The default active dataset will generally be the most recent shipment of data. For example, the current year U.S. dataset from Esri is USA_ESRI_2018.

4. Select the feature selection method from the **Selection method** drop-down list. `Hybrid` is recommended for a combination of speed and accuracy.

5. Double-click within **Democalc parameters** to modify your threshold settings, data layers, or apportionment methods. You can also add new parameters. It is recommended that you leave the default values unless you understand how the parameters can change Business Analyst Server analyses.

6. When your modified settings are complete, Click **Save and Restart**.