

Arbutus Analyzer

INSTALLATION GUIDE



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About this Guide

This guide is provided to licensed users of Analyzer and will assist you with installing and configuring Analyzer. For more information about our products and services, visit our web site at:

www.ArbutusSoftware.com

Need Help?

Resources

For assistance in using Analyzer or ConnectPlus, refer to these additional resources:

- Analyzer Online Help
- ConnectPlus Installation Guide

Contacting Us

If you have suggestions for improvements or if you can not find a solution to a problem, you can contact technical support for assistance. Please include:

- Your Analyzer serial number.
- A description of what you were doing when the problem occurred.
- The error message, if any, displayed by Analyzer.

Support Center

Global Help Center

- Phone: +1-604-437-7873 or +1-877-333-6336 ext. 333 (Toll Free in North America)
- Fax: +1-604-437-7872
- Email: support@ArbutusSoftware.com

Or write to us at:

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Contents

Copyright	ii
About this Guide	iii
Contents	1
Chapter 1 Introduction	3
System Description	3
The Arbutus Solution - Overview	3
The Arbutus Solution - Components	4
System Requirements	5
Minimum Recommended Resources (Desktop)	6
Optimal Recommended Resources (Desktop)	6
Optimal Recommended Resources (Remote Host)	6
Arbutus Smart Apps	6
Arbutus Connectors	7
Chapter 2 Installing Analyzer on a Single Machine or Citrix Server	10
Installation Procedures	10
Step 1 - Downloading Analyzer from the Arbutus Web Site	10
Step 2 - Installing Arbutus Analyzer	10
Step 3 - Activating Analyzer	11
Chapter 3 Installing Analyzer on Multiple Machines Using An MSI File	13
Installation Procedures Using an MSI File	13
Prerequisites	13
Installing Analyzer using the MSI File	13
Un-Installing Analyzer using the MSI File	15
Chapter 4 Servers and Shared Access	16

Server Profiles	16
Optional Parameters for Relational Data Sources	20
Shared Folders	20
Specifying Shared Folders	22

CHAPTER 1 INTRODUCTION

System Description

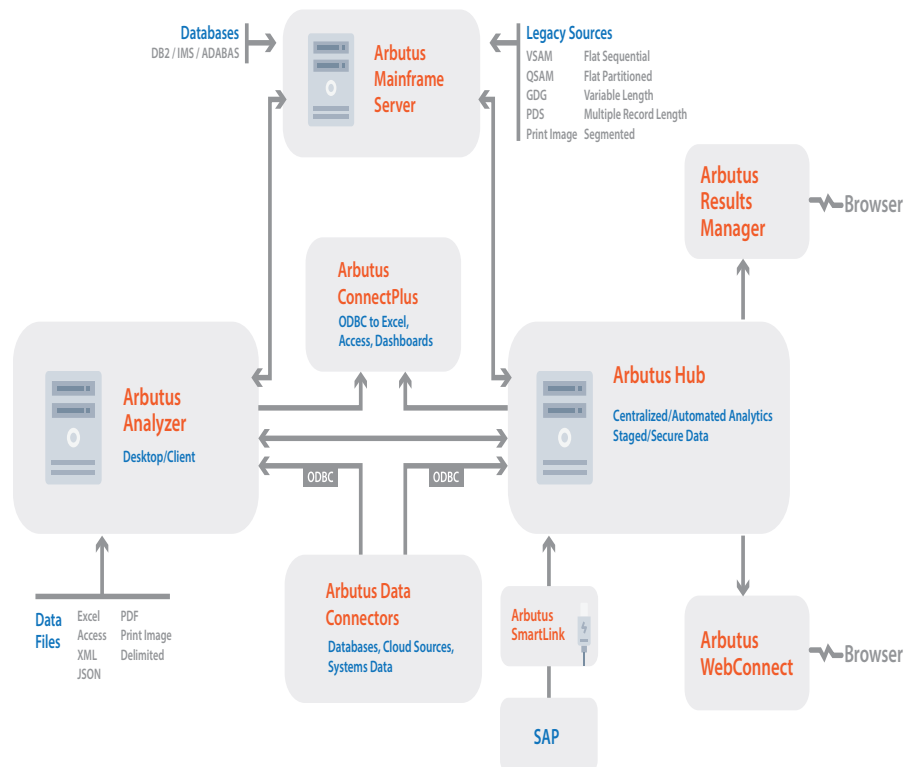
The Arbutus Solution - Overview

The Arbutus Solution consists of:

1. One or more of the Arbutus Servers:
 - A zSeries mainframe computer running the Arbutus zSeries Server
 - A Windows server running the Arbutus Hub Server
2. One or more of the PC-based Arbutus Clients:
 - Arbutus Analyzer
 - Arbutus ConnectPlus
 - Arbutus WebConnect
 - Arbutus Results Manager
3. A TCP/IP network connection linking the clients and servers together
4. Optional background offline batch processing for the Arbutus zSeries Server.

Note: For visual depictions of “The Arbutus Solution” see the diagrams on the following pages.

The Arbutus Solution



The Arbutus Solution - Components

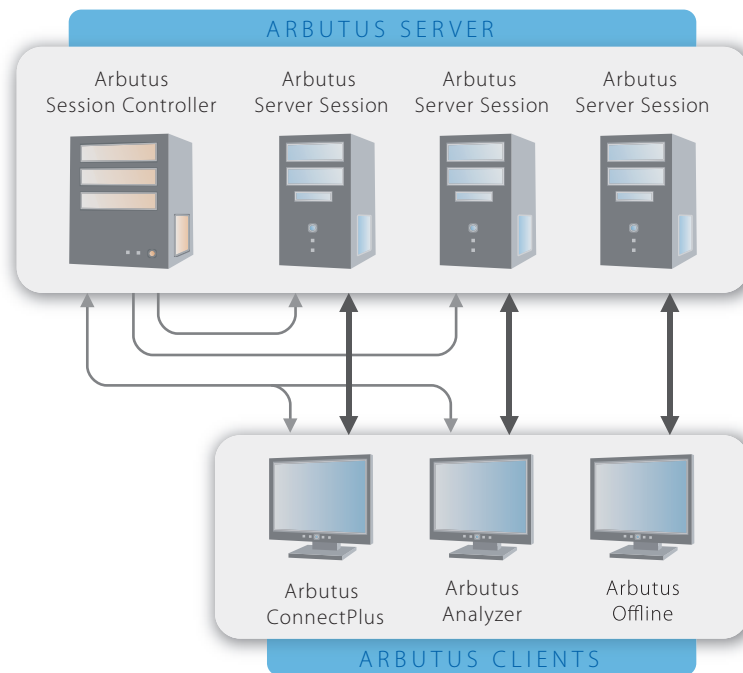
An Arbutus “session controller” is provided to manage TCP/IP communications and Arbutus end-user sessions (“server sessions”) for configurations that connect across multiple platforms, as is the case when running the PC-based Arbutus Clients with any of the Arbutus Servers.

When a PC-based Arbutus Client sends a connection request to the session controller, the session controller authenticates the request and creates an end-user server session. The session controller then establishes a direct communications link between the client and the end-user server session, and hands off the communication link to them.

Once this connection is established, the end-user server session runs independently of the session controller, and the session controller goes back to listening for incoming requests.

For each connection it accepts, the session controller starts a separate end-user server session. Connection requests from different users result in multiple, independent server sessions. A server session ends when the connection is terminated from the PC-based client.

Arbutus Server Session Management



System Requirements

The installation steps described in “Installing Analyzer on a Single Machine or Citrix Server” on page 10 are those required to install Arbutus Analyzer.

Analyzer can be installed on a Windows machine running any version of Windows 7 or later and requires 500 MB of RAM and 20 MB of hard disk space.

In order to activate the software, the Windows machine must have the 32-bit Microsoft .NET Framework 4.5.2 or higher installed. To obtain and install the 32-bit Microsoft .NET Framework 4.5.2 or higher, navigate to:

<https://dotnet.microsoft.com/download>

and select Download .NET Framework Runtime.

In addition, to activate the software, the installer must be connected to the internet and have administrator rights on the Windows machine to ensure that all required activation settings can be properly set for the local user in the machines registry.

Note: You will also need sufficient disk space for all of the data files you will be analyzing.

It is important to point out that data analytics is a very resource intensive task, and installing Analyzer on a network server could severely impact the performance of the network server.

Instead, we recommended that each copy of Analyzer be installed on an individual local machine.

Minimum Recommended Resources (Desktop)

The minimum recommended resources when using Analyzer are:

- The operating system should be at least Windows 7 (or later)
- If you are processing data locally, we recommend a minimum i5 level processor (or equivalent), with at least 8 GB of RAM and sufficient hard disk space to meet analytic processing needs.
- Solid state drives (SSDs) can significantly enhance speed, where performance is at a premium.

Note: Opting for minimum requirements may significantly impact performance.

Optimal Recommended Resources (Desktop)

To obtain the best results when using Analyzer, we recommend the following:

- We recommend that the operating system be at least Windows 10 (or higher)
- If you are processing data locally, we recommend an i5 or i7 level processor (or equivalent), with at least 16 GB of RAM and at least 1TB hard disk space.
- Solid state drives (SSDs) can significantly enhance speed, where performance is at a premium.

Optimal Recommended Resources (Remote Host)

When deploying Analyzer remotely, either in a virtual environment or via a remote host (like Citrix or Windows Terminal Services), each instance of Analyzer should be provided with:

- a minimum of 8 GB of RAM
- sufficient hard disk space (to allow for processing and storing of data that will be created as part of an end users analytics)

Arbutus Smart Apps

As part of the Arbutus Analyzer installation, a default suite of more than 70 interactive Smart Apps are installed. These apps are stored in "My Documents/Arbutus/SmartApps" and will automatically appear in Analyzer's App menu for ease of use.

The Smart Apps cover common useful tests for the following areas:

- Accounts Payable
- Accounts Receivables
- Inventory
- Fixed Assets
- General Ledger
- Fraud and Compliance

Any questions regarding the Smart Apps should be directed to Arbutus Technical Support.

Arbutus Connectors

As part of the Arbutus Analyzer installation, the installer will be provided with the option to select and install desired data connectors from a supplied suite of optional Arbutus data connectors. These data connectors are solely for the use of Arbutus software.

Note: During installation, the installer will be prompted to choose which of the desired Arbutus connectors should be installed.

These are the currently available connectors that users can select from:

- Access
- Active Directory
- Amazon DynamoDB
- Amazon Redshift
- Amazon S3
- Apache HBase
- Apache Hive
- Apache Spark
- Btrieve
- Cassandra
- CouchBase
- Email
- Excel Online (for accessing Excel on cloud platforms like Azure)
- Excel Services (for accessing Excel on Sharepoint)
- Epicor ERP
- Google BigQuery
- Jira
- Microsoft Dynamics 365 (Finance and Operations)

- Microsoft Dynamics GP
- Microsoft Exchange
- MongoDB
- MySQL
- NetSuite
- Oracle Financials Cloud
- Oracle HCM Cloud
- PostgreSQL
- Quickbooks
- Amazon Redshift
- REST
- Salesforce
- SAP Concur
- SAP ERP
- SAP HANA
- ServiceNow
- SharePoint
- Snowflake
- Splunk
- SQL_Server
- Teradata
- Workday
- Xero Accounting

Selected data connectors are installed as User DSN's in Window's 32 Bit ODBC Manager. Each of the data connector's names are prefaced with Arbutus (for example: Arbutus SQL Server).

Once the Arbutus data connectors are installed, they must be configured prior to usage.

- For locally installed Arbutus data connectors, they can be configured via the Data Definition Wizard in Analyzer by clicking the Configure button in the Select Data Source or Subsystem Panel after selecting the Arbutus connector.
- For locally installed Arbutus data connectors, they can also be configured using Window's 32 Bit ODBC Manager.

The installer can easily access the 32 Bit ODBC Manager on the local machine by establishing a desktop short cut to:

`C:\Windows\SysWOW64\odbcad32.exe`

Installed data connectors will automatically appear in the list of available ODBC/Relational data sources when using Analyzer's Data Definition Wizard, the SQL command or the ODBC Explorer.

CHAPTER 2 INSTALLING ANALYZER ON A SINGLE MACHINE OR CITRIX SERVER

Installing Arbutus Analyzer directly on a single machine or a Citrix server is quick and easy. In this section you will learn how to download and install Analyzer from the Arbutus Web Site.

Note: When installing Analyzer on a machine, the installer must have administrator rights on that machine in order to allow necessary registry settings to be established.

Installation Procedures

The Analyzer components can be downloaded directly from the Arbutus Web site to the desired workstation and then installed.

Step 1 - Downloading Analyzer from the Arbutus Web Site

Go to the following Arbutus Web Site downloads page to download the correct version of Analyzer:

<https://www.arbutussoftware.com/en/download-software>

Step 2 - Installing Arbutus Analyzer

Once you have downloaded the correct version of Arbutus Analyzer you can install it on a desktop/laptop or on a Citrix/Remote Access server.

Currently, the Citrix Analyzer license can only be run in a XENAPP environment (not a XENDESKTOP environment).

Note: The system requirements for each user of Analyzer are the same regardless of the installation environment.

Double clicking on the downloaded file will:

- prompt you to choose to install a new instance or to simply maintain or upgrade an existing instance - this includes choosing to perform a complete installation or a custom installation.

Note: A custom installation might be chosen if the user only wants to choose specific Arbutus data connectors to install versus the whole suite).

- prompt you to choose your desired software language from a list of supported installation languages
- require you to accept the license agreement
- prompt you to install Analyzer into the default location "C:\Program Files (x86)\Arbutus\" or to specify an alternate install location (local or network drive)

- install a set of three sample data files and a project file in a project folder called "Documents\Arbutus\Sample". The project file in this folder is called "Sample Data.ASI" and is automatically opened the first time you start Analyzer. These files are for evaluation purposes only.
- install a default suite of Smart Apps. For more information see "Introduction" on page 3 (Smart Apps).
- prompt the installer to choose Arbutus desired data connectors from the suite of available connectors. These connectors are solely for the use of Arbutus software. For more information see "Introduction" on page 3 (Arbutus Connectors).

Note: To connect Analyzer to any of the Arbutus Servers, a valid server profile must be established for each Arbutus Server. For more information on server profiles see "Servers and Shared Access" on page 16 of this Install Guide and "Creating a Server Profile" in the Analyzer Online Help.

Note: For evaluation purposes we recommend that Analyzer is run from "C:\Program Files (x86)\Arbutus\" as this is the default installation location. Issues for choosing locations and sharing access to table definitions are discussed in more detail in "Servers and Shared Access" on page 16.

Need for Administrator Rights

When installing Analyzer on a machine, the installer must have administrator rights to that machine in order to allow necessary registry settings to be established.

For Citrix installations, the machine administrator for the Citrix server should install Analyzer.

Once installed, the local user should start Analyzer and activate the software license. The administrator (if different from the local user) must not activate the software as this will not activate the software for the intended local user nor allow the necessary registry settings for the local user to be established.

Step 3 - Activating Analyzer

Once the software installation is complete, the first time the user starts Analyzer they will be prompted to activate (register) their copy of Analyzer online. Users must enter their company and user name and the software licence key provided with their copy of Analyzer.

If the user has access to the internet, and is not behind a proxy server, then they will be able to contact the activation server to register their license at:

`http://quicklicensemanager.com/arbutus/qlm/qlmservice.asmx`

The user must also have administrative rights to the local machine that Analyzer is installed on in order to allow necessary registry settings to be correctly established for that user.

To successfully activate the software, the machine that Analyzer is installed on must also have the 32-bit Microsoft .NET Framework 4.5.2 or higher installed. To obtain and install the 32-bit Microsoft .NET Framework 4.5.2 or higher, navigate to:

`https://dotnet.microsoft.com/download`

and select Download .NET Framework Runtime.

Optionally, if users are operating behind a Proxy Server, they can click the Proxy Settings button on the Internet Software Activation screen and fill in their appropriate Proxy Server credentials.

The user can begin using Analyzer once their copy is activated.

Manual Activation (Single-User Licensing Only)

If the internet activation is unsuccessful (typically due to internal corporate restrictions for accessing the internet) an Analyzer dialog box will pop up a listing of certain machine information. Save this information (for example, using Notepad) and then refer to the accompanying PDF entitled "Manual Activation.pdf" that is found in the Arbutus program folder. This guide documents the appropriate steps for manually activating your software for single-user licensing.

Concurrent User Licensing

When installing Analyzer on a machine using concurrent user licensing, that machine must have an internet connection at all times, as concurrent user licensing cannot be manually activated and concurrent usage licensing is dynamically managed via the internet. All users will enter the same concurrent user licensing key when installing the software.

Installation of Arbutus Analyzer is now complete!

Note: Analyzer auto-checks for updates every 10 days.

CHAPTER 3 INSTALLING ANALYZER ON MULTIPLE MACHINES USING AN MSI FILE

Installing Arbutus Analyzer is quick and easy. In this section you will learn how to perform a "silent install" to multiple machines at a time using an MSI file.

All of the software requirements (including internet and registry rights) outlined in detail in "Installing Analyzer on a Single Machine or Citrix Server" on page 10 still apply.

Installation Procedures Using an MSI File

Prerequisites

Prior to performing a silent or "mass" install of Arbutus Analyzer, the installer must ensure that all target machines have the 32 bit (x86) version of the following files already installed:

1. Visual C++ Redistributable for Visual Studio 2015/2017/2019
2. WebView 2
3. Visual C++ Redistributable for Visual Studio 2013
4. Visual C++ Redistributable for Visual Studio 2010

The listed files in points 1 & 2 must be installed. The listed files in points 3 & 4 may be required.

If the listed files are not installed, you can download them from the Utilities section of:

<https://www.arbutussoftware.com/en/download-software>

Once downloaded, you must manually update each machine with the these files prior to installing Arbutus Analyzer.

Installing Analyzer using the MSI File

To perform a "silent" or mass install of Arbutus Analyzer using the supplied MSI file (and related MST file for supported non-English languages), the syntax is:

```
msiexec /i "Arbutus Analyzer.msi" /qn ACCEPT_EULA="Yes"
```

Note: When installing, ACCEPT_EULA="Yes" must always be included in the syntax in order to accept the licensing terms.

To change the install directory, the syntax is:

```
msiexec /i "Arbutus Analyzer.msi" /qn ACCEPT_EULA="Yes"  
INSTALLDIR="c:\install_directory\"
```

To add a path for the "Arbutus Analyzer.msi" file (for example, if the current working directory is C:\ but the MSI file is located in C:\Downloads\), the syntax is:

```
C:\> msixec /i "C:\Downloads\Arbutus Analyzer.msi" /qn ACCEPT_
EULA="Yes"
```

To add the activation code, company and/or the key information for the proxy server, the syntax is:

```
msixec /i "Arbutus Analyzer.msi" /qn ACCEPT_EULA=Yes ACTIVATION_
KEY="QLMZ0S0A71GHJ5NZ8W2D3652EHZ74J" COMPANY="company_name" PROXY_
USER="username" PROXY_DOMAIN="proxy.company.com" PROXY_PW="password"
USE_PROXY="1"
```

Note: When specifying proxy information, the USE_PROXY value must be "1".

Note: The activation key provided is an example and should be replaced with the activation key supplied to you by Arbutus Technical Support.

To install one of the supported non-English languages, the syntax is:

```
msixec /i "Arbutus Analyzer.msi" /qn ACCEPT_EULA=Yes
TRANSFORMS=xxxx.mst
```

where "xxxx" in the syntax TRANSFORMS=xxxx.mst refers to the 4 digit language id:

Language ID	Language Description
1028	Chinese Traditional (Taiwan)
2052	Chinese Simplified (China)
1036	French (France)
1046	Portuguese (Brazil)
1034	Spanish

Alternatively, you can simply run the supplied MSI file by double clicking on it. This provides only basic features - running the MSI install on the command line is recommended to ensure all necessary attributes are incorporated.

Customizing Add-Ons for MSI Install

Although a complete (standard) install is recommended, installers can pick the Arbutus connectors that should be installed.

To customize the MSI install and specify the desired add-ons, the installer must add the ADDLOCAL parameter to the MSI syntax:

```
msixec /i "Arbutus Analyzer.msi" /qn ACCEPT_EULA="Yes" ACTIVATION_
KEY="xxxx..." COMPANY="Arbutus" ADDLOCAL="Analyzer_
Files,SmartApps,Sample_Files,SQL_Server,Active_Directory,MySQL"
```

The example shown above will install the Analyzer sample files and SmartApps along with the specified Arbutus connectors for SQL_Server, Active_Directory and MySQL.

Notice that you must always specify the 3 internal feature names which are part of a standard install (Analyzer_Files,SmartApps,Sample_Files). The internal feature names must be included in front of the specific Arbutus Connector names, and all features must be comma separated. Any internal feature names or Arbutus connector names referenced must use the correct case and spelling.

Here are the list of the specific internal feature names:

- Sample_Files
- SmartApps
- Analyzer_Files

For more information on the Arbutus connectors and their specific names, see "Introduction" on page 3.

Un-Installing Analyzer using the MSI File

To perform a "silent" or mass uninstall, the syntax is:

```
msiexec /x "Arbutus Analyzer.msi" /qn
```

Although it is possible to select the Arbutus Connectors to be uninstalled, we highly recommend that a full un-install is done via the command line prior to running a new custom MSI install.

CHAPTER 4 SERVERS AND SHARED ACCESS

This section discusses methods for connecting the Analyzer client to the Arbutus Servers, and setting up shared folders on the Arbutus Hub Server for sharing project items between users.

Additional detail can be found in the Arbutus Online Help.

Server Profiles

Server profiles are used by Analyzer and ConnectPlus to store security and configuration information necessary for connecting to an Arbutus Server.

Profiles can be created using the Analyzer Server Profile dialog, which is described in the Analyzer Online Help in the section called Creating a Server Profile.

Profiles created using Analyzer are private as they are stored in the registry of the local machine and are only accessible on that machine.

Note: Creating profiles via the Analyzer Server Profile dialog is useful for someone running both Analyzer and ConnectPlus from the same local machine, such as the system administrator or installer.

Server profiles can also be specified by creating a PROFILES.TXT file. This provides a simple method for ensuring users work with a common set of server profiles.

Note: A sample PROFILES.TXT file is supplied with the software and is named PROFILES.XTX. Simply edit this file, enter the necessary profile information sequentially and then save it as PROFILES.TXT

An example of typical settings within a PROFILES.TXT file are:

```
[server_profile_name]
server_type=0
username=UserID
password=*****
prefix=ARBSM2
input=ARBSM1.PRD.FIL
hostname1=132.90.0.12
hostname2=145.88.0.15
port=7008
encryption=1
compression=1
ims_enabled=0
timeout=15
```

```
rm_enabled=0  
sso_enabled=0
```

There are several possible parameters for each server profile, and each supplied value is used for establishing a connection to an Arbutus Server. The values shown in the example above are typical of a server profile for an Arbutus zSeries Server, but can be tailored to suit any target Arbutus Server Hub or zSeries).

The parameters correspond to the values found in the Analyzer Server Profile dialog and are as follows (optional values are noted):

Item 1 - Server Profile Name

Shown as [server_profile_name] in the example above. This is a descriptive name to identify the server profile. It must be surrounded by square brackets and may include spaces.

Item 2 - Server Type

Shown as "0" in the example above, this value indicates zSeries (0), Windows (1), Linux (2), or iSeries (3) server.

Item 3 - User Name (optional)

Shown as "UserID" in the example above. The User ID is the system logon User ID for the server.

Note: Though valid for all Windows servers, Windows 7 and higher servers require that the User ID be specified in the format user_name@domain_name where the domain_name is the active directory domain name (see your server administrator for more information).

The user name should only be included when all end-users using a Profiles.txt file will be connecting to the server with the same user name. Where this is not the case, then leaving the user name out of the Profiles.txt file will cause each end-user to be prompted for both their unique user name and password.

Note: If the user name is entered for a server profile in the Profiles.txt, the user name associated with this profile can not be changed at the time of connection.

Item 4 - Password (optional)

Shown as "*****" in the example above. If omitted, the end-user will be prompted to enter the password associated with their user name at the time the server connection is made.

The password can be stored in a server profile contained in the Profiles.txt file but we recommend caution when doing so, as this would allow any Analyzer or ConnectPlus user of this Profiles.txt file access to the Arbutus Server with all the rights of the default user name.

If the password is stored in a server profile contained in the Profiles.txt, the password must be encrypted, and cannot be changed by the end-user unless prompted to do so by Analyzer, as may happen in the case of an expired password.

Note: Please call Arbutus Technical Support for information on generating encrypted passwords.

If the user name or password are omitted from a server profile contained in the Profiles.txt, the end-user can supply default values for either, or both, of these items by editing the server profile within Analyzer or the ODBC Manager. Any values supplied in Analyzer's server profile dialog are then stored in the user registry of the local machine, not the Profiles.txt.

If the administrator wants to prevent end-users from being able to save the password and/or user name to their registry, then the user name and/or password parameters in the Profiles.txt should contain an exclamation mark (!) as the only value (i.e., password=!).

Item 5 - Prefix

Shown as "ARBSM2" in the example above. The prefix is used by Analyzer as the default high level qualifier or location for creating output files. This value can easily be changed during processing.

Note: If this value is not stored in the Profiles.txt file, each user will need to enter it in Analyzer's server profile dialog and have the value stored in their registry.

Item 6 - Input

Shown as "ARBSM1.PRD.FIL" in the example above. This value is used by Analyzer as the default high level qualifier or initial location for reading input files in the Data Definition Wizard's Select File to Define dialog. This dialog allows the user to manually change the value.

Note: If this value is not stored in the Profiles.txt file, the user will need to enter it in Analyzer's server profile dialog and have the value stored in their registry.

Item 7 - Host Name 1 and 2

Hostname1 is shown as "132.90.0.12", while Hostname2 is shown as "145.88.0.15" in the examples above. This value is used to specify the host name or explicit IP address. Users may enter two host names in case one fails.

Item 8 - Port

Shown as "7008" in the example above. This is the Port Number selected by the Server Installer where the Arbutus Server is running.

Item 9 - Encryption On/Off

Shown as "1" in the example above. This flag is set as either ON (1) or OFF (0) to enable or disable encryption of communication between the Arbutus client and

server. Encryption is most appropriate when communications are being carried over public lines.

Note: Arbutus uses 128-bit encryption.

Item 10 - Compression On/Off

Shown as "1" in the example above. This flag is set to enable / disable compression of communication between the Arbutus client and server. Compression is always recommended. Compression values range from 0 to 9 with 0 indicating no compression and 9 indicating maximum file compression.

Item 11 - IMS Interface On/Off

Shown as "0" in the example above. This flag is set as either ON (1) or OFF (0) to enable or disable enable or disable the IMS interface.

Note: This parameter is only applicable for Arbutus zSeries Servers.

Item 12 - Inactivity Time Out

Shown as "15" in the example above. This value specifies the time (in minutes) that an idle Arbutus Server session will time out. If not specified, the time-out defaults to 60 (minutes).

Note: All Arbutus Server sessions will time out unless you set the time-out to 999. We do not recommend this setting, as failed communications may result in a server session that must be manually terminated by operations.

Item 13 - RM Enabled On/Off

Shown as "0" in the example above. This flag is set as either ON (1) or OFF (0) to enable or disable the Results Manager server.

Item 14 - SSO Enabled On/Off

Shown as "0" in the example above. This flag is set as either ON (1) or OFF (0) to enable or disable single sign on.

Valid Locations for a PROFILES.TXT

When used, the PROFILES.TXT file can be placed in either of the following locations. The PROFILES.TXT file should always reside in a secure, read-only location.

Global Server Profiles

By default, for global usage across an organization, the PROFILES.TXT must reside in the same location as the Analyzer.exe or Legacy.dll file, as appropriate.

Local Server Profiles

Alternatively, the PROFILES.TXT can also reside in the root of an Analyzer Project Folder. This will provide users with project level rather than global level server mappings.

Note: Since both global and local server profiles can be established, the specified server profiles stored in each should not overlap. If there is overlap, then the server profile settings from the PROFILE.TXT in the Analyzer project always take precedence.

Optional Parameters for Relational Data Sources

When connecting Analyzer to the Arbutus Hub Server, some relational data sources (SQL Server, Oracle, etc.) will require a user name and password to be accessed. The user name and password can be entered manually when defining the relational data source in the Data Definition Wizard, or can be preset by storing them in the Profiles.TXT file using the following optional parameters:

```
[DSN Name for Relational Data Source]
profile=server_profile_name
username=userid
password=*****
```

The optional parameters for one or more relational data sources must immediately follow the related Arbutus Hub Server profile to which they relate.

Item 1 - Relational Data Source

Shown as [DSN Name for Relational Data Source] in the example above. This is the actual DSN name provided in the 32-Bit ODBC Data Source Administrator on the Windows server for the desired relational data source. It must be surrounded by square brackets and may include spaces.

Item 2 - Server Profile Name

Shown as "server_profile_name" in the example above. This is the name of the server profile that should be used to connect to the Arbutus Hub Server.

Item 3 - User Name

Shown as "userid" in the example above. This is the user id for accessing the relational data source.

Item 4 - Password (optional)

Shown as ***** in the example above. This is the password for the specified user id for accessing the relational data source. To store the password in the Profiles.TXT file, the password must be encrypted, and cannot be changed by the end-user.

Note: Please call Arbutus Technical Support for information on generating encrypted passwords for use in the Profiles.TXT file.

Shared Folders

Project items created using Analyzer, in particular table layouts, are by default read from the location where the currently open Analyzer project resides.

Analyzer will also read project items from shared folders locally (on a mapped network drive) or on an Arbutus Hub Server.

While convenient, use of a single Analyzer project reading project items from a single location will often not accommodate the disparate requirements of a complex organization comprised of many end-users having diverse interests and business needs.

To accommodate sharing of project items that are common to a group of end-users, shared folders can be specified on any Arbutus Hub Server in a location that is shared by all end-users. Analyzer will then access project items from any shared folders in addition to those accessed via each end-user's Analyzer project.

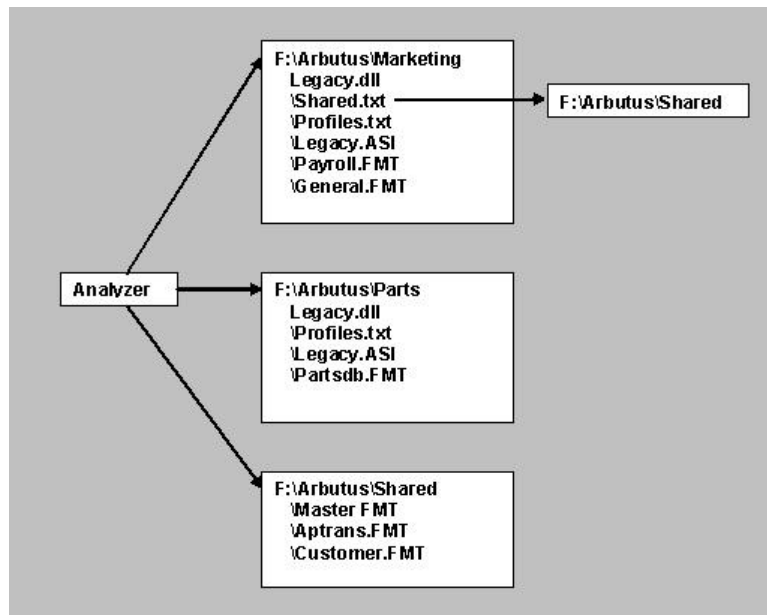
It is possible that there are table layouts that should be shared by all end-users, regardless of their department. These should be placed in a shared folder in a location that is shared by all end-users. It is also possible that there are table layouts that are only relevant to a particular department, or subset of end-users. These table layouts should be placed in a separate shared location that can only be referenced by the appropriate subset of end-users.

Steps should be taken to ensure appropriate level of privacy for this information. If the very existence of a particular table or tables should only be known to certain groups, then other groups should have no access rights (not even read rights) to the shared folder location that stores the table layouts. If controlling access to the actual data is sufficient, then appropriate access controls over the data should be set up on the physical server, using the standard operating system capabilities.

In general, shared folders should be made read-only to the end-users, to ensure that there is no unauthorized altering or corruption of the shared objects.

Additionally, local shared folders are useful for providing centralized access and maintenance for a common set of master project items (table layouts, workspaces and procedures) that are required across a number of distinct projects. This avoids the need to duplicate and maintain master project items within each project.

The following diagram illustrates the structuring of departmental and shared access to table layouts created using Analyzer:



In the preceding diagram, the Marketing department can access table layouts created for them by the System Administrator and written to the F:\Arbutus\Marketing folder, as well as all the table layouts written to the shared folder F:\Arbutus\Shared. The Parts department can only access the table layouts that reside in the F:\Arbutus\Parts folder.

Specifying Shared Folders

To specify shared folders, end-users can do either of the following:

- Click on the Share menu in Analyzer. You can specify:
 - A Personal Share - this is a shared folder unique to each user and is used when a user wants to share project items between various Analyzer projects. The shared folder can be located in a folder on a local or network drive.
 - A Hub Share - this is a shared folder for use by users throughout the organization who may work remotely from different locations and therefore do not necessarily have access to the same network drive. In this case, the shared folder is established on an Arbutus Hub Server that all users access via TCP/IP.
- Manually create a Shared.txt file to specify shared folders that will be available to all end-users, regardless of their Analyzer project. Save this file in the same folder as the Analyzer executable.

For either method, any number of shared folders can be established.

Note: Shared folders on the Arbutus Hub Server operate using TCP/IP and therefore do not require specific network architectures to be in place. In addition, shared folders on an

Arbutus Hub Server may be accessed from anywhere, whether the user is on the road or in a remote office.

Specifying Shared Folders using Analyzer

This method is used by the data administrator or the end-user to easily establish shared folders for the individual end-user, and requires that Analyzer is installed on the end-user's local machine.

To specify shared folders in Analyzer:

1. Open Analyzer.
2. Click on the Share menu
3. Choose to add either:
 - A Personal Share
 - A Hub Share
4. A Shared Folder Setup dialog appears.
5. Specify a name for the Shared Folder, then browse to select the desired physical Windows folder. For a Hub Share, specify the server profile to be used to access the Arbutus Hub Server and then specify the server based folder.

For a Hub Share, the users of the Shared Folder must specify an associated server profile with the same name for every user. As a result, it is essential that each user ensures that the associated server profile for the shared folder specifies a unique output prefix for each user, otherwise users risk overwriting each others work.
6. By default, the contents of a shared folder apply to all of an end-user's Analyzer projects. If the shared folder contents only apply to specific Analyzer projects, then click the "Apply to this project only" check box and then specify the name(s) of the Analyzer project(s), separating each project name with a comma (no spaces should be used other than those included as part of the project name).
7. Click [OK].

Note: For more information on establishing shared folders on an Arbutus Hub Server, please see the Server and Shared Folder sections in the Analyzer Online Help.

Specifying Shared Folders using a SHARED.TXT file

Shared folders can also be specified by creating a SHARED.TXT file. This provides a simple method for ensuring users work with a common set of shared folders.

Note: A sample SHARED.TXT file is supplied with the software and is named SHARED.XTX. Simply edit this file, enter the necessary shared folder pathing information sequentially and then save it as SHARED.TXT

When using a SHARED.TXT file, each shared folder must be specified as an individual entry in the SHARED.TXT file as follows:

Arbutus Shared Folder entry

Example:

```
"Shared_Folder_Name" "C:\Shared_Folder_Path\" ""|"Server_Profile"  
<"Project_Name">␣
```

Note: Parameters in parenthesis are optional and only applied to shared folders on an Arbutus Server. Each item in the shared folder entry must be separated by a space.

In this example,

- the “Shared_Folder_Name” is the descriptive name for the physical shared folder (specified as the second parameter) that appears in the Overview Window in Analyzer. This entry must be surrounded by quotes and must be followed by a space.
- “C:\Shared_Folder_Path” is the full path and name of the physical Windows folder serving as the shared folder (either locally or on an Arbutus Server). This entry must be surrounded in quotes and followed by a space.
- For a local shared folder (Personal), specify “”. For an Arbutus Hub Server shared folder (Hub Share), specify the name of the server profile in quotes. In either case, this entry must be surrounded in quotes and followed by a space.
- “Project_Name” is an optional entry. If included, this value is the name of the specific Analyzer project(s) for which the shared folder is active. When specifying more than one project, separate project names within the quoted string using a comma. No spaces should be used except for spaces that are part of a project name. If this entry is omitted, the shared folder is active for all Analyzer projects. This entry must be surrounded by quotes and is separated from the preceding entry by one space.

Note: The specified shared folder location as well as all sub-folders under the specified location are read when compiling the list of available project items to present to the end-user in the Overview Window.

Valid Locations for a SHARED.TXT

When used, the SHARED.TXT file can be placed in either of the following locations. The SHARED.TXT file should always reside in a secure, read-only location.

Global Shared Folders

By default, for global usage across an organization, the SHARED.TXT must reside in the same location as the Analyzer.exe or Legacy.dll file, as appropriate.

Local Shared Folders

Alternatively, the SHARED.TXT can also reside in the root of an Analyzer Project Folder. This will provide users with project level rather than global level shared folder mappings.

Note: Since both global and local shared folder can be established, the specified shared folders stored in each should not overlap. If there is overlap, then the shared folder settings from the SHARED.TXT in the Analyzer project always take precedence.