ARBUTUS CONNECTPLUS

INSTALLATION GUIDE

ARBUTUS SOFTWARE

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About this Guide

This guide is provided to licensed users of ConnectPlus and will assist you with installing and configuring ConnectPlus. 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 Installation Guide
- Analyzer Online Help

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 Desk

- Phone: +1-604-437-7873 or +1-877-333-6336 ext. 333
- Fax: +1-604-437-7872
- E-mail: support@ArbutusSoftware.com

Or write to us at:

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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
   - An iSeries midrange computer running the Arbutus iSeries Server
   - A Windows server running the Arbutus Windows Server
2. One or more of the PC-based Arbutus Clients:
   - Arbutus Analyzer
   - Arbutus ConnectPlus
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
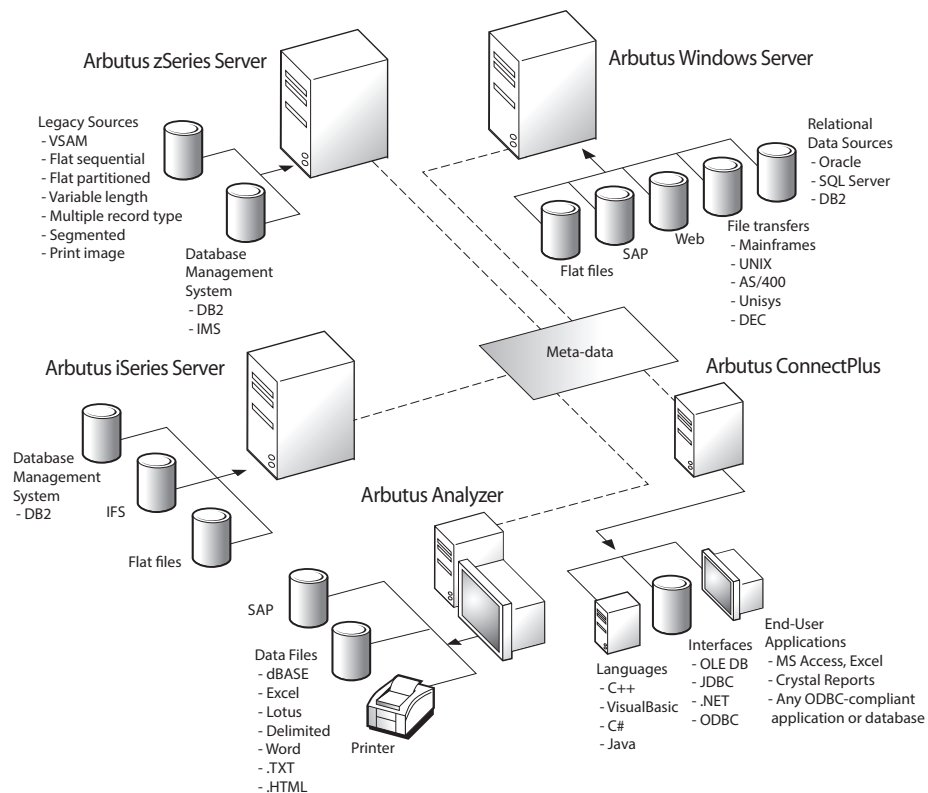
The Arbutus Solution - Components

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
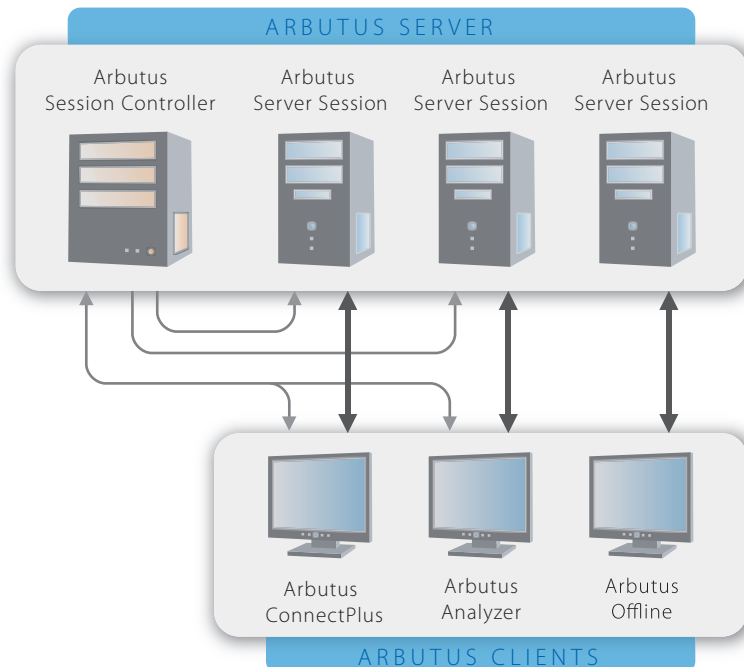
User Interface Options

All of the Arbutus Servers can be configured to provide interactive, real-time processing from any ODBC-compliant PC application or from the Arbutus Analyzer graphical user interface.

ODBC-Compliant PC Application

Use of this feature requires an ODBC-compliant application running on the PC, Arbutus ConnectPlus, TCP/IP services, various specific configuration settings, and at least one of the Arbutus Servers.

Arbutus Analyzer Graphical User Interface

Use of this feature requires a copy of the Arbutus Analyzer client running on the PC, TCP/IP services, various specific configuration settings and at least one of the Arbutus Servers.

System Requirements

Arbutus ConnectPlus

The installation steps described in "Installing ConnectPlus on a Single Machine" on page 8 are those required to install Arbutus ConnectPlus.

Arbutus ConnectPlus can be installed on a Windows machine running any version of Windows XP 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 version of Microsoft .NET Framework 4.0 installed.

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 in the machines registry.

The ConnectPlus ODBC driver is a 32-bit driver and in order to access and modify the driver on a 64-bit operating systems, users will need to create a shortcut that points to the 32-bit ODBC Manager on their desktop.

The path for establishing a shortcut to the 32-bit ODBC Manager is:

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

Recommended Optimal Resources

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

- Arbutus Client software will run on any PC configuration using Windows XP or later, with any amount of memory and disk.

- If you are processing data locally, we recommend an i5 or i7 level processor (or equivalent), with at least 8GB of RAM and at least 1TB hard disk space.
- Solid state drives (SSDs) can significantly enhance speed, where performance is at a premium.

CHAPTER 2 INSTALLING CONNECTPLUS ON A SINGLE MACHINE

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

Note: When installing ConnectPlus, on a machine the installer must have administrative access rights to write to the registry of the local machine that ConnectPlus is installed on in order to allow necessary registry settings to be established. The user must also have access rights to write to the registry at the time they activate the software.

The following diagram details the various options for accessing data via ConnectPlus:

ConnectPlus

SQL

LANGUAGES	INTERFACES	END USER APPLICATIONS
• C++ • Visual Basic • C# • Java	• OLE DB • JDBC • .NET • ODBC	• MS Access / Excel • Crystal Reports • Any ODBC-compliant application or database
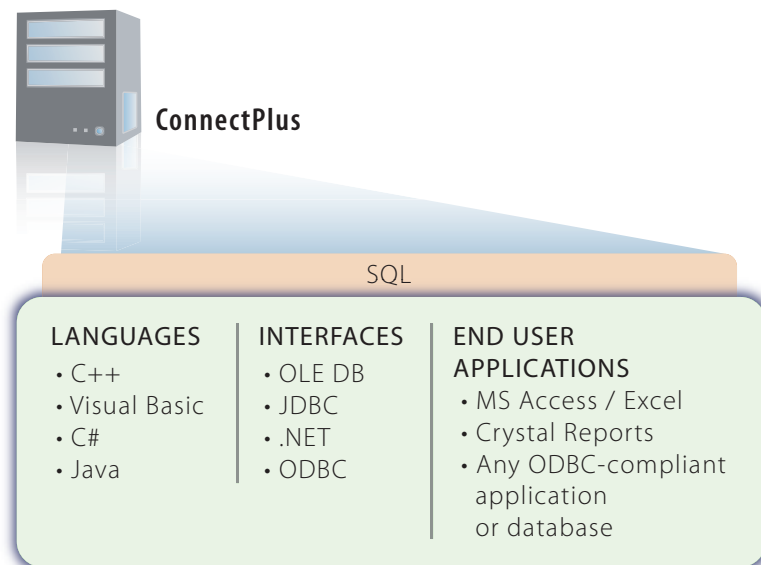
When installing ConnectPlus, the user will be prompted to activate (register) their copy of ConnectPlus online. Users must enter their company and user name and the software licence key provided with their copy of ConnectPlus. Optionally, users can also enter information related to their proxy server.

Note: To activate the software, the workstation that ConnectPlus is installed on must also have Microsoft .NET Framework 4.0 installed and must be connected to the internet. Additionally, to activate the software, the user must have administrative rights to the local machine that ConnectPlus is installed on in order to allow necessary registry settings to be established.

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

Installation of Arbutus ConnectPlus is now complete!

Installation Procedures

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

Step 1 - Downloading ConnectPlus from the Arbutus Web Site

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

`http://www.arbutussoftware.com/support/downloads/`

Step 2 - Installing ConnectPlus

Once you have downloaded the correct version of ConnectPlusyou can install it on a desktop/laptop.

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

▪ 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 ConnectPlus into the default location "C:\Program Files (x86)\Arbutus\" or to specify an alternate install location (local or network drive)

Note: To connect ConnectPlus to any of the Arbutus Servers, a valid server profile must be established for each Arbutus Server. For more information on server profiles see "Security and Shared Access" on page 15 of this Install Guide and "Creating a Server Profile" in the Arbutus Analyzer Online Help.

Note: For evaluation purposes we recommend that ConnectPlus 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 "Security and Shared Access" on page 15.

Need for Administrator Rights

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

Step 3 - Activating ConnectPlus

Once the software installation is complete, the first time the user starts ConnectPlus they will be prompted to activate (register) their copy of

ConnectPlus online. Users must enter their company and user name and the software activation key provided with their copy of ConnectPlus.

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 ConnectPlus 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 ConnectPlus is installed on must also have the 32-bit Microsoft .NET 4.0 Framework installed. To obtain and install the 32-bit Microsoft .NET 4.0 Framework, go to:

`https://www.microsoft.com/en-ca/download/details.aspx?id=17851`

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 ConnectPlus 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) a ConnectPlus dialog box will pop up listing certain local machine information. Save this information (for example, using Notepad).

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. Alternatively you can contact Arbutus Technical Support for assistance.

Installation of Arbutus ConnectPlus is now complete!

CHAPTER 3 INSTALLING CONNECTPLUS ON MULTIPLE MACHINES USING AN MSI FILE

Installing Arbutus ConnectPlus is quick and easy. This section shows you how to perform a "silent install" on multiple machines at a time using an MSI file.

All of the software requirements (including internet and registry rights) outlined in detail in the section "Installing ConnectPlus on a Single Machine" on page 8 still apply.

Installation Procedures Using an MSI File

Prerequisites

Prior to performing a silent or "mass" install of Arbutus ConnectPlus, the installer must ensure that all machines they intend to install ConnectPlus upon have the 32 bit (x86) version of the following file already installed:

    MICROSOFT VISUAL C++ 2015 REDISTRIBUTABLE (x86)

If not, you can download the VC_RuntimeMinimum_x86.MSI file which contains this redistributable from:

    http://www.arbutussoftware.com/support/downloads/

Once downloaded, you can perform a "silent" or mass install using the following syntax:

    msiexec /i /qn VC_RuntimeMinimum_x86.msi

Note: You can also update each machine requiring this redistributable update manually.

Installing Analyzer using the MSI File

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

    msiexec /i "Arbutus ConnectPlus.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 command line syntax is:

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

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

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

To specify the activation key, the command line syntax is:

```
msiexec /i "Arbutus ConnectPlus.msi" /qn ACCEPT_EULA="Yes"
USER="Installer Name" COMPANY="Company Name" ACTIVATION_
KEY="QLMZ0S0A71GHJ5NZ8W2D3652EHZ74J"
```

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

```
msiexec /i "Arbutus ConnectPlus.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 MIS on the command line is recommended to ensure all necessary attributes are incorporated.

UnInstalling Analyzer using the MSI File

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

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

CHAPTER 4 CONFIGURING CONNECTPLUS FOR SERVICES

This section describes configuring ConnectPlus for use with services (for example, dashboards or other web services).

Installing ConnectPlus For Use With Services

When installing ConnectPlus for use with services, the software should be installed on the same server that the service is installed upon.

Configuring ConnectPlus For Use With Services

Once ConnectPlus is installed and activated, the user must establish necessary server profile information and/or shared folder information to provide direct access to desired data sources. As this information cannot be stored in the registry, it must be provided manually using two optional text files described below. Templates for these files are provided as part of the installation.

Profiles.txt

Arbutus Server profiles can be created using a Profiles.txt file that can be made available to the end-users from a common network/server location. This allows the installation process to be automated and ensures that it is secure. For more information see "Server Profiles" on page 15.

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

Shared.txt

A shared location, or multiple shared locations, can be created and specified in a Shared.txt file to access the desired table layouts that will be created using Analyzer and accessed by a group of end-users using ConnectPlus. This file must be placed in the ConnectPlus Program Files installation folder. For more information see "Accessing Table Layouts from Shared Folders" on page 20.

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

Optimization Considerations for Services

When implementing ConnectPlus in support of services (Web services or dashboard software), optimizing performance for end-users is of paramount importance.

As result, the following is a list of items to consider for optimizing data throughput from ConnectPlus to the intended service:

- Avoid use of auto-executing procedures on large or complex data sources as the time to completion for these procedures may delay the resulting data from reaching the intended service in a timely manner (possibly resulting in a service timeout)

- Avoid using live reads of large ODBC/SQL data sources as service responsiveness may be slowed (particularly for dashboards) waiting for data to be fetched via ODBC

- Consider scheduling procedures in off-peak times that will create and flatten necessary data in advance of when it will be needed by the requesting service. Ensuring that the data is prepared and flattened in advance will ensure end-users receive maximized performance from their calling service.

- Consider only exposing necessary fields and records to end-users - typically done by using pre-scheduled procedures to access data and prepare flattened files containing only essential data. This will simplify the end-users interactions and ensure that performance is optimized.

CHAPTER 5 SECURITY AND SHARED ACCESS

This section discusses security and shared access considerations for connecting the ConnectPlus client to an Arbutus Server.

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. 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. If used, the PROFILES.TXT file must reside in the same location as the Analyzer.exe or ConnectPlus.dll file, as appropriate. The PROFILES.TXT file should reside in a secure, read-only location.

> Note: A sample PROFILES.TXT file is supplied with the installation of the software in the install directory 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
hostname=132.90.0.12
port=7008
encryption=1
compression=1
ims_enabled=0
timeout=15
```

There are several possible parameters for each server profile, and each supplied value is used for 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 (zSeries, iSeries or Windows).

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

Shown as "132.90.0.12" in the example above. This value is used to specify the host name or explicit IP address.

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 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.

Optional Parameters for Relational Data Sources

When connecting ConnectPlus to the Arbutus Windows 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 Analyzer's Data Definition Wizard, or can be preset by storing them in the Profiles.txt file using the following optional parameters:

```
[database name]
profile=server_profile_name
username=database_username
password="********************"
```

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

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 - Database Name

Shown as "database_username" in the example above.

Item 3 - Password (optional)

Shown as "********************" in the example above. To be stored in the Profiles.txt, 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.

Accessing Table Layouts from Project Folder

Table layouts created using Analyzer are by default written to and read from the location where the currently open ConnectPlus project resides.

When installing ConnectPlus, a sample ConnectPlus project (Sample Data.ASI) is automatically created and placed in the default project folder. By default, ConnectPlus is configured to read all table layouts defined using Analyzer for this ConnectPlus project.

ConnectPlus will also read project items from any shared folders. For more information on shared folders see "Accessing Table Layouts from Shared Folders" on page 20.

Using the default "Sample Data.ASI" project is useful when evaluating ConnectPlus. In all other situations you should create a new Analyzer project and then select this as your ConnectPlus project (as described below).

ConnectPlus can only refer to one project at a time. You therefore need to specify the appropriate project for ConnectPlus to access.

To point ConnectPlus at more than one project, a separate instance of the ConnectPlus driver will need to be established in the ODBC Data Source Administrator, with each instance pointed at a unique project.

You can easily specify the appropriate ConnectPlus project for each end-user using their ODBC Data Source Administrator. To establish a ConnectPlus project for a group of end-users, store the ConnectPlus project on a mapped network drive that is accessible to all desired end-users.

If controlling access to the actual data is sufficient, then appropriate access controls (like read-only) over the data should be set up on the physical drive, using the standard operating system capabilities.

To specify the desired ConnectPlus project, perform the following steps:

Specifying ConnectPlus Project

To configure the ConnectPlus 32-bit ODBC driver to point to the ConnectPlus project for each user, perform the following steps:

32-Bit Windows Operating System

1. From the Start menu, click on Control Panel
2. Double-click on Administrative Tools

3. Double-click on Data Sources (ODBC) to launch the ODBC Data Source Administrator dialog.

64-Bit Windows Operating System

Since the ConnectPlus ODBC driver is a 32-bit driver, in order to access and modify the driver on a 64-bit operating systems, users will need to:

1. Create a shortcut that points to the 32-bit ODBC Manager on their desktop. The path for establishing a shortcut to the 32-bit ODBC Manager is:

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

2. Click on the shortcut on the desktop to start the 32-bit ODBC Data Source Administrator dialog

For all Windows Operating Systems

1. In the ODBC Data Source Administrator dialog, click the System DSN tab.
2. Click on the Arbutus ConnectPlus driver and then click the Configure button.
3. In the Database area of the ConnectPlus ODBC Setup window, enter the path and name for the Analyzer Project file (if other than the installed default).
4. Click [OK] repeatedly to exit this area.

Accessing Table Layouts from Shared Folders

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

ConnectPlus will also read project items locally (from shared folders on a mapped network drive) or from shared folders on any Arbutus Windows Server.

While convenient, use of a single ConnectPlus 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 Windows Server in a location that is shared by all end-users. ConnectPlus will then access project items from any shared folders in addition to those accessed via each end-user's ConnectPlus 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 (like read-only) over the data should be set up on the physical server, using the standard operating system capabilities.

In general, shared folders on mapped network drives or on Arbutus Windows Server 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 on mapped network drives 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.

To specify shared folders for ConnectPlus, 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 but not other users. The shared folder can be located in a folder on a local or network drive.
  - Team Share - this is a shared folder for use by several Analyzer users on the same local network and is used to share common project items. The shared folder must be located in a folder on a local network drive that all intended users have rights to access.
  - Enterprise 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 Windows 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 or ConnectPlus executable as applicable.

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

Note: Shared folders on the Arbutus Windows Server operate using TCP/IP and therefore do not require specific network architectures to be in place. In addition, shared folders on an Arbutus Windows 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 for the data administrator or 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:
   - A Personal Share
   - A Team Share
   - An Enterprise Share
4. A Shared Folder Setup dialog appears. Specify a name for the Shared Folder, then browse to select the desired folder.
5. For an Enterprise Share, specify the server profile to be used to access the Arbutus Windows Server and then specify the server folder.
6. For an Enterprise 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 other's work.
7. 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" checkbox 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).
8. Click [OK].

Note: For more information on establishing shared folders on an Arbutus Windows 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. If used, the SHARED.TXT file must reside in the same location as the Analyzer.exe or ConnectPlus.dll file, as appropriate.

Note: A sample SHARED.TXT file is supplied with the installation of the software in the install directory 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, 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\" "LOCAL"|"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, specify "LOCAL". For an Arbutus Windows Server shared folder, 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 lists 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.

Restricting Data Access using ConnectPlus

When using Analyzer to establish the table layouts used to access source data via ConnectPlus, end-users and data administrators can set up the table layouts to restrict access to only pertinent data (fields and records). To do so, using Analyzer, fields can be hidden and filters can be specified to restricted records being accessed via ConnectPlus.

Hiding Fields

When establishing table layouts, not all end-users will need to access all fields - in fact various user-groups may require a set of common fields and then may

have specific fields of interest.

To deal with this, Analyzer enables fields to be designated as hidden so that they do not appear in field lists when data is accessed via ConnectPlus. To designate a field as being hidden, simply click Edit / Table Layout, then double-click on the field to be hidden. In the resulting Edit Field dialog, click the [Advanced] button and check the Hidden check box.

To hide a set of fields in a table layout:

1. Click Edit on the main menu and select Table Layout.
2. Using the CTRL key, select all fields to hide.
3. Once all fields are highlighted, right-click on them and select Hide.
4. Alternatively, you can double-click on each field individually and edit the field properties. Click the [Advanced] button, select the Hide check box and then click [OK] to save the field change.

Filtering Records

When establishing table layouts, not all records will be required by end-users. To expose only required records to end-users via ConnectPlus you can establish a logical computed field to act as a filter and designate the filter as a "Default Filter" that is automatically activated whenever a table layout is opened or accessed.

To designate a logical computed field as a default filter, do the following:

1. Click [Edit] on the main menu and select Table Layout.
2. Double-click on the logical computed field to edit its properties, then click on the [Advanced] button, check the Default Filter check box and click [OK].
3. Click the (Accept Entry) button to save and close the field dialog.

Note: To activate the newly established default filter in Analyzer you must close and re-open the table layout.

CHAPTER 6 CUSTOMIZING THE CONNECTPLUS INSTALL

Installing Arbutus ConnectPlus is quick and easy. This section describes customizing the installation of ConnectPlus.

To customize the installation, please contact Arbutus Technical Support to obtain a set of files for a customized installation.

> *Note: When installing ConnectPlus, the installer must have administrative access rights to write to the registry of the local machine that ConnectPlus is installed on in order to allow necessary registry settings to be established. The user must also have access rights to write to the registry at the time they activate the software.*

Customizing ConnectPlus Install

To customize the install, request the ConnectPlus installation files in a standard zip file.

Copy this file from the Web site:

        ConnectPlus.zip

Place the file into a temporary directory:

        e.g. C:\Temp

Unzip the file and copy the contents into a temporary directory.

        e.g. C:\Temp\ConnectPlus

To perform the install, double-click on the Setup.exe file.

To ensure that users install ConnectPlus only in the default "C:\Program Files\Arbutus\", you must edit and save the supplied Custom.ini file. Simply change the parameter within it from UserControl=1 to UserControl=0. This will cause the install to be placed in the default location. Leaving the UserControl=1 will allow the user to choose an install location other than the default location.

Many organizations find it convenient to place all of the unzipped ConnectPlus components into a shared network location from which end-users can manually install ConnectPlus on to their local machines.

By default, the ConnectPlus install will perform the installation based solely on default parameters established in the Custom.ini file. For more information see "Custom.ini" on page 26.

Based on edits made to the Custom.ini file, edits may be also be required to the Openrda.ini file. For more information see "Openrda.ini" on page 27.

The Profiles.txt file can be edited to establish server profiles for connecting to Arbutus Servers. For more information see "Profiles.txt" on page 28.

The Shared.txt file can be edited to establish shared locations for accessing table layouts. For more information see "Shared.txt" on page 28.

Installing in Default Location

To ensure that end-users install ConnectPlus in the default "C:\Program Files\Arbutus\" location, you must edit and save the supplied Custom.ini file. Simply change the parameter within it from UserControl=1 to UserControl=0. This will cause the install to be placed only in the default location.

Custom.ini

This file contains information regarding the ConnectPlus components that will be installed. Most of the parameters should not be changed. Parameters that you can customize before installation are the *AppBasePath*, *ProjectBasePath*, *UserControl*, *CopyFiles* and *FolderName*.

```
[AutoInstall]


AppBasePath=C:\Program Files\Arbutus
ProjectBasePath=C:\My Documents\Arbutus\Sample


UserControl=1
CopyFiles=1


FolderName=Arbutus ConnectPlus


CompanyName=Arbutus Software Inc.
ProductName=Arbutus ConnectPLus ODBC Driver
ProductVersion=4.4
ProductRegKey=ConnectPlus.dll
ODBCDriverName=Arbutus ConnectPlus Driver
ODBCDriverDLLName=ConnectPlus.dll
ODBCSetupDLLName=ConnectPlus.dll
ClientKey=19003-0000-0003-0007-1a02-6801-0000-cef9
PromptForUID=1
AddDatabase=Arbutus ConnectPlus
AddType=ISAM
;AddConnectString=
;CustomConnectProperties=
;CustomPropertiesSetup=
;CustomConnectSetup=
```

The *AppBasePath* parameter specifies the location of the installed ConnectPlus ODBC driver. By default, this parameter is set to "C:\Program Files\Arbutus\" but can be set to a shared network or alternate location as appropriate.

The *ProjectBasePath* parameter specifies the location of the ConnectPlus project. By default, this parameter is set to "My Documents/Arbutus/Sample/" but can be set to a shared network or alternate location as appropriate and cannot be altered during installation.

> *Note: The end-user can subsequently modify the ProjectBasePath using the Arbutus ConnectPlus ODBC Setup Utility from the ODBC Data Source Administrator. For more information see "Security and Shared Access" on page 15.*

The UserControl parameter determines whether the end-user will be given an opportunity to install the software to an end-user specified location or solely to the default location.

By default, this parameter is set to 1 which causes a standard install to the default location that can be overridden by the installer.

> *Note: Setting this value to 0 prior to installation causes an unprompted install to C:\Program Files\Arbutus.*

The CopyFiles parameter determines whether files will be left on the shared network location or copied to the end-user's location during installation. By default, this parameter is set to 1 which causes all program files to be written to the end-user's location as specified in the AppBasePath parameter. Setting this parameter to 0 causes the program files to remain on the shared network location.

> *Note: The advantage of not copying files is that deployment of subsequent version updates is simpler as the administrator only needs to replace the files in the shared location. The potential disadvantage is that loading a driver from a shared network may be slower than from a local machine. Conversely, copying files to the local machine guarantees the fastest execution, but may entail a little more work on the part of the administrator to deploy version updates.*

The FolderName parameter specifies the Start Menu name for ConnectPlus and by default is set to "Arbutus ConnectPlus". This parameter can be set to an alternate start menu name as appropriate.

Openrda.ini

This file is only relevant when the CopyFiles parameter in the Custom.ini file is set to 0. When the CopyFiles parameter is set to 0, the Openrda.ini file is used and must be edited prior to installation to replace all instances of "***<insert path here>***" with the installed location specified in the AppBasePath parameter in the Custom.ini file.

```
[Common]
```

```
oa_root=***<insert path here>***

SchemaPath=***<insert path here>***

Config=***<insert path here>***

SchemaUpdateAllowed=0

CacheOptions=PATH=***<insert path here>***\

;INITIAL_SIZE=10;INCREMENT_SIZE=5;MAX_SIZE=50;DATABLOCK_
SIZE=64

CacheMemSize=8192

[Client]

Key=12003-0000-0003-0001-1a02-7801-0000-cef9

TraceFile=***<insert path here>***\oaclient.log

FETCHBLOCK_SIZE=100

[TraceClient]

All=FATAL|SNO|ERRORS

[ODBC32]

TraceFile=***<insert path here>***\oaodbc32.log

TraceOptions=0

PromptForUID=1
```

Profiles.txt

Arbutus Server profiles can be created using a profiles.txt file that can be made available to the end-users from a common network location. This allows the installation process to be automated and ensures that it is secure. For more information see "Server Profiles" on page 15.

Shared.txt

A shared location, or multiple shared locations, can be created and specified in a shared.txt file to organize the table layouts that will be created by the Analyzer Administrator and accessed by a group of end-users. This file can then be made available to the end-users from a common network location. This allows the installation process to be automated and ensures that it is secure. For more information see "Accessing Table Layouts from Shared Folders" on page 20.

> Note: Regardless of which installation options are chosen, each end-user must perform a basic installation to their local machine to ensure that the necessary local registry settings are established.

CHAPTER 7 GETTING STARTED

Overview

This section provides a brief overview for getting started using ConnectPlus. Analyzer is initially used to establish the data definitions (Analyzer table layouts) required to access the source data directly through ConnectPlus.

Note: Both Analyzer and ConnectPlus require a server profile to enable them to connect to an Arbutus Server. For information on setting up a server profile, see "Server Profiles" on page 15.

Establishing Table Layouts

1. Start Analyzer.
2. Open the supplied Analyzer project file named "Sample Data.ASI" as your initial Analyzer project.
3. Use Analyzer's Data Definition Wizard (DDW) to walk you through the process of accessing the server data files and creating the Analyzer table layouts necessary to make the data accessible to end-user's ODBC-compliant applications via ConnectPlus.

   Note: By default, the table layouts created when you define data files using Analyzer are written to the location where the Analyzer project resides.

   Note: By default, ConnectPlus will read table layouts from the "Sample Data.ASI" project in the C:\My Documents\Sample folder (unless otherwise configured).

4. Start your ODBC-compliant end-user application.
5. Select ConnectPlus from the list of available ODBC drivers. Table layouts for data files defined in Analyzer that are accessible to ConnectPlus will be displayed.
6. Select the desired table layout and fields to be imported.

For more detailed information on using Analyzer see the Online Help. "Using ConnectPlus" on page 31 for more detailed information on using ConnectPlus with common ODBC-compliant end-user applications.

Ensuring Data Integrity

When making data available to end-users, data integrity is always a critical issue. To address this you can choose to define only those records and fields in the data file that you wish end-users to access and analyze. In addition, you may consider providing end-users with summary reports rather than the underlying raw data to ensure that context and rules for the organizational data are clearly conveyed to the end-users.

For additional assistance in planning an installation and configuration that will accommodate the unique requirements at your organization, please contact Arbutus Technical Support.

CHAPTER 8 USING CONNECTPLUS

Overview

Arbutus ConnectPlus interacts as an ODBC driver with your favorite ODBC-compliant software applications and database management systems.

In this section you will learn how to use ConnectPlus to import legacy data residing on an Arbutus Server into the following common ODBC-compliant sources:

- MS Excel 2002 and 2007
- MS Access 2002 and 2007
- Crystal Reports 9
- SQL Server 2000

Note: The techniques discussed are consistent with, or are similar to, those used with most recent versions of the applications discussed, and with most ODBC- compliant software applications and database management systems in general. Refer to your application's user guide or reference manual for more details.

This section assumes that Arbutus ConnectPlus has been installed and configured for you, that you have been given the necessary server access rights, and that Arbutus table layouts have been established to pre-define the legacy data you intend to access. Please contact your IT department for more information.

MS Excel 2002

Likely one of the most commonly used software applications today, MS Excel 2002 makes importing data via ODBC easy and seamless. It is important to note that MS Excel 2002 provides filtering and sorting utilities via MS Query. MS Query allows you to pre-filter and pre-sort imported data to ensure that only desired data is imported, and that it is ordered in a meaningful way.

Note: Ensure that MS Query has been installed on your machine prior to importing data into MS Excel 2002 using ConnectPlus. MS Query is installed with MS Excel 2002 whenever a typical installation is performed.

This is particularly important given the inherent row limitation in MS Excel 2002 of processing a maximum of 64,000 rows of data. Be sure to understand the attributes and size of the legacy data you are importing in order to appropriately filter and sort the legacy data.

Importing Legacy Data Using ConnectPlus

MS Excel 2002 provides an import utility that will step you through the process. To import legacy data using Arbutus ConnectPlus perform the following steps:

1. Open MS Excel 2002 with a blank worksheet.

2. Click on Data in the main menu.

3. Choose Import External Data.

4. Select New Database Query to launch Microsoft Query.

5. Microsoft Query launches a Choose Data Source dialog.

6. Select Arbutus ConnectPlus from the database tab and click [OK].

7. You will be prompted to choose the desired columns from the appropriate legacy tables. The list of legacy tables and columns is provided by Arbutus ConnectPlus based upon pre-defined Arbutus table layouts established for you by your IT department.

   Note: You will only be able to access those tables and columns that have been defined for you. In some cases, tables that you can access may have additional columns that have not been defined and therefore will not be accessible to you even though they exist within the source legacy data.

8. Choose the desired legacy table - for security purposes you may be prompted to enter your User ID and password provided by your IT department for the server on which the legacy data resides. Once they are entered click [OK].

9. A server activity window will appear displaying initialization progress for your connection to the identified Arbutus Server. This window will close automatically when the connection to the server is successful. If the connection attempt fails, an error message will be provided that should be brought to the attention of your IT department.

10. After successfully connecting to the Arbutus Server, you have the option of choosing and importing only relevant columns from the desired legacy table that are necessary to your analysis. By default all columns for the selected legacy tables columns are imported. Click [NEXT] to proceed.

    Note: By selecting only necessary columns you can reduce the size of the data being imported and thereby speed the data transfer and the resulting analysis.

11. MS Excel will prompt you to filter the legacy data to be imported using MS Query. This is optional but recommended given MS Excel's inherent row limitation, and to speed both the import and subsequent analysis of the legacy data. Simply choose the column or columns you wish to filter upon and specify the filtering criteria (in order of precedence) for each column. Click [NEXT] to proceed.

12. MS Excel will also prompt you to order the legacy data to be imported. This too is optional and should be performed if it aids in your subsequent analysis. To order the imported legacy data, simply choose the column or columns to sort upon and specify the sort order (ascending or descending) for each column (in order of precedence). Click [NEXT] to proceed.

13. At this point you have completed all of the preparation for the legacy data import. If you expect to import this data in the same fashion in an ongoing manner, you can choose to save the query you have constructed for future use. To save a query for re-use, click the SAVE QUERY button, specify a location and name for the saved query, and click [OK]. If the query is not re-usable, simply click [FINISH].

14. The imported legacy data appears in a new worksheet. You can now analyze this data using your familiar MS Excel tools.

Re-using a Saved Query to Import Data

Once an MS Query has been created and saved in MS Excel 2002, it can easily be re-used to import a consistent and up to date version of the legacy data. To re-use a saved MS Query in MS Excel 2002:

1. Open MS Excel 2002.

2. Click on Data in the main menu.

3. Choose Import External Data.

4. Select Import Data.

5. You will be prompted to choose your data source - select "Database Queries" from the dropdown list.

6. Choose the location of your saved query, highlight the query, and click [OK].

7. You may be prompted to enter your User ID and password provided by your IT department for the server on which the legacy data resides. Once they are entered click [OK].

8. A server activity window will appear displaying initialization progress for your connection to the identified Arbutus Server. This window will close automatically when the connection to the server is successful. If the connection attempt fails, an error message will be provided that should be brought to the attention of your IT department.

9. The imported legacy data appears in a new worksheet. You can now analyze this data using your familiar MS Excel 2002 tools.

MS Excel 2007

Likely one of the most commonly used software applications today, MS Excel 2007 makes importing data via ODBC easy and seamless. It is important to note that MS Excel 2007 provides filtering and sorting utilities via MS Query. MS Query allows you to pre-filter and pre-sort imported data to ensure that only desired data is imported, and that it is ordered in a meaningful way.

Note: Ensure that MS Query has been installed on your machine prior to importing data into MS Excel 2007 using ConnectPlus. MS Query is installed with MS Excel 2007 whenever a typical installation is performed.

Be sure to understand the attributes and size of the legacy data you are importing in order to appropriately filter and sort the legacy data.

Importing Legacy Data Using ConnectPlus

MS Excel 2007 provides an import utility that will step you through the process. To import legacy data using Arbutus ConnectPlus perform the following steps:

1. Open MS Excel 2007 with a blank worksheet.

2. Click on Data tab in the main menu.

3. Choose From Other Sources from the Get External Data section.

4. Choose From Microsoft Query.

5. Microsoft Query launches a Choose Data Source dialog.

6. Select Arbutus ConnectPlus from the Database tab and click [OK].

7. You will be prompted to choose the desired columns from the appropriate legacy tables. The list of legacy tables and columns is provided by Arbutus ConnectPlus based upon pre-defined Arbutus table layouts established for you by your IT department.

   Note: You will only be able to access those tables and columns that have been defined for you. In some cases, tables that you can access may have additional columns that have not been defined and therefore will not be accessible to you even though they exist within the source legacy data.

8. Choose the desired legacy table - for security purposes you may be prompted to enter your User ID and password provided by your IT department for the server on which the legacy data resides. Once they are entered click [OK].

9. A server activity window will appear displaying initialization progress for your connection to the identified Arbutus Server. This window will close automatically when the connection to the server is successful. If the connection attempt fails, an error message will be provided that should be brought to the attention of your IT department.

10. After successfully connecting to the Arbutus Server, you have the option of choosing and importing only relevant columns from the desired legacy table that are necessary to your analysis. By default all columns for the selected legacy tables columns are imported. Click [NEXT] to proceed.

    Note: By selecting only necessary columns you can reduce the size of the data being imported and thereby speed the data transfer and the resulting analysis.

11. MS Excel 2007 will prompt you to filter the legacy data to be imported using MS Query. This is optional but recommended given MS Excel's inherent row limitation, and to speed both the import and subsequent analysis of the legacy data. Simply choose the column or columns you wish to filter upon and specify the filtering criteria (in order of precedence) for each column. Click [NEXT] to proceed.

12. MS Excel 2007 will also prompt you to order the legacy data to be imported. This too is optional and should be performed if it aids in your subsequent analysis. To order the imported legacy data, simply choose the column or columns to sort upon and specify the sort order (ascending or descending) for each column (in order of precedence). Click [NEXT] to proceed.

13. At this point you have completed all of the preparation for the legacy data import. If you expect to import this data in the same fashion in an ongoing manner, you can choose to save the query you have constructed for future use. To save a query for re-use, click the [SAVE QUERY] button, specify a location and name for the saved query, and click [OK]. If the query is not re-usable, simply click [FINISH].

14. The imported legacy data appears in a new worksheet. You can now analyze this data using your familiar MS Excel 2007 tools.

Re-using a Saved Query to Import Data

Once an MS Query has been created and saved in MS Excel 2007, it can easily be re-used to import a consistent and up to date version of the legacy data. To re-use a saved MS Query in MS Excel 2007:

1. Open MS Excel 2007.

2. Click on Data tab in the main menu.

3. Choose Existing Connections from the Get External Data section.

4. Click the Browse For More button

5. Choose your data source - select "Database Queries" from the dropdown list.

6. Choose the location of your saved query, highlight the query, and click [OK].

7. You may be prompted to enter your User ID and password provided by your IT department for the server on which the legacy data resides. Once they are entered click [OK].

8. A server activity window will appear displaying initialization progress for your connection to the identified Arbutus Server. This window will close automatically when the connection to the server is successful. If the connection attempt fails, an error message will be provided that should be brought to the attention of your IT department.

9. The imported legacy data appears in a new worksheet. You can now analyze this data using your familiar MS Excel 2007 tools.

MS Access 2002

MS Access 2002 provides two easy and seamless ways to access your legacy data using Arbutus ConnectPlus.

Importing Legacy Data Using ConnectPlus

To import legacy data into MS Access perform the following steps:

1. Open MS Access 2002.

2. Open an existing database or create a new database.

3. Click on File in the main menu.

4. Choose Get External Data.

5. Select Import.

6. You will be prompted to choose type of file to Import - select "ODBC Databases", and click Import.

7. You will be prompted to choose the Data Source - choose Arbutus ConnectPlus and click [OK].

8. An Import Objects dialog will appear from which you will choose the legacy table to be imported. The list of legacy tables is provided by Arbutus ConnectPlus based upon pre-defined Arbutus table layouts established for you by your IT department.

   Note: You will only be able to access tables that have been defined for you. In some cases, tables that you can access may have additional columns that have not been defined and therefore will not be accessible to you even though they exist within the source legacy data.

9. Choose the desired legacy table - for security purposes you may be prompted to enter your User ID and password provided by your IT department for the server on which the legacy data resides. Once they are entered click [OK].

10 A server activity window will appear displaying initialization progress for your connection to the identified Arbutus Server. This window will close automatically when the connection to the server is successful. If the connection attempt fails, an error message will be provided that should be brought to the attention of your IT department.

11 After successfully connecting to the Arbutus Server, a new table containing the imported legacy data will be created in your currently open MS Access database. You can now use standard MS Access tools to analyze this data.

Creating a "Live" Link to Legacy Data Using ConnectPlus

An effective alternative to importing legacy data in MS Access is to create a "live" link. This allows you to access the most current version of the legacy data every time you open the linked table without importing it. To create a "live" link to legacy data using ConnectPlus perform the following steps:

Setting up a Live Link to a Legacy Table

1. Open MS Access.

2. Open an existing database or create a new database.

3. Click on Table in the Objects menu and choose Link Tables.

4. You will be prompted to choose type of file to Link - select "ODBC Databases", and click Link.

5. You will be prompted to choose the Data Source - choose Arbutus ConnectPlus and click [OK].

6. A Link Tables dialog will appear to specify the legacy table for the live link. The list of legacy tables is provided by Arbutus ConnectPlus based upon pre-defined Arbutus table layouts established for you by your IT department.

   Note: You will only be able to access tables that have been defined for you. In some cases, tables that you can access may have additional columns that have not been defined and therefore will not be accessible to you even though they exist within the source legacy data.

7. Choose the desired legacy table - for security purposes you may be prompted to enter your User ID and password provided by your IT department for the server on which the legacy data resides. Once they are entered click [OK].

8. A server activity window will appear displaying initialization progress for your connection to the identified Arbutus Server. This window will close automatically when the connection to the server is successful. If the connection attempt fails, an error message will be provided that should be brought to the attention of your IT department.

9. After successfully connecting to the Arbutus Server, a Select Unique Record Identifier dialog will appear listing all columns you have access to in the table. This dialog enables you to specify which column (if any) in the linked table should be used to uniquely identify each row (in other words to act as a primary key). This column must contain a unique value (no null values) for every record. If a there is a Unique Record Identifier, select the column and click [OK]. Otherwise click CANCEL.

   Note: When setting up the table layouts for use with ConnectPlus, be sure your IT department defines and specifies which column (if any) should be used as the unique record identifier (i.e., the primary key). For most flat files there is no such column, simply click CANCEL to proceed.

10. A new table containing the linked legacy data will be created in your currently open MS Access database.

Setting up a Query to Filter and Sort a Table

Prior to opening a table, you can create a query for filtering and sorting the data by performing the following steps:

1. Click on Query in the Object menu.

2. Double-click on Create Query In Design View.

3. A Show Table dialog appears in which you specify the table to query. Select the table and click ADD, then click CLOSE.

4. A Select Query dialog appears containing a window listing all columns available in the linked table appears. From this window double-click to select the columns (one at a time in order of precedence) you wish to appear in the linked table.

5. Each column selected will appear horizontally (left to right in order of selection/precedence) in a cell in the lower half of the Select Query dialog.

6. For each column selected, specify the relevant sorting and/or filtering criteria. More than one field can be sorted and/or filtered upon.

7. When all of the query criteria has been specified, close the Select Query dialog.

8. You will be prompted to save your Query - click YES.

9. In the resulting Save As dialog, specify the name of the query and click [OK].

10. You are returned to the Queries dialog. Double-click on the saved query to open the legacy table and to invoke the query criteria.

11. The legacy table is now displayed based on the query criteria specified. You can now use standard MS Access 2002 tools to further analyze this data.

MS Access 2007

MS Access 2007 provides two easy and seamless ways to access your legacy data using Arbutus ConnectPlus.

Importing Legacy Data Using ConnectPlus

To import legacy data into MS Access perform the following steps:

1. Open MS Access 2007.

2. Open an existing database or create a new database.

3. Click on the External Data tab.

4. Click on the More drop down menu.

5. Select ODBC Database.

6. You will be prompted to Import or Link - choose "Import the Source Data into a New Table in the Current Database".

7. You will be prompted to choose the Data Source - choose Arbutus ConnectPlus and click [OK].

8. An Import Objects dialog will appear from which you will choose the legacy table to be imported. The list of legacy tables is provided by Arbutus ConnectPlus based upon pre-defined Arbutus table layouts established for you by your IT department.

   Note: You will only be able to access tables that have been defined for you. In some cases, tables that you can access may have additional columns that have not been defined

and therefore will not be accessible to you even though they exist within the source legacy data.

9. Choose the desired legacy table - for security purposes you may be prompted to enter your User ID and password provided by your IT department for the server on which the legacy data resides. Once they are entered click [OK].

10. A server activity window will appear displaying initialization progress for your connection to the identified Arbutus Server. This window will close automatically when the connection to the server is successful. If the connection attempt fails, an error message will be provided that should be brought to the attention of your IT department.

11. After successfully connecting to the Arbutus Server, a new table containing the imported legacy data will be created in your currently open MS Access database. You can now use standard MS Access tools to analyze this data.

Creating a "Live" Link to Legacy Data Using ConnectPlus

An effective alternative to importing legacy data in MS Access is to create a "live" link. This allows you to access the most current version of the legacy data every time you open the linked table without importing it. To create a "live" link to legacy data using ConnectPlus perform the following steps:

Setting up a Live Link to a Legacy Table

1. Open MS Access.

2. Open an existing database or create a new database.

3. Click on the External Data tab.

4. Click on the More drop down menu.

5. Select ODBC Database.

6. You will be prompted to Import or Link - choose "Link to the Data Source by Creating a Linked Table".

7. You will be prompted to choose the Data Source - choose Arbutus ConnectPlus and click [OK].

8. A Link Tables dialog will appear to specify the legacy table for the live link. The list of legacy tables is provided by Arbutus ConnectPlus based upon pre-defined Arbutus table layouts established for you by your IT department.

   Note: You will only be able to access tables that have been defined for you. In some cases, tables that you can access may have additional columns that have not been defined and therefore will not be accessible to you even though they exist within the source legacy data.

9. Choose the desired legacy table - for security purposes you may be prompted to enter your User ID and password provided by your IT department for the server on which the legacy data resides. Once they are entered click [OK].

10. A server activity window will appear displaying initialization progress for your connection to the identified Arbutus Server. This window will close automatically when the connection to the server is successful. If the connection attempt fails, an error message will be provided that should be brought to the attention of your IT department.

11. After successfully connecting to the Arbutus Server, a Select Unique Record Identifier dialog will appear listing all columns you have access to in the table. This dialog enables you to specify which column (if any) in the linked table should be used to uniquely identify each row (in other words to act as a primary key). This column must contain a unique value (no null values) for every record. If a there is a Unique Record Identifier, select the column and click [OK]. Otherwise click CANCEL.

> Note: When setting up the table layouts for use with ConnectPlus, be sure your IT department defines and specifies which column (if any) should be used as the unique record identifier (i.e., the primary key). For most flat files there is no such column, simply click CANCEL to proceed.

12. A new table containing the linked legacy data will be created in your currently open MS Access database.

Setting up a Query to Filter and Sort a Table

Prior to opening a table, you can create a query for filtering and sorting the data by performing the following steps:

1. Click on the Create tab.

2. Select Query Design from the Other category.

3. A Show Table dialog appears in which you specify the table to query. Select the table and click ADD, then click CLOSE.

4. A Select Query dialog appears containing a window listing all columns available in the linked table. From this window double-click to select the columns (one at a time in order of precedence) you wish to appear in the linked table.

5. Each column selected will appear horizontally (left to right in order of selection/precedence) in a cell in the lower half of the Select Query dialog.

6. For each column selected, specify the relevant sorting and/or filtering criteria. More than one field can be sorted and/or filtered upon.

7. When all of the query criteria has been specified, close the Select Query dialog.

8. You will be prompted to save your Query - click YES.

9. In the resulting Save As dialog, specify the name of the query and click [OK].

10. You are returned to the Queries dialog. Double-click on the saved query to open the legacy table and to invoke the query criteria.

The legacy table is now displayed based on the query criteria specified. You can now use standard MS Access tools to further analyze this data.

Crystal Reports 9

Crystal Reports provides an easy to use report wizard which enables you to import and filter legacy data using Arbutus ConnectPlus.

Importing and Manipulating Legacy Data Using ConnectPlus

To import, group, summarize, sort, graph, and/or filter the legacy data using ConnectPlus, perform the following steps:

Importing Legacy Data

1. Click File on the main menu and then select New.

2. A Crystal Reports Gallery dialog appears. Select the Using the Report Wizard radio button, select the Standard report wizard, and click [OK].

3. In the resulting Standard Report Generation Wizard - Data screen, double-click on Create New Connection and double-click on ODBC (RDO).

4. In the Data Source Selection dialog that appears, select Arbutus ConnectPlus, and click Next.

5. A prompt for an optional ODBC user name and password may appear. Enter this information if required, and then click Finish. You are returned to the Standard Report Wizard.

6. In the Data screen, select the legacy table to be imported from the list of available data sources and click Next. The list of legacy tables is provided by Arbutus ConnectPlus based upon pre-defined Arbutus table layouts established for you by your IT department.

7. In the Fields screen, select the table columns to be imported, and click Finish (see step 9 below if you want to group, summarize, sort, graph, and/or filter the legacy data).

8. A standard report appears displaying the imported legacy data.

Grouping, Summarizing, Sorting, Graphing and Filtering the Legacy Data

9. If you want to group, summarize, sort, graph, and/or filter the legacy data prior to generating the report, click Next (instead of Finish) in Step 7 above.

10. In the Grouping screen, choose the columns (if any) upon which you want to group the legacy data within the report (choose the columns in order of precedence), specify whether each column is grouped in ascending or descending order, and then click Next.

11. In the Summaries screen, specify the summary criteria for relevant grouping columns (if any), and then click Next.

12. In the Group Sorting screen, specify the group to be sorted and the required group ordering (if any), then click Next.

13. In the Chart screen, specify the type of graph to be generated (if any).

14. In the Record Selection screen, choose the filtering columns (in order of precedence) and specify the relevant filtering criteria (if any), then click Next.

15. In the Template screen, choose the report template required (if any), and click Finish.

   Note: Some of the screens noted in steps 10 thru 15 are not mandatory and are predicated on selections made in early screens. As a result, not all of the screens described will necessarily appear every time.

16. A report appears displaying the legacy data based upon the criteria specified in the steps above.

SQL Server 2000

SQL Server 2000 provides a Data Transformation Services (DTS) Import/Export Wizard to enable users to simply import and query legacy data using ConnectPlus.

Importing and Querying Legacy Data using ConnectPlus

To use the DTS Import/Export Wizard perform the following steps:

Importing Legacy Data Using ConnectPlus

1. Open the SQL Server Enterprise Manager utility.

2. Select the desired SQL Server database to which you wish to import data.

3. Click on Tools in the main menu.

4. Select Data Transformation Services to invoke the DTS Import/Export Wizard. Click Next to proceed.

5. In the "Choose a Data Source" window do the following:

   ▪ Select "Other (ODBC Data Source)" as the Data Source
   ▪ Choose Arbutus ConnectPlus as the User/System or File DSN (as appropriate)
   ▪ Specify your optional ODBC username and password, if required
   ▪ Click Next.

6. In the "Choose a Destination" window, select the database into which you want to import the legacy data. Click Next.

7. In the "Table Copy or Query" windows specify "Copy Table" to directly import your legacy data. (If you wish to query the legacy data prior to importing then specify "Use a Query" and advance to step 13 below). Click Next.

8. In the "Select Source Tables and Views" windows a list of legacy data tables is displayed. The list of legacy tables is provided by Arbutus ConnectPlus based upon pre-defined Arbutus table layouts established for you by your IT department.

9. Choose the legacy data to be imported - for security purposes you may be prompted to enter your User ID and password provided by your IT department for the server on which the legacy data resides. Once they are entered click [OK].

10. A server activity window will appear displaying initialization progress for your connection to the identified Arbutus Server. This window will close automatically when the connection to the server is successful. If the connection attempt fails, an error message will be provided that should be brought to the attention of your IT department. Click Next.

11. In the "Save, Schedule, and Replicate" window, choose Run Immediately and click Next followed by Finish.

12. The Wizard performs the import. When the import is complete, click Done, and then open the database containing the imported data. You can now analyze the new table containing the imported legacy data using a variety of SQL Server tools.

Querying the Legacy Data

1. In the "Table Copy or Query" window, specify "Use a Query" so you can provide an SQL Select statement to filter and sort the legacy data to be imported prior to importing the data. Click Next.

2. In the "Type SQL Statement" window you can do one of the following:

   ▪ Manually enter a MS SQL Select statement containing filtering and sorting criteria. Click the PARSE button to validate it, and then Next to proceed, or

   ▪ Click on the Query Builder button to advance through the automated query wizard to construct a valid MS SQL Select statement for sorting and filtering the legacy data to be imported, clicking Next to proceed, or

   ▪ Click on the Browse button to locate and re-use a pre-established and saved query, clicking Next to proceed.

3. For any of the options selected in Step 14 above, you may be prompted for security reasons to enter your User ID and password provided by your IT department for the server on which the legacy data resides. Once they are entered click [OK].

4. A server activity window will appear displaying initialization progress for your connection to the identified Arbutus Server. This window will close automatically when the connection to the server is successful. If the connection attempt fails, an error message will be provided that should be brought to the attention of your IT department.

5. In the "Select Source Tables and Views" window, the Query you constructed will be selected. Click Next to proceed.

6. In the "Save, Schedule, and Replicate" window, choose Run Immediately and click Next followed by Finish.

7. The Wizard performs the import. When the import is complete, click Done, and then open the database containing the imported data. You can now analyze the new table containing the imported legacy data using a variety of SQL Server tools.