MatrikonOPC

MatrikonOPC Analyzer

User's Manual

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This manual is a product of Matrikon Inc.

Matrikon Inc.
Suite 1800, 10405 Jasper Avenue
Edmonton, AB T5J 3N4
Canada

Phone: 780.448.1010
Fax: 780.448.9191
www.matrikonopc.com

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Introduction

The MatrikonOPC™ Analyzer application is an invaluable tool for troubleshooting MatrikonOPC products and OPC servers in general. This tool gathers information such as DCOM settings, DEP settings, operating system version, and more. Analyzer can then package this information into a ZIP archive that is easy to send to the MatrikonOPC Support team which allows them to better understand your system as a whole.

Who Should Use This Manual

This manual is intended for all users of MatrikonOPC Analyzer. This manual explains how to install, license, and configure the software, and how to perform common tasks. In addition and where required, technical information about OPC data items, diagnostics information, and a troubleshooting section is included.

Overview of Manual

This manual uses icons to highlight valuable information. Remember these icons and what they mean, as they will assist you throughout the manual.

⚠️	This symbol denotes important information that must be acknowledged. Failure to do so may result in the software not functioning properly.
BOLD	Font displayed in this color and style indicates a hyperlink to the applicable/associated information within this manual, or if applicable, any external sources.

The *User's Manual* has been designed as such so that you can click on references in the document to jump to that referenced point without having to scroll through several pages (in some cases). For example, if you were to see the sentence "Refer to Figure 1 for more information", pressing the **CTRL** key and clicking your mouse on the text "Figure 1" will automatically take you to the location of Figure 1 within the document.

This manual consists of several chapters and is structured as follows:

- **Introduction** – this introductory chapter.

- **Getting Started** – provides instructions for installing the software, and MatrikonOPC Support team contact information.

- **Using Analyzer** – describes command line options, how Analyzer works, and what information the utility gathers.

- **Troubleshooting** – provides solutions for common problems that may have been encountered, and answers to frequently asked questions.

- **Limitations** – provides information on specific performance and operational limitations of the software.

- **Un-installation** – provides instructions on un-installing the software.

- **Appendices**:

o **A** – provides DCOM information, including common configurations and troubleshooting.

Terminology

Table 1 provides a list of definitions for terms used throughout this document.

The terms *screen* and *window* are used interchangeably throughout this document.

Term/Abbreviation	Description
DCOM	Distributed Component Object Model
Matrikon	Matrikon Inc.
MatrikonOPC	Matrikon's brand name for its OPC-compliant servers and clients.
OPC	A communication standard. Refer to **www.opcfoundation.org** for more information.

Table 1 - Terms and Definitions

Getting Started

This section of the User's Manual contains important information regarding software installation and how to contact MatrikonOPC's Support team.

The *System Requirements* section shows how to avoid future problems by ensuring that the system meets the minimum software and hardware requirements. Detailed, step-by-step instructions in the *Installation* section will guide you through the installation process and provide a list of files that are installed during this process.

Once the software is installed, refer to the *Licensing* section for information on how to obtain the appropriate license. The *Contacting Support* section will provide you with contact information for the MatrikonOPC Support team, should you have any problems during the installation or licensing of the software.

System Requirements

The software has minimum *Software* and *Hardware* system requirements. These requirements must be met for the software to function properly.

Software Requirements

The server requires the following software:

- Microsoft Windows XP or 2003 or 2000

> **Note:** It is recommended that the most current service packs are installed.

Hardware Requirements

The server requires the following hardware:

- Intel® Pentium® 4 Processor
- 512 MB RAM
- 40 GB 7200 RPM hard drive

Installation

Once the system requirements have been met, you are ready to install the software.

> **Notes:**
>
> - Prior to starting the installation process, it is recommended that you make sure that the Data Execution Permissions (DEP) is set to *Turn on DEP for essential Windows programs and services only*. If not, you will need to re-install the product. DEP does not affect all operating systems (i.e., DEP is used in XP SP2 and 2003 SP1).

To install the software:

1. Insert the MatrikonOPC Analyzer CD into the CD drive.

2. If the MatrikonOPC **Welcome** screen does not automatically appear, double-click the *MatrikonOPCAnalyzer.EXE* file. The **InstallAware Wizard** verifies its contents (Figure 1), and the **Welcome to MatrikonOPC Analyzer Setup** screen (Figure 2) appears.

   Note: The **Version** number located in the lower left corner indicates the version number of the software that is being installed. The text "*X.X.X.X*" will be replaced with the specific product version.
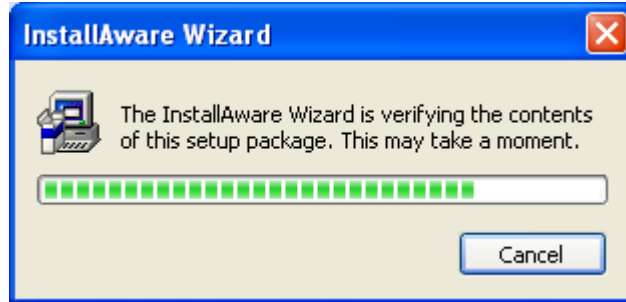

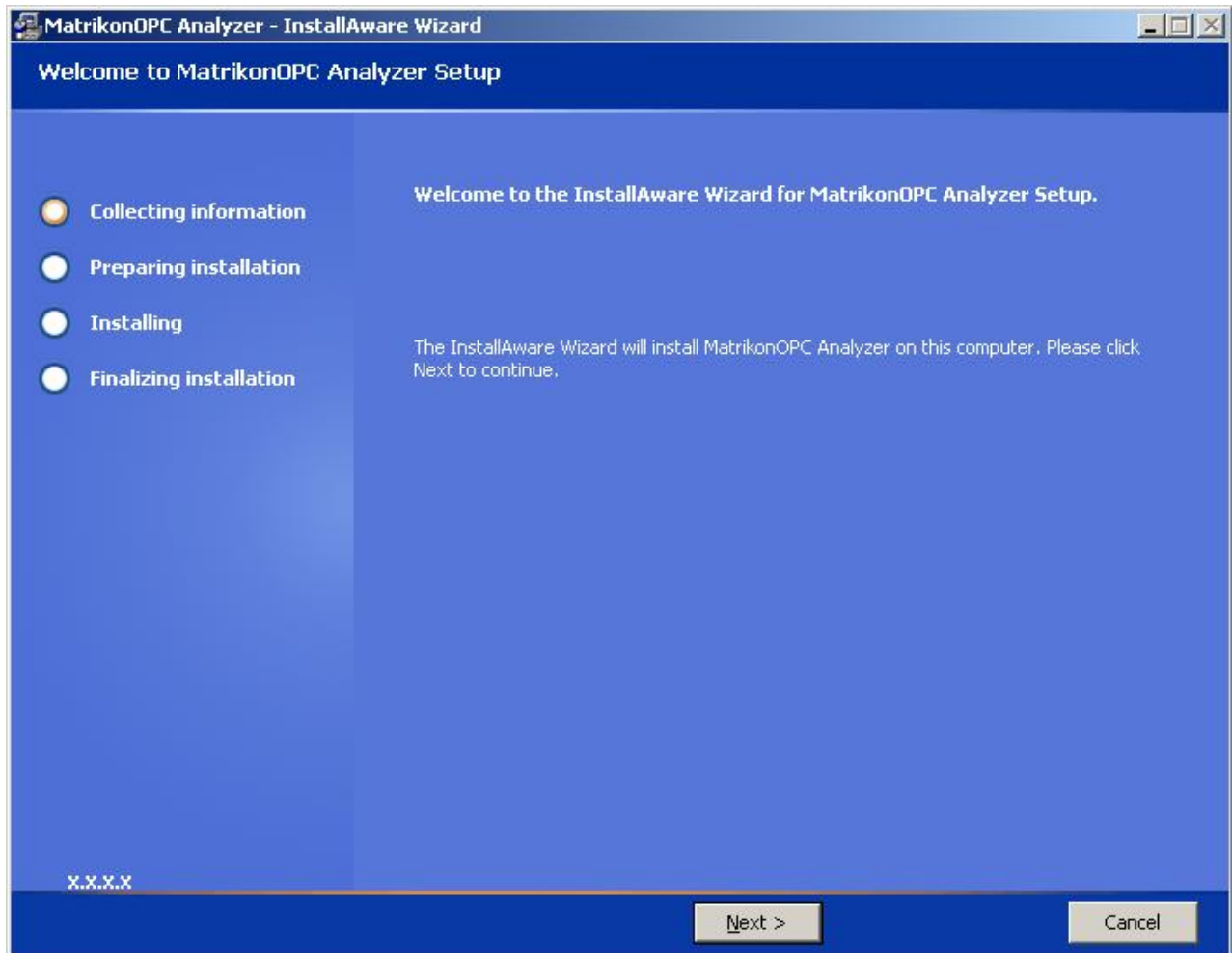**Figure 1 - InstallAware Wizard Verification Window**

Figure 2 - Welcome to MatrikonOPC Analyzer Screen

3. Click on the **Next** button. The **License Agreement** screen (Figure 3) appears.

   Notes:

   - From the **License Agreement** screen, you have the option of clicking on the **Back** button to return to the **Welcome** screen, or selecting the **I reject the license agreement** option. Selecting the **I reject the license agreement** option button disables the **Next** button so your options are to return to the previous screen, cancel the install by clicking on the **Cancel** button, or select the **I accept the license agreement** option button enabling you to proceed through the install.

   - From this point onward, the **Back** button is available allowing you to return to the previous screen or screens.
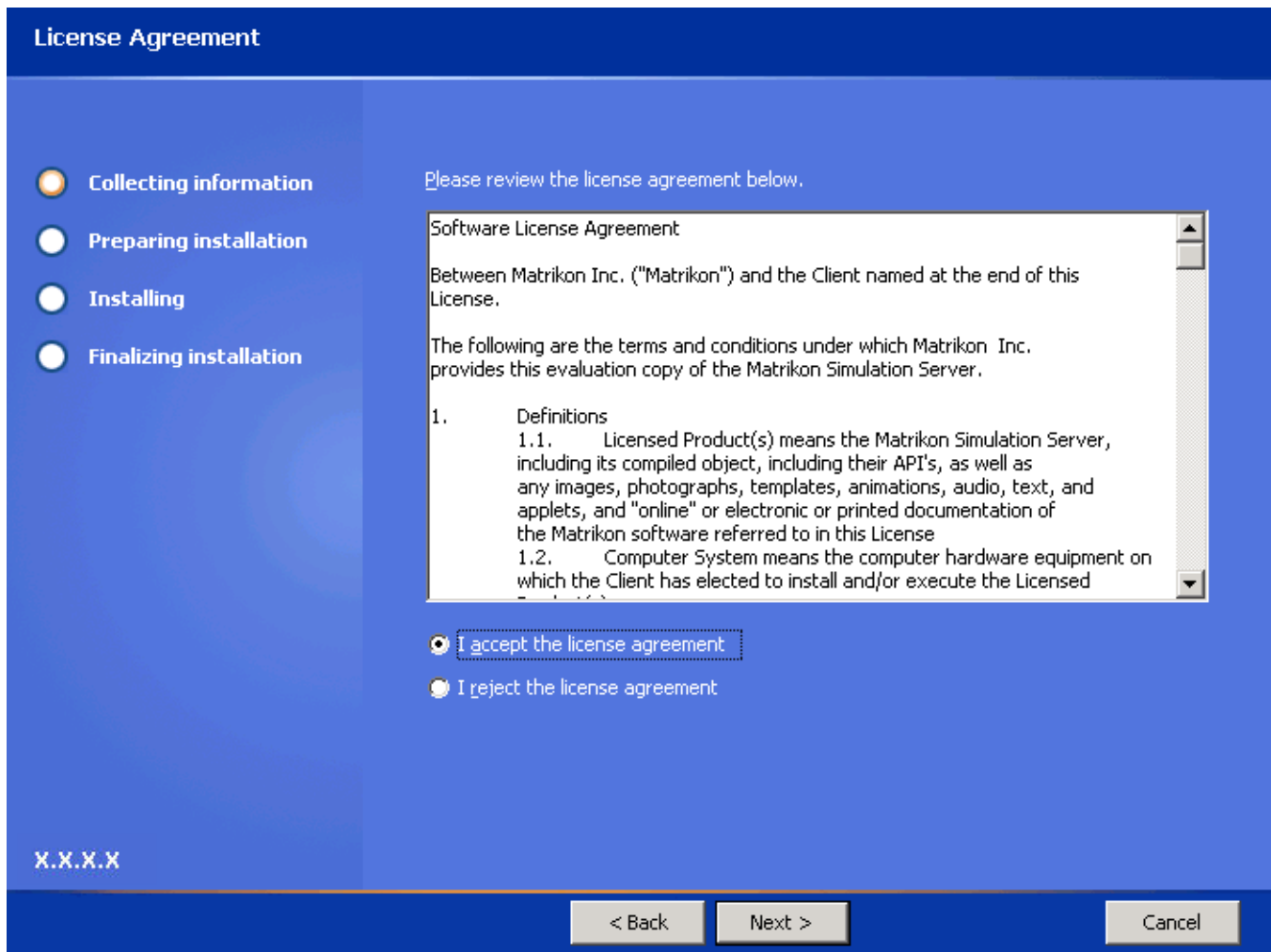
Figure 3 - License Agreement Screen

4. Read the **Software License Agreement**, using the scroll bar to view the entire message.

5. Select the **I accept the license agreement** option button.

6. Click on the **Next** button. The **Destination Folder** screen (Figure 4) appears.
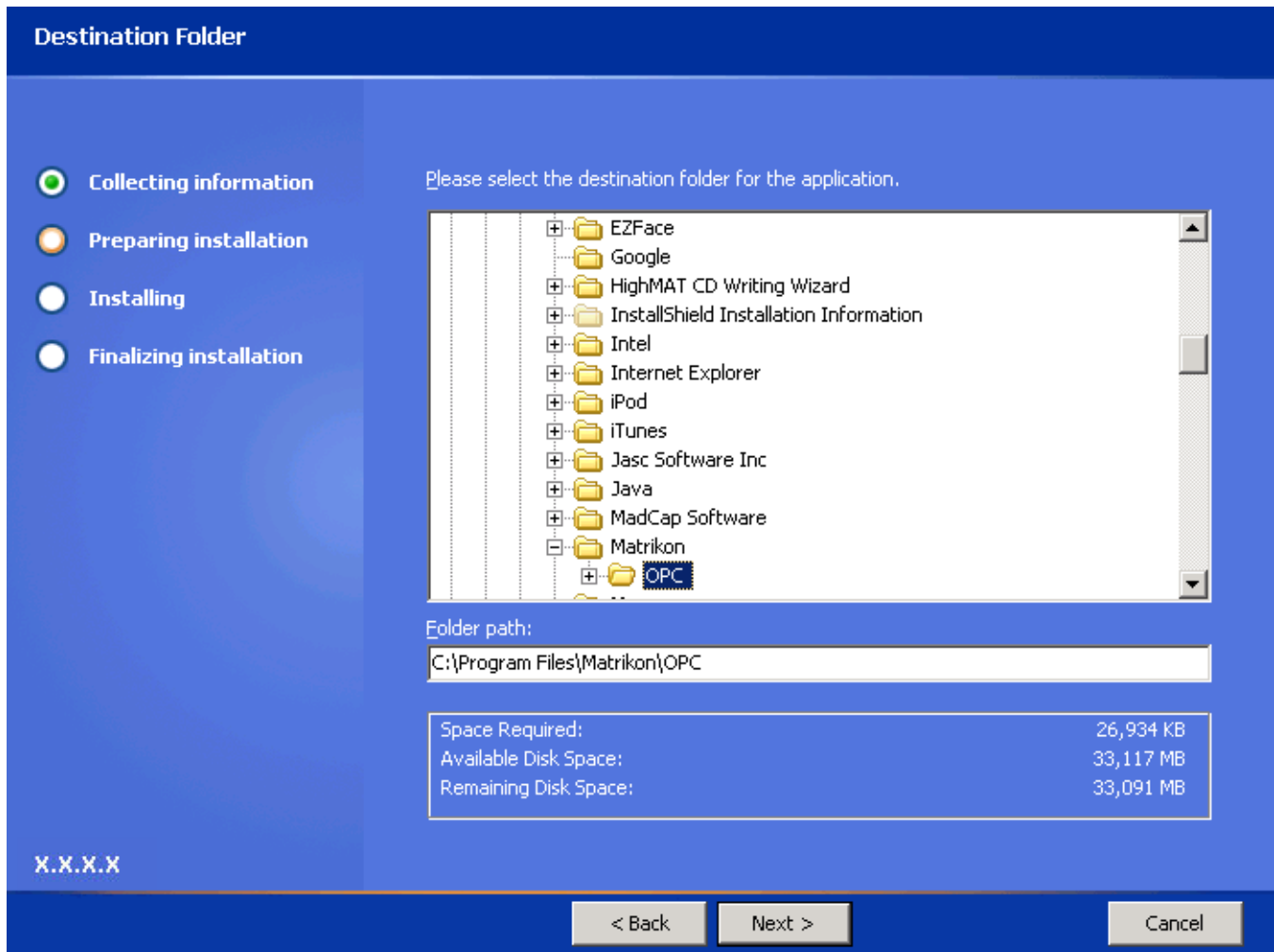
Figure 4 - Destination Folder Screen

7. Select the folder in which to install MatrikonOPC Analyzer, or accept the default location displayed in the **Folder path** field.

8. Click on the **Next** button. The **Start Menu** screen (Figure 5) appears.
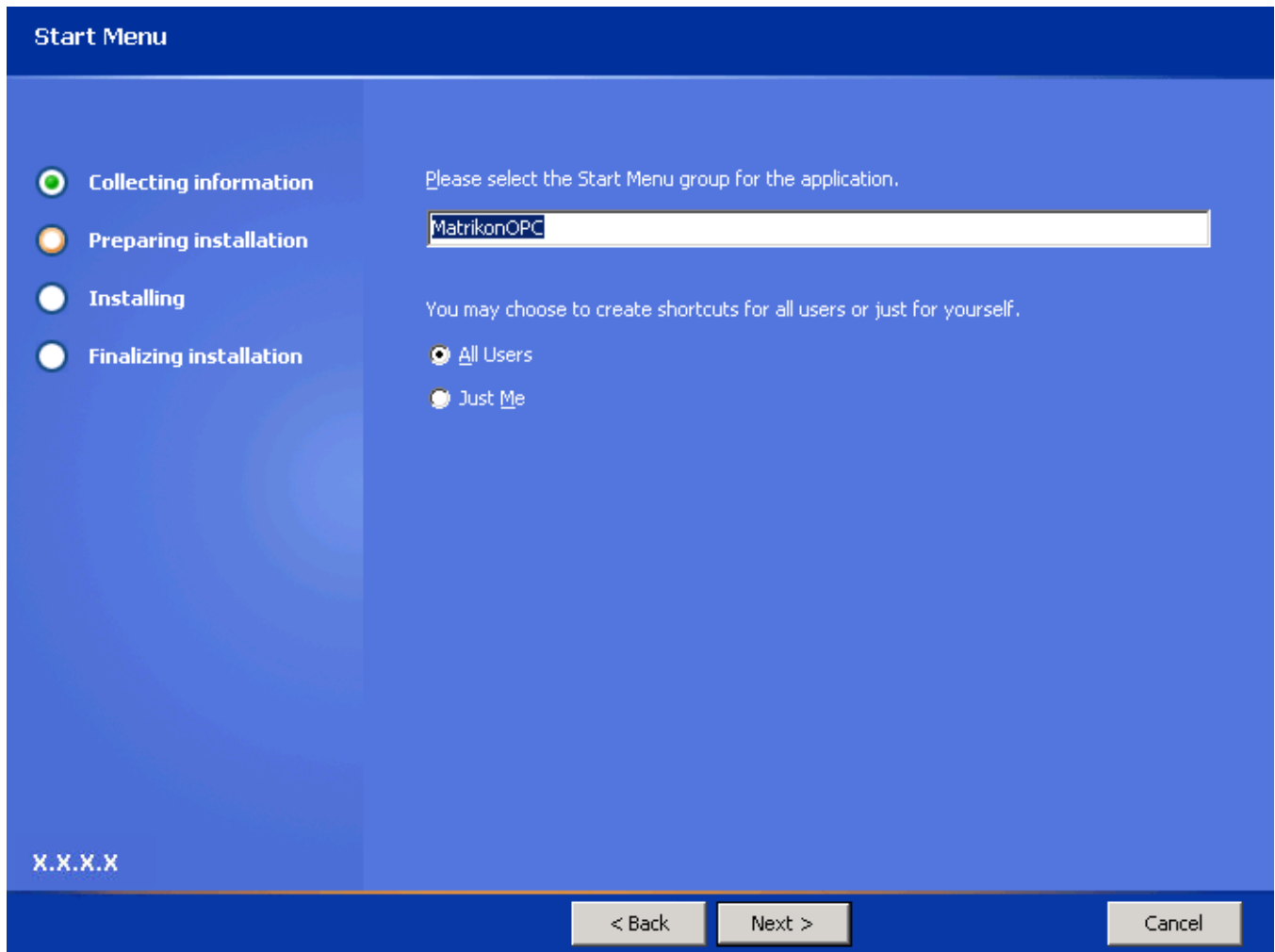
Figure 5 - Start Menu Screen

Select the Start Menu **group and then specify whether you want shortcuts created only for yourself, or for all users, by selecting the applicable option button. Click on the** Next **button. The** Ready to Install **screen**
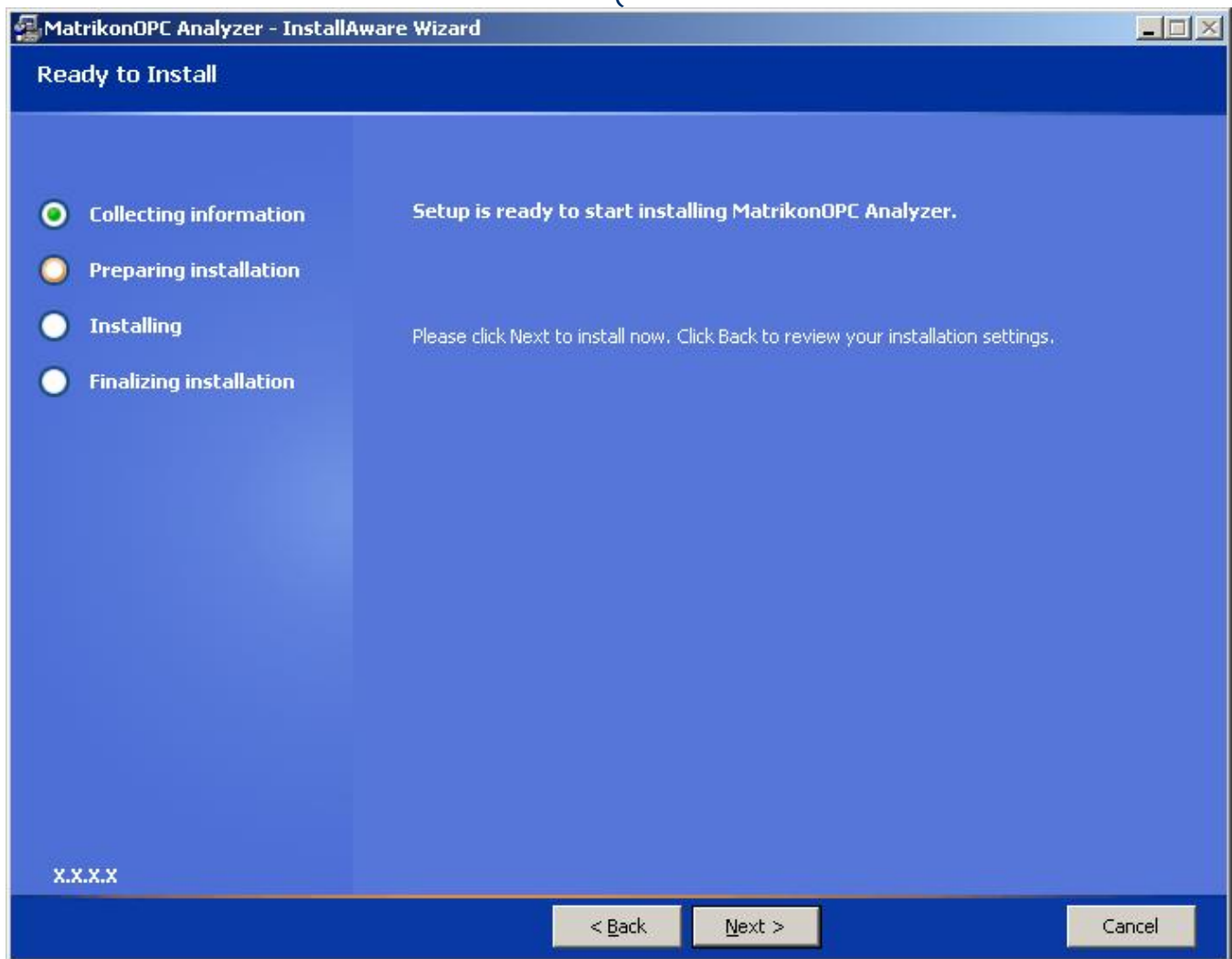
9. Figure 6) appears.
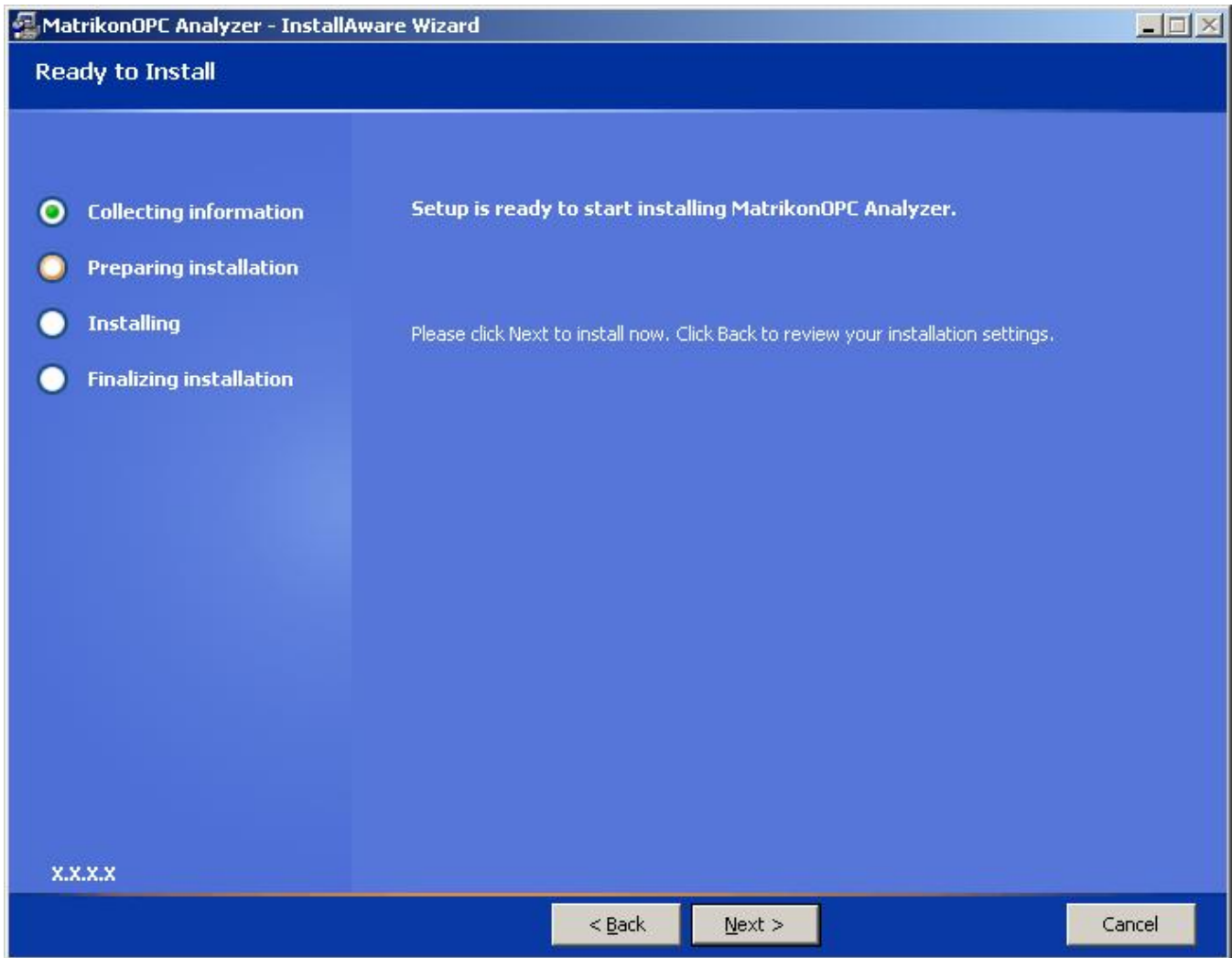
Figure 6 - Ready to Install Screen

10. Click on the **Next** button. The **Installing MatrikonOPC Analyzer** screen (Figure 7) appears, installation begins, and the product files are copied to the computer.

   Note: Prior to starting the installation, you have the option of clicking on the **Back** button to change any of the installation information. Click on the **Cancel** button if you wish to stop or cancel the installation.
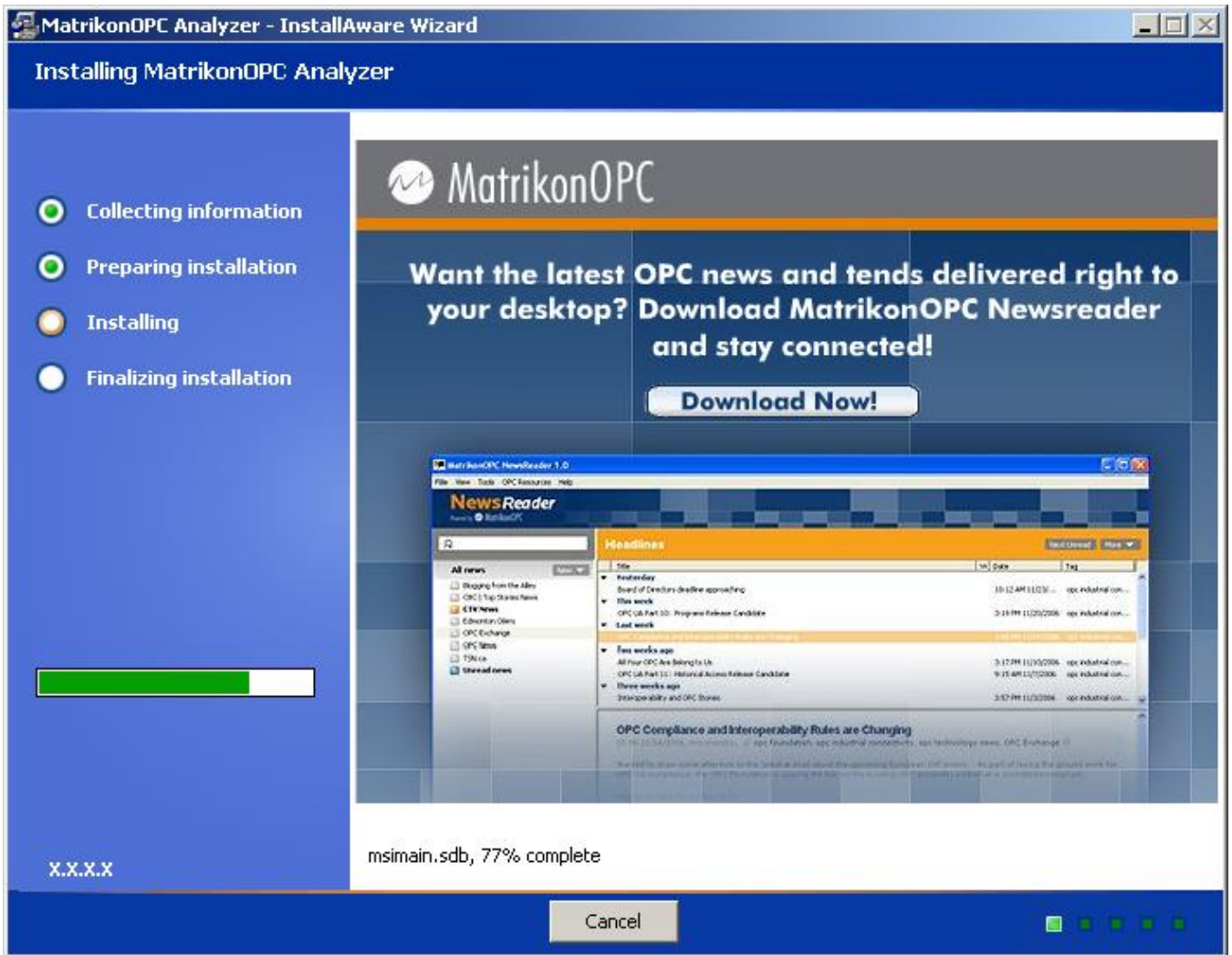
Figure 7 - Installing MatrikonOPC Analyzer Screen

11. When the installation has finished, the **MatrikonOPC Analyzer Setup Complete** screen (Figure 8) appears stating that the MatrikonOPC Analyzer has been successfully installed.
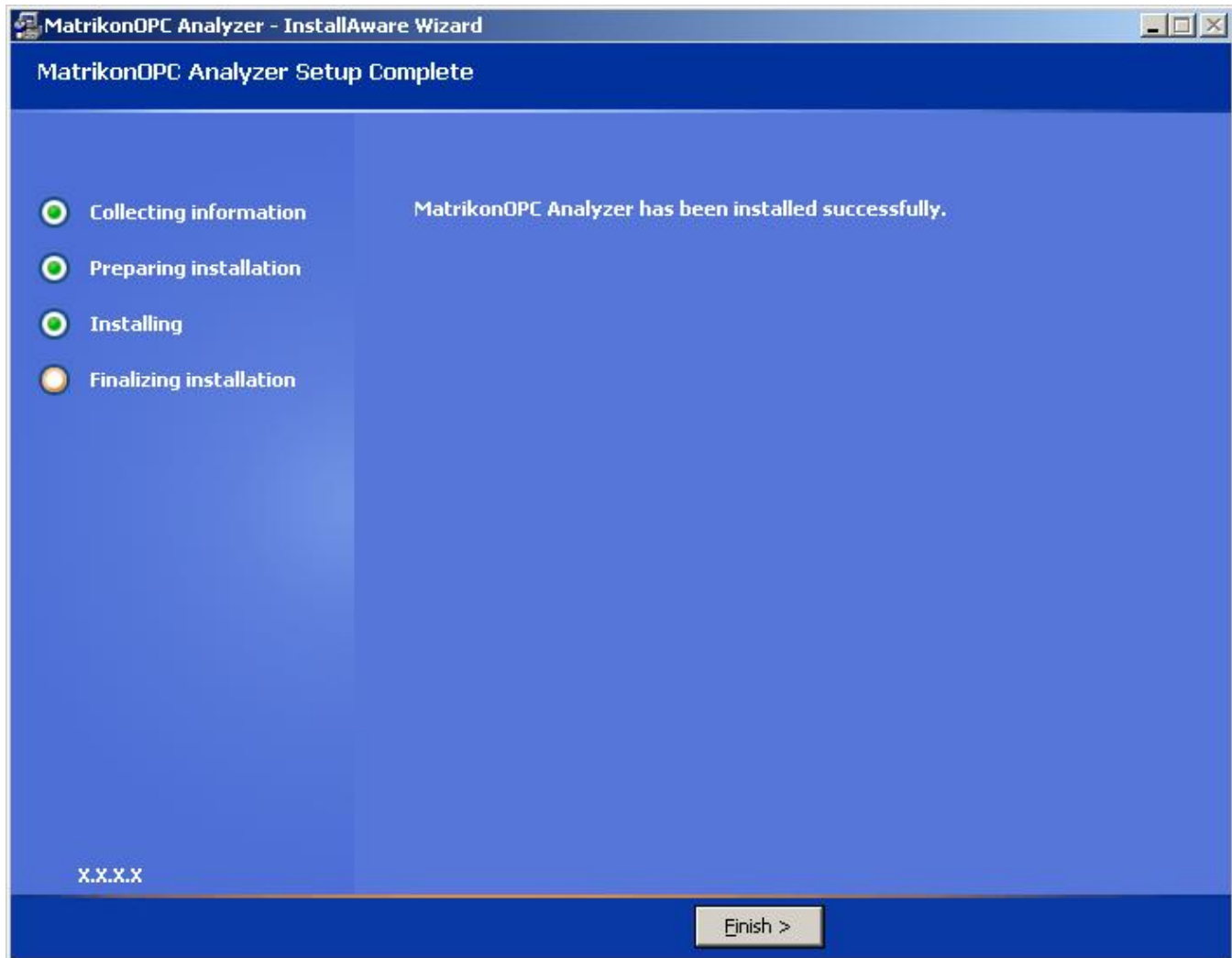
Figure 8 - MatrikonOPC Analyzer Setup Complete Screen

12. At this point you have the option of launching the server's *Release Notes* and/or *User's Manual*. Select the necessary checkbox or checkboxes.

13. Click on the **Finish** button to complete the installation and exit the Wizard.

14. The necessary files are copied to the target computer, the software components are registered, and short-cut icons are created in the **Start** menu.

Installed Files

The installation program copies all necessary files to the target computer and creates short-cut icons in the Start menu. The files listed in Table 2 are installed by default and placed in the locations listed below.

Note: *%Program Files%* refers to your default installation directory.

File Name	Description	File Location
OPCAnalyzer.exe	Console application	*%Program Files%\Common Files\MatrikonOPC\Common*

File Name	Description	File Location
MatrikonOPC Analyzer.exe	GUI interface	*%Program Files%\Matrikon\OPC\Analyzer*
MatrikonOPC Analyzer Release Notes.pdf	Release Notes	*%Program Files%\Matrikon\OPC\Analyzer*
MatrikonOPC Analyzer User Manual.pdf	User's Manual	*%Program Files%\Matrikon\OPC\Analyzer*

Table 2 - Files Installed in "COMMON" Folder

The installation program does not install any of the standard OPC components such as the proxy/stub DLLs or the server browser. It is assumed that these components have already been installed on the target machine along with the OPC client or server being tested. These components are readily available from the common downloads on the OPC Foundation web site (see **www.opcfoundation.org**).

Licensing

Note: No licensing is required for MatrikonOPC Analyzer, as this is strictly a diagnostic tool.

Contacting Support

MatrikonOPC support is available Monday through Friday, 8:00 a.m. to 5:00 p.m. Mountain Standard Time.

Email: support@matrikonopc.com

Phone: 780.448.4011

Fax: 780.448.9191

Using Analyzer

The MatrikonOPC Analyzer tool is intended to be as simple as possible, in terms of design and usage. This section of the manual describes command line options, user interface and what information Analyzer gathers in regard to system information, configuration files, log files, Zip files, and DCOM information.

Command Line Options

By default, MatrikonOPC Analyzer will run all of the options listed in Table 3:

Command Line Option	Description
-a	Creates an output file of DCOM settings for those OPC applications on the current system.
-c	Creates an output file listing the configuration files found in the Matrikon directories.
-d	Overrides the default directory. Path must be specified by the user.
-i	Creates output files listing information about the current system.
-l	Creates output files listing the log files found in the Matrikon directories.
-z	Zips all generated files, along with any log and configuration files that are found.

Table 3 - Command Line Options

Figure 9 shows an example of some of the command line options in use.
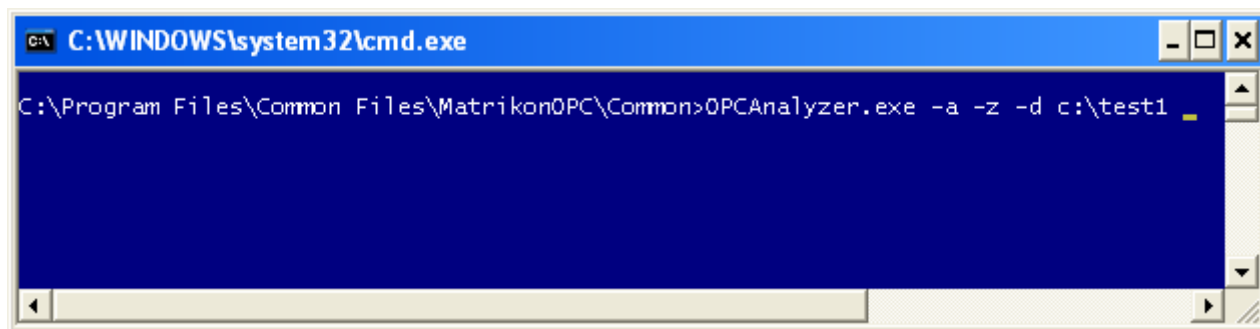
Figure 9 - Example - Command Line Options

User Interface

The Graphical User Interface (GUI) offers the same options available in the list of command line options. The GUI just makes the utility simpler to use.

To run MatrikonOPC Analyzer from the GUI:

1. Click on the Windows **Start** button and select the **Programs -> MatrikonOPC -> Analyzer -> MatrikonOPC Analyzer** shortcut.

2. The **MatrikonOPC Analyzer** window appears (see Figure 10).

3. Select the applicable checkboxes.

Note: The utility will capture information based on those checkboxes selected.

Figure 10 - MatrikonOPC Analyzer Utility Window

4. Click on the **Run** button to execute the utility.

5. A directory window (see Figure 11) appears displaying the location where the information has been saved.
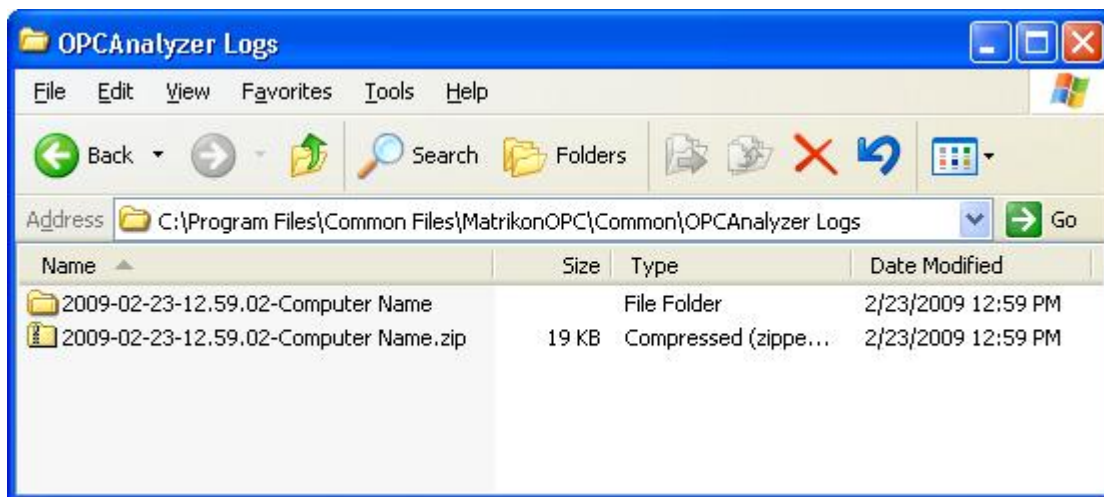
Figure 11 - Analyzer Log Directory

Capturing Information

This section describes the information captured by each available option:

- **System information**

- **DCOM listings**

- **Log files**

- **Configuration files**

- **Zip output files**

System Information

By selecting the **System Information** checkbox on the MatrikonOPC Analyzer utility window, information about the machine on which Analyzer is being run is captured. The following is an example of the information recorded in a file named *ComputerInfo.txt*:

Information for Computer <Computer Name>


Date: Mon Feb 23 14:07:54 2009

COMPUTER NAME	: <Computer Name>
DOMAIN NAME	: <Domain Name>
USER NAME	: <User Name>
OS VERSION	: Microsoft Windows XPService Pack 2
PROCESSOR TYPE	: GenuineIntel Intel(R) Pentium(R) 4 CPU 3.00GHz
FIREWALL	: On
TIMEZONE	: (GMT-07:00) Mountain Time (US & Canada)
SYSTEM Path's	: ./bin;%SystemRoot%\system32;
	%SystemRoot%;
	%SystemRoot%\System32\Wbem;
	C:\Program Files\Microsoft SQL Server\80\Tools\BINN;
	C:\$work\tools;C:\Program Files\Common Files\Compuware
DEP	: DEP is OFF - Windows programs and services only
COUNTRY CODE	: 1
COUNTRY	: United States
LANGUAGE	: ENU
Running Processes	: 0 : [System Process]
	4 : System
	556 : smss.exe
	604 : csrss.exe
	628 : winlogon.exe
	672 : services.exe
	684 : lsass.exe
	836 : svchost.exe
	896 : svchost.exe
	988 : svchost.exe
	1052 : svchost.exe
	1096 : svchost.exe
	1328 : spoolsv.exe

          1928   : alg.exe

          476   : explorer.exe

          600   : msmsgs.exe

          1644   : svchost.exe

          1920   : dllhost.exe

          464   : msdtc.exe

          2640   : locator.exe

          2656   : ORBCON~1.EXE

          2740   : AEQueue.exe

          3408   : OpcEnum.exe

          3244   : MatrikonOPC Analyzer.exe

          3604   : OPCAnalyzer.exe

Several other files are also created when this option is enabled:

- A file named *MSUpdates.txt* which lists all of the Microsoft updates that have been applied to the current operating system

- Backups of the Windows Event logs (AppEventLog.evt, SecEventLog.evt, SysEventLog.evt)

- IpConfig.txt which contains information about the computer's network settings

DCOM

Note: For information about DCOM, refer to **Appendix A** in this manual.

By selecting the **DCOM** checkbox on the MatrikonOPC Analyzer utility window, the *Launch and Activation* Permissions, and *Access* Permissions lists for all MatrikonOPC applications (or any applications and system defaults containing the term "OPC") are captured. For each application found, the utility will also capture the user under who the application is running under, the Identity setting, and Authentication Level.

The following is an example of the information captured in the *DCOMInfo.txt* file:

Default Access Permission list:

          ALLOWED-> NT AUTHORITY\SYSTEM

          ALLOWED-> NT AUTHORITY\SELF

          ALLOWED-> NT AUTHORITY\NETWORK

          ALLOWED-> NT AUTHORITY\INTERACTIVE

          ALLOWED-> \Everyone

          Default Launch and Activation Permission list:

          ALLOWED-> NT AUTHORITY\SYSTEM

          ALLOWED-> NT AUTHORITY\NETWORK

          ALLOWED-> NT AUTHORITY\INTERACTIVE

ALLOWED-> \Everyone

ALLOWED-> BUILTIN\Administrators

****

General Properties of DCOM Application : MatrikonOPC Server for Modbus Devices

****

ACCESS PERMISSIONS:

ALLOWED-> MATRIKON\<User Name>

ALLOWED-> \Everyone

ALLOWED-> NT AUTHORITY\SYSTEM

ALLOWED-> NT AUTHORITY\INTERACTIVE

LAUNCH AND ACTIVATION PERMISSIONS:

ALLOWED-> MATRIKON\<User Name>

ALLOWED-> \Everyone

ALLOWED-> NT AUTHORITY\SYSTEM

ALLOWED-> NT AUTHORITY\INTERACTIVE

IDENTITY SETTINGS

Running as a: Service

Identity is set to: System Account

Authentication Level: Connect

Log Files

Selecting the **Log Files** option allows the utility to search the common Matrikon directories to find files with *.LOG* or *.BAK* extensions and makes a list of their locations in a file called *LogFileInfo.txt*. Following is a sample list:

C:\Program Files\Common Files\MatrikonOPC\Common\PSTCFGMatrikon.OPC.Simulation.1.LOG

C:\Program Files\Common Files\MatrikonOPC\Common\PSTCFGMatrikon.OPC.Triconex.1.LOG.bak

C:\Program Files\Common Files\MatrikonOPC\Common\PSTCFGMatrikon.OPC.Tunneller.1.LOG

C:\Program Files\Matrikon\OPC\Common\logs\PSTCFGMatrikon.OPC.DataManager.1.LOG

C:\Program Files\Matrikon\OPC\Common\logs\PSTCFGMatrikon.OPC.DataManager.1.LOG.bak

C:\Program Files\Matrikon\OPC\Common\logs\PSTCFGMatrikon.OPC.DDE.1.LOG

C:\Program Files\Matrikon\OPC\Common\logs\PSTCFGMatrikon.OPC.Moore.1.LOG

Configuration Files

Selecting the Configuration Files option results in the utility searching the common Matrikon directories to find files with *.XML, .ORB,* and *.CSV* extensions and creates a list in a file called *ConfigFileInfo.txt*. Following is an example of the list:

C:\Program Files\Matrikon\OPC\Modbus\ModbusConfig.xml

C:\Program Files\Matrikon\OPC\Modbus\Aliases.csv

C:\Program Files\Matrikon\OPC\ORB\Config.orb

Zip Output Files

Selecting the Zip Output Files option archives the files created by MatrikonOPC Analyzer as well as the files specified in the *ConfigFileInfo.txt* and *LogFileInfo.txt files*. Figure 12 shows an example of the Zip Archive.
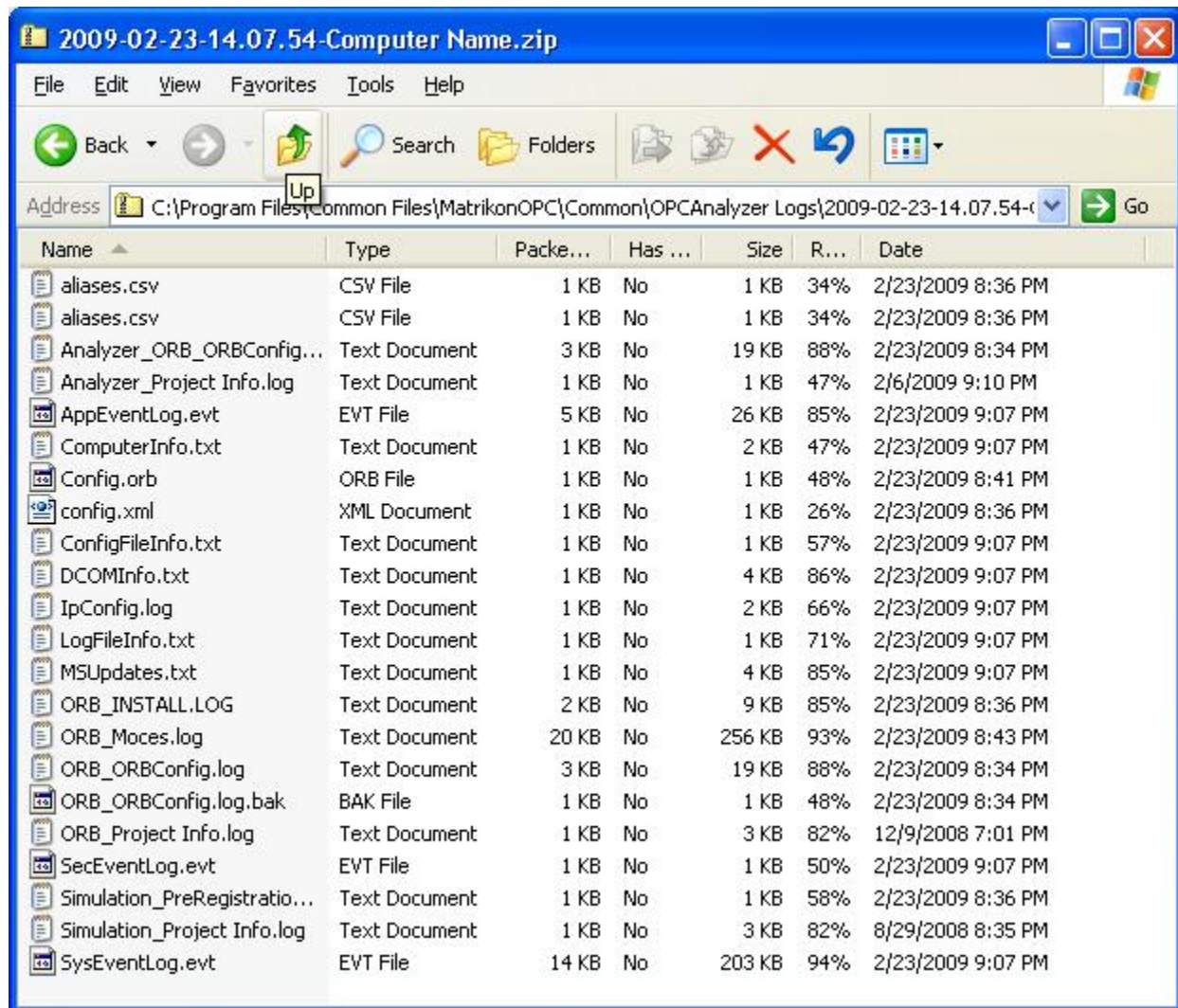
Figure 12 - Example - Zip Archive

Troubleshooting

Problems and Solutions

Search the *MatrikonOPC Support Knowledge Base* at **www.opcsupport.com** to find the answers to commonly-asked Analyzer questions.

Application Limitations

MatrikonOPC Analyzer has the following limitations:

1. **Microsoft Windows NT is not supported** – MatrikonOPC Analyzer will not execute if running on the Windows NT operating system.

Un-Installation

To successfully un-install MatrikonOPC Analyzer, using the **Add/Remove Programs** from the Microsoft Windows **Control Panel** is recommended.

⚠️ **Note:** Matrikon strongly recommends that you back up all history and configuration files prior to upgrading or re-installing the software.

To un-install Analyzer:

1. Click on the **Start** button and highlight the **Control Panel** item.

2. From the displayed menu, select **Add or Remove Programs**.

3. The **Add or Remove Programs** window is displayed.

4. Scroll through the list of currently installed programs and updates to find and select **MatrikonOPC Analyzer**.
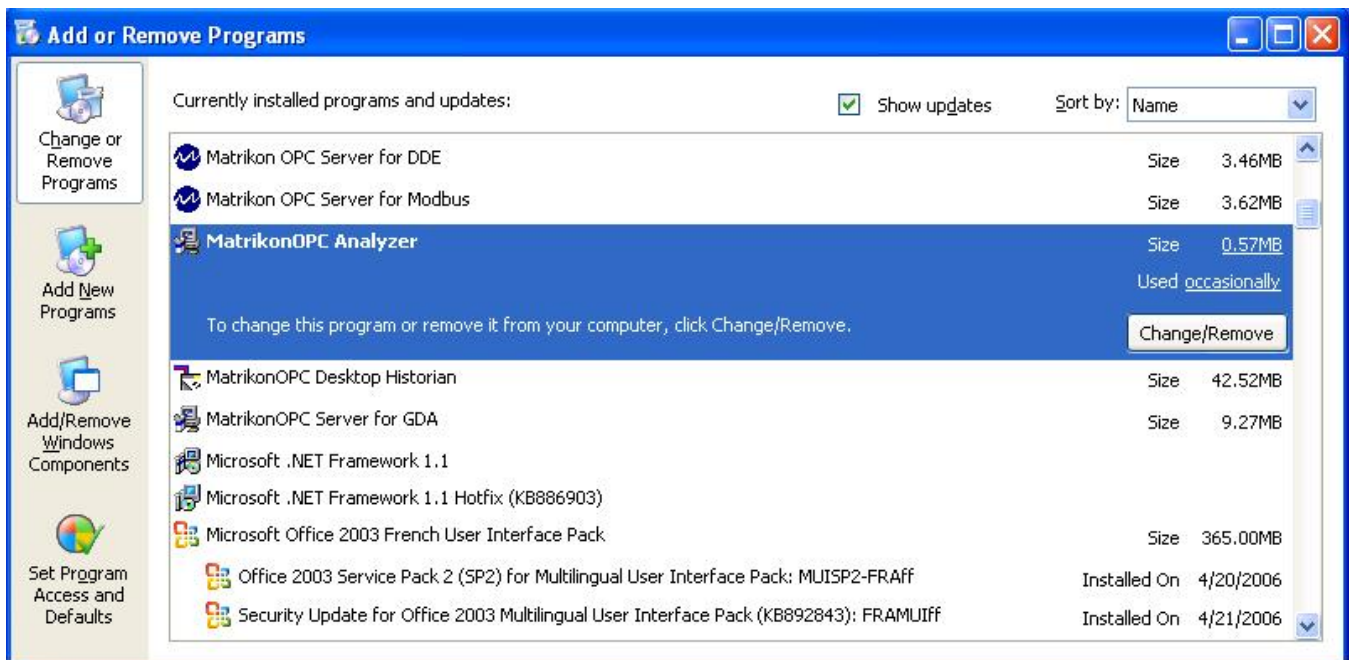

Figure 13 - Add/Remove Programs

5. Click on the **Change/Remove** button associated with the MatrikonOPC Analyzer program to initiate the un-install process.

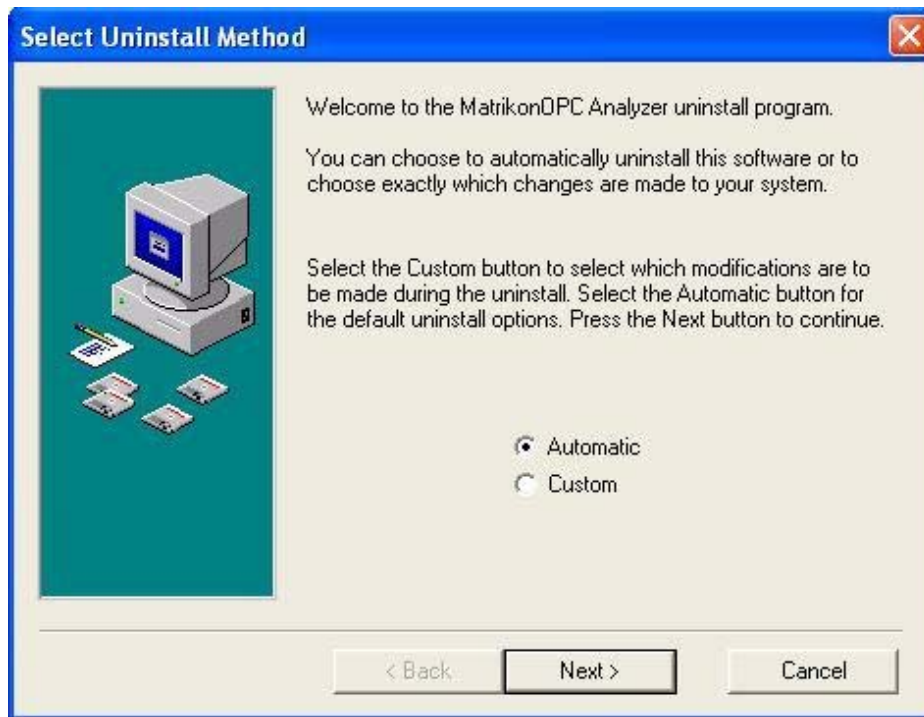6. The **Select Uninstall Method** window appears (Figure 14).

Figure 14 - Select Uninstall Method Window

7. From the **Select Uninstall Method** window, select the required option button.

    Note: MatrikonOPC recommends the **Automatic** option method of un-installing.

8. Click on the **Next** button.

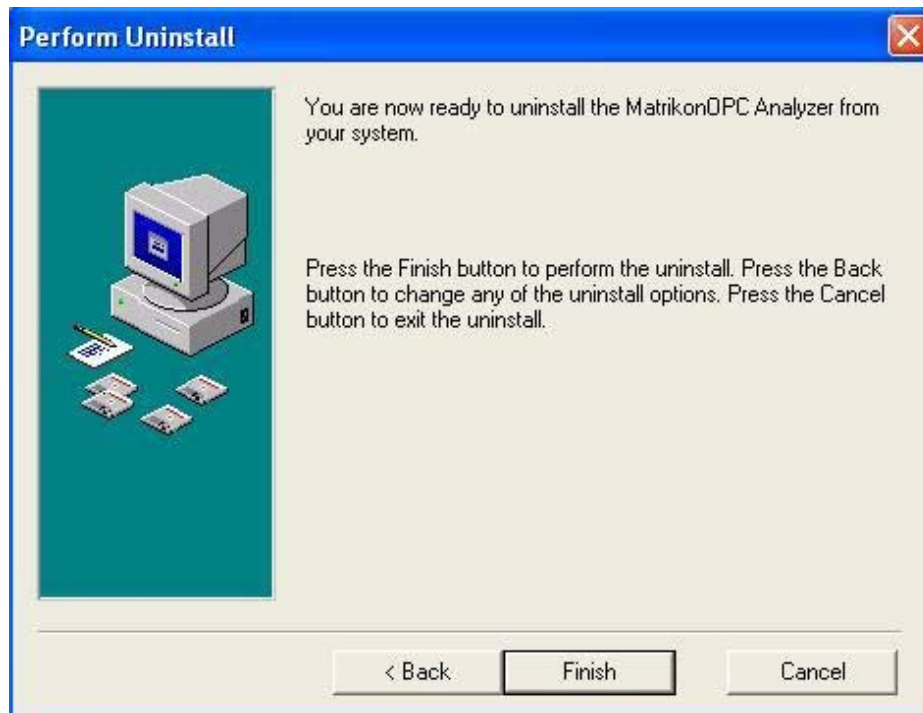9. The **Perform Uninstall** window is displayed (Figure 13).

Figure 15 - Perform Uninstall Window

10. Click on the **Finish** button.

11. The **Remove Files?** window appears.
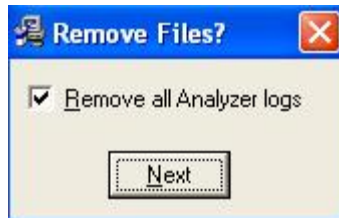
Figure 16 - Remove Files? Window

12. The **Remove Files?** window asks whether to remove all log files. To keep all log files, clear the **Remove all Analyzer logs** checkbox. By default, the checkbox is selected, indicating that all log files are to be removed.

13. Click on the **Next** button.

14. The **Remove Files?** window closes and the un-install proceeds. When the un-install is complete, the program no longer appears listed in the **Add or Remove Programs** window.

Appendix A – Distributed COM (DCOM)

Notes:

- The information provided in this section is strictly for reference only as **Analyzer does not have any COM or DCOM settings**. This information shows the current state for those OPC servers with COM/DCOM settings, and allows for the adjustment, if necessary, of those settings.

- The following steps are only suggestions. Ask your Windows NT/2000 System Administrator for more information about the settings that you should use; especially between different domains.

Distributed Component Object Model (DCOM) is an object protocol that enables COM components (such as OPC clients and servers) to communicate directly with each other across a network. A certain amount of configuration is required on the system where the OPC server is installed to allow remote clients to connect to it over the network.

Readers should be familiar with DCOM and with Windows 2000 security features and security administration. Information regarding DCOM and various links to related sites, white papers, specifications, and so on, can be found at **http://www.microsoft.com/com/tech/DCOM.asp**.

Specifications on DCOM/COM and release notes on COM+ can be found in the MSDN Online Library at **http://www.microsoft.com/com/resources/specs.asp**.

DCOM Configuration Utility

1. Start the DCOM configuration utility from either the server configuration utility, or from the command-line (*DCOMCNFG*).

2. Answer *Yes* to any messages that are displayed. This allows the utility to assign application ID entries to those servers that do not already have them.

The **DCOMCNFG** main window allows you to either configure default settings for all COM servers, or allows you to configure settings for a specific server chosen from the list. The former will affect all servers configured to use the default settings, while the latter affects only the selected server.

Note: DCOM settings are stored in the registry and loaded by COM (and OPC) servers at start-up. Therefore, server processes must be shut down and restarted in order for these changes to take effect.

Default Properties

The **Default Properties** tab contains settings that affect all DCOM communication on the machine:

- Ensure that **Enable Distributed DCOM on this computer** is selected so that the machine is available to others via DCOM.

- Select **Enable COM Internet Services on this computer** to allow DCOM access to the machine from the Internet (check with your administrator).

- In general, the other settings do not need to be changed.

The **Authentication Level** specifies when COM should authenticate the identity of calling clients (e.g., each call, each packet):

- Normally, it should be set to **Connect**, indicating that COM should authenticate clients when they first connect to a server. If it is set to **None**, then COM performs no authentication and ignores any access permission settings.

The **Impersonation Level** specifies whether servers can ascertain the identity of calling clients and whether they can then perform operations on the client's behalf (as if the server is the client):

- Normally, it should be set to **Identify**, allowing the server to identify the calling client to see if it is allowed access to a certain resource, but not to actually access any of these resources as the client.

- Select **Provide additional security for reference tracking** to make even the reference counting on COM objects secure. Generally, this setting is not required.

Security Permissions

The most important DCOM settings for an OPC server are the security permissions which can be set in two ways:

1. Change the specific settings for the server (recommended).

2. Change the default settings (not recommended) and make sure that the OPC server will use them.

Whichever method is used, be certain that the access and launch permissions are correct for the server.

Setting Security Permissions

To set the security permissions for an OPC Server:

1. From the **Start** button, select **Run**.

2. The **Run** window appears.

3. In the **Open** field, enter *dcomcnfg* and click on the **OK** button.

4. The **Component Services** window appears.

5. In the navigation pane (i.e., left side pane), click on **Component Services**.

6. Expand the **Computers** node.

7. Expand the **My Computers** node.

8. Expand the **DCOM Config** node.

9. Scroll through the displayed list and select the required OPC server.

10. Either right-click on the server name and select Properties from the menu that appears, or highlight the server and then select the **Properties** menu item from the **Action** menu.

11. The **Distributed COM Configuration Properties** window appears (Figure 17).
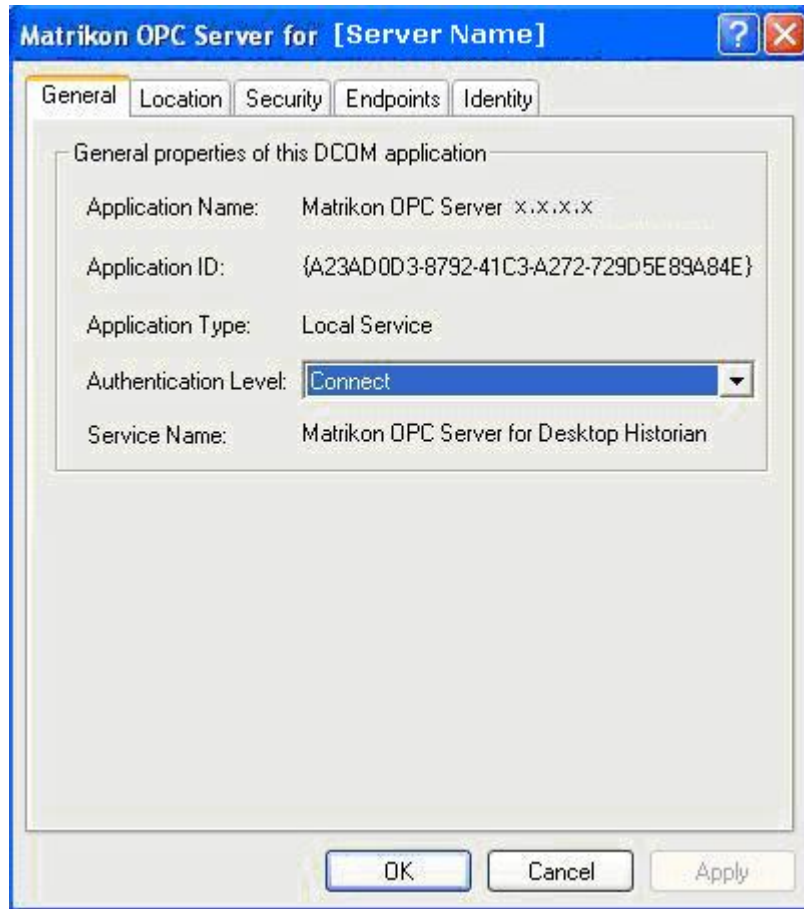
Figure 17 - Distributed COM Configuration Properties Window

12. Click on the **Security** tab.

13. The **Distributed COM Configuration Security** tab appears (Figure 18).
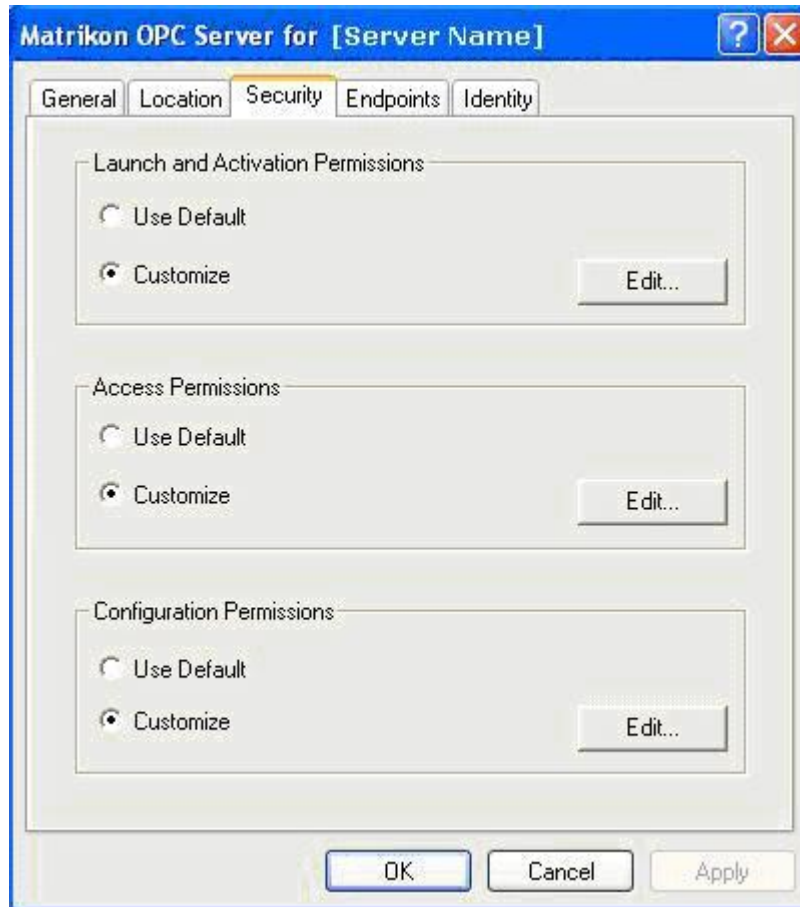
Figure 18 - Distributed COM Configuration Security Tab

14. Under **Launch and Activation Permissions**, select the **Customize** option button and click on the **Edit** button.

15. The **Launch Permission** window appears.

16. Include the names of users or user groups from trusted domains that you wish to be able to use OPC server on this machine. Include the **Everyone** group to allow access to all users on a particular domain.

    Note: To add a group or name, click on the **Add** button to access the **Select Users, Computers, or Groups** window where you can add the missing group or name.

17. Set the permissions for each group or user as required.

18. Click on the **OK** button to close the **Launch Permission** window and return to the **Security** tab.

19. Repeat steps 14 through 18 for **Access Permissions** and **Configuration Permissions**.

20. From the **Security** tab, click on the **OK** button to close the **Properties** window and return to the **Component Services** window.

To connect to an OPC server from outside of the domain:

1. Create a local user on both the server and the client machine with identical user name and password.

2. Add the local user on the OPC server to the DCOM permissions.

3. Use the local account on the client machine to connect to the OPC server.

Server Identity

The **Identity** tab for a selected COM (or OPC) server specifies the user account that should be used when COM starts up the process. The available settings are different for servers that run as local executables, as opposed to those that run as NT services.

Note: It is strongly recommended that the OPC server should be installed to run as NT services if they are going to be accessed by remote clients via DCOM. This ensures that the server can always be accessed even if no one is presently logged on to the machine, and only one server process ever starts up. It also adds a greater degree of security in terms of who is able to shut down the server process.

Servers that run a local executable have the option of running as the launching user (the calling client [default]), the interactive user (the one currently logged on to the machine), or a specified user. It is usually best to use the interactive user or a specified user. Otherwise, remote clients might start up multiple separate server processes that are not accessible to others.

Servers that run as NT services should generally run as the local **System** account. Alternatively, the server can be set to run as a specified user, although this is usually done from the **Service Control Manager** applet rather than DCOMCNFG. Access and Launch permissions are particularly important when installing a server to run as an NT service.

Default Protocols

The **Default Protocols** tab specifies the communication protocols available to DCOM. The order the protocols appear in the list indicates the priority in which they will be used (the top-most having the highest priority).

The more protocols that appear in the list, the better the chance of connecting to an OPC server on an unknown remote machine (such as at an OPC Interoperability Workshop). However, it may also take longer for DCOM to time out if a server machine is not present since it has to try each protocol in turn.

For most situations, it is best to remove all unused protocols from the list, and include only those that are necessary for your network. For example, on a TCP\IP network, one would include the **Connection-oriented TCP/IP** protocol. Contact your IT personnel for more information about your network.

Note: Evidence indicates that there are problems with the datagram-oriented protocols (such as UDP/IP) that can cause memory leaks in DCOM. Therefore, it is strongly recommended that these protocols be removed from the list of default protocols. Datagram-oriented protocols are not supported under Windows 2000 at all (although the DCOM configuration utility still allows you to configure them).

Remote Program ID

Before the **OPC Server Browser** became available, OPC client applications had to search the registry to generate a list of available OPC servers. Therefore, some older OPC clients need to have a program ID in the local registry to connect to a particular OPC server.

The simplest solution is to install the OPC server software on the client machine even if it is not used. Alternatively, use the following steps to copy a program ID to the client machine.

⚠ **Note:** This method may not work for every OPC client. Please check the client documentation for more information.

To copy a program ID to the client machine:

1. On the server machine, run **REGEDIT** as a user that has access rights to the local registry.

2. Expand the **HKEY_CLASSES_ROOT** key.

3. Find the program ID or IDs for the desired OPC server or servers.

   Note: In the case of MatrikonOPC servers, the ID has the form *Matrikon.OPC.Device*. Typing the first few letters of the required key should enable REGEDIT to jump to the location of that key. Some servers have both a version-specific, as well as version-independent, program ID. In this case, both IDs should be copied to the client machine.

4. For each program ID, select the key and choose **Export Registry File** from the **Registry** menu.

5. Enter a file name and click on the **Save** button.

   Note: Be careful not to overwrite other export files that you are creating.

6. Copy the exported **REG** files to the client machine.

7. Merge the **REG** files into the client machine's registry.

   Note: This should be a matter of simply double-clicking on the file from the desktop of the client machine. Alternatively, run **REGEDIT** on the client machine and choose **Import Registry File** from the **Registry** menu, selecting each file in turn. This must be done as a user who has write access to the local registry.

8. Use **REGEDIT** to check that the program IDs have in fact, been copied.

9. Delete the **REG** files as they are no longer required.