



Symmetry Software Installation Manual

For Business, Professional and Enterprise Editions
8.1.0.2

SECURITY MANAGEMENT SYSTEM

9600-0427

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Preface

About this Manual

This manual explains how to install Symmetry Business, Professional and Enterprise editions. The manual is intended to be used by technical staff who need to install or support Symmetry.

Related Documents

The following documents provide additional information, which you may need when installing optional modules or utilities:

- *Aperio Locks Configuration & User Guide*
- *Cluster Installation Manual*
- *Data Connect Manual*
- *Directory Sync Manager Installation & User Guide*
- *Disconnected Doors Guide*
- *Guard Patrol Manager Installation & User Guide*
- *Intercom Management Installation & User Guide*
- *Intrusion Management Installation & User Guide*
- *M2150 Intrusion Guide*
- *NIC Module Configuration Guide*
- *SymmetryWEB Installation Guide*
- *Threat Level Manager Installation & User Guide*
- *Video Integration SDK Installation & User Guide*
- *RDS/Citrix Client Access Installation & User Guide*
- *XML Open Integration Module Installation & User Guide*
- *Global Edition Installation & User Guide*
- *Third-Party Access Devices Installation & User Guide*

This manual should be read in conjunction with the product help, which is also available in printed form as the *Symmetry Reference Manual*.

Chapter 1: Introduction

Symmetry Editions

This manual covers the installation of the following editions of Symmetry:

- **Business Edition** - A true client/server system suitable for use on a customer network, but limited to a maximum configuration of 3 clients and 64 readers. Each panel can recognize up to 2000 cards. If required, all software can be installed on a single PC.

Business Edition uses databases managed by Microsoft SQL Server Express. With its maximum database size of 10GB, SQL Server Express has been designed and optimized for use on smaller computer systems.

By default, the Symmetry client software is installed on the server.

- **Professional Edition** - Professional Edition builds on the capabilities of Business Edition to provide a maximum of 9 clients and up to 512 readers, depending on the license purchased. Professional Edition uses SQL Server Express.
- **Enterprise Edition** - This provides all the features of the Professional Edition system, but utilizes the full Microsoft SQL Server relational database management system, which meets the needs of high performance and scalability. Enterprise Edition supports unrestricted expansion for large systems and the use of a separate SQL database server, which could be used by Symmetry and other third-party applications.

Enterprise Edition also supports "clustering" (see the *Cluster Installation Manual*), where two independent servers are seen as a single server by Symmetry. If one server in the cluster should fail, the other automatically steps in to continue normal operation.

- **Global Edition** - This provides enhanced capabilities for centralized card and alarm management of multiple systems spread over a number of geographically separate sites. A Global Edition system consists of a "head office" and a number of separate "regions". The head office is used to define card holders and their access rights centrally for automatic download to the appropriate regions. The regions upload alarms and events to the head office for centralized alarm monitoring, as well as local access codes to facilitate the definition of card holder access rights.

An example of the architecture of Global Edition is given on page 6. For further information, please refer to the *Global Edition Installation and User Guide*.

Examples of System Architecture

The following sections provide typical examples of system architecture.

Example 1: Installation on a Single Computer

Typically, smaller companies use Symmetry Business or Professional Edition, with all Symmetry software installed on a single computer, as shown in Figure 1. An existing network can be used to communicate with Symmetry hardware, such as access-control or intrusion nodes.

Although Symmetry is installed using a single install kit and appears to users as a single application, there are actually several distinct components installed on the one computer:

- a) The Symmetry client software – this provides the user interface to Symmetry and is also responsible for managing communications to Symmetry hardware.
- b) The freely-available Microsoft SQL Server Express database engine – this manages the database. SQL Server 2014 Express can be installed during the installation of Symmetry. If required, SQL Server 2012 Express can be used if it is installed before Symmetry.
- c) The database – this contains the data you see in Symmetry, such as card holder records, configuration settings and alarm information.
- d) The Symmetry server software. This performs various management tasks, including management of the communications between the Symmetry clients and database.

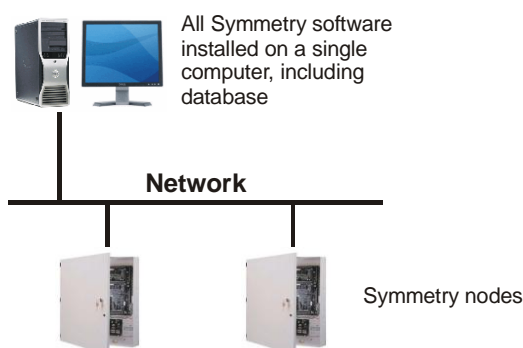


Figure 1: Installation on a Single Computer

- e) Optionally, the Symmetry Network Video Recorder (NVR) software and other software such as SymmetryWEB (as described in the *SymmetryWEB Installation Guide*).

By default, the Symmetry services (which run in the background) use the Local System account, although it is possible to use a pre-defined local or Active Directory account if the system administrator has a preference.

Example 2: Using a Separate Symmetry Server

The single-computer architecture described in the previous section can be easily expanded by, for example:

- Installing the Symmetry client software on additional computers. (The Symmetry client software is always available on the Symmetry server.)
- Installing the Symmetry NVR software on additional or separate computer(s).

An example is shown in Figure 2. An existing Symmetry server requires no modification if additional clients or NVRs are added at a later date.

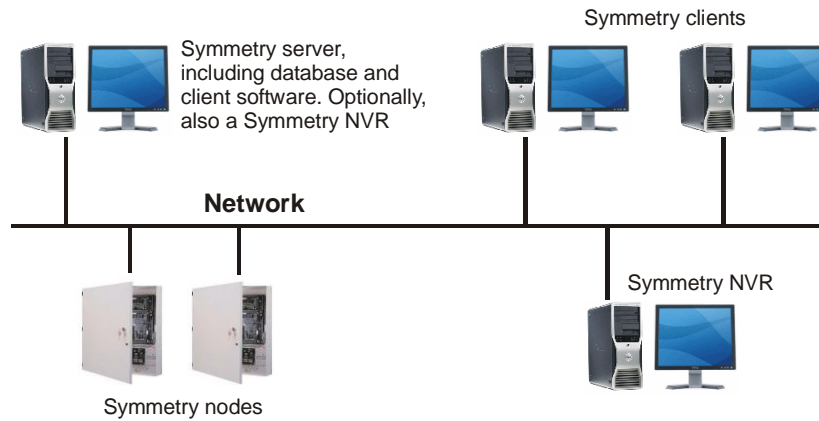


Figure 2: Client/Server Architecture

Such an architecture could be used with any edition of Symmetry, but is more often used with Professional or Enterprise Edition in medium-to-large-sized organizations. The architecture enables, for example:

- One client to be used by an administrator to set up card holders, manage access rights and produce reports.
- A second client to be used by a guard to monitor alarms.
- A third client to be used for visitor management.
- Other clients to be used for tasks such as video monitoring or managing communications with nearby hardware devices.
- Separate machines to be used for Symmetry NVR(s) or other software such as SymmetryWEB, perhaps for performance benefits.

In larger organizations that use Symmetry Enterprise Edition, the server requires a Windows Server operating system and a full SQL Server database engine such as SQL Server 2012 pre-installed. Otherwise, the installation of Symmetry on the server uses the same install kit as used when installing Symmetry on a single computer.

Symmetry is compatible with workgroup-based and domain-based networks. When operating in a domain, Symmetry fully supports the use of Active Directory to define the permissions necessary for Symmetry users and services.

Example 3: Using Separate Symmetry and Database Servers

Enterprise Edition provides the option of installing the Symmetry database on a separate database server, as shown in Figure 3 (in this example, rack-mounted PCs are used). The database server, which requires a full version of SQL Server, may also manage other third-party databases, depending on the requirements of the site. This architecture is commonly used in large organizations that prefer to use a dedicated computer to run databases, often for security reasons. Further details of possible benefits are described in the next section.

When a separate database server is used, a domain-based network must be used due to the security requirements needed for such an architecture.

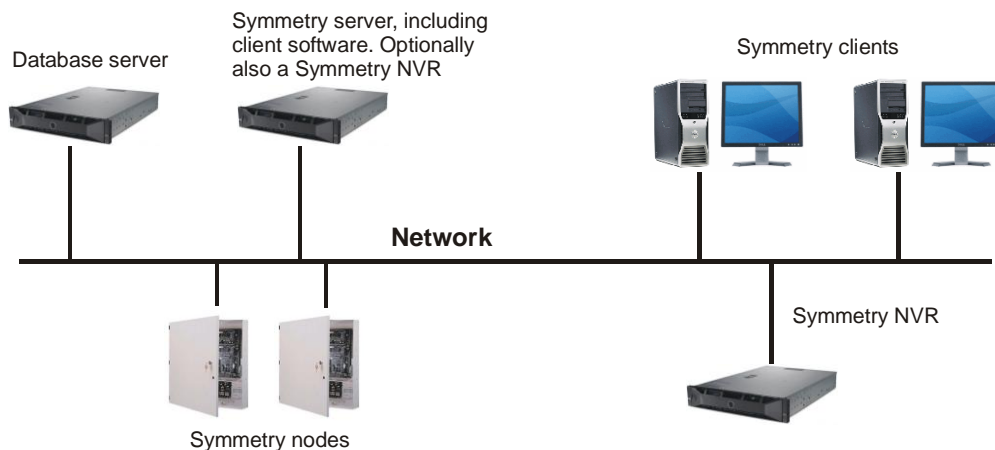


Figure 3: Enterprise Architecture Using a Separate Database Server

The permissions to run the Symmetry services and user accounts are defined in the Windows Active Directory. Since it is unlikely that the installer of Symmetry will have full domain administrator permissions or even local administrator privileges to the database server, some configuration will need to be carried out by appropriate system administrator(s) before Symmetry is installed. Chapter 2 describes all tasks that need to be carried out, and a checklist is provided in Appendix G.

In brief, the main differences when using a separate database server are typically the following:

- Symmetry Enterprise Edition is required.
- A domain-based network is required.
- High-quality network components and infrastructure must be used to avoid latency or packet loss between the Symmetry server and database server.
- A domain administrator will need to:
 - a) Create an account for the person who is to install Symmetry and give that account local administrator permissions to the Symmetry server and client machines.
 - b) Set up an account in Active Directory for the Symmetry services.
 - c) Create "ACSAdmin", "ACSUsers" and "ACSGuest" groups in Active Directory (alternative names can be used).
 - d) Assign the Symmetry services account to the ACSAdmin group.
 - e) Assign each Symmetry user to the ACSUsers group.
- A database administrator will need to:
 - a) Install an SQL Server instance for Symmetry.
 - b) Give the account used to install Symmetry permissions to administer the instance.
 - c) Create a share to the SQL backup folder on the database server.

Advantages of using a Separate Database Server

In common with other database applications, using a separate database server for Symmetry (Figure 3) can provide many benefits and may be a necessity for certain organizations.

The key concept of a separate database server is that it enables an application (in this case Symmetry) and its database to use physically separate machines. For Symmetry, no additional executables or services need to be installed on the database server.

Using a separate database server may be desirable for a number of different reasons. For example:

- **Reduced cost and administration through a single SQL Server deployment**

The need to host multiple Microsoft SQL Server databases is commonplace within organizations due to the number of applications that use databases. Hosting multiple databases on a single machine running SQL Server rather than on multiple machines can reduce the purchase cost of the hardware and software, simplify deployment and ease maintenance.

The improved cost efficiency of using a single database server can enable hardware of significantly higher performance to be purchased for the benefit of all database applications.

The Symmetry database can be installed on a default or named SQL instance, which allows it to be used alongside other application databases. Symmetry can also share a single instance of SQL with other databases and use custom port numbers for added security configurations.

- **Simplified system administration**

Updates necessary to applications or their operating systems may require no software changes at the database server, which can simplify the process of administering the organization's IT systems.

- **Greater protection against harmful software**

IT departments consider it good practice to install applications and databases on different platforms to reduce the amount of software installed on the database machine. This strategy can reduce the possibility of information held in the databases being compromised by malware or other harmful software, or resources being consumed by misbehaving applications.

- **Improved security**

Using a separate database server provides better security, both from external (web-based) attacks and insider attacks/mistakes for several reasons:

- Personnel who are responsible for maintaining applications such as Symmetry are unlikely to need direct access to the database server. This allows the database server to be located in a separate room, with access provided only to authorized personnel.
- An internal or external attacker who manages to compromise part of the network may not be able to access the database server due to privileges, firewalls or other security measures.
- A separate database server can make it easier to install a database firewall between the applications and the databases. Such devices are capable of analyzing SQL traffic to the databases, blocking potential attacks, logging activity and providing intelligent tools to improve security.

- **Simplified backup procedures**

A database server may make it easier to back up multiple databases used by different applications. Instead of backing up each database separately at different machines, a database server may allow all databases on the server to be backed up using a single set of tools and procedures.

- **Simplified design of high-availability architectures**

Deploying multiple databases onto a single database server can make it easier to design high-availability solutions using, for example, Microsoft clustering. Should the database server stop functioning, a failover process causes another server to assume control to provide continuous service for all relevant applications using the database server.

- **Improved tailoring of company resources**

A solution that gives the flexibility to deploy the Symmetry database, server and clients onto separate machines allows these components to be deployed onto machines and in environments tailored to their function.

Example 4: Global Edition

Global Edition consists of a "head office" and one or more "regions". The installation type is determined by the license serial number used during the installation of Symmetry.

The architecture of the head office and each region is the same as for Enterprise Edition, with the exception that Global Edition does not support separate database servers. In all other respects, the hardware and software minimum requirements at a head office or region are the same as for an Enterprise Edition system.

Figure 4 shows one possible architecture, in which the head office includes Symmetry nodes (e.g. for local access control). Depending on requirements, it is feasible for the head office to be used only for centralized card administration and alarm handling.

The regions upload locally-defined access codes, alarms and events to the head office. The head office downloads card holders and their access rights (using the access codes uploaded from the regions). Secure https communications are used in both cases.

For further information about Global Edition, including details of how to configure it, please refer to the *Symmetry Global Edition Installation and User Guide*.

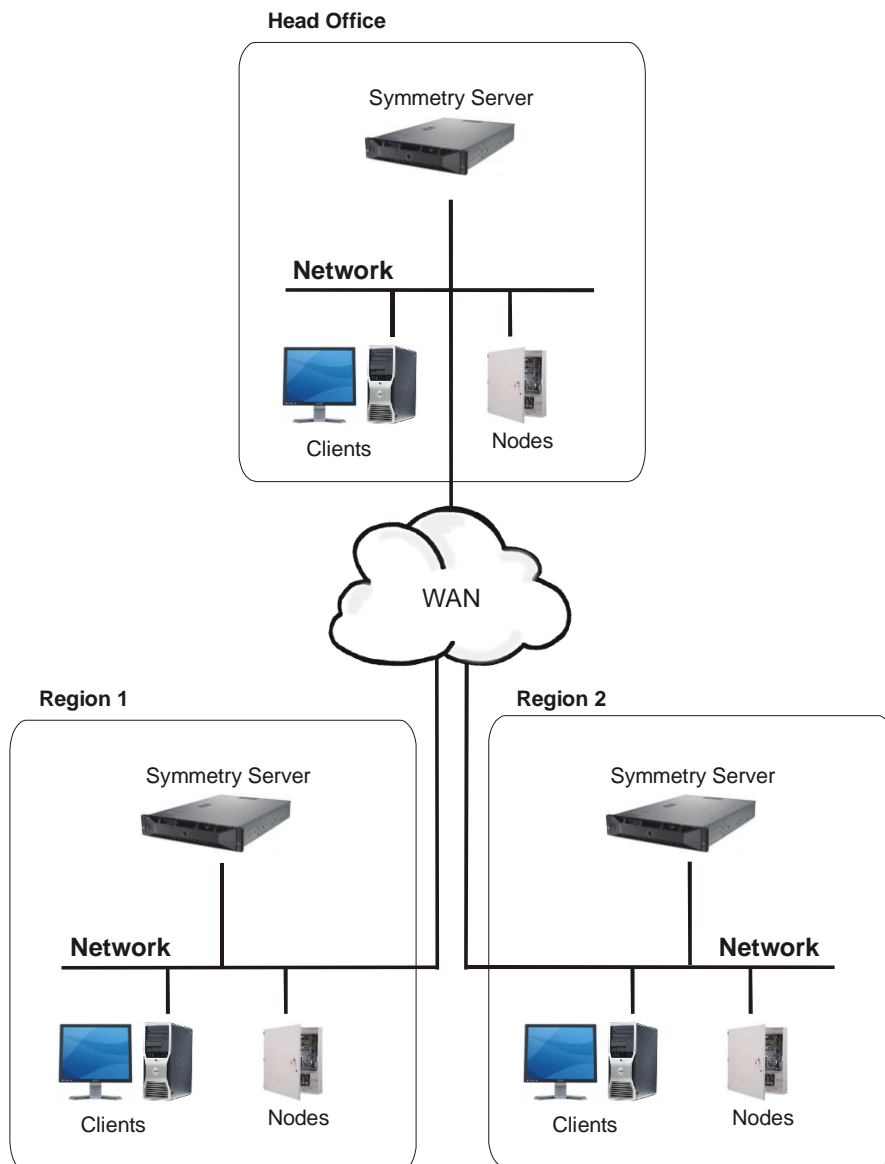


Figure 4: Example Global Edition Architecture

Installation Sequence

Typically, the steps you need to take to install the software are as follows:

1. Check hardware and software requirements. Refer to the following sections.

2. Perform the pre-installation tasks. See:

Chapter 2: Pre-Installation Tasks

3. Install and start Symmetry. See:

Chapter 3: Quick Install Instructions (Single-Machine Installation).

OR:

Chapter 4: Installing Symmetry

4. Perform various post-installation tasks, such as to set power options and configure modems. See:

Chapter 5: Post-Installation Tasks.

Hardware and Software Minimum Requirements

This section specifies the minimum hardware and software requirements for Symmetry computers.

Note:

- These recommendations are based on experience with many different installations. However, it is essential to test the performance of the system fully before going "live". Network performance, SQL/network monitoring tools, antivirus software, operational usage, use of VMware® and other site-specific factors can affect performance and therefore may require changes to system requirements or infrastructure to achieve performance expectations.
- The Symmetry client software is also installed on the symmetry server (except on a cluster). However, to ensure resource availability for task-intensive operations, it is recommended that the Symmetry server is normally dedicated for Symmetry use, depending on the number of readers and transactions.
- Disk compression must not be used.

Symmetry Business/Professional Server, Client (any Edition) or NVR

The following applies for any machine that is being used as a Symmetry Business/Professional Edition server, Symmetry client (in any edition) or Symmetry NVR. **Note:** Also refer to *Maintaining Symmetry NVR or Video Performance* (page 10) if the computer is being used as a Symmetry NVR or to view video.

Item	Requirement
Operating System	<p>Any of the following:</p> <ul style="list-style-type: none"> • 32-bit or 64-bit Windows 7 Professional or Ultimate Edition (with SP1). • 64-bit Windows 8.1 Pro or Enterprise Edition. • 64-bit Windows 10 Pro or Enterprise Edition <p>Note: Also supported are the Windows Server operating systems supported for Enterprise Edition (see the next section). If a Windows Server operating system is used, it is recommended to use the same machine hardware as for an Enterprise server. Note that only Express versions of Microsoft SQL Server are supported for Business and Professional Edition systems.</p>
Processor	Minimum Intel i5-3570 @3.4GHz (or equivalent).
Memory	Minimum 4GB RAM.
Optical Drive	The Symmetry software is supplied on a single-layer DVD.
Monitor	1280 x 1024 minimum resolution.
LAN Speed	Minimum 100Mbit/s; 1000Mbit/s recommended, especially for video.
Database software	<p>Either of the following (on a Symmetry server only):</p> <ul style="list-style-type: none"> • Microsoft SQL Server 2012 Express (with SP2). • Microsoft SQL Server 2014 Express (with SP1). <p>Note: SQL Server 2014 Express can be installed during the installation of Symmetry. SQL Server 2012 or 2014 Express is used if pre-installed.</p>
Disk Space	<p>A typical hard disk in a modern PC should easily accommodate the Symmetry disk requirements. The minimum disk space required is:</p> <ul style="list-style-type: none"> • Business/Professional Edition server: 30GB. • Symmetry client (any edition): 1GB. • Symmetry NVR: 1GB for Symmetry use, excluding video storage. Additional network storage may be needed to store recorded video.
Optional Hardware/Software	See page 11.

Symmetry Enterprise Server

Note: Also refer to *Maintaining Symmetry NVR or Video Performance* (page 10) if the computer is also being used as a Symmetry NVR or to view video.

Item	Requirement
Operating System	Any of the following: <ul style="list-style-type: none"> 64-bit Windows Server 2012 (Standard Edition). 64-bit Windows Server 2012 R2 (Standard or Datacenter Edition).
Processor	Minimum Intel Xeon E3-1270v2 4C/4T @3.5GHz 8M cache (or equivalent).
Memory	Minimum 8GB RAM.
Optical Drive	The Symmetry software is supplied on a single-layer DVD.
Monitor	1280 x 1024 minimum resolution.
LAN Speed	Minimum 100Mbit/s; 1000Mbit/s recommended, especially for video.
Database software	A "full" version of Microsoft SQL Server must be installed on the Symmetry server or on a separate database server before the Symmetry software is installed. The following versions of Microsoft SQL Server are supported: <ul style="list-style-type: none"> 32-bit or 64-bit SQL Server 2012 Standard, Business or Enterprise Edition (with SP2). 32-bit or 64-bit SQL Server 2014 Standard, Business or Enterprise Edition (with SP1). <p>Note: SQL Server must be purchased separately. Please check the Microsoft web site for compatibility with the chosen operating system.</p>
Disk Space	A typical hard disk in a modern PC should easily accommodate the Symmetry disk requirements. The minimum disk space required is: <ul style="list-style-type: none"> Enterprise server: 30GB if the database is on the Symmetry server, or 10GB if a separate database server is used. Symmetry NVR: Additional 1GB for Symmetry use, excluding video storage. Additional network storage may be needed to store recorded video.
Optional Hardware/Software	See page 11.

Separate Database Server (Enterprise Edition only)

If a separate database server is used, Symmetry supports the same Microsoft SQL Server editions as supported for an Enterprise server.

The operating system used can be any Windows operating system supported by the edition of Microsoft SQL Server selected.

The machine hardware requirements are dependent on the number and type of database applications being served by the database server, but should not be less than specified for a Symmetry Enterprise server. A minimum of 20GB of disk space should be reserved for Symmetry use.

Maintaining Symmetry NVR or Video Performance

The Symmetry client machine specification is the minimum requirement for a Symmetry NVR. However, the Symmetry Enterprise Server specification is highly recommended, since this allows for easy future expansion and provides greater performance and hardware resilience for installations that have extensive video requirements.

Symmetry NVR Operation

To maintain performance at a computer with the processor and memory specifications of a Symmetry client machine:

- a) The combined simultaneous recording bit rate of an NVR should not exceed 85Mbits/s, and the combined simultaneous playback bit rate should not exceed 97Mbits/s (182Mbits/s total).

For example, 10 cameras, each being recorded simultaneously at 8.5Mbits/s, and at the same time, 10 recordings, each being played back simultaneously at 9.7Mbits/s.

- b) A more powerful hardware platform may be required if the NVR is installed on the Symmetry server or on a client, depending on system usage.

Each NVR supports a maximum of 80 cameras (with a maximum combined simultaneous recording bit rate of 85Mbits/s as described above).

Each NVR supports a maximum of 28 concurrent playback streams. Since each Symmetry client can display up to 4 video recordings in the Video Playback screen, each NVR can serve up to 7 Symmetry clients concurrently.

Live Video Display or Playback

To maintain performance at a computer with the processor and memory specifications of a Symmetry client machine:

- a) The total maximum bit rate for combined live and playback streams at each Symmetry client should not exceed 40Mbits/s.
- b) A more powerful hardware platform may be required if live or recorded video is to be displayed at a Symmetry server or NVR, depending on system usage.

Network Requirements for NVR Operation

Networks that suffer from high levels of latency, packet loss or other conditions can result in video loss or corruption. It is therefore important to use only high-quality network components and to test performance thoroughly before the system goes "live".

The NVR and all cameras should be time-synchronized to the same network time server to ensure accurate recording times and clip search results. All cameras assigned to an NVR should be in the same time zone as the NVR. In cases where the installation requires more than one time zone, a separate NVR should be used for each time zone.

Ports need to be opened in firewalls to enable the NVR to record video. Ports may also need to be opened for cameras to stream video or send events. For further information, please refer to Appendix E or the camera manufacturer's documentation.

Local disk drives or UNC paths can be used for video repositories. It is recommended that UNC rather than mapped drives are used. The data transfer rate of each disk drive must be able to manage the potential amount of data being simultaneously written and read. (Typically, a 7200 RPM HDD has an average data transfer rate of 100 Mbytes per second, which should comfortably manage all but extreme situations).

Video Playback in VMware Environments

It is not recommended to run the NVR in a VMware environment unless significant machine resources are made available to achieve acceptable performance. For further information, please refer to *VM Performance & Limitations* in the document titled *Guide to Running Symmetry inside a VMware Environment* (9600-2222).

When deploying Symmetry in a VMware environment, it is essential that the performance of the Symmetry system is fully proven before the system goes "live".

Disk Type

Solid-state drives are recommended, particularly when continuous recording of video is required. Select drive models that have proven performance and reliability.

For a Symmetry clustered solution, hard drive storage in RAID 5 (or 6) configuration is recommended.

Optional Hardware/Software

This section specifies optional hardware and software supported by Symmetry.

Note: Before installing Symmetry, please ensure that any required third-party drivers (or applications) are compatible with the version of Windows you intend to use. This is particularly important for 64-bit operating systems, which require drivers written specifically for those operating systems.

Further guidance for third-party integrations supported by Symmetry can be obtained from your local technical support representative.

Email Integration

If emails are to be used for alarm reporting, workflow events, visitor arrivals or reports, a connection to an SMTP mail server is required. Fully test operation before completing system deployment.

COM Ports

A card providing two additional ports (COM3 and COM4) may be required, depending on the number and type of chains and other peripherals connected to the client. If such a card is used, COM3 and COM4 must use unique interrupts and must be high-speed asynchronous ports that use the 16550AN UART.

Printer

Any Windows-compatible printer can be used, including network printers.

Card Encoder

The following encoders are supported:

- Standalone Cardman 5x21. This provides support for Mifare Plus cards and the latest Classic MIFARE cards supporting 7 bit UID (driver provided on Symmetry installation media in Symmetry\Extras).
- Standalone MIFARE Pegoda (driver provided on Symmetry installation media in Symmetry\Extras).
- GEMPLUS contact/contactless encoder for MIFARE cards, when integrated with Fargo badge printers.

Magstripe Encoder Unit

Required only if encoding magstripe cards. Use a Model MSR206-7HL encoder. The previous model 712E HC encoder remains supported.

Note: A magstripe encoder requires a client port to be set up in the "Install/System/Client Ports" screen of the Symmetry software.

Card Scanner

Scanshell 800 scanner, from Card Scanning Solutions. 64-bit Windows-compatible versions of the software are available from the manufacturer's web site.

Signature Pad

Transaction Team 1500. Use only for RS-232 connection.

Mobinetix PenWare1500. Use only for RS-232 connection.

Topaz Signature GEM pad model T-S751-B-R (serial connection signature pad).

Topaz Signature GEM pad model T-S261-HSB-R (USB connection signature pad).

Note: You need to set up an ini file for a Topaz USB signature pad. Please refer to the online help for the "Install/System/Client Ports" screen.

Video Capture

A video capture card is required at any PC where card holder pictures or signatures are to be captured for printing on a badge. The card should have at least 128MB of memory and must be configured as described on page 41.

A compatible Web camera may be used, or an AXIS camera using the AXIS DirectX driver. It is not possible to use cameras connected to a DVR or EN-9000 Series video server to capture card holder pictures and signatures.

Badge Printers

Appendix C provides advice on how to configure badge printers for use with Symmetry.

Automatic Updates

Please be aware that in general, automatic updates to the Windows operating system or other software result in no loss in performance or operation of Symmetry. However, to ensure complete compatibility, please ensure that either only those versions of the software documented in this chapter are used, or contact your local technical support representative to confirm whether newer versions have already been approved for use.

Chapter 2: Pre-Installation Tasks

This chapter describes the tasks that must be carried out before you install Symmetry. Some tasks will need to be carried out by another person if you do not have sufficient privileges.

A checklist for pre-installation tasks using a separate database server is provided in Appendix G.

Step 1 – Check Network Configuration and Performance

A static IP address must be used for:

- A Symmetry server (including a database server) if NEC clustering is used.
- A Symmetry server if cameras are assigned to a Symmetry NVR (irrespective of whether the NVR is the Symmetry server or a separate machine).
- Any Symmetry machine that communicates with a LAN chain, where the connection type for any node on the chain node is configured as "Periodic" or "Continuous - connection established by Controller".

Computer names should not use the underscore character, as some applications may not operate correctly if any part of the name contains an underscore character.

Note: If a separate database server is used, it is essential to use only high-quality network components and to test network performance prior to installing Symmetry. Various third-party tools are available to carry out such tests. Packet loss and latency between the Symmetry and database servers may have a significant impact on performance. A latency of greater than 2mS may cause significant degradation to Symmetry performance in some areas of the software.

Ports will need to be opened in firewalls to enable Symmetry to communicate, depending on the software used and system configuration. Appendix E provides further information.

Step 2 – Obtain Permissions to Install Symmetry

Symmetry Server and Client Permissions

To install Symmetry, you will require local administrator permissions to the Symmetry server and to any separate Symmetry client PCs.

Database Server Permissions

If a separate database server is being used, installation may be easier if you have local administrator privileges to the database server. If you are not given these privileges, you will need a user who has those permissions to:

- Install and configure SQL Server (Steps 7 and 8).
- Give you database administrator permissions to the SQL server instance (Step 9a).
- Create a share to the SQL backup folder, making sure that you and the Symmetry services account have "Read" and "Change" permissions to it (Step 9c).

Domain Permissions

If a domain is used, obtain an Active Directory account to install Symmetry. Installation is simplified if you have domain administrator privileges, which may also give you local administrator permissions to all other computers.

If you do not have domain administrator permissions, you will need to ask the domain administrator to carry out the following:

- Create the Symmetry ACS groups (Step 3).
- Create the Symmetry services account and add it to the ACSAdmin group (Step 4).
- Add any user who needs to use Symmetry to the ACSUsers group (Step 5).

Step 3 – Create ACS Groups (domain only)

If Symmetry is being installed on a domain, "ACSUsers", "ACSAdmin" and "ACSGuest" groups need to be created in the Active Directory by a domain administrator prior to installing Symmetry. Different group names may be used, if preferred.

If you are installing in a workgroup, the groups can be created automatically.

Please refer to page 57 for details of the required group privileges.

Step 4 – Choose the Symmetry Services Account

During the installation of Symmetry on the server and on each client, you are prompted for the name of an account that will run the Symmetry services on that machine. You are given the option to use:

- The built-in Local System account (Symmetry server only). You should use this only if you are installing Symmetry on a single computer, since named accounts are preferred for a client/server solution. The Local System account must not be used if you are using any of the following:
 - Printers for use with scheduled or muster reports.
 - The "Operation/Data/Backup" screen, when the backup is sent to a different computer (a named account is needed to access the backup destination specified in the Backup screen).
- A named account, created before you install Symmetry.

If you are installing in a workgroup, you can create the account yourself, since you will have local administrator rights. If you are installing in a domain, a domain administrator will need to create an account in the Active Directory.

The account used at Symmetry clients must be the same as used at the Symmetry server. The password and account must be set not to expire.

Permissions for a Named Services Account

If you are installing in a workgroup, the services account is automatically assigned to the local Administrators and ACSAdmin groups.

If you are installing in a domain, a domain administrator must assign the services account to ACSAdmin before installation. The services account is automatically assigned to the local Administrators group.

Step 5 – Assign Users to ACSUsers

All users who need to use Symmetry must be assigned to the ACSUsers group. This can be carried out before or after installation. If you are using a domain, a domain administrator will need to do this.

Step 6 – Install .NET 3.5

Symmetry and SQL Server Express require .NET 3.5 (even if a later version is also installed). If .NET 3.5 is not already installed, you can normally install it by adding the Windows feature. For example, for Windows 7:

1. Open the Windows Control Panel.
2. Open **Programs and Features**.
3. Click **Turn Windows features on or off**.
4. Make sure **Microsoft .NET Framework 3.5.1** is enabled.
5. Save changes.

For operating systems later than Windows 7, you will need internet access. If internet access is not available, you can install .NET 3.5 as follows using the Windows installation media:

1. Open a command prompt using administrative privileges.
2. Enter:

```
Dism /online /enable-feature /featurename:NetFx3 /All /Source:F:\sources\sxs /LimitAccess
```

Where F: is the location of your Windows installation media.

3. Close the command prompt.

Step 7 – Install SQL Server

SQL Server Express

Symmetry Business and Professional Editions must use only the Express version of SQL Server. You can install SQL Server 2014 Express during the installation of Symmetry. If you want to use SQL Server 2012 Express, make sure that it is installed on the Symmetry server before installing Symmetry.

If you are installing SQL Server Express as part of the Symmetry installation, a default instance of SQL Server Express is installed. If you want to pre-install SQL Server Express, a default or named instance can be used. If the machine has one or more named instances, you are prompted to choose the instance to use during Symmetry installation.

Note: Make sure any unsupported version of SQL Server Express is removed or upgraded before you start to install Symmetry.

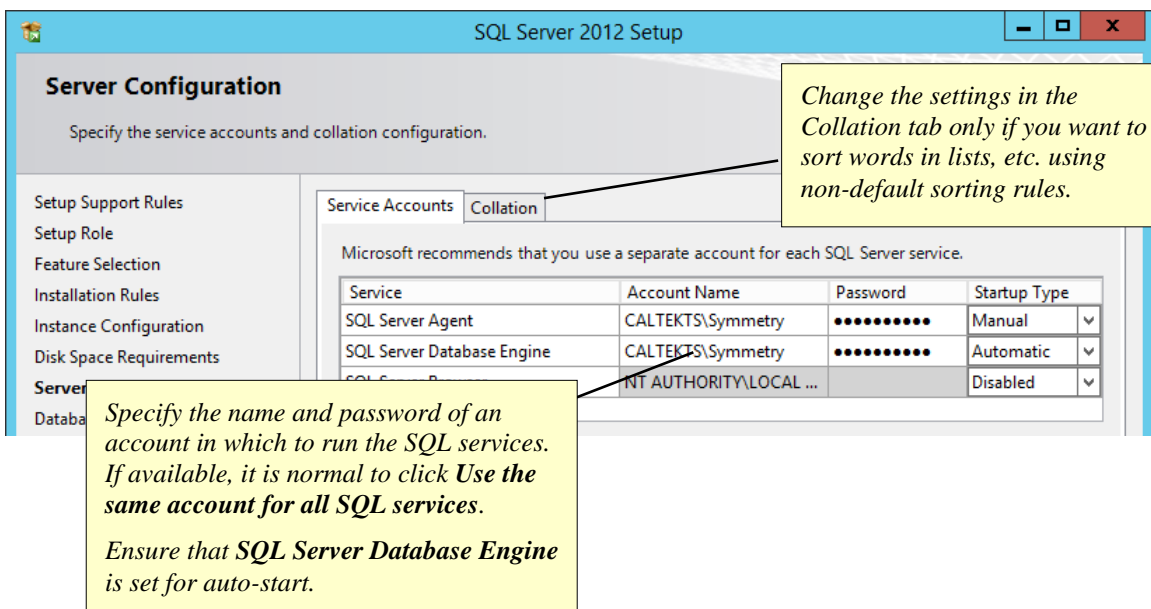
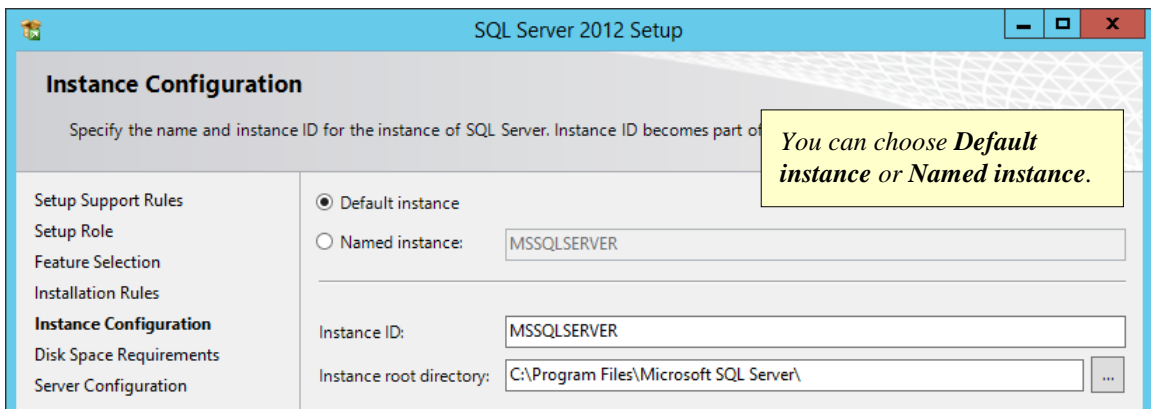
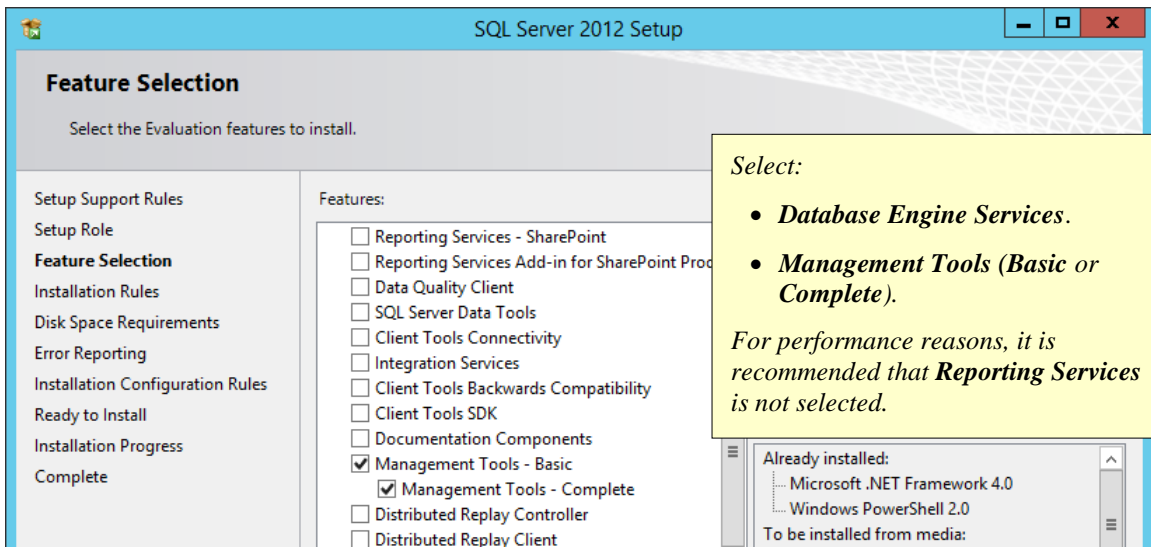
Note: If SQL Server Express is pre-installed, it is recommended that SQL Server Express is configured to use **windows authentication** (before Symmetry is installed).

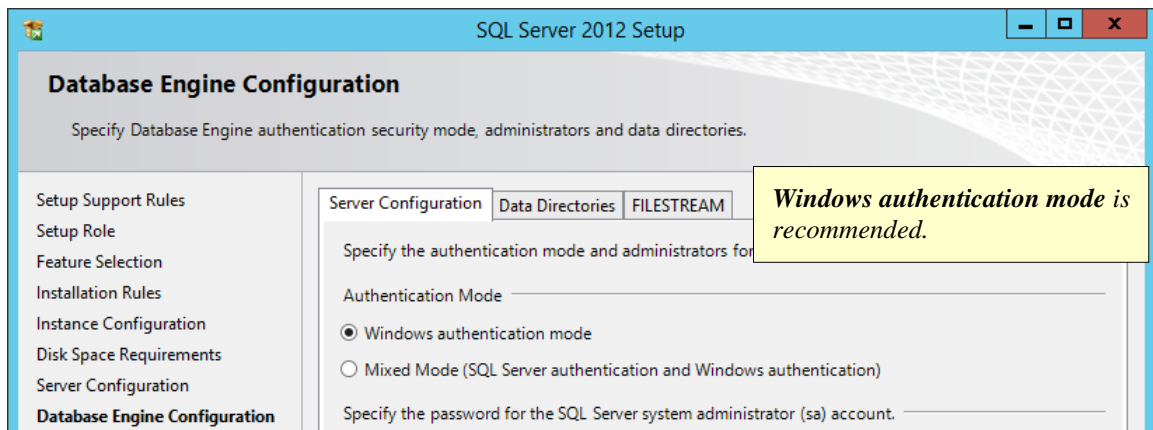
SQL Server (Full Version)

The full version of SQL Server must be used only for Symmetry Enterprise system. Before installing Symmetry, make sure that SQL Server and the appropriate service pack are installed on the Symmetry server, or if applicable, on the separate database server.

When using a separate database server, it is allowable for the computer to contain other instances of SQL Server for other third-party applications. Please ensure that the performance of Symmetry will not be compromised; a higher-specification computer may be necessary.

Note the following when installing SQL Server (SQL Server 2012 shown).





Step 8 – Configure SQL Server

Carry out the following on the machine that is to hold the Symmetry database. That is, on the Symmetry server or separate Symmetry database server (Enterprise Edition only), as appropriate. You do not need to follow this step if you are installing SQL Server Express as part of the Symmetry installation.

Step 8a – Enable the TCP/IP Protocol

If a named instance of SQL Server is being used, enable the TCP/IP protocol for the SQL Server instance using SQL Server Configuration Manager (unless the site has other requirements).

Step 8b – Configure the Firewall for SQL Server

Symmetry uses standard SQL Server firewall configuration settings; there are no additional settings required specifically for Symmetry.

There are several ways to configure the firewall for SQL Server, depending on site security requirements and whether a named or default instance of SQL Server is being used. If **Default instance** was selected during the installation of SQL Server, it is normal to open TCP port 1433 in the firewall. If **named instance** was selected, one approach is to add both of the following to the firewall exceptions:

- sqlservr.exe (e.g. in Program Files\Microsoft SQL Server\MSSQL11.<InstanceName>\MSSQL\Binn)
Note: Each instance of SQL server has a separate sqlservr.exe.
- UDP port 1434 (for SQL Browser)

Note: If you are installing Symmetry in a cluster, the firewall must be configured on both nodes in the cluster.

For detailed information about firewall configuration, please refer to the Microsoft web site. At the time of writing this manual, appropriate information was available in the web page titled "Configure the Windows Firewall to Allow SQL Server Access", available at:

<http://technet.microsoft.com/en-us/library/cc646023.aspx>

Step 8c – Configure the SQL Server Browser Service

It is recommended that windows authentication is used for SQL Server. However, if mixed-mode (SQL Server) authentication is used, you will need to make sure that the SQL Server Browser service is configured to start automatically.

Step 9 – Set up a Separate Database Server

If you are using a separate database server, the following tasks must be completed at the database server before you install Symmetry. These tasks can be carried out only by someone who has local administrator privileges to the database server.

Step 9a – Assign Database Administrator Privileges to Installer's Account

The user who installs Symmetry requires database administrator privileges. This can be achieved in one of two ways:

- a) By adding the domain account that is going to be used to install Symmetry to the sysadmin role in SQL Server Management Studio. This is the preferred method.
- b) By giving the installer of Symmetry an SQL Server administrator login name and password (for SQL authentication). This requires the SQL Server instance to have "mixed mode" authentication enabled (that is, Windows and SQL Server authentication). Note: For security reasons, mixed-mode authentication is not recommended.

Step 9b – Enable Network Discovery

It is necessary to enable **Network discovery** on the Symmetry server and on the database server to enable the database instance and shared backup folder to be selected during the installation of Symmetry. **Network discovery** can be enabled in the Network and Sharing Center of the Windows Control Panel.

Step 9c – Create and Share a Backup Folder

You need to create a backup folder and share it to the account that is going to be used to install Symmetry and to the Symmetry services account. Carry out the following:

1. Enable **File sharing** on the database server, such as through the Network and Sharing Center of the Windows Control Panel.
2. Create a folder for Symmetry backups.

Note: Remote machines are not able to access C:\Program Files... or administrative (C\$) shares without elevated privileges. The backup folder must be in an accessible location (e.g. at the top level of the C drive).

3. Right-click the folder, select **Properties** and set up an advanced share. Installation of Symmetry is easier if you use the standard share name of "SymmetryBackup", but you can use an alternative name if you wish.

Make sure that the Symmetry services account, the SQL services account and the account that is going to be used to install Symmetry have "Read" and "Change" permissions to the share.

4. **IMPORTANT:** Using SQL Server Management Studio, change the backup path to the shared folder. To do this, right-click the SQL Server instance, select **Properties**, then **Database Settings** and change the **Backup** field.

During the installation of Symmetry, a series of "Backup Devices" are created for each database under **Server Objects** in SQL Server Management Studio. Each backup device includes the backup path. Since Symmetry uses these backup devices to determine where to place the backups, it is important to change the backup path as described above before Symmetry is installed.

Step 10 – Check Windows Time Service Configuration

The Windows Time Service is installed by Windows. Its purpose is to allow synchronization of date and time of computers running on a Windows network. It is a fully-compliant implementation of the Simple Network Time Protocol (SNTP).

It is recommended that an SNTP server is used to synchronize the time at all Symmetry servers and clients. Care should be taken to ensure that the frequency of the time changes will not disrupt system performance.

The Windows Time Service (W32time) starts automatically on computers that are joined as part of a domain. For computers belonging to a peer-to-peer workgroup, the Windows Time Service synchronization settings must be manually set up in the computer's registry.

If you do not have sufficient privileges to check Time Service configuration, please refer to an appropriate system administrator.

Step 11 – Check Printer Configuration

If scheduled or muster reports ("Reports/Configuration/Predefined Reports" and "Home/Identity/Muster") are to be generated, make sure that the printer is available for:

- The user account that will be used to set up the reports.
- The Symmetry services account (for a workgroup, on each client where scheduled reports are to be generated).

If more than one printer is used, they must be installed in the same order in both accounts.

Step 12 – Obtain Symmetry Licenses

Make sure that you have a license serial number for each product you are going to install. You need a serial number for the Symmetry server, the clients and each optional feature (such as additional readers or the intrusion management module).

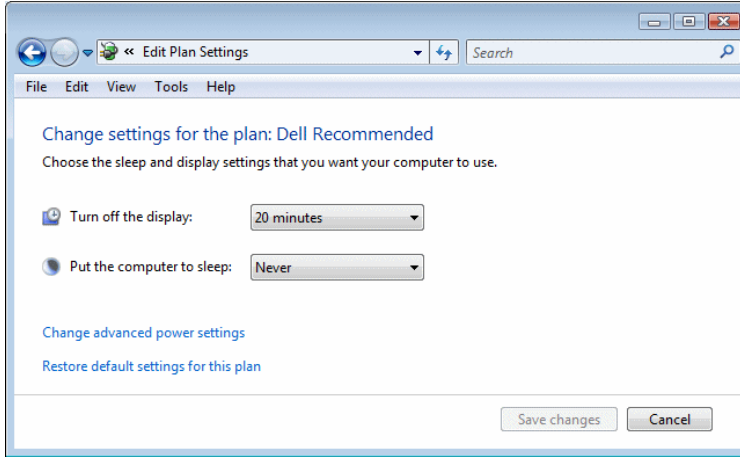
Step 13 – Disable Database Optimization Software (if used)

It is recommended that database optimization applications either exclude the Symmetry database or be completely disabled.

Database optimization software may change the structure of the Symmetry database. If carried out on a live system, this can cause Symmetry to fail and require a restart of the server and all clients. In addition, when the database optimization is taking place, it acquires write access to the database and the associated tables, which may prevent Symmetry from writing to the database.

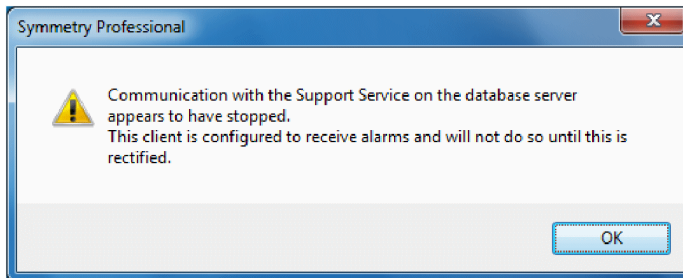
Step 14 – Set Power Options

On the Symmetry server, switch off sleep or hibernate mode in the **Power Options** of the Windows Control Panel. For example:



*Select **Never** for **Put the computer to sleep**. Also click **Change the advanced power settings** and choose for the hard disk never to switch off.*

Note: Failure to set the power options may result in the following error message:



(Note: "database server" means the Symmetry server.)

Chapter 3: Quick Install Instructions (Single-Machine Installation)

Introduction

If you are going to install Symmetry on a single machine using SQL Server Express, installation is extremely straightforward and normally requires selection of the default settings. This chapter explains the normal installation process, which covers most cases.

Chapter 4 provides full details of the installation prompts.

Installation

To install the Symmetry software on a single machine

1. Log in with Administrator privileges at the Symmetry server.
2. Insert the Symmetry installation media and wait for the installation wizard to start. If it does not start, double-click SymmetrySetup.exe, which is located in the top-level folder of the media.
3. Select the **SQL Express** and **Symmetry** checkboxes. Also select **Symmetry Network Video Recorder** if you want to install the Symmetry NVR.
4. Follow the prompts, selecting the defaults in all cases where provided.

Starting Symmetry

1. Start Symmetry from the Start/Programs/Security Management System menu or from the desktop icon:



2. When prompted, log into Symmetry. The default username and password for the installer are "installer" and "install" respectively.

Chapter 4: Installing Symmetry

Introduction

This chapter gives full details of how to install the Symmetry server and client software. Quick Install Instructions are given in Chapter 3.

Overview of Installing Symmetry

1. Install the main Symmetry server and client software on the server (see the next section).
2. If you have chosen to install the Symmetry NVR, also follow the instructions on page 34.
3. If required, install the relevant Language Pack on the Symmetry server (page 30).
4. If required, install the Symmetry client software on any additional client PCs (page 31). The client software is installed by default on the Symmetry server (except on a cluster).

Installing the Symmetry Server Software

Note: Before you start, follow the pre-install instructions given in Chapter 2.

To install the Symmetry on the server:

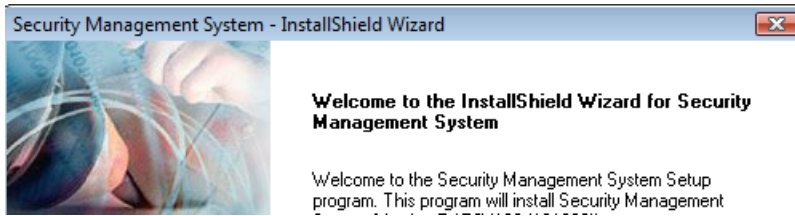
1. Log in with administrator privileges at the Symmetry server (see page 13 for further details of privileges required).
2. Insert the Symmetry installation media and wait for the installation wizard to start. If it does not start, double-click SymmetrySetup.exe, which is located in the top-level folder of the media.
3. Choose the product(s) to install, as shown next.



Select this only if you are installing Business or Professional Edition and SQL Server Express is not already installed.

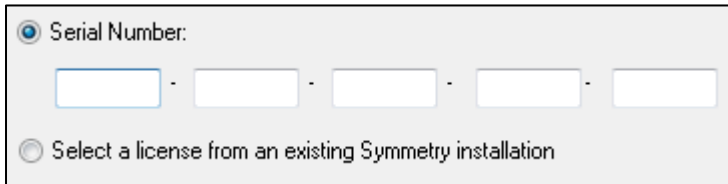
If selected, installation of the NVR software takes place once installation of the main Symmetry software is finished. See page 34.

4. **Welcome** – Click **Next** at the Welcome screen:



5. **Software License Agreement** – Read the license agreement. Select **I accept...** and click **Next** if you agree.

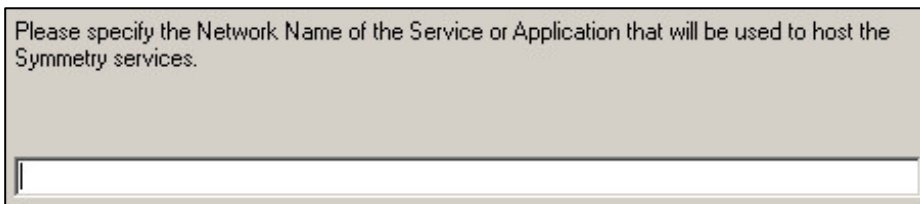
6. **Licensing Information:**



If this is a new installation (not an upgrade), choose **Serial Number**, enter the serial number of the product (as found on the Software License Certificate), then click **Next**.

If this is an upgrade, choose **Select a license from an existing Symmetry installation**, then click **Next**. Please refer to the *Symmetry Upgrade Guide*.

7. **Resource Network Name** (Microsoft Cluster only): The following is displayed if you are installing on the active node of a Microsoft cluster:



Please refer to the *Cluster Installation Manual* for details of this prompt.

8. Database Server:

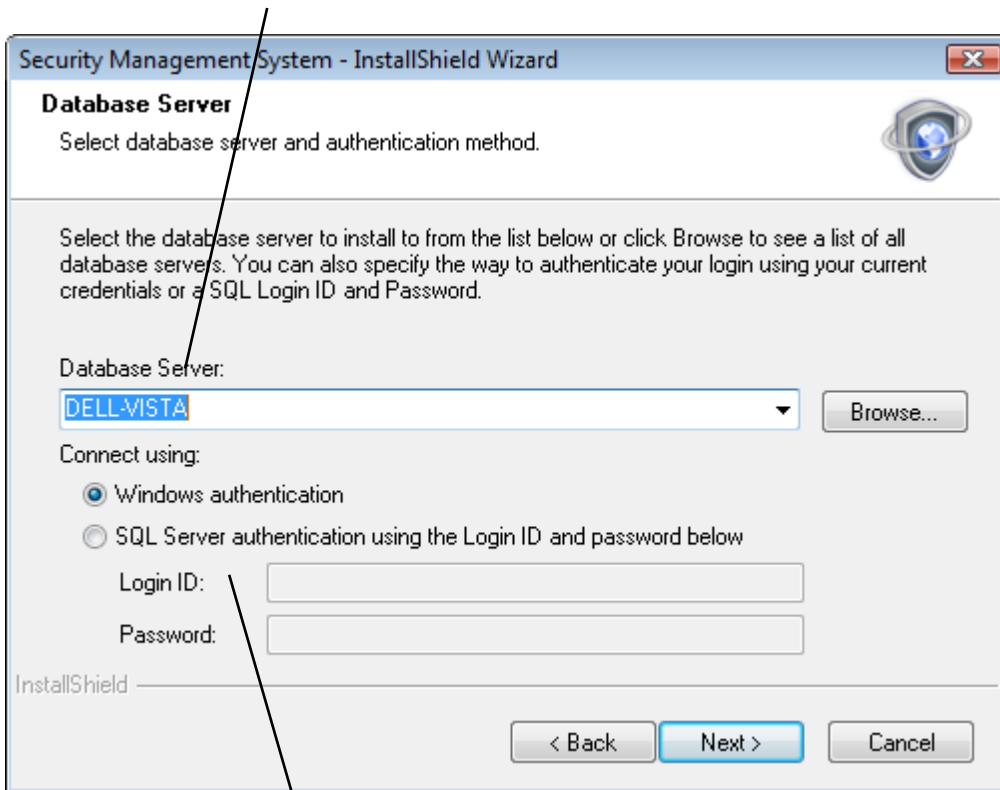
Use the **Database Server** menu or **Browse** button to choose the SQL server instance you want to use.

Note:

- For Enterprise Edition, you can choose the computer that you are currently using (the Symmetry server), or an instance on a separate database server.
- If login fails, make sure that TCP/IP is enabled (see page 17).
- If you are using a fixed port for your database instance, it is necessary to include the port number in the format:

<SQLServerName>\<InstanceName>,<PortNumber>

For example, MySQLServer\SymmInstance,6532



Connect using specifies the authentication method used to connect to the database server to install the Symmetry databases. It is recommended to use **Windows authentication**.

You can use **SQL Server authentication** (irrespective of whether SQL Server Express or full SQL Server is used), but please note:

- The authentication method is used only to set up the database; Windows authentication is always used between the Symmetry server and database server during day-to-day operation.
- To use **SQL Server authentication**, the SQL server instance must have "mixed mode" authentication enabled, and you will need the login ID and password for the administrator account defined within the SQL Server instance. For further information, refer to Step 9a on page 18.

9. **Database Backup** (Enterprise only) – The following is displayed if you are using a separate database server. Select the share to the SQL backup folder (see page 18). The folder is used as a temporary store of backups before they are sent to the network location specified in the "Operation/Data/Backup" screen.

10. **Registration Details** – Enter your details, and click **Next**.

11. **Setup Type** – Choose **Typical** or **Custom**:

If you choose **Custom**, you will have complete control over system configuration. Choosing **Typical** will cause defaults to be used for some settings. You must choose **Custom** if you intend to use any of the following:

- Data import/export using a text file (if your license allows this).
- Smart card readers.

12. **Database and Component Selection** (Custom only, for Business/Professional Edition) – If SQL Server Express is being installed, select the folder in which to install SQL Server Express and the Symmetry database:

13. **Application Folder** (Custom only) – Select the folder in which to install Symmetry on the server:

Data Folder: If you are performing an installation on the active node of a cluster (see the *Cluster Installation Manual*), an additional **Browse** button is displayed for a **Data Folder**. The folder is used as the root to store import, export, script and video files. For Microsoft clustering, the folder must be on the shared storage device, not on the quorum.

14. **Services Account Configuration** – Specify the account in which to run the Symmetry services (as determined in Step 4 on page 14):

Use Local System Account is available only if the Symmetry database is going to be on the Symmetry server (i.e. you are not using a separate database server). You should normally select this option only if you are installing Symmetry on a single computer, since named accounts are preferred for a client/server solution. **Local System Account must not** be used if you plan to use any of the following:

- Printers for use with scheduled or muster reports.
- The "Operation/Data/Backup" screen, when the backup is sent to a different computer (a named account is needed to access the backup destination specified in the Backup screen).

Use this account allows you to choose an existing account to run the services. Specify a domain account if Symmetry is to run in a domain [see Note 1]. Specify a local account if Symmetry is to run in a workgroup.

If the account is local, it will be automatically assigned to the ACSAdmin and local Administrator groups. If a domain account is used, it will be automatically assigned only to the local Administrator group; you should have already assigned it to ACSAdmin (see page 14).

15. **Group Account Configuration:**

Configuration of the above is dependent on whether you are using a local or domain account for the Symmetry services, as described next.

Local Account used for Symmetry Services (normally workgroup only)

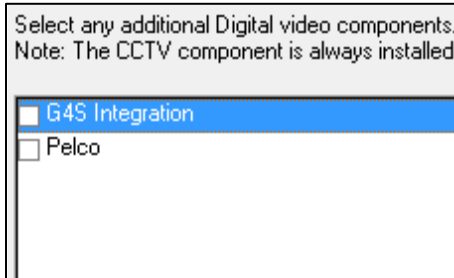
If you have chosen the Local System or a local named account for the Symmetry services in the previous screen, select the local machine from the **Group Location** menu. You can then select the existing groups already set up on the local machine, or type group names directly into the fields and they will be created for you.

Note 1: It is allowable to use a local account if Symmetry is to run in a domain, but the same account must be used for Symmetry services at clients, so there is probably no advantage in using a local account. It is better practice to use a domain account if a domain is used. If you are on a domain and choose **Use Local System Account** or specify a local account, you are indicating that you do not wish to use domain-level users and groups and therefore will not be able to choose domain groups in the next screen.

Domain Account used for Symmetry Services

If you specified a domain account for the Symmetry services in the previous prompt, you should normally select the domain you are using from the **Group Location** menu [see Note 1]. You can then select the existing groups already set up on that domain. If you do not have permissions to see the group names, you can type the existing group names directly into the fields, but in this case, it is **essential** to make sure the spelling is exactly the same as the group names already defined in the domain.

16. **Select Features** – If applicable, select the type of Digital Video Recorder (DVR) you are using, if any:

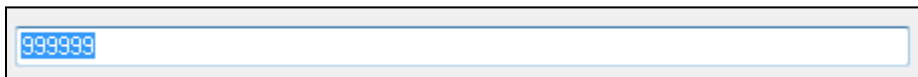


Only one DVR type per Symmetry installation is supported, including DVRs from the same manufacturer.

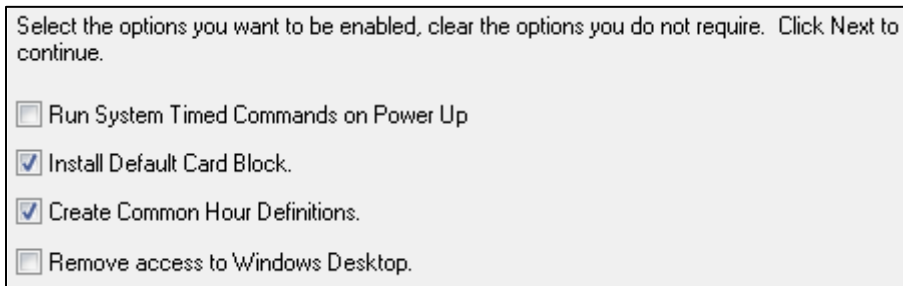
You may see other recorders in this dialog.

Other prompts may be displayed, depending on the DVR installed.

17. **Enter text** (Custom only) – If you have been supplied with a facility/customer code to be encoded on your company's cards, enter it now. If you have not been supplied with a customer code, use the default of 999999.



18. **Your Computer Configuration** (Custom only) – Select the required options:



Run System Timed Commands on Power Up – This option determines what happens to scheduled commands stored on the server if it has been shut down, then restarted (e.g. after a power cut). If you select this option, any overdue scheduled commands stored on the server are actioned when the Symmetry services are restarted. The server stores scheduled commands if, for example, there is insufficient memory in a node or if the timed command relates to an auxiliary output group or CCTV switcher unit.

Install Default Card Block – This option is relevant only if the access cards to be used do not have an encoded customer code. In these cases, the "Setup/Identity/Card Blocks" screen must be used to define the ranges of cards being used. Selecting this option causes the "Setup/Identity/Card Blocks" screen to include default card block definitions (although you may want to review these during system configuration).

Note 1: When a domain account is used for the Symmetry services, other selections from the **Group Location** menu are available in order to handle unusual architectures or requirements, but should not be used without technical guidance.

Create Common Hour Definitions – If this is selected, the "Operation/Times/Hours" screen will include default Hours definitions. These can help access rights to be set up more quickly during system configuration.

Remove access to Windows Desktop – If this is selected, no Windows desktop will appear and Symmetry will start automatically if the Windows user specified in the "Maintenance/User & Preferences/Client Preferences" screen logs in to Windows. **Note:** To prevent a user from accessing the Windows desktop, also deselect **Enable Logon Cancel Button** in the "Maintenance/User & Preferences/Client Preferences" screen.

19. **Data Import Configuration** (Custom only) – This is displayed only if the license includes "Data Connect". Select the appropriate option for card data imports, as used by the "Operation/Data/Data Import" screen:

A screenshot of a configuration window with three radio button options. The second option, "Import from SQL Server Database [Default]", is selected.

Note: You will need to install a Data Connect license to use Data Import or Data Export, unless you are installing Enterprise Edition.

20. **Data Export Configuration** (Custom only) – This is displayed only if the license includes "Data Connect". Select the appropriate option for card data exports, as used by the "Operation/Data/Data Export" screen:

A screenshot of a configuration window with three radio button options. The second option, "Export to SQL Server Database [Default]", is selected.

You can choose to disable data export, export into an SQL Server database, or export to a text file for the transfer of card details from one system to another (Symmetry must be the same version on both systems).

21. **Smart Card Configuration** (Custom only) – If a GEMPLUS, Cardman 5x21 or Mifare Pegoda encoder (or printer/encoder) is to be used at the client for smart card encoding, select it next. The setting is irrelevant if another type of encoder is being used.

A screenshot of a configuration window with five radio button options. The fourth option, "Cardman 5x21 Encoder", is selected.

*For a Fargo HDP600, DTC400 or DTC550 printer/encoder, choose **GEMPLUS Contactless**. For a Fargo HDP5000, choose **Cardman 5x21 Encoder**.*

Note: Windows plug and play drivers for contact smart-card /encoders must be disabled after installation, as described on page 39.

22. **Start Copying Files** – Click **Next** to begin installation.
 23. Wait for installation to complete. You may be prompted to restart the computer.

Note: During the installation of SQL Server Express (if applicable), you may see the progress bar completing many times. This is normal.

24. When prompted, register the software:

Serial Number:	H463-ZQ3N-76314-6BZW-15H4
Registration Key:	H4-1497-21B9-97B3-EBZ8-21
You must register Symmetry.	
Online Registration	
If this machine has access to the internet:	<input type="button" value="Register Online"/>
Offline Registration	
Obtain an activation code at:	https://register.g4stechnology.com
The user name and password are shown on your Software License Certificate.	
For telephone assistance with the licensing process or for cases where no internet access is available call one of the following numbers:	
<ul style="list-style-type: none"> ▫ Continental America call 1-800-889-9138 between 6am and 5pm Pacific Standard Time [Mon-Fri]. ▫ Rest of World call +44-1684-277257 between 9am and 4pm Greenwich Mean Time [Mon-Fri]. 	
Enter your Activation Code here:	<input type="text"/> - <input type="text"/> - <input type="text"/> - <input type="text"/>
<input type="button" value="Register Now"/>	
Register Later	
You must enter an Activation Code to register	<input type="button" value="Register Later"/>

You need to obtain an activation code to activate Symmetry. You can obtain the activation code in one of the following ways:

- Automatically over the internet by clicking **Register Online**. Note: A license can be activated online up to three times before needing to be reset by Customer Support.
- By clicking the link. You will be prompted to log in and register your details. The login username and password are provided on the Software License Certificate. You will need the Serial Number and Registration Key displayed near the top of the dialog.
- By phone using one of the numbers displayed.

If you click **Register Later**, you have up to 21 days to enter the activation code in the "Maintenance/Licensing/System Licenses" screen.

When you have the activation code, write it down in the space provided on the Software License Certificate.

25. Click **Finish** and follow the prompts.

If you have also chosen to install the Symmetry NVR, follow the instructions in the next section.

Installing a Language Pack

If you require Symmetry to use a language other than English (e.g. for the option names displayed in menus, text in screens, help, etc.), you must install the appropriate Language Pack on the server following installation of the server. It is allowable to install the Language Pack after the system has been in use.

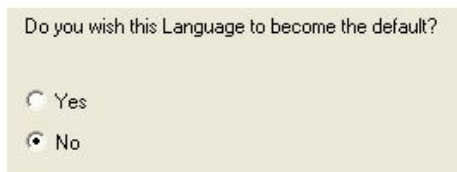
You can install more than one Language Pack, and choose which one to use as the default in the "Maintenance/User & Preferences/System Preferences" screen of the Symmetry software.

Although there is a default language, the "Maintenance/User & Preferences/Accounts" screen allows each user to use any one of the installed languages.

Install Language Packs only on the server - clients are updated automatically. To install a Language Pack:

1. Insert the Language Pack installation media. French, German and Spanish language packs are available on the same media you used to install Symmetry; others are available on separate media.
2. Double-click Setup.exe on the installation media and follow the prompts.

If you select **Yes** to the following prompt, the default language used by Symmetry will be set to the language you are currently installing. If you are installing the Language Pack after Symmetry has been in use for some time, and select **Yes** to this prompt, any existing users of Symmetry will have their language set to this language.



Installing Symmetry Client Software

Follow this section if you want to install only the Symmetry client software. Note the following:

- The Symmetry server must have been installed already.
- The client software is installed by default on the server, except on cluster installations.

Note: Before you start, follow the pre-install instructions given in Chapter 2.

To install the Symmetry client software:

1. Log in with administrator privileges at the Symmetry client (see page 13 for further details of privileges required).
2. Insert the Symmetry installation media and wait for the installation wizard to start. If it does not start, double-click SymmetrySetup.exe, which is located in the top-level folder of the media.
3. Select the **Symmetry** and, if required, **Symmetry Network Video Recorder** checkboxes:.



Do not choose to install SQL Server Express for a client installation.

Select Symmetry.

If selected, installation of the NVR software takes place once installation of the main Symmetry software is finished. See page 34.

4. **Welcome** – Click **Next** at the Welcome screen.
5. **Software License Agreement** – Read the license agreement. Select **I accept...** and click **Next** if you agree.
6. **Licensing Information:**

If this is a new installation (not an upgrade), choose **Serial Number**, enter the serial number of the product (as found on the Software License Certificate), then click **Next**.

If this is an upgrade, choose **Select a license from an existing Symmetry installation**, then click **Next**. Please refer to the *Symmetry Upgrade Guide*.

7. **Database Server** – Click **Browse** to select the SQL Server instance that is running the Symmetry database (or the machine name if the default instance is used), as shown next.

8. **Setup Type** – Choose **Typical** or **Custom**:

If you choose **Custom**, you will have complete control over system configuration. Choosing **Typical** will cause defaults to be used for some settings. Choose **Custom** if you are using smart card readers.

9. **Application Folder** (Custom only) – Select the folder in which to install Symmetry on the client:

10. **Services Account Configuration** – Specify an existing account in which to run the Symmetry services:

Specify a domain account if Symmetry is to run in a domain. Specify a local account if Symmetry is to run in a workgroup. Make sure you use the same account name that you used at the Symmetry server [\[see Note 1\]](#).

If the account is local, it will be automatically assigned to the ACSAdmin and local Administrator groups. If a domain account is used, it will be automatically assigned only to the local Administrator group; you should have already assigned it to ACSAdmin (see page 14).

11. **Group Account Configuration** – Select the groups to use for Symmetry:

Note 1: If you selected **Local System Account** at the Symmetry server, you will need to make sure that the account you specify here also exists at the Symmetry server.

Configuration of the above is dependent on whether you are using a local or domain account for the Symmetry services, as described next.

IMPORTANT: It is essential that you use the same group names that you used at the Symmetry server.

Local Account used for Symmetry Services (normally workgroup only)

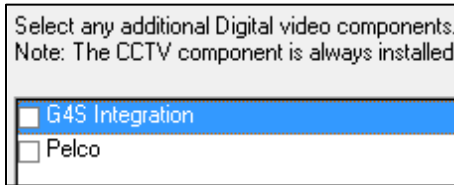
If you have chosen a local account for the Symmetry services in the previous screen, **Group Location** is set to the local machine. You can select existing groups already set up on the local machine, or type group names directly into the fields and they will be created for you.

Domain Account used for Symmetry Services

If you specified a domain account for the Symmetry services in the previous prompt, you should normally select the domain you are using from the **Group Location** menu. You can then select the existing groups already set up on that domain. If you do not have permissions to see the group names, you can type the existing group names directly into the fields, but in this case, it is **essential** to make sure the spelling is exactly the same as the group names already defined in the domain.

Note: When a domain account is used for the Symmetry services, other selections from the **Group Location** menu are available in order to handle unusual architectures or requirements, but should not be used without technical guidance.

12. **Select Features** – If applicable, select the type of Digital Video Recorder (DVR) you are using, if any:



You may see other recorders in this dialog.

Other prompts may be displayed, depending on the DVR installed.

13. **Your Computer Configuration** (Custom only):

Remove access to Windows Desktop – If this is selected, no Windows desktop will appear and the Symmetry software will start automatically if the Windows user specified in the "Maintenance/User & Preferences/Client Preferences" screen logs in to Windows. **Note:** To prevent a user from accessing the Windows desktop, also deselect **Enable Logon Cancel Button** in the "Maintenance/User & Preferences/Client Preferences" screen.

14. **Smart Card Configuration** (Custom only) – If a GEMPLUS, Cardman 5x21 or Mifare Pegoda encoder (or printer/encoder) is to be used at the client for smart card encoding, select it next. The setting is irrelevant if another type of encoder is being used.



*For a Fargo HDP600, DTC400 or DTC550 printer/encoder, choose **GEMPLUS Contactless**. For a Fargo HDP5000, choose **Cardman 5x21 Encoder**.*

***Note:** Windows plug and play drivers for contact smart-card /encoders must be disabled after installation, as described on page 39.*

15. **Start Copying Files** – Click **Next** to begin installation.

Installing a Symmetry NVR

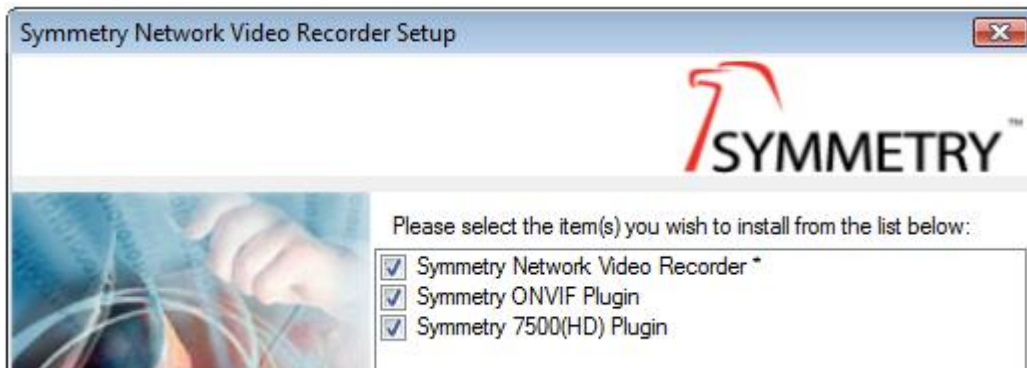
This section explains how to install the Symmetry NVR software.

Note: Each Symmetry installation allows a single Symmetry NVR to be defined without a separate license number having to be added to the "Maintenance/Licensing/System Licenses" screen. You will need to add a license if you want to use more than one Symmetry NVR.

Note: If you selected to install the NVR on the Symmetry server (page 22) or client (page 31), installation starts automatically once installation of the main Symmetry software is complete.

To install the NVR software:

1. If you are installing the NVR separately from Symmetry (that is, without also installing the Symmetry server or client software on the same machine):
 - a) Ensure that you are logged into the machine with administrator privileges.
 - b) Insert the Symmetry installation media and wait for the installation wizard to start. If it does not start, double-click SymmetrySetup.exe, which is located in the top-level folder of the media.
 - c) Choose the components to install:



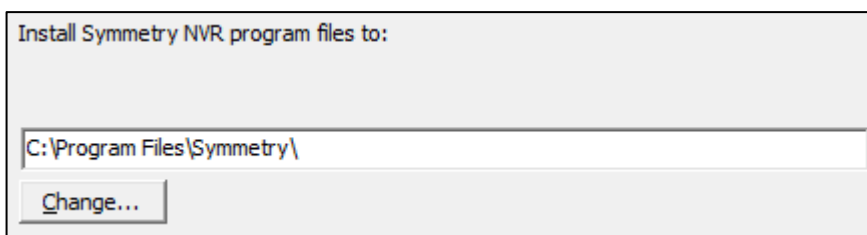
- d) Choose **Symmetry Network Video Recorder**. You may also want to select:

Symmetry ONVIF Plugin – Select this if you are using cameras that use the Open Network Interface Forum (ONVIF) interface.

Symmetry 7500(HD) Plugin – Select this if you are using Symmetry 7500(HD) cameras.

Note: The above plugins are installed by default if you have installed the Symmetry server and/or client software.

2. **Welcome** – Click **Next** at the Welcome screen.
3. **Software License Agreement** – Read the license agreement. Select **I accept...** and click **Next** if you agree.
4. **Destination Folder** – Choose the folder in which to install the Symmetry NVR program files:



- Installation Type** – Keep the default selection of **Standard** if you are not installing in a cluster. Otherwise, choose one of the **Clustered** options, as appropriate.

Please refer to the Cluster Installation Manual for further details of installing Symmetry in a cluster.

Note: *It is allowable to have an NVR in a cluster, irrespective of whether or not the NVR is installed on the Symmetry server.*

- Configuration Folder Location** – Choose the folder in which to store video index files:

Note: This folder will need to be backed up regularly. Please refer to page 40 for further details.

- Repository Options** – Choose a "repository" (a location in which to store video recordings), and the amount of disk space to allocate for that repository:

Maximum Quota shows the amount of free disk space.

You can set up additional repositories using the NVR web interface after installation.

Note: This folder will also need to be backed up regularly. Please refer to page 40 for further details.

It is recommended that UNC paths rather than mapped drives are used.

- Web Interface Port** – Specify the http port on the NVR that you want the Symmetry server to use to communicate with the NVR:

If you change the default, you will need to make sure you enter the same number in the "Install/Video & Audio/Digital Video-NVR" screen in the Symmetry software.

- Service Credentials** – Specify an account in which to run the Symmetry services on the NVR:

Specify a named account if a repository is to be on a device elsewhere on the network. In this case, the repository will need to set up a share. The share will require permissions that allow the account specified here to create files and folders in that share.

A domain account can be used, if appropriate.

- Click **Install** and follow the prompts.

Starting Symmetry

To start Symmetry:

1. Log into Windows. Use the account that you specified during the client software installation.
2. Start Symmetry from the Start/Programs/Security Management System Menu or from the desktop icon:



4. Log in using one of the user names described next.
5. If prompted, enter the activation code or choose to activate your license via the internet. If you click **Register Later**, you have up to 21 days to enter the activation code in the "Maintenance/Licensing/System Licenses" screen. Please refer to page 29 for details of how to obtain the activation code.

Default Login User Names and Passwords

The following default login names and passwords are provided. The engineer name and password are fixed, but for all others, you should ensure that they are changed as soon as possible.

Name	Password	Permissions Group
GUARD	GUARD	Guard Permissions
ADMINISTRATOR	ADMINISTRATOR	Administrator Permissions
MANAGER	MANAGER	System Manager Permissions
INSTALLER	INSTALL	Installer Permissions
ENGINEER	INCOM	Engineer Permissions

Engineer Logins

An engineer can log in only if permitted, as specified in the "Maintenance/User & Preferences/System Preferences" screen. In addition to having access to the Install options, an engineer can clear all alarms from the currently logged-in machine ("Home/Monitoring/Alarms" screen).

The "Maintenance/User & Preferences/Set Password" screen is not available to engineers.

Command-Line Logons

It is possible to start and automatically log on to Symmetry by specifying the username and password in the Windows command line. This feature can be useful to allow casual users of Symmetry to log on easily (e.g. for visitor enrollment).

To start and log in from a Windows shortcut, select **Command Line Logon** in the "Maintenance/User & Preferences/System Preferences" screen and use the following command format in the **Target** field of the shortcut properties:

```
"<Path to Symmetry.exe>" /u"<UserName>" /p"<Password>"
```

For example:

```
"C:\Program Files\Security Management System\Symmetry.exe" /u"alanc" /p"mypassword"
```

Network-Locking Command-Line Switch

You can use the following command-line switch when running Symmetry.exe:

/N Clears the network locking table whenever the software is started. This may be necessary if users are prevented from using a screen because the system incorrectly believes that the screen is in use by another user. This may happen if, for example, the system has been shut down prematurely (e.g. by a power cut).

For example: "**C:\Program Files\Security Management System\Symmetry.exe**" **/N**

You can run Symmetry with this switch by entering the full string as shown above in the Run dialog (displayed by selecting **Run** from **Start, All Programs, Accessories** in Windows Vista or Windows 7). Note the space before **/N** and the use of double-quotes.

Chapter 5: Post-Installation Tasks

This chapter describes tasks that you may need to carry out after installing Symmetry, depending on the hardware installed and the customer's requirements.

Installing Optional Features

Many optional features are available for Symmetry, such as additional readers and cameras, and modules including intrusion management, guard patrols and card data import/export.

In general, no additional software needs to be installed to enable these features. Instead, obtain a serial number for the feature and enter it into the "Maintenance/Licensing/System Licenses" screen. You will need to enter an activation code, which you can obtain by phone or online from the address in the "Maintenance/Licensing/System Licenses" screen.

Configuring Antivirus Software

In some cases, the use of antivirus software can significantly affect the performance of Symmetry, particularly if there is a large transaction rate. To maintain system performance, real-time scanning (which scans files as they are opened) should be disabled. In addition, the following folders should either be excluded from antivirus scanning or scanned only during quiet periods of the day:

Folder (and all subfolders) ¹	Location
Program Files\Microsoft SQL Server\MSSQL\Data (Microsoft KB309422)	Server
Windows\System32\MSMQ (Microsoft KB829259)	Server and clients
Program Files\Security Management System	Server and clients
Program Files\Security Management System\Import	Server and clients
Program Files\Security Management System\Export	Server and clients
Program Files\Security Management System\Images	Server and clients

¹ The folder names shown in the table are the default locations on the Symmetry server. Please use the appropriate paths if the defaults are not used.


Please refer to page 69 for details of ports used by Symmetry. Firewalls should allow traffic across appropriate ports.

Displaying the Symmetry Service Monitor

The Symmetry Service Monitor is available on the Symmetry server and on all Symmetry client PCs. The Service Monitor allows you to view the current status of the Symmetry services, and start or stop services if there is a requirement to do so.

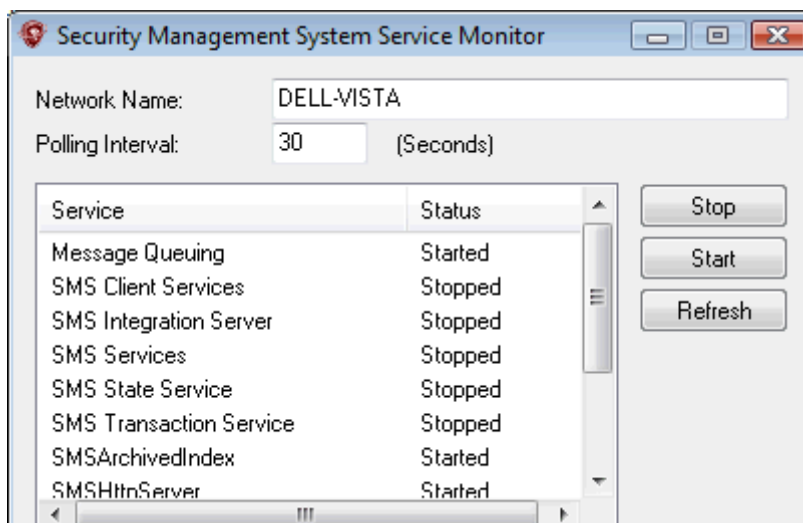
You can make the Service Monitor available by setting up a desktop shortcut to **ServiceMonitor.exe** located in the Symmetry installation folder (by default, Program Files\Security Management System).

After double-clicking the shortcut, you will see one of the following icons in the System Tray:

 A green icon indicates that all services have started.

 A flashing red icon indicates that not all services are started.

Right-click the icon and select **Open SMS Service Monitor** to display the Service Monitor. For example:



Installing Encoder Files

If magstripe and/or Smartmax cards are going to be encoded from within the Symmetry software, install the supplied .ENX and .SMX files into the Symmetry installation folder (default is "Program Files\Security Management System") on the Symmetry server. The files limit encoding to specified customer codes (for standard Symmetry systems) or specified system codes (for HSE systems).

Once you have installed the files, restart the Symmetry server (or the Symmetry services). This process copies the files into the database.

Note: .ENC files used in previous versions of Symmetry are not compatible with the current version of the software.

Disabling Drivers for Contact Smart-Card Readers/Encoders

If a driver has been installed for a contact smart-card reader/encoder by Windows plug-and-play, it must be disabled as follows. (This is not necessary for a contactless reader/encoder.)

1. Display the Windows Computer Management window (e.g. by right-clicking **Computer** in the **Start** menu and selecting **Manage**).
2. If **Smart Card Encoder** is displayed in **Device Manager**, right-click on it and select **Disable**.
3. Switch off then restart the computer (restarting without switching off is not sufficient).

Configuring and Testing Backups

During system commissioning, you need to specify the backup interval, test the backup process and check the ability of third-party applications to save and restore backup files.

End users can use the "Operation/Data/Backup" screen to produce a backup of the Symmetry database, either on demand or at scheduled intervals. The backup takes the form of a series of SQL "bak" files that include all configuration settings, card details, card transactions, alarms, events, tasks and user activity stored in the Symmetry database. The backup also takes a copy of the multimax.ini and crf.ini files from the Windows installation folder on the Symmetry server.

In the unlikely event of a disk failure or other major problem, a Symmetry backup enables the Symmetry databases to be restored, as described in Appendix F. Backups are also used when upgrading Symmetry.

Symmetry backups can be automatically transferred to an external device using any appropriate third-party backup software.

If you are having any difficulties getting backups to run, please refer to the notes in the section titled *Step 9c – Create and Share a Backup Folder* on page 18 and to the online help for the "Operation/Data/Backup" screen.

Note: If you are using a Symmetry NVR (page 47), you must back up the NVR configuration folder separately and, if required, the video repositories. There is a separate configuration folder for each NVR, the location of which was specified during the installation of the NVR software. By default, the folder is located in "ProgramData\Symmetry\NVR", but you can find out the path by opening the properties of one of the "Symmetry NVR" services – the path to the configuration folder is shown as a parameter in the command line.

Configuring and Testing Archives

During system commissioning, you need to specify the archive interval and purge period, and test the archive process.

An archive is a copy of the historical transaction data from the Symmetry database; that is, card transactions, alarms, events, tasks and user activity. An archive is stored in an SQL "bak" file stored in a specified location. End users can produce an archive using the "Operation/Data/Archive" screen.

Producing archives may be necessary for historical reporting purposes, since log data that is older than a specified number of days is deleted automatically, as specified by the **Purge Daily Logs After** option in the "Maintenance/User & Preferences/System Preferences" screen. When producing a report, such as in the "Reports/History/Activity" screen, the user can choose an archive as the reporting source.

Normally, the interval between archives should be slightly less than the **Purge Daily Logs After** value. For example, if **Purge Daily Logs After** is set to 90 days, archives should be taken every 89 days.

Depending on the customer's requirements, archiving may not be required at all; data older than a specified amount may not be of any interest. It is also important to know that if an archive is used to produce a report, the whole archive is re-inserted into the transaction database.

Archives can be saved to an external device using any appropriate third-party software.

Note: On systems managed by Microsoft SQL Server Express, databases are restricted to a maximum size of 10GB. If the transaction database grows to within 80% of this maximum (i.e. 8GB), the "Transaction Log Running at Capacity" alarm/event message is generated and the oldest data is deleted automatically to keep the database size less than 8GB. If this alarm/event message is generated, **Purge Daily Logs After** should be set to a lower value and archives generated more frequently.

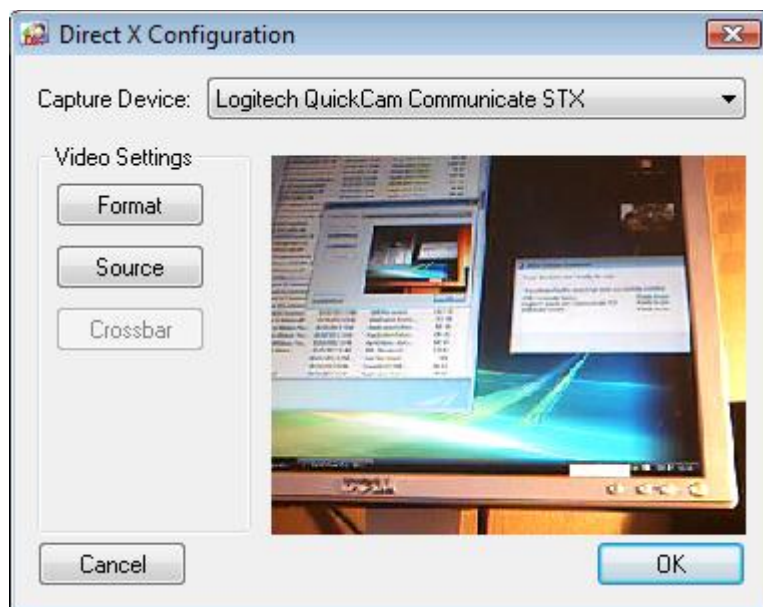
Configuring DirectX Video Settings

Any client at which Video Capturing is to be used (for the capture of card holder pictures and signatures to be printed on a badge) must be fitted with a card that supports DirectX.

Note: If the video capture card is being used in a computer with an integrated display adapter, then this adapter should be disabled on the motherboard, if possible.

Before using the Video Capture feature, you must use the video configuration utility provided with Symmetry to select the video camera being used and, if necessary, to adjust video settings such as brightness, contrast, etc. Run the configuration utility after installing Symmetry.

1. Run **dxconfig.exe** located in the Symmetry installation folder on the client where the card is fitted (by default, "Program Files\Security Management System"). The following dialog is displayed:



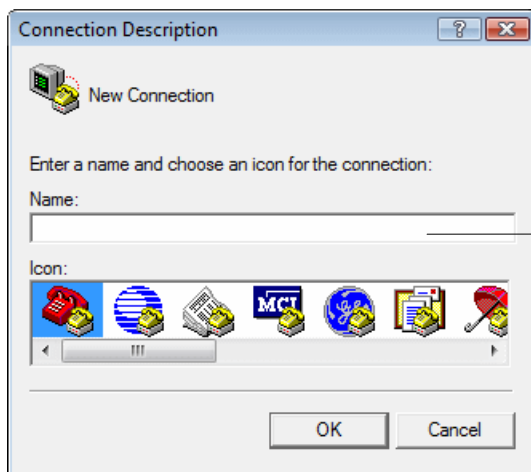
2. Select the video camera that you want to use for Video Capture from the **Capture Device** menu. You should see the video image in the dialog.
3. If necessary, adjust the video settings using the options displayed by the **Format** and **Source** buttons.
4. Select **OK**. The selected camera and settings are stored in the `multimax.ini` file.
5. Restart Symmetry at the client if the software was running while you configured the DirectX settings or changed the ini file.

Setting Up Dial-Up Local/Remote Modems

This section is relevant only if Symmetry is going to modems for dial-up communications to remote nodes.

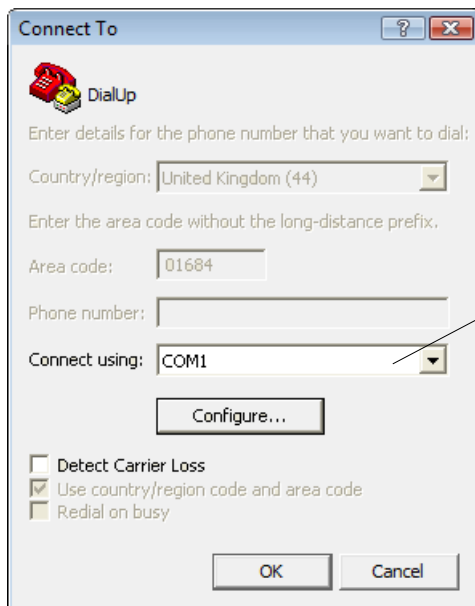
Modems are configured automatically by the initialization string specified in the "Install/Access Control/Chains/Dial-Up" screen. Normally, the local and remote modems' default settings do not enable auto answer. Both modems need to be configured to allow this to happen. The remote modem needs to be configured before it is taken to the remote site. Please read the following in conjunction with the manufacturer's documentation. The modems can be set up by a 'terminal' program, such as HyperTerminal, which can be downloaded from <http://www.hilgraeve.com/hpe/download.html>.

1. Connect the modem to a serial port using a modem-type serial cable.
2. Start HyperTerminal.
3. Create a new connection:



Type a name.

4. Choose the COM port that the modem is connected to:



*Choose the COM port the modem is connected to, then click **Configure** and enter the baud rate (all other settings can be left at the defaults).*

5. In the HyperTerminal screen, send the specified initialization string to the local/remote modem. Precede the initialization string with "AT" and finish by pressing the Enter key; for example, ATQVXS0=2&M&N6&R1&W<Enter>.

The commands used to recall the active profile and set up the initialization string vary between modem types. The following pages give some examples. It may be necessary to modify these commands for other manufacturers or when different types of modem are used.

Note the following points:

- <Enter> means press the Enter key on your keyboard.
- The initialization string (excluding "AT") also needs to be entered in the "Install/Access Control/Chains/Dial-Up" screen. Note that the initialization string for a dial-in modem is sent to the modem only when Symmetry is started. Also, the maximum length that should be entered into the Remote initialization String field should not exceed 21 characters. The field will allow more

characters than this to be entered, which allows for easier editing. Entering more characters than the maximums stated may cause the remote node to malfunction.

- **In remote chains, the node with the lowest address (set by switches in the node) must be closest to the modem. All nodes start from address 1, except the following:**
 - Micronode elevator nodes - start from address 65.
 - Micronode Supervised Alarm Panels (SAPs) - start from address J0.

Therefore, if, for example, the remote chain contains only a Micronode elevator node (address 65) and a Micronode SAP (address J0), the elevator node must be connected to the modem.

- Some nodes can be set to a baud rate of 38K4. Analogue modems may not support this connection speed. Therefore, 38K4 should not be used in a dial-up chain configuration.

USRobotics Sportster Modem with DIP Switches

First, set the switches as follows:

Switch No.	Local Modem	Remote Modem	Description
1	off/up	on/down	Local monitors DTR, Remote ignores DTR
2	on/down	on/down	Result codes are numeric
3	on/down	on/down	Result codes enabled
4	on/down	on/down	Do not echo in command state
5	off/up	off/up	Auto answer on first ring
6	off/up	off/up	Carrier detect reflects modem connection
7	off/up	off/up	Loads Y ₀ or Y ₁ from non-volatile memory
8	on/down	on/down	AT command recognition enabled

With each modem recall the factory default settings and write them to the active profile, AT&F1&W0<Enter>.

Remote modem initialization string:

QVXS0=2&M&N6&R1&W<Enter>

Local modem initialization string:

QVXS0=1&M&N6&W<Enter>

Where:

Q0 enables the modem to return result codes.

V0 displays the result codes as numbers.

S0=2 sets the modem to answer on the second ring.

X0 provides basic call progress result codes.

&M0 disables error control (having this enabled can cause significant delays between local and remote).

&N6 sets connect speed to 9600 baud. To communicate at 1200 baud the &Nn register should be changed to &N2.

&R1 modem ignores RTS (remote modem only).

USRobotics Sportster Flash

First, recall to the active profile the factory default settings, AT&F1<Enter>.

Remote modem initialization string (9600 baud):

```
VS0=2EX&D&M&N6&R1<Enter>
```

Send the &W0<Enter> command to store the profile. This command may be appended to the above string.

(In order to keep the string less than or equal to 17/21 characters, any command that uses a zero, e.g. X0, has the zero removed; the modem will assume zero.)

Local modem initialization string (9600 baud):

```
QVS0=1EX&D2&M&N6&W<Enter>
```

Where:

Q0 enables the modem to return result codes.

V0 displays the result codes as numbers.

S0=2 sets the modem to answer on the second ring.

E0 causes characters not to be echoed.

X0 provides basic call progress result codes.

&D0 ignore the DTR signal (remote modem only).

&D2 monitor the DTR signal (local modem only).

&M0 disables error control (having this enabled can cause significant delays between local and remote).

&N6 sets connect speed to 9600 baud. To communicate at 1200 baud the &Nn register should be changed to &N2.

&R1 modem ignores RTS (remote modem only).

The above entries can then be verified by using the ATI4 command.

Hayes Modems

- **Hayes V Series / Hayes Accura Modems**

First, recall to the active profile the factory default settings, AT&F<Enter>.

Remote modem initialization string:

```
QVXS0=2E&D&Q6&W<Enter>
```

(In order to keep the string less than or equal to 17/21 characters, any command that uses a zero, e.g. X0, has the zero removed; the modem will assume zero.)

Local modem initialization string:

```
QVXS0=1E&D2&Q6&W<Enter>
```

- **Hayes Smartmodem (Older Type)**

Remote modem initialization string:

Q0V0X0S0=2E0<Enter>

Local modem initialization string:

Q0V0X0S0=1E0<Enter>

Where:

Q0 enables the modem to return result codes.

V0 displays the result codes as numbers.

X0 provides basic call progress result codes.

S0=2 sets the modem to answer on the second ring.

E0 causes characters not to be echoed.

&Q6 sets the modem for automatic speed buffering (optionally &Q0 - async mode). (The default &Q5 error-correction mode can cause complications in detecting the carrier; for this reason &Q6 should be used instead.)

&D0 ignore the DTR signal (remote modem only).

&D2 monitor the DTR signal (local modem only).

&W0 causes the current configuration to be written to profile 0

The above entries can then be verified by using the AT&V command.

Chapter 6: Configuring Symmetry

Configuration Steps

This section outlines typical steps you need to take to configure Symmetry. If necessary, refer to the *Online Help* or other publications for further information.

Installer Tasks

The following screens should be used by the installer in the order shown.

Screen Name	Purpose
"Maintenance/User & Preferences/Set Password"	To change the installer's password, if the customer requires this.
"Maintenance/Licensing/System Licenses"	To add licenses for readers, cameras and additional features.
"Install/System/Clients"	To specify the type of clients used.
"Install/System/Default Settings/Reader/Card Formats"	To customize card formats (if required).
"Install/Access Control/Node"	To define details of each node, including the chain that it is connected to.
"Install/Access Control/Reader"	To define details of each reader, including the node that it is connected to.
"Install/Access Control/Monitor Point"	To define details of each monitor point, including the node that it is connected to.
"Install/Access Control/Auxiliary Output"	To define details of each auxiliary output, including the node that it is connected to.
"Setup/Configuration/Facility/Customer Codes"	To define the card customer codes.
"Operation/Alarms/Routing"	To specify the clients that are to receive alarms (client/server system only).
"Setup/Graphics/Add"	To create any graphics that are to be used and locate devices on graphics.
"Setup/Graphics/Setup"	
"Maintenance/User & Preferences"	To define system and client preferences.
"Operation/Data/Backup"	To set up the daily backup time.

Note: To initialize communications, restart all clients that have Symmetry equipment connected to their ports.

End-User Configuration Tasks

The following screens should be set up in the order shown. This may be the responsibility of the installer or end user.

Screen Name	Purpose
"Maintenance/User & Preferences/Roles"	To set up permissions.
"Maintenance/User & Preferences/Accounts"	
"Setup/Identity/Personal Data"	To set up personal data.
"Operation/Times/Holiday"	To set up access rights. Note: Floor groups are supported by elevator nodes only. For a multi-company system, you may also need to use the Shared Floors/Outputs and Shared Readers screens in the "Setup/Device Groups" menu.
"Operation/Times/Hours"	
"Operation/Times/Time Codes"	
"Setup/Device Groups/Readers"	
"Setup/Device Groups/Floor/Output"	
"Setup/Identity/Badge Designer"	To set up badge designs.
"Home/Identity/Card Holders"	To set up card details.
"Home/Identity/Visitors"	
"Home/Identity/Print Badges"	To print badges. Badges can also be printed individually from the "Home/Identity/Card Holders" screen.
"Operation/Commands/Scheduled"	To set up commands.
"Operation/Commands/Trigger"	
"Setup/Identity/Area Occupancy"	
"Operation/Alarms/Instructions"	To set up alarm handling
"Operation/Alarms/Comments"	
"Operation/Alarms/Definitions"	
"Operation/Alarms/Commands"	
"Setup/Configuration/Patrol Tours"	To set up patrol tours.
"Reports/Configuration"	To set up predefined reports
"Home/Identity/Muster"	

Chapter 7: Removing Symmetry

This chapter describes how to remove Symmetry and its database, if it ever becomes necessary to do so (e.g. when a computer is replaced).

Note: You must have local administrator privileges to remove the software.

Removing the Client Software from a Client PC

To remove the Symmetry client software at a PC that is not also the Symmetry server:

1. Close down the client software and the Service Monitor (if launched).
2. Use the Windows Control Panel to remove **Security Management System (Client)** and any other software that includes "**Symmetry**" in its name.

Data files are not removed from the installation folder; you can remove these using Windows Explorer.

Removing the Server Software

Use the following procedure if you want to remove Symmetry from the server:

1. If the Symmetry client software is still installed on remote clients, go to each of these clients, close down Symmetry and stop all Symmetry services. Services can be stopped from **Administrative Tools** in the Control Panel, or from the Symmetry Service Monitor (see page 39).
2. Close the Symmetry Service Monitor on the server, if open.
3. Use the Windows Control Panel to remove any software that has a name containing "**Symmetry**".
4. Restart the computer, then remove the "Program Files\Security Management System" folder. Also remove the "Program Files\Microsoft SQL Server" folder if you have removed SQL Server Express.

Removing SQL Server

If a full version of SQL Server is being used, it can be removed as follows:

1. Using the Windows Control Panel, remove all **Microsoft SQL Server** programs, and follow the prompts.

If prompted, choose to remove all components/features.

2. On completion, restart the computer, and check that all Microsoft SQL Server programs have been removed.
3. Remove the SQL Server installation folder (e.g. Program Files\Microsoft SQL Server).

Appendix A: About the .ini File Settings

MultiMAX.ini Settings

This appendix describes the meaning of each entry in the multiMAX.ini configuration file found in the Windows Installation folder on each computer. To avoid harming system operation, please change settings with caution and only if you fully understand the effects.

Note: After modifying multimax.ini, restart all Symmetry services and the Symmetry software on the PC where multimax.ini is located.

[multiMAX]

ActivityAndSystemReverseOrder=0	<i>This optional (client) parameter determines the order of items displayed in the "Reports/History/Activity" and "Reports/History/System" screens. Set to 1 to reverse normal order (0 is default).</i>
ActivityByCompanyGroup=1	<i>Set to 1 and set the View Menu By Company system preference to enable the Activity screen to display only information from companies in the user's company group. Setting to 0 (the default) and unsetting View Menu By Company enables the Activity screen to display information from any company belonging to any company group, irrespective of the user's own company group.</i>
AIQ=1	<i>Alarms Input Queue. This server-only parameter must be set to 1.</i>
AllowForceInitialisation=1	<i>This optional parameter enables a Factory Reset button in the "Install/Access Control/Node" screen, which allows the engineer to re-initialize all the databases in the controller to factory default state.</i>
BadgePrinter1=	<i>Specifies the default badge printer for a badge design.</i>
BlockRandomSearch=1	<i>Specifies to block a card belonging to a card holder who is undergoing a random search. Omit this setting to disable automatic blocking.</i>
CheckGrantedAccessCondCommand=1	<i>When this is set to 1 (the default), Symmetry checks whether each grant access transaction received is used in the "when" part of a trigger command. If grant access is not required to activate trigger commands, performance benefits are achieved by disabling this feature (i.e. setting to 0).</i>
CommsReceiverDateTimeSentPeriodMins=	<i>This determines the period between date and time updates at a communications receiver. The receiver's date and time are synchronized with the date and time at the Symmetry database server. Set to 0 to disable date and time updating (default is 60).</i>
CTQ=1	<i>Comms Transmission Queue. Set to 1 to enable communications from this PC.</i>
DatabaseInstance=	<i>Specifies the instance name of SQL Server used for the Symmetry database.</i>
datacardprinter=	<i>The default is "datacard". If a Datacard badge printer is used, the name specified here must appear in the Windows name of the printer to ensure that Symmetry uses the correct encoder files.</i>

Appendix A: About the .ini File Settings

DataExportAfterImport=1	<i>This optional parameter enables the exporting of card holder data following an import. Set to 1 to enable, or 0 (default) to disable.</i>
DataExportEnabled=0	<i>This server-only parameter specifies how to export data: 0 = Data Export disabled; 1 = Data Export uses SQL Server database; 3 = Data Export uses text (2 is not used).</i>
DataImportEnabled=0	<i>This server-only parameter specifies how to import data: 0 = Data Import disabled; 1 = Data Import uses SQL Server database; 2 = Data Import uses text.</i>
DCOMRouter=0	<i>For engineering use only; do not change.</i>
DefaultAgencyCode=9999	<i>Specifies the default Agency Code displayed in the Card Holders or Visitors screen for Homeland systems.</i>
DefaultCardSearchIndex=	<i>Records the option selected in the Filter By pull-down list in the "Home/Identity/Card Holders" screen. This enables Symmetry to automatically select the option the next time the screen is opened.</i>
DefaultCardStatusIndex=	<i>Records the option selected in the Select by Status pull-down list in the "Home/Identity/Card Holders" screen. This enables Symmetry to automatically select the option the next time the screen is opened. 0 = All.</i>
DefaultConditionalCommandSearchIndex=0	<i>Used to store the Select By Status setting in the Trigger Commands Selection screen.</i>
DefaultShowAllAccessRights=	<i>Records the last selected state of the Show All button in the Card Holder screen (1=Show All).</i>
DefaultSystemCode=9999	<i>Specifies the default System Code displayed in the Card Holders or Visitors screen for Homeland systems.</i>
DefaultTimedCommandSearchIndex=0	<i>Used to store the Select By Status setting in the Scheduled Commands Selection screen.</i>
DefaultUnitIDCode=9999	<i>Specifies the default Unit Code displayed in the Card Holders or Visitors screen for Homeland systems.</i>
DefaultVisitorSearchIndex=	<i>Records the option selected in the Filter By pull-down list in the "Home/Identity/Visitors" screen. This enables Symmetry to automatically select the option the next time the screen is opened.</i>
DefaultVisitorStatusIndex=	<i>Records the option selected in the Select by Status pull-down list in the "Home/Identity/Visitors" screen. This enables Symmetry to automatically select the option the next time the screen is opened. 0 = All.</i>
DeleteMSMQs=0	<i>This is an engineering tool that deletes and recreates the Symmetry message queue (you may want to use this if alarms or other messages are not reaching their destination). With all of the Symmetry services running:</i> <ol style="list-style-type: none"><i>Set to 1 at a client to delete the message queue at the client, or set to 1 at the server to delete the message queue at the server.</i><i>Stop then restart the Symmetry services. The message queue is recreated and DeleteMSMQs is set to 0.</i>
DisableScreenSaver=0	<i>Set to 0 to allow the operating system screen saver to function. Set to 1 to disable the screen saver.</i>
DisableChainName=1	<i>Set to 0 to allow the chain and node address of an existing node to be changed in the "Install/Access Control/Node" screen. Set to 1 to use the default behavior of not being able to change these settings.</i>
DVMTimeout=30	<i>Specifies the maximum period of time (in seconds) that Symmetry will wait for a video recording to be retrieved from a digital video recorder. A recording that takes longer than this period to retrieve is seen as a timeout error.</i>
fargoprinter=	<i>The default is "fargo". Do not change this setting.</i>

Appendix A: About the .ini File Settings

FRCustCode=	<i>This is the customer code to be programmed into a Bioscrypt fingerprint reader from the "Install/System/Client Ports" screen.</i>
HorizontalFaceRatio=100	<i>Specifies the horizontal aspect ratio setting used when selecting the area of a face image to use in the Card Holders or Visitors screen. For example, if HorizontalFaceRatio is 300 and VerticalFaceRatio is 400, the aspect ratio used is 3:4.</i>
ImportExportAllPersonalData=0	<i>This server-only parameter determines whether 50 or 20 personal data titles are imported by the Tools/Data Import option. The default of 0 allows 20 titles to be imported. Setting the parameter to 1 allows 50 titles to be imported, although this increases import time.</i>
LegacyFargoPrinter=0	<i>Specifies the type of magstripe encoding for Fargo badge printers. Set to 1 for ISO encoding, or 0 for RAW binary encoding. The Fargo DTC 400 and 550 require ISO encoding. The HDP5000 can use either encoding method. Ensure printer properties are configured (page 59).</i>
LocalPath=C:\Program Files\ Security Management System\ 	<i>Specifies the destination folder of reports that are sent to a file. The reports are stored in the reports folder below this path. Do not change the drive letter.</i>
magicardprinter=	<i>The setting determines the encoding format when printing and encoding cards.</i>
MainPath=\\SERVER\RootOnServer\ Program Files\Access Control System\ 	<i>Path to the Symmetry files on the server.</i>
MaxMultipleCards=10	<i>Specifies the maximum number of cards per card holder (default 10).</i>
MicronodeSupport=0	<i>Set this server-only parameter to 1 if the system contains any micronode hardware, otherwise set to 0. Setting to 1 makes some options in the user interface unavailable to maintain compatibility with micronodes.</i>
NCCT=600	<i>This setting causes an automatic restart of the Symmetry client PC if the Symmetry client service has not been able to communicate with the Symmetry server within the specified time period (in seconds). The restart of the client PC is aimed at re-establishing communications. The setting is optional; if it is not specified, the default of 600 seconds is used.</i>
NoLeadingZerosOnBadge=0	<i>When set to 0 (the default), this optional server-only parameter causes the card number printed on badges to be prefixed with zeros to extend the number of digits used to the maximum. For example, card 24 may be printed as 00000024. A value of 1 specifies that no leading zeros are to be printed.</i>
ReportIntegralMotionAlarms=0	<i>Set to 0 to disable reporting of Pelco Integral motion alarms (default 1).</i>
RDSLocalBrowsing=0	<i>This is available only for multimax.ini on an RDS web server machine. Set to 1 to allow browsing on user's local browser machine. Set to 0 (the default) to prevent browsing on local machine and instead to constrain browsing to the RDS web server machine. For further information, please refer to the RDS-Citrix Client Access Installation and User Guide.</i>
ScreenSaverPeriod=0	<i>This parameter instructs the Symmetry screen saver to operate after the defined period. The default is 0 seconds, indicating the screen saver is disabled.</i>
ServerName=SMSServer	<i>This is the name of the computer on which the Symmetry databases are installed.</i>
ShowPortEncryption=0	<i>Set to 1 to enable configuration of encryption between a LAN chain and the supporting client, as set up in the "Install/System/Client Ports" screen. The default of 0 causes no encryption to be used.</i>
ShowTimeZoneCode=0	<i>Setting this parameter to 1 will cause all alarms and events displayed at the PC to be displayed with a 3-letter time zone code (e.g. "10:13 GMT") and causes the Time Zone field to be displayed in the Dial-Up</i>

	<i>Chain and LAN Chain Definition screens. The default of 0 prevents the time zone from being displayed.</i>
StateChangeAllowed=1	<i>If set to 1 (default), the Alarms screen is maximized when an alarm is received. Set to 0 to disable.</i>
StorageServerName=	<i>Specifies the name of the default Symmetry NVR, as shown in the "Install/Video & Audio/NVR Settings" screen.</i>
TimeZoneCardActivation=	<i>Set to 1 to allow the time offset of nodes to be taken into account when Symmetry determines whether cards are active/inactive.</i>
TimeZoneCode=	<i>This parameter specifies the 3-letter time zone code for the computer. You can set TimeZoneCode to any 3-letter code. If TimeZoneCode is blank (the default), the PC's own setting is used (e.g. "GMT"). Any alarms and other transactions generated from hardwired chains connected to this computer are appended with the specified time zone code. Dial-Up and LAN chains use this setting as the default value for the Time Zone field, which can be changed as required.</i>
TransactionsAlwaysShowCommaInName=1	<i>Set to 1 to add an additional ',' (comma) character after the 'Last Name' description displayed for card holder transactions.</i>
TransActionUsesCardholderCompany=1	<i>Set to 1 to filter card transactions by the card holder's company (instead of the company that owns the reader).</i>
UniqueOfficial=0	<i>When set to 1, this parameter enables an approving official with the same last name, middle initial and first name as an existing entry to be added in the "Setup/Identity/Approving Official" screen (default = 0).</i>
UnlimitedFacilityCodes=1	<i>When set to 1, this optional parameter removes any restriction on the number of customer/facility codes (the default). A value of 0 imposes a limit of eight customer/facility codes. Apply/change this setting only under guidance from Product Support.</i>
UseOldStatusScreen=0	<i>If set to 1, the "Home/Monitoring/Command Center" screen is non-graphical. When set to 0 (default), the "Home/Monitoring/Command Center" screen is the graphical version.</i>
UseValCam=1	<i>Set to 1 to enable the ValCam flash camera to save live images in the Card Holder and Visitor screens.</i>
VerticalFaceRatio=100	<i>Specifies the vertical aspect ratio setting used when selecting the area of a face image to use in the Card Holders or Visitors screen.</i>
Video=DX	<i>By default, this is set to DX to indicate that a DirectX-supported card is used for the Video Capture feature. If Video Capture at this client is being used with a FlashPoint card, set to MCI. The dxconfig utility sets this to DX if it is used to configure a DirectX-supported card.</i>
[Scheduler]	
DHMP=1	<i>Days/Hours/Minutes Processor. This is the scheduler for activity that occurs on a timed basis, e.g. scheduled commands at the server and timed reports at each client. Setting it to 0 disables such processing. Setting to 1 enables processing.</i>
DLP=1	<i>Download Processor. This server-only parameter should normally be set to 1. If set to zero, nothing is downloaded to nodes. This could be useful to prevent downloading until the system is configured.</i>
DTA=1	<i>Server-only setting for engineering use only; do not change.</i>
NSP=1	<i>Node Status Processor. If set to 1, the PC will automatically download data to a node if the node reports that its database is broken. This is normally set to 1 on all PCs having comms.</i>
RSSPUP=0	<i>This is a server-only parameter. It is set to 1 if Run System Timed Commands on Power Up was selected during installation.</i>
[A4Vision]	
Application=	<i>Specifies the exe file name for the A4Vision Enrollment Wizard.</i>
Directory=	<i>Specifies the folder where the A4Vision Enrollment Wizard exe file is located (if used).</i>

[Comms]

DoNotLogClocks=1	<i>If this is set to 1, it filters out the logging of PC-to-node clock messages in the Comms Status window. These messages are sent out every half an hour. This parameter filters only those messages sent from the PC on which this parameter is set.</i>
DoNotLogEmptyAlarms=1	<i>If this is set to 1, it filters out the logging of "no alarm" messages from nodes attached to the PC, i.e. alarm messages will be logged to the Comms Status window only if an alarm has been generated. This parameter filters only those messages at the PC on which this parameter is set.</i>
DoNotLogEmptyEvents=1	<i>If this is set to 1, it filters out the logging of "no event" messages from nodes attached to the PC, i.e. event messages will be logged to the Comms Status window only if an event has been generated. This parameter filters only those messages at the PC on which this parameter is set.</i>
DoNotLogMicronodeZZs=1	<i>This optional parameter filters out the empty transaction messages returned by a Micronode.</i>
DTRControlMode=1	<i>This parameter specifies the DTR control mode that is being used by the modem, which affects the string used to disconnect a call (see "Modem Commands", next). The number used must be the same as the number used in HostModemDTRControl (e.g. if HostModemDTRControl is 1, DTRControlMode must be 1). Supported values are 0, 1, 2 and 3.</i>
FactoryInitialiseModem=&F0	<i>This parameter specifies the string that Symmetry uses to reset the modem to the factory default settings. The string is used when Symmetry starts the modem (see "Modem Commands", next). Hayes usually use &F0, and US Robotics use &F1.</i>
FilterToFile=1	<i>Setting this optional parameter causes any messages shown in the Status Comms window to be logged to a text file.</i>
HostModemDTRControl=&D1	<i>This parameter specifies the string the modem recognizes to mean "DTR toggle causes online command mode". If DTRControlMode is not 0, the string is used when Symmetry starts the modem (see "Modem Commands", next).</i>
IssueInstrHostinit=1	<i>This parameter specifies whether or not the modem initialization string should be used in the command to start up the modem (see "Modem Commands", next). The initialization string itself is specified in the Symmetry screens (e.g. Dial-Up Chain Definitions screen) . A value of 1 causes the string to be used. A value of 0 prevents the string from being used.</i>
ModemSoftwareResetString=ATZ0	<i>This parameter specifies the string used at the very end of the command to disconnect a call (see "Modem Commands", next). The string is used only if DTRControlMode is not set to 3.</i>
StoreModemSettings=&W0&Y0	<i>This specifies the string that is used to store and recall the modem's configuration settings. The string is used when Symmetry starts the modem (see "Modem Commands", next).</i>

Modem Commands

Command issued by Symmetry to start the modem (command issued when Symmetry starts):

+++ATH AT{FactoryInitialiseModem} AT{Initialization String in Symmetry screen}{HostModemDTRControl} AT{StoreModemSettings}

Command issued by Symmetry to connect a call:

+++ATS0=0S7={"Wait for Answer" Setting in Symmetry screen}DT{phone number} *If DTRControlMode = 0*
 ATS0=0S7={"Wait for Answer" Setting in Symmetry screen}DT{phone number} *If DTRControlMode = 1, 2 or 3*

Command issued by Symmetry to disconnect a call:

+++ATH {ModemSoftwareResetString} *If DTRControlMode = 0*
 ATH {ModemSoftwareResetString} *If DTRControlMode = 1 or 2*
 ATH *If DTRControlMode = 3*

ViewAllLANAlarms=1

This optional parameter is read if the ini file is on a PC that has a LAN chain port (i.e. the PC is used for communications with LAN chains). It can be used to filter "LAN..." alarm/event messages that are generated when connecting to the LAN chains (e.g. LAN Retry). 0 = Discard all LAN messages; 1 (default) = Discard all LAN messages except "LAN Error" and "LAN Failed Connection"; 2 = Discard all LAN messages except "LAN Error", "LAN Failed Connection" and "LAN Retry"; 3 = Discard no LAN messages.

[Custom]

PhoneNumberFormat=99999999999999999999

Do not change; engineering use only.

RemoteIPAddressFormat=999-999-999-999

Do not change; engineering use only.

[Recent File List]

Added by Windows; ignore.

File1=COM2

File2=COM1

[Shell]

ClearNetworkTable=0

Must be set to 0 for a standalone system. Set to 1 if you wish to clear the network locking table (actioned when Symmetry is started). This must be set at the server only when the application has been shut down at all clients. Set back to zero when the operation is complete.

[Transaction Service]

TimeZoneCode=

Specifies the time zone code of the transaction service. This parameter should be set to the same value as the parameter with the same name in the [SupportService] section.

[SupportService]

TimeZoneCode=

Specifies the time zone code of the support service. This parameter should be set to the same value as the parameter with the same name in the [TransactionService] section.

[Control]

The [Control] section is required by the Controls options. ControlID must be set to 1 if a Commend 416 system is used, or 3 if a Commend 200/700 system is used.

[SmartCard]

EncoderType=5

This specifies the type of encoder used when encoding smart cards that will not hold fingerprint data (the setting is irrelevant for cards encoded using an S81x fingerprint or Bioscrypt fingerprint encoder). 1 = None; 2 = GemPlus contactless; 3 = GemPlus contact; 4 = Pegoda (Contactless DESFire); 5 = Cardman 5x21.

DESFireEncoding=0

*Reflects the last state of the **DES Fire Encoding** option in the Encode a Smart Card screen; 1=set; 0=unset*

UserPINEncoding=0

*Reflects the last state of the **User PIN Active** option in the Encode a Smart Card screen; 1=set; 0=unset.*

[DXvideo]

This section records the settings made in the dxconfig utility (see page 41) at the client. This section is followed by a separate section for each video camera.

[Cropping]

FaceCropping=0

If set to 1 a cropping rectangle is displayed after freezing a live face image in the Card Holders screen. The coordinates of the rectangle are given next.

FaceLeft=67

These specify the coordinates of the face cropping rectangle.

FaceRight=228
FaceTop=104
FaceBottom=318

SigCropping=0

If set to 1 a cropping rectangle is displayed after freezing a live signature image in the Card Holders screen. The coordinates of the rectangle are given next.

SigLeft=61
SigRight=379
SigTop=121
SigBottom=280

These specify the coordinates of the signature cropping rectangle.

[Idscan]

Used for idScan (see page 65).

IDDataFile=C:\cardscan\info.txt

Specifies the location of the idScan output file. This must be the same as set up in the License text export tab in the idScan Scanner Configuration dialog.

ImageDirectory=C:\cardscan

Specifies the location of the idScan image folder. This must be the same as set up in the Automation tab(File naming and type) in the idScan Scanner Configuration dialog.

IDNumber=1
LicenseNumber=2
Name=3
Address=4
City=5
State=6
Zip=7
IssueDate=8
ExpiryDate=9
BirthDate=10
Sex=11
LicenseClass=12
SocialSecurity=13
MiddleName=14
NameSuffix=15

The next 15 entries specify the id of the Symmetry personal data title to map to the scanned data item.

VisitorIDNumber=1

The next 15 entries specify the id of the Symmetry visitor personal data title to map to the scanned visitor data item.

VisitorLicenseNumber=2
VisitorName=3
VisitorAddress=4
VisitorCity=5
VisitorState=6
VisitorZip=7
VisitorIssueDate=8
VisitorExpiryDate=9
VisitorBirthDate=10
VisitorSex=11
VisitorLicenseClass=12
VisitorSocialSecurity=13
VisitorMiddleName=14
VisitorNameSuffix=15

[GraphicsAlarmView]

Treewidth=180

For engineering use only; do not change.

[AppSize]

This section saves the window settings of Symmetry.

[BadgeDesign]

CustomColours=

Records any custom colors defined when applying colors in the "Setup/Identity/Badge Designer" screen.

[Graphics]

GraphicNameEqualsFileName=0

*When set to 1, this optional parameter causes the **Filename** field in the "Setup/Graphics/Add" screen to be automatically set to the graphic filename.*

[G4TDigitalVideo]

This section saves the Video Management settings.

<code>Bosch.IPCameraMotionAlarmInterval=15</code>	<i>This controls the time between motion events from a Bosch IP camera. If, for example, it is set to 15 (the default), continual motion in front of the camera creates a "Motion Alarm" every 15 seconds, and 15 seconds after the final motion is detected, a "Motion Normal" alarm is generated.</i>
<code>Matrix.DisableLoadLastView=0</code>	<i>When set to 1, this optional parameter prevents the Virtual Matrix screen from loading the last-used view when the screen is opened.</i>
<code>matrix.DisableMatrixBalloonWarnings=1</code>	<i>Set to 1 to enable pop-up balloons in the Virtual Matrix screen.</i>
<code>NVRCameraLimit=128</code>	<i>Specifies the maximum number of cameras that can be assigned to an NVR in the "Install/Video & Audio/NVR Cameras Assignment" screen (default 128).</i>
<code>Panasonic.NTEventLogging=0</code>	<i>When set to 1, this enables Windows application event logging for offline Panasonic IP cameras.</i>
<code>Panasonic.Alarm.Notification.Port=1818</code>	<i>Specifies the default alarm port used by Panasonic IP cameras (Symmetry server).</i>
<code>Panasonic.IPCameraMotionAlarmInterval=30</code>	<i>This controls the time between motion events from a Panasonic IP camera (see the equivalent Bosch setting above).</i>
<code>StreamingRecordingMaxRetryCount=1</code>	<i>Specifies the number of times that Symmetry attempts to reconnect to a camera after it has been disconnected.</i>

[Intrusion]

<code>PanelLanguage=0</code>	<i>Set to 0 if a Norwegian DSC4030 intrusion panel is used, or to 1 if a Swedish panel is used. This ensures the correct characters in area and zone names.</i>
<code>TGMSV354+=1</code>	<i>Set to 1 if ThorGuard Management System (TGMS) Version 3.5.4 or above is used.</i>
<code>V6ThorguardCU=1</code>	<i>Set to 1 to enable upload from a ThorGuard V6 (Firmware) system. Set on the client that has the connection to the ThorGuard panel.</i>

[Salto]

<code>ShowSaltoMessages=1</code>	<i>By default (set to 1), a "Salto system is offline" message is displayed when opening a card holder or visitor if the SALTO system is not reachable (e.g. the SALTO system has been removed or has not been started before Symmetry). Set to 0 to disable the message.</i>
----------------------------------	--

[global]

Use at a region on a Global Edition system.

<code>TransferGlobalCardActivityToHO=1</code>	<i>By default (set to 1), the region uploads to the head office all card events associated with card holders who have global access rights. Set to 0 to block uploading of these messages to the head office.</i>
<code>TransferLocalCardActivityToHO=1</code>	<i>By default (set to 1), the region uploads to the head office all card events <u>not</u> associated with card holders who have global access rights. Set to 0 to block uploading of these messages to the head office.</i>

Appendix B: Windows Security Groups

Groups Used by Symmetry

Symmetry uses "ACSUsers", "ACSAdmin" and "ACSGuest" groups, as described in the following sections. For a domain, the groups must be in the Active Directory.

Note: If you are using a domain, you can create equivalent groups named as you wish, and during the installation of Symmetry, choose the groups to use for ACSUsers, ACSAdmin and ACSGuest.

Note: The groups are automatically added as logins to the SQL database. This enables Symmetry users or services to access the database with the correct permissions.

ACSUsers

This is used to provide the privileges necessary for a user to use the Symmetry client software. The group requires the following privileges:

- Access this computer from the network
- Bypass traverse checking
- Allow log on locally
- Shut down the system

Workgroup Installations

If you install Symmetry in a workgroup, the installation process automatically creates ACSUsers on the Symmetry server. Any user who needs to use the Symmetry client software must be assigned to the ACSUsers group.

Domain Installations

If you install Symmetry in a domain, a domain administrator will need to create ACSUsers before you install Symmetry.

Any user who needs to use the Symmetry client software must be assigned to the ACSUsers group; this can only be carried out by a domain administrator.

ACSAdmin

This is used by the Symmetry services on the Symmetry server and uses the following privileges:

- Log on as a service
- Access this computer from the network
- Deny Log on locally.

Workgroup Installations

If you install Symmetry in a workgroup, the installation process can automatically create an ACSAdmin group on the Symmetry server. The account you select for the Symmetry services (page 26) is automatically assigned to the ACSAdmin and the local Administrators groups.

Domain Installations

If you install Symmetry in a domain, a domain administrator will need to create ACSAdmin and assign the Symmetry services account (page 26) to ACSAdmin before you install Symmetry. The account is automatically assigned to the local Administrators group.

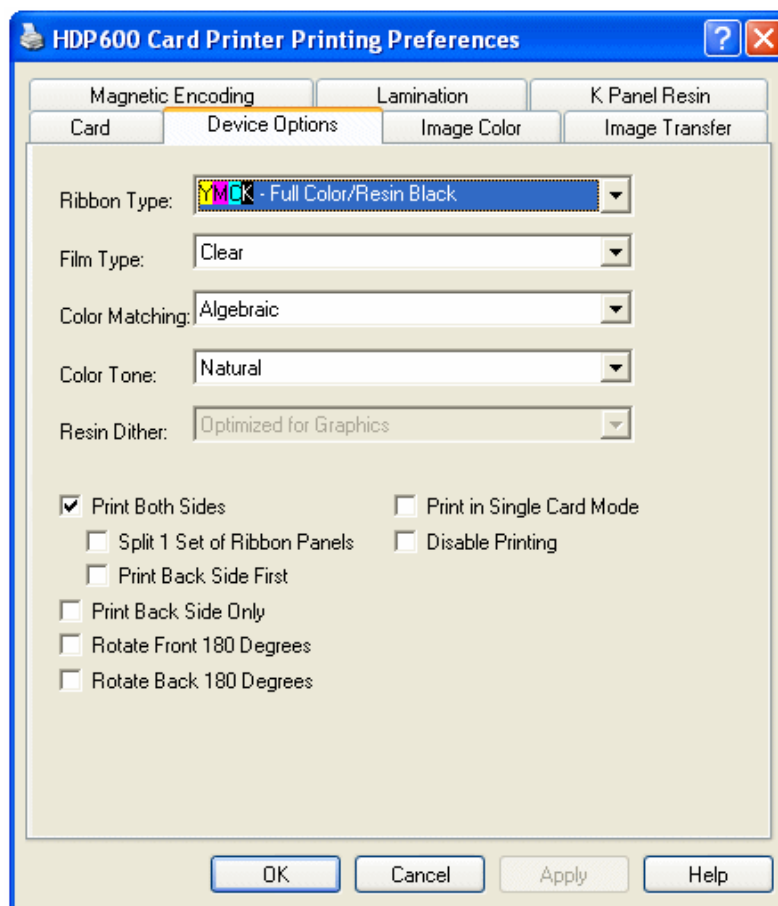
ACSGuest

This may be of use for third-party applications, such as reporting applications, which need to read the contents of the database.

Appendix C Badge Printer Setup

This appendix describes how to set up the printer drivers for badge printers.

Fargo HDP600 Driver Setup



*Install the printer driver according to the manufacturer's instructions. Right-click on the printer in the Windows Control Panel and select **Printing Preferences**.*

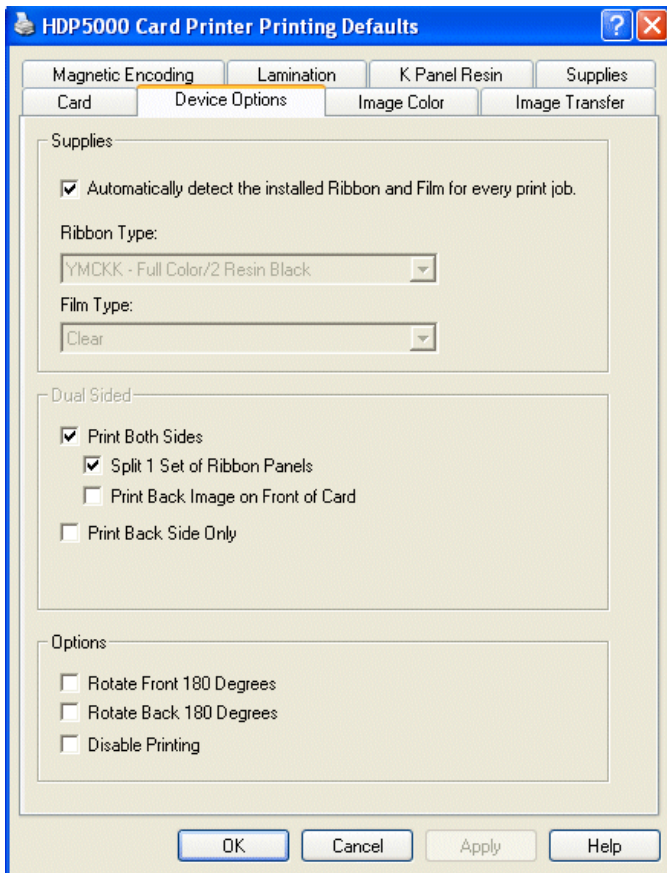
*The **Ribbon Type** shown opposite is the normal choice.*

Check the other tabs to make sure the settings are as required.

If a serial cable is used between the Symmetry PC and printer, the cable should connect to the "Contactless" serial socket at the printer.

***Note:** Make sure that the windows name of the printer includes the name "Fargo" (the same default name specified in the fargoprinter=multimax.ini setting). Also set LegacyFargoPrinter=1 for this printer type*

Fargo HDP5000 Driver Setup



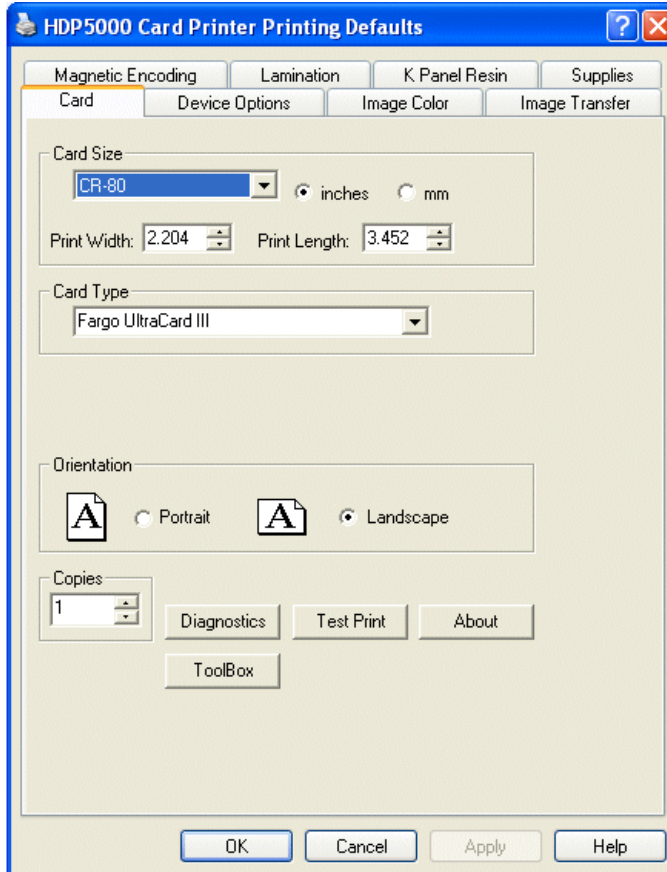
To install the printer:

1. If the printer has a Mifare USB Encoder, unpack the 5x2x encoder driver by double-clicking the appropriate exe file located in the Symmetry\Extras\Cardman 5x21 Drivers folder on the Symmetry installation media.
2. Install the printer driver using the media supplied with the printer. Follow the on-screen instructions. If you are given the opportunity, select the driver unpacked in step 1. Otherwise, update the driver as documented in the readme file in the driver folder.

Once installed, right-click on the printer in the Windows Control Panel and select **Printing Preferences**. The settings shown opposite are recommended.

Check the other tabs to make sure the settings are as required.

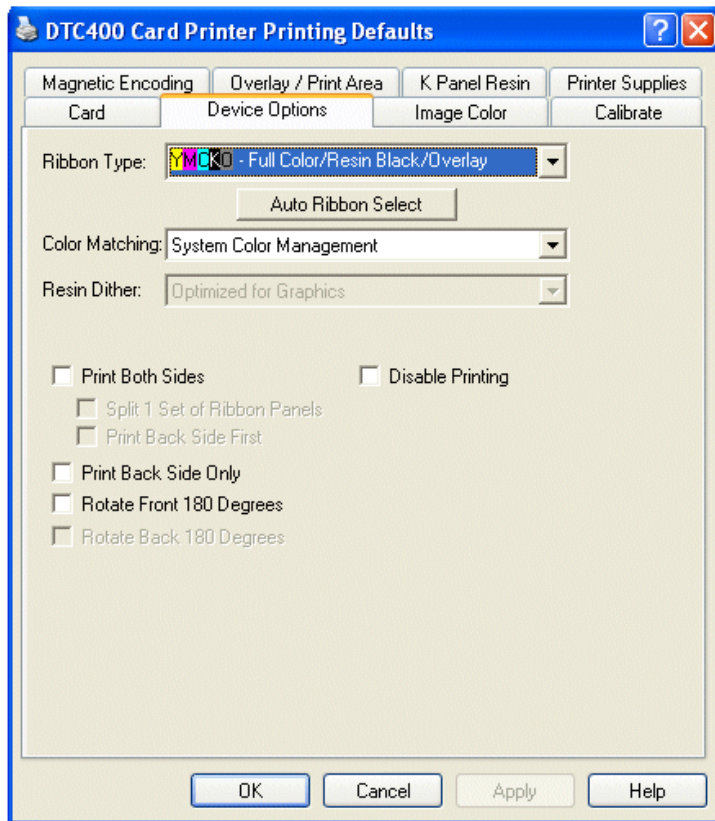
For smart-card encoding, set up a **Smart Card Encoder** port using the "Install/System/Client Ports" screen in the Symmetry software. Choose the USB port type.



The **Encoding Mode** in the Magnetic Encoding tab can be left at the default of **ISO Encoding** or set to **RAW Binary Encoding**. If the **ISO Encoding** is used, LegacyFargoPrinter must be set to 1 in `multimax.ini`. If **RAW Binary Encoding** is used, uncheck **Reverse Bit Order** for Track 1 and 2 in the Encoding tab and set LegacyFargoPrinter to 0 (the default).

Note: Make sure that the windows name of the printer includes the name "Fargo" (the same default name specified in the `fargoprinter=multimax.ini` setting). Also set `EncoderType=5` for this printer type.

Fargo DTC400/DTC400e/DTC550 Driver Setup



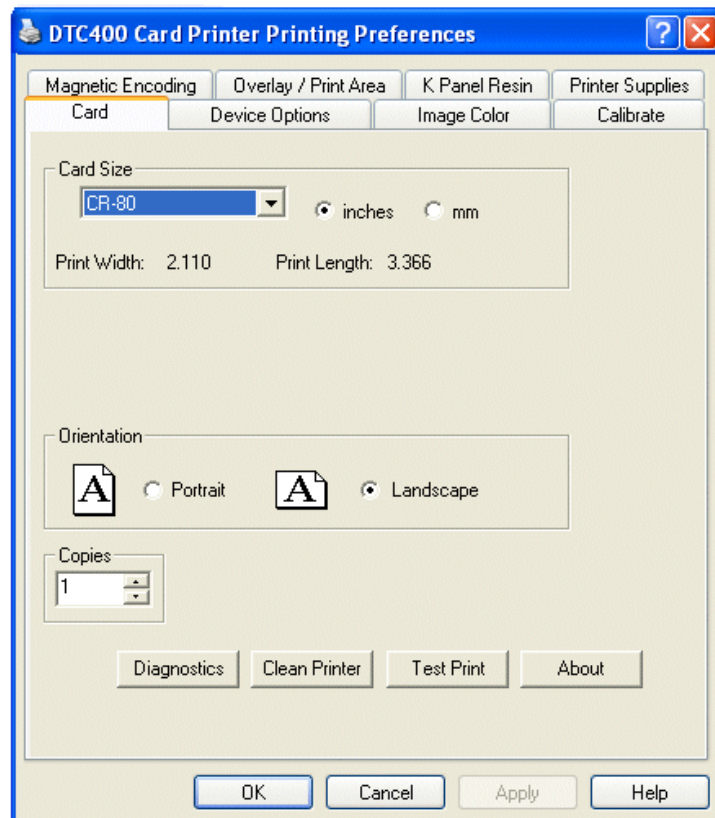
Install the printer according to the manufacturer's instructions.

Once installed, right-click on the printer in the Windows Control Panel and select **Printing Preferences**. The **Ribbon Type** shown opposite is the normal choice.

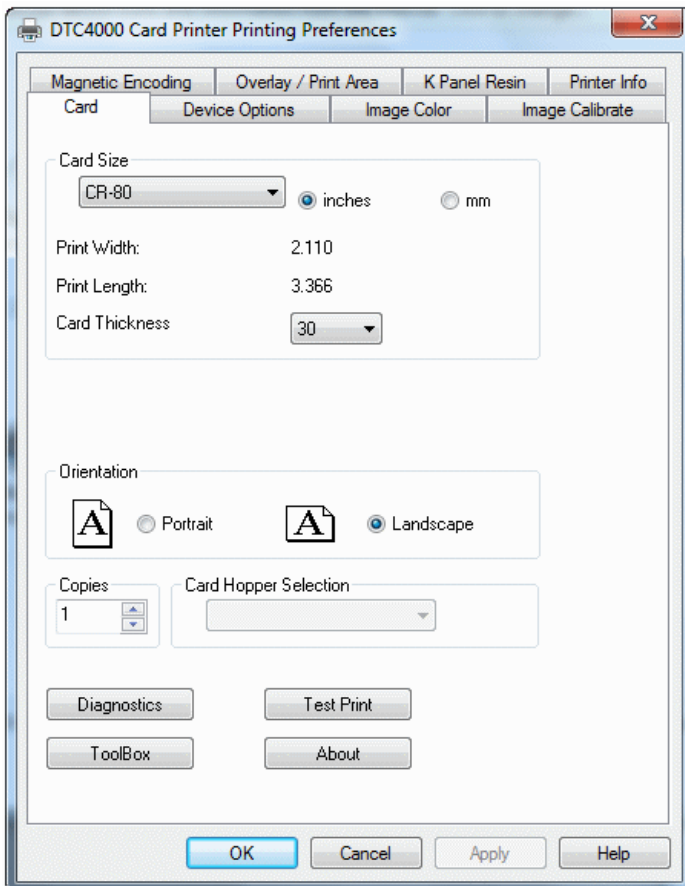
Check the other tabs to make sure the settings are as required.

For smart-card encoding, set up a **Smart Card Encoder** port using the "Install/System/Client Ports" screen in the Symmetry software.

Note: Make sure that the windows name of the printer includes the name "Fargo" (the same default name specified in the `fargoprinter= multimax.ini` setting). Also set `EncoderType=2` and `LegacyFargoPrinter=1` for this printer type.



Fargo DTC1000/1250e/4000/4250e/4500/4500e Driver Setup



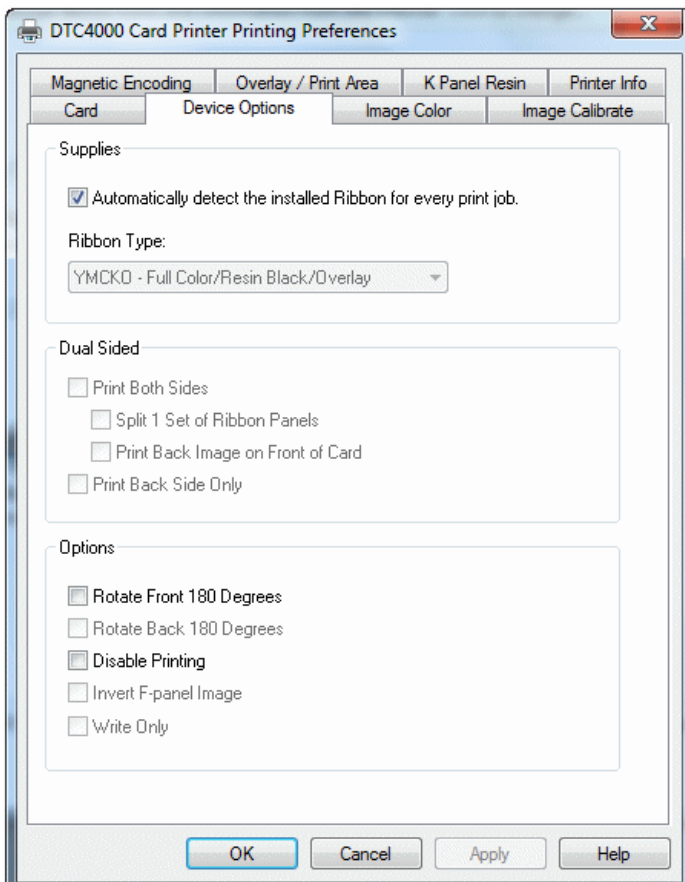
To install the printer:

1. If the printer has a Mifare USB Encoder, unpack the 5x2x encoder driver by double-clicking the appropriate exe file located in the `Symmetry\Extras\Cardman 5x21 Drivers` folder on the Symmetry installation media.
2. Install the printer driver using the media supplied with the printer. Follow the on-screen instructions. If you are given the opportunity, select the driver unpacked in step 1. Otherwise, update the driver as documented in the readme file in the driver folder.

Once installed, right-click on the printer in the Windows Control Panel and select **Printing Preferences**. The settings shown here are recommended.

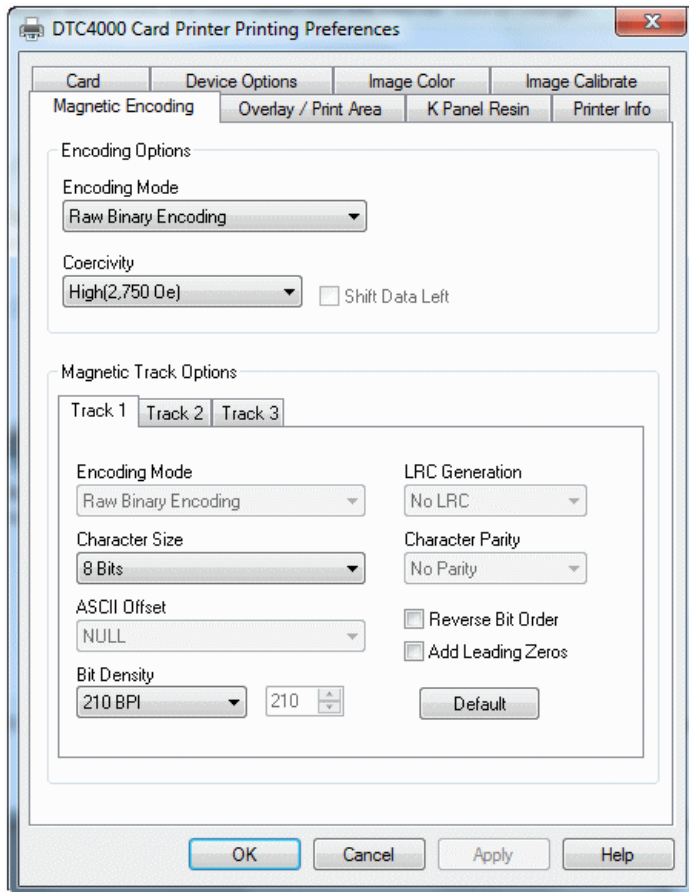
Check the other tabs to make sure the settings are as required.

For smart-card encoding, set up a **Smart Card Encoder** port using the "Install/System/Client Ports" screen in the Symmetry software. Choose the USB port type.



See the next page for magnetic encoding options.

Note: Make sure that the windows name of the printer includes the name "Fargo" (the same default name specified in the `fargoprinter=multimax.ini` setting). Also set `EncoderType=5` for this printer type.



*In the Magnetic Encoding tab, select **RAW Binary Encoding** and uncheck **Reverse Bit Order** for Track 1 and 2. LegacyFargoPrinter must be set to 0 (the default) in multimax.ini.*

Datacard SP55

Note: Make sure that the windows name of the printer includes the name "Datacard" (the same default name specified in the datacardprinter= multimax.ini setting).

Refer to the Dataclass *Printer Installation Guide* for details of how to install the printer.

Appendix D: Scanshell 800 Card Scanner Installation and Setup

A Scanshell 800 optical character recognition card scanner, used with the idScan software, enables data on driver licenses to be transferred to Symmetry. The scanner and software are available from Card Scanning Solutions (www.card-scanner.com).

The transfer process is extremely easy: you simply open a card holder or visitor record in Symmetry, then insert the license card. The person's photograph and signature automatically populate the appropriate areas in the card holder or visitor record. Personal data such as the person's license number and address populate pre-defined personal data fields. Entries in the `multimax.ini` file determine the mapping between the scanned data and the Symmetry personal data titles.

Installing the Software

Installing the Scanshell Driver

Install the Scanshell driver as follows:

1. Download the driver from www.card-scanner.com.
2. Connect the scanner to the PC using the supplied USB cable.
3. When the Found New Hardware wizard is displayed, browse to the extracted Scanshell driver (.inf) file and install it.
4. Click **Continue Anyway** if you see a message informing you that the Scanshell 800 has not passed Windows logo testing.

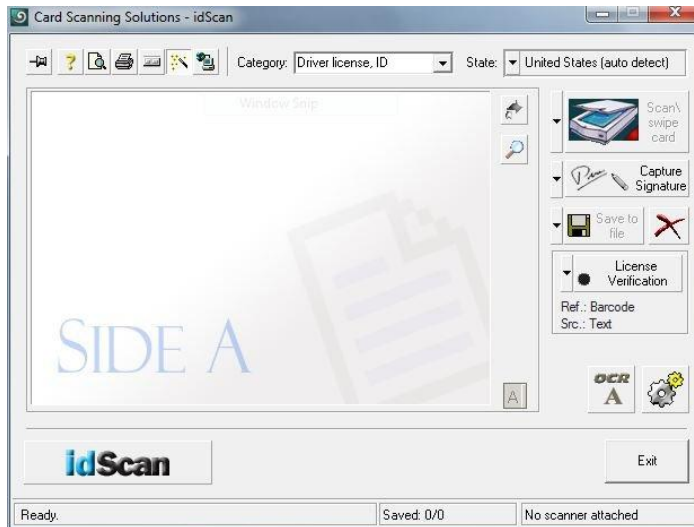
Installing the idScan Software

Install the idScan software using the default settings.

Configuring the idScan Software

Configure the idScan software as follows:

1. Start **IDScanOCR**.
2. If prompted, enter the license key provided with the software. The main window is displayed:

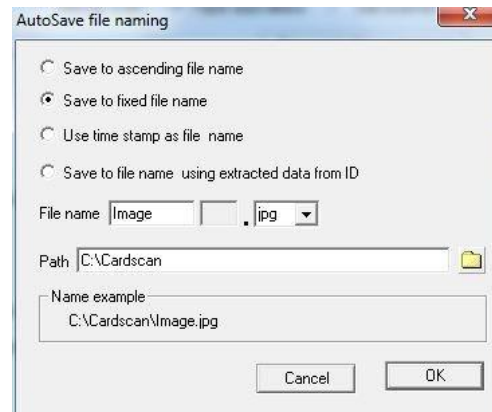
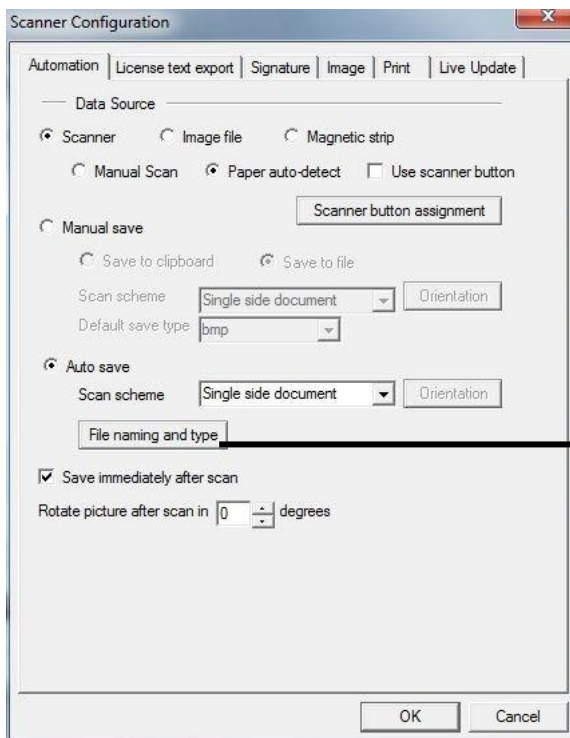


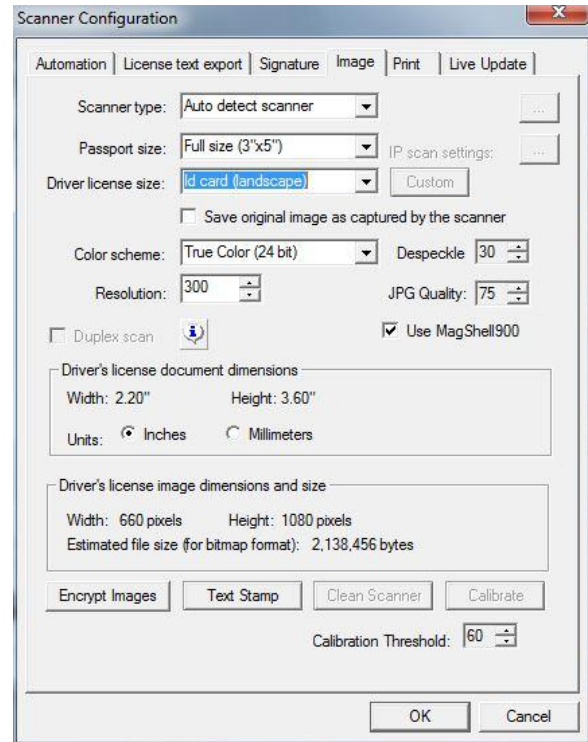
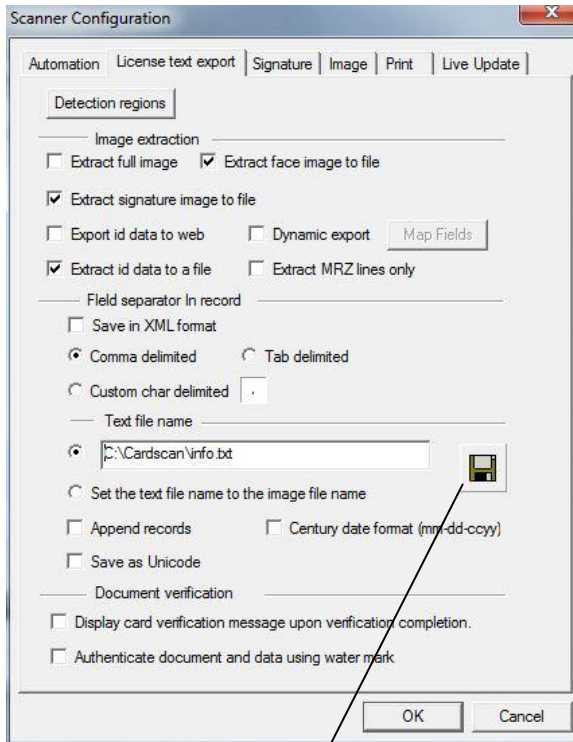
Note: The appearance of the screens may be different from shown here, depending on the version of idScan used.

3. Use auto detect in the State menu (or for other versions of idScan, select **Detect state**).
4. Click the **View scanner configuration** button:

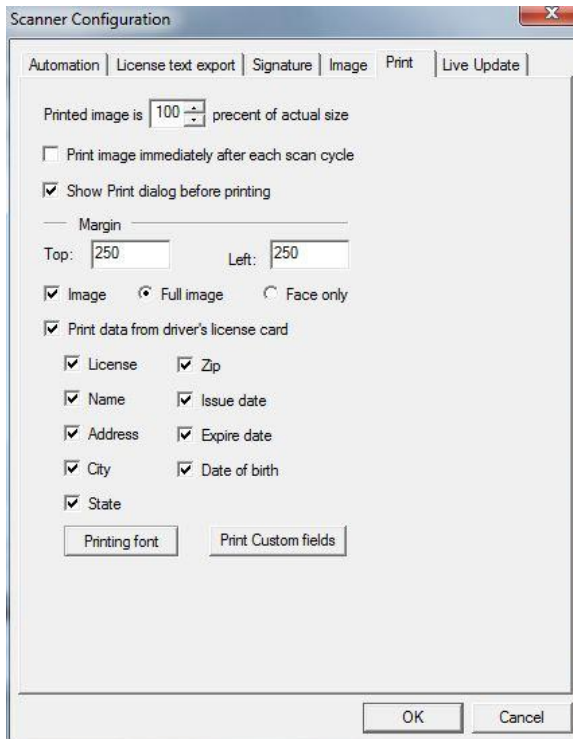


5. Set up the four tabs in the Scanner Configuration dialog as shown next.





Click the **Save** button. In the dialog displayed, create the folder named `C:\cardscan` and a file named `info.txt` in that folder.



4. Click **OK** in the Scanner Configuration window.

Other Configuration Tasks

Editing Multimax.ini

You need to edit the [idScan] section of the multimax.ini file to specify the mapping between the scanned data and the Symmetry personal data titles. Please refer to page 55. Restart the computer once you have saved changes to multimax.ini.

Calibrating the Scanner

You must calibrate the scanner before using it for the first time. To calibrate the scanner:

1. Start **IDScanOCR**, then insert the supplied calibration card (the correct way up).
2. Click **Video Scanner Configuration** in the main window. Select the image tab.
3. Click the **Calibrate** button.
4. Once calibration is complete, click **Done**. The scanner is now ready for use.

The idScan software must be running to start a scan.

Scanning a Card

To scan a license card and transfer details to Symmetry:

1. Make sure that the idScan software is running.
2. Open a new or existing card holder or visitor record.
3. Insert the card face down into the scanner, top edge first. The card is scanned. Approximately 10 to 20 seconds later, the card details are displayed in the Card Holders or Visitors screen.

If scan does not start, make sure that **Paper auto detection** is selected in the Automation tab of the Scanner Configuration dialog.

Appendix E: Port Usage

This appendix lists the standard ports used by Symmetry. This information may be needed to configure routers, firewalls or port forwarding.

Standard Ports for General Microsoft Software

The following general Windows ports are used by all Symmetry computers.

Purpose	Port	Type	Communications Direction
Microsoft file/printer sharing (if used)	139	TCP	IN and OUT
	445	TCP	IN and OUT
	137	UDP	IN and OUT
	138	UDP	IN and OUT
DNS, Domain Name System (required if a domain is used)	53	TCP & UDP	OUT
NETBIOS (Name Resolution)	137	UDP	IN and OUT
Windows Time Service (for time synchronization)	123	UDP	OUT
MSMQ (MS Messages Queue service). These ports are needed for Symmetry machines to host MSMQs	1801	TCP & UDP	IN and OUT
MSMQ (MS Messages Queue service). This port is used for the internal "ping" mechanism for Message Queuing. Note: For Message Queuing 4.0 and later, UDP port 3527 is no longer used by default. For more information, visit: http://technet.microsoft.com/en-us/library/cc731882(WS.10).aspx	3527	UDP	IN and OUT
RPC (needed by DCOM, DTC, MSMQ, Cluster). Dynamic RPC port typically assigned by RPC for handshaking with an independent client or with an RPC server for the Message Queuing server to determine the fixed ports.	135	TCP	IN and OUT

Microsoft SQL Server

Note: The following specifies the default ports; SQL Server may be set up to use different ports than those specified below.

Purpose	Port	Type	Communications Direction
Microsoft SQL Server - Port on computer that runs Microsoft SQL Server	1433	TCP	IN
Microsoft SQL Server Browser - Port on computer that runs Microsoft SQL Server, for SQL Server Browser	1434	UDP	IN
Microsoft SQL Server - Port on Symmetry client or NVR, or on the Symmetry server if a separate database server is used	1433	TCP	OUT
Microsoft SQL Server Browser - Port on Symmetry client or NVR, or on the Symmetry server if a separate database server is used	1434	UDP	OUT

Symmetry Node/Device/Client Communications

Purpose	Port	Type	Communications Direction
Port on Symmetry server for Symmetry client messaging	12090	TCP	IN
Port on any Symmetry computer that uses network communications to nodes	3001	TCP	OUT; also IN if node instigates communications
Port on any Symmetry computer from which the G4S Flashnet utility or device discovery (Discover button) is used	49107	TCP & UDP	IN and OUT

Emails

The following default ports are used by Symmetry for any option that send information via email (such as email alarms and workflow emails).

Purpose	Port	Type	Communications Direction
Port on Symmetry server or client for SMTP emails (configurable in the "Setup/Configuration/Email Profiles" screen)	25/587/465	TCP & UDP	OUT

RDS/Citrix Access

(See the *RDS/Citrix Client Access Installation and User Guide*.)

Purpose	Port	Type	Communications Direction
Port on web server used for Remote Desktop Services	3389	TCP	IN
Port on web server used for non-encrypted (HTTP) communications from clients	80	TCP	IN
Port on web server used for encrypted (HTTPS) communications from clients	443	TCP	IN

Symmetry NVR

Purpose	Port	Type	Communications Direction
NetBIOS	137	UDP	IN and OUT
RTP video traffic	6456-7456	UDP	IN
Real-Time Streaming Protocol traffic	554	TCP	IN
HTTP traffic	8080	TCP	IN

Video

Purpose	Port	Type	Communications Direction
Port on Symmetry server used for communications from Integral DSXpress and DSRealvue Xpress DVRs	1433/1434	TCP	IN
Port on any Symmetry client used to play back video (RTP traffic)	6456-8457	UDP	IN
Microsoft Universal Plug and Play; primarily used for the discovery of ONVIF video cameras	2869	TCP	IN and OUT
	1900	UDP	IN and OUT

Bosch Cameras

The following ports are used at a Bosch camera. The integration uses the RCPP.DLL third-party SDK runtime file.

Purpose	Port	Type	Communications Direction
Firmware upload and TCP tunneling via HTTP	80	TCP	IN
Encrypted communication via SSL	443	TCP	IN
RCP+ communication	1756	TCP	IN and OUT
Network scan target	1758	UDP	IN
Network scan response	1759	UDP	OUT
Multicast network scan target	1900	UDP	IN

Panasonic Cameras

The following ports are used at a Panasonic camera. No third-party SDK runtime files are used. Panasonic cameras use HTTP calls only.

Purpose	Port	Type	Communications Direction
HTTP	80	TCP	IN
Alarm notifications	1818	TCP	IN and OUT
Device discovery response	10669	UDP	OUT

Sony Cameras

The following ports are used at a Sony camera. The integration uses the SNCSTRM.DLL and SONYNETWORKCAMERA4.DLL third-party SDK runtime file.

Purpose	Port	Type	Communications Direction
HTTP	80	TCP	IN
Device discovery response	4000	UDP	OUT

Symmetry Cameras

The following ports are used at a Symmetry camera. The integration uses the IPADMINTOOL.DLL third-party SDK runtime file.

Purpose	Port	Type	Communications Direction
HTTP	80	TCP	IN
RTSP	554	TCP	IN
Alarm notifications (two consecutive ports, one for RTP and one for RTCP are required per camera)	3000-32001	UDP	IN and OUT
Device discovery response (via IPADMINTOOL.DLL)	5353	UDP	OUT
Broadcast of events generated by the camera (75xx HD camera and 79xx HD encoder)	2555	TCP	OUT

Microsoft Clustering

(See the *Cluster Installation Manual*.)

Purpose	Port	Type	Communications Direction
Cluster Services	3343	UDP	IN and OUT

SALTO Interface

(See the *Disconnected Doors Installation and User Guide*.)

Purpose	Port	Type	Communications Direction
Port on Symmetry server used by the SALTO server to send messages.	20001	TCP	IN
Port on SALTO server used by Symmetry to send messages.	20000	TCP	IN

XML Open Integration

(See the *XML Open Integration Module Installation and User Guide*.)

Purpose	Port	Type	Communications Direction
Port on the Symmetry server used for XML Open Integration	65101	TCP	IN

Global Edition

Purpose	Port	Type	Communications Direction
Port on the Symmetry head office server used for https or http communications from the regions. Default ports shown; alternative ports can be used if configured in G4T.Global.CommsService.exe.config.	443 (https or 80 (http)	TCP	IN

Appendix F: Restoring Symmetry

This appendix describes how to restore the Symmetry server and/or database in the unlikely event of, for example, a disk or other fault. See page 40 for general detail of backup configuration.

Restoring Symmetry and SQL Server

The following describes how to replace the Symmetry and, if required, SQL Server software in the extremely unlikely event that it is necessary to do so.

1. Shut down Symmetry at the Symmetry server and at all clients.
2. Log in as an Administrator at the Symmetry server.
3. Note the drive and installation folder of Symmetry (default folder is "Security Management System" in Program Files).
4. Remove Symmetry (see page 48). If you are using SQL Server Express, choose to remove the database and, if required, SQL Server Express during the uninstall process.
5. If you are using a full version of SQL Server and want to remove and reinstall it, do so now.
6. Re-install Symmetry using the same location as noted in step 3 (paths specified in the ini file at clients will need to be changed if a different installation folder is used). Check that Symmetry is functioning correctly before restoring the previous database (as described next).

Restoring the Symmetry Database

The following describes how to restore the Symmetry database from a backup. **Note:** It is not necessary to replace Symmetry or SQL Server first.

1. Shut down Symmetry and all Symmetry (SMS) services at the Symmetry server and at all clients.
2. Log in as an Administrator at the server that contains the database.
3. Copy the databases from the backup media to the computer that contains the Symmetry database.
4. Make sure that the SQL Server service is running, start SQL Server Management Studio, then open the server followed by the **Databases** tree.
5. Right-click on the **multiMAX** database, select **Tasks, Restore, Database**. Select **Device**, then click the browse (...) button. In the dialog displayed, click **Add**, then select the backup file. Click **OK** twice to return to the Restore Database dialog. Select the backup.
6. Select the Options page on the left side of the dialog, then select **Overwrite the existing database**.
7. In the Files page, check the paths displayed. These must match the path to the Data folder used by SQL Server (by default, Program Files\Microsoft SQL Server\<InstanceName>\Data). If these paths are not correct, click and edit the paths. Make sure that the drive letter is correct.
8. Click **OK** in the Restore Database dialog to begin the restore process. If the restore fails, make sure that the Symmetry services are stopped and try again.
9. Repeat steps 5 to 8 for the **multiMAXTxn** database.
10. Close SQL Server Management Studio.

11. Insert the Symmetry installation media.
12. Right-click the following file and select **Run as Administrator**:
`<Symmetry Media Drive>\Symmetry\Disk1\DB\Recovery\ReAssignPerms.exe`
This program ensures that the Symmetry permissions are configured in the database.
13. Allow the program to run and click **OK** to start the application. Click only once and wait until you see a response (may take a while).
Log files are produced in the "Security Management System\Scripts\DBA\Output" folder.
14. Start the Symmetry (SMS) services. Symmetry is ready for use.

Appendix G: Pre-Installation Checklist (Separate Database Server)

This appendix provides a checklist of the tasks that need to be completed before you install Symmetry Enterprise Edition when a separate database server is used. The following assumes that separate people are used to install Symmetry, set up the database server and set up the domain.

Tasks for the Installer of Symmetry

<u>Tasks</u>	<u>See Page</u>
<input type="checkbox"/> Check that the domain and database administrators have completed all their tasks (see next sections).	13
<input type="checkbox"/> Check that licenses to install the Symmetry server software, Symmetry client software and any optional modules are available.	19
<input type="checkbox"/> Make sure .NET 3.5 is installed.	15

Tasks for the Database Administrator

<u>Tasks</u>	<u>See Page</u>
<input type="checkbox"/> Test network performance.	13
<input type="checkbox"/> Make sure .NET 3.5 is installed.	15
<input type="checkbox"/> Install SQL Server on the database server for Symmetry.	15
<input type="checkbox"/> Create and share a folder for backups. Give permissions to the installer of Symmetry and to the Symmetry services account. Change the SQL Server backup path before Symmetry is installed.	18
<input type="checkbox"/> Enable TCP/IP protocol for the SQL Server database instance.	17
<input type="checkbox"/> Configure the firewall on the database server.	18
<input type="checkbox"/> Provide the installer of Symmetry with database administrator permissions to the SQL Server instance .	18

- | | | |
|--------------------------|--|----|
| <input type="checkbox"/> | Enable Network Discovery on the database server. | 18 |
| <input type="checkbox"/> | Confirm that database optimization software is not being used. | 19 |

Tasks for the Domain Administrator

<u>Tasks</u>	<u>See Page</u>
<input type="checkbox"/> Provide the installer of Symmetry a domain login account, with local administrator permissions to the Symmetry server and clients.	13
<input type="checkbox"/> Create the Symmetry (ACS) groups in Active Directory.	14
<input type="checkbox"/> Create the Symmetry services account and assign it to the ACSAdmin in Active Directory.	14
<input type="checkbox"/> Assign all users who are required to use Symmetry to the ACSUsers group in Active Directory.	15
<input type="checkbox"/> Enable time synchronization across the network.	19
<input type="checkbox"/> Enable a printer for use by Symmetry users and the Symmetry services account.	19