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INTRODUCTION

The InFocus® ProjectorNet™ system is a complete projector networking solution. It is designed to extend the life of projectors, prevent projector theft, avoid projector downtime, and provide warnings on issues such as low lamp life and projector errors. By utilizing client/server software, it allows the control of projectors with built-in network capability, and through the use of optional Network Adapters it allows the control of legacy InFocus, ASK, and Proxima projectors that do not have network capabilities.

ProjectorNet is designed to enable IT Administrators to install, set up and maintain the ProjectorNet system. It also allows end-users designated as Help Desk and Facilities personnel to remotely monitor, control, and troubleshoot multiple projectors widely distributed throughout an organization by connecting them to the corporate Local Area Network (LAN).

ProjectorNet operates as a snap-in within the Microsoft® Management Console (MMC), an existing graphical user interface concept.

The ProjectorNet User’s Guide

This User’s Guide is written for both the ProjectorNet Administrator and the ProjectorNet end-user, such as Help Desk and Facilities personnel. Please note that the majority of the chapters in this User’s Guide are intended to be read and used by your network administrator or IT professional (the ProjectorNet Administrator) who is to install, set up, and maintain ProjectorNet on a corporate LAN.

A single chapter, “ProjectorNet for End-Users,” focuses on actually using ProjectorNet, and is designed for the Help Desk and Facilities personnel who perform the projector monitoring and troubleshooting duties via ProjectorNet.
Introduction

The majority of this User’s Guide chapters are intended to be read and used by the IT Administrators.

If you are an end-user of ProjectorNet, just read the “Introduction,” “About ProjectorNet,” “ProjectorNet for End-users” chapters and the Appendix.

About this User’s Guide

The following headings introduce and briefly describe what to expect in the chapters of this guide.

Introduction

This chapter, gives a very high-level glance at the ProjectorNet system, the audiences targeted for this User’s Guide, this User’s Guide’s organization, and where to find assistance. This section is written for both Administrators and end-users.

About ProjectorNet

In the “About ProjectorNet” chapter, a more detailed overview of ProjectorNet and its components can be found along with definitions of the “User Categories” and a sample “System Architecture” layout. This chapter is intended for both Administrators and end-users.

ProjectorNet for Administrators

The “ProjectorNet for Administrators” chapter contains an overview of the installation process, a list of information needed before embarking upon the installation, and a detailed explanation of the installation process.

This chapter also instructs Administrators on getting ProjectorNet running, setting up the ProjectorNet server application, and discusses maintenance instructions. This chapter is intended for Administrators, not for the end-users.

ProjectorNet for End-Users

This chapter details the installation and setup processes for the end-users of ProjectorNet, as well as describes each of the tasks that the end-user can manage. An end-user is the Helpdesk, Facilities, or any other designated staffer who is to use the software on an everyday basis to remotely monitor, control and troubleshoot multiple projectors.

Appendix

The Appendix lists projectors supported by ProjectorNet and describes menu, toolbar, and window interface options. This chapter is intended for both Administrators and end-users.
Glossary
The Glossary contains terms that are used in our descriptions of both networks and ProjectorNet.

If You Need Assistance
The first place to look for help is in this manual. The software also contains an on-line Help system that is listed as a book within the MMC’s Help application. Just select the ProjectorNet book to view its topics, or browse through the index to locate a topic that can answer your question.

Help can also be found at the Service and Support section of our website at http://www.infocus.com/projectornet. You’ll find a Technical Library, FAQs, and support contacts including a technical support e-mail form.

The software also contains an on-line Help system that is listed as a book within the MMC’s Help application. Just select the ProjectorNet book to view its topics, or browse through the index to locate a topic that can answer your question.

If these sources don’t answer your question, call InFocus Customer Service directly at 1-800-799-9911. Call between 6 a.m. and 6 p.m. PST, Monday through Friday. Service is available in North America after hours and on weekends for a fee at 1-888-592-6800.

In Europe, call InFocus in The Netherlands at (31) 35-6474010. In Asia, call InFocus in Singapore at (65) 6334-9005.

Or, send us an e-mail at techsupport@infocus.com.


Warranty
This product is backed by a limited warranty. The details of the warranty are printed at the back of this manual.

If you have an optional Network Adapter, please refer to its accompanying documentation to locate its warranty information.
Introduction
ABOUT PROJECTORNET

ProjectorNet Overview

As noted in the previous chapter, ProjectorNet is a system designed to provide control and administration of multimedia projectors from remote consoles. The system allows management of legacy InFocus, ASK, and Proxima projectors that do not have network capability, as well as projectors with built-in network capability. By using an existing and familiar graphical user interface powered by the MMC, ProjectorNet grants administrators and privileged users remote access to a wide range of projector maintenance and management functions.

The ProjectorNet system is easy to install, as both software and optional hardware components operate out-of-the-box without expensive customized programming.

ProjectorNet Components

ProjectorNet is primarily a client/server software package that works with projectors that have built-in networking capability. However, through the use of an optional Network Adapter, ProjectorNet can manage legacy InFocus, ASK, and Proxima projectors that do not have built-in networking capability. A list of projectors that use the Network Adapter, and those that have built-in networking capabilities are listed on page 73.

The ProjectorNet Software

ProjectorNet is delivered on a single read-only installation CD. It contains both the server and client software.

The individual software components are listed below.

- **Windows 2000 Administration Server and MSDE (Microsoft Data Engine) database**
  The back-office server software and database are installed on the same server machine. It is a centralized, non-dedicated server application that communicates with all network-enabled projectors on a network segment.
• **MMC Snap-in User Interface**
  
The user interface is powered by the MMC Application Program Interface (API). ProjectorNet's layout of text items, dialog boxes, and the lists of node attributes for property boxes has been customized by InFocus. It is used to manage, diagnose and control projectors from a remote location.

• **Documentation**
  ProjectorNet contains the following documentation:
  
  • **ProjectorNet User’s Guide**
    
    This document is a PDF-formatted manual (ProjectorNet.pdf) intended for both the Administrator and the end-users. It can be printed as a one-sided document, two-sided document (duplex) if your printer supports it, or read from the screen.

  • **ProjectorNet On-line Help**
    
    The on-line help is a standard HTML help system that can be invoked by selecting the `<F1>` key or by selecting the Help icon on the tool bar. It is part of the MMC snap-in's help system and resides as a “book” below the MMC “book” icon in the Table of Contents.

  • **ProjectorNet Quick Start**
    
    The Quick Start is intended to aid the ProjectorNet Administrator in getting up and going in short order. It is included on the inside pages of the CD jacket.

The CD also contains a Collateral folder where you can find a **ProjectorNet Presentation**, a **ProjectorNet Data Sheet**, and a **Frequently Asked Questions (FAQ)** document.

• **Network Connectivity Options**
  ProjectorNet supports two network connectivity options. These options are:

  • Projectors with built-in networking capability, such as the InFocus LP790

  • Projectors attached to a Network Adapter

ProjectorNet also supports common networking protocols (TCP/IP), ensuring network compatibility.
**ProjectorNet Hardware - Legacy Compatibility**

A RS-232 to RJ-45 Serial Device Server, the Network Adapter, is available from your authorized InFocus Corporation network dealer. The Network Adapter is an optional hardware item and not a requirement unless you have legacy projectors that you want managed ProjectorNet. The ProjectorNet software requires the Network Adapter in order to communicate to these legacy InFocus, ASK, and Proxima projectors.

**User Categories**

ProjectorNet is based upon three User Categories. The User Categories are the *privilege groups* that maintain and operate ProjectorNet as needed. The three User Categories are:

- **Administrator**
- **Facilities**
- **Help Desk**

**Administrator User Category**

The Administrator User Category is similar to a network administrator. This category contains all of the functions relating to the connection and configuration of projectors and servers to the network.

The Administrator adds users and assigns privileges to the Facilities and Help Desk categories. The Administrator is allowed to add projectors and modify all projector attributes, users, servers, and directories. In general, these functions are performed by the IT department for other network resources such as file servers, printers, etc.

<table>
<thead>
<tr>
<th>Function</th>
<th>User Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Install and set up ProjectorNet on the server</td>
<td>Administrator</td>
</tr>
<tr>
<td>Add and Remove ProjectorNet servers</td>
<td>Administrator</td>
</tr>
<tr>
<td>Add projectors to ProjectorNet</td>
<td>Administrator</td>
</tr>
<tr>
<td>Configure IP Addresses, Server Names, TCP/IP Ports</td>
<td>Administrator</td>
</tr>
<tr>
<td>View Current Server Status</td>
<td>Administrator</td>
</tr>
<tr>
<td>Add and Remove Users</td>
<td>Administrator</td>
</tr>
<tr>
<td>Set User Privileges</td>
<td>Administrator</td>
</tr>
</tbody>
</table>
About ProjectorNet

Facilities User Category
Conference Room projectors are typically managed by the department that owns them, or by a corporate Facilities group. In keeping with this model, the functions that support the actual management of the projectors are included in the Facilities User Category.

This category views and adjusts all preventative maintenance statuses and alerts. The Facilities User Category also has the ability to set projector event parameters (such as lamp life threshold), manage location and asset tracking, and specify the e-mail address for each projector event message type, for example.

<table>
<thead>
<tr>
<th>Function</th>
<th>User Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Import and View Projector Model Info</td>
<td>Facilities</td>
</tr>
<tr>
<td>Set Projector Location</td>
<td>Facilities</td>
</tr>
<tr>
<td>Remove Projector from Server Database</td>
<td>Facilities</td>
</tr>
<tr>
<td>Set Event Definition Parameters (including E-Mail Address)</td>
<td>Facilities</td>
</tr>
<tr>
<td>View Event Log and Delete Entries</td>
<td>Facilities</td>
</tr>
<tr>
<td>Add, Remove, and Edit Directory Info</td>
<td>Facilities</td>
</tr>
<tr>
<td>View Current Projector List with Projector Status</td>
<td>Facilities</td>
</tr>
</tbody>
</table>

Help Desk User Category
The Help Desk User designation provides network privileges for viewing all help desk status and control issues. For example, the group in charge of troubleshooting all projector problems would be set up as a Help Desk User.

Help Desk personnel have real-time access to projector settings. This lets them assist users in a conference room with a problem on a network-installed projector. Help Desk personnel can view the current input source, power state, and other settings such as
ceiling mount and rear projection. Functions are also available to allow Help Desk personnel to change these settings on a remote projector.

<table>
<thead>
<tr>
<th>Function</th>
<th>User Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monitor Projector Status</td>
<td>Help Desk</td>
</tr>
<tr>
<td>Update Projector Settings</td>
<td>Help Desk</td>
</tr>
<tr>
<td>including Power, Input Source, etc.</td>
<td></td>
</tr>
</tbody>
</table>

**System Architecture**

The following illustration (Figure 1) represents a basic view of the ProjectorNet system architecture. It contains:

- Networked projectors
- The ProjectorNet server
- Administrator, Facilities, and Help Desk

![ProjectorNet system architecture diagram](image)
**ProjectorNet Usage Model**

The following diagram (Figure 2) illustrates a usage model for ProjectorNet. In this example, there is a campus with three buildings connected together by a LAN. Each of the three buildings has three floors with seven projectors in each building.

- The first floor of each building has three projectors connected to the LAN through a Network Adapter.
- The second floor has one projector connected through a Network Adapter.
- The third floor has three projectors connected to the LAN through a Network Adapter and a DP8000 with a built-in network interface card (NIC).

A non-dedicated ProjectorNet server controls all of the projectors in these buildings. Available elsewhere on the network are three different types of users:

- An Administrator
- A Facilities User
- A Help Desk User

All three users have different projector control and status authorities. The Administrator controls the overall ProjectorNet system including servers, directories, events, and users. The Facilities user has the authority to view any maintenance related issues including lamp changes, filter cleaning, and other problems. Finally, the Help Desk user can control and troubleshoot all projectors from a remote location, negating a trip to the actual conference room holding the projector. See “User Categories” starting on page 7 for more specific user category roles.
FIGURE 2

ProjectorNet Usage Model
About ProjectorNet
PROJECTORNET FOR ADMINISTRATORS

Overview
This chapter explains the processes for installing and setting up the ProjectorNet server software. It also lists the information that you, the ProjectorNet Administrator, should have at hand for the server software installation. Finally, it details standard Windows 2000 maintenance processes that may help you should ProjectorNet need to be stopped, paused, or restarted.

The software includes:
- ProjectorNet Server software and MSDE database
- MMC snap-in user interface
- InstallShield installation software
- The InFocus Projector Administration Service
- The InFocus Locator Service
- The InFocus Directory Service

About the ProjectorNet MMC snap-in
The primary administrative tool for the ProjectorNet software is the MMC snap-in. It provides three user group privilege levels (see “User Group Overview” on page 30) that allow users access to specific information depending upon which user group they are assigned to.

The MMC snap-in is designed for deployment to all ProjectorNet users involved in the management of network projectors in some capacity. Multiple users can run the MMC snap-in and connect to the servers at the same time.

The MMC snap-in interacts with all of the ProjectorNet Services (see “Services Overview” on page 24). It is responsible for obtaining data from each of the Services and combining this data into an integrated view of the entire system for the user. Each instance of the ProjectorNet MMC snap-in running in the system maintains an active connection (TCP/IP socket) with each Service.
ProjectorNet for Administrators

Whenever you select a new node or subnode in the Scope Pane, the column categories at the top of the Results Pane will change. For an explanation of these categories, see “Menu Items, Tool Bar Icons, and Results Pane Options” on page 74.

The ProjectorNet MMC snap-in is shown in **Figure 3**. It contains the ProjectorNet nodes and subnodes in the Scope Pane on the left and subnodes in the Results Pane on the right.

**Figure 3**
The ProjectorNet MMC snap-in

System Requirements

The following two topics contain the hardware and software requirements for installing ProjectorNet.

**Hardware System for Administration Server**

- SMTP-Compliant E-mail Server (to support e-mail notification of projector events)
- Projector devices accessible from ProjectorNet Administration server
- Pentium® III 350 or higher
- 128 MB RAM minimum
- 250 MB free disk space
- CD drive
• **LAN/Intranet Access**
  A Network Interface Card (NIC) configured to use the TCP/IP stack.

• **SMTP-Compliant E-mail Server**
  To support e-mail notification of projector events.

**Projector Device Connectivity**

One or more projectors connected to a network in either of the following ways:

• Legacy InFocus, ASK, and Proxima projector connectivity via a Network Adapter, such as the Lantronix UDS-10 Serial Device Server.

• Built-in Network Interface Card (NIC). Projectors with networking on board, such as the Proxima DP8000.

**Optional Connectivity Configurations**

• The Proxima ® ProjectionLink PL-300 device can be set up to communicate with a ProjectorNet 1.1 server installation that is connected to a projector through a Lantronix UDS-10 Serial Device Server. See the “ProjectorNet 1.1 Release Documentation” (an HTML document that is part of the ProjectorNet 1.1 upgrade) for setup information.

• Local control devices by companies such as Crestron and AMX can also be set up to work with the Lantronix UDS-10 Serial Device Server. See the “ProjectorNet 1.1 Release Documentation” for setup information.

**Installing ProjectorNet on the Server**

When you install ProjectorNet, you are installing the ProjectorNet Server. You may also install the ProjectorNet MMC Client software. Both of these installations are detailed on page 16 and on page 18.

**Information Needed for Installation**

The following lists the information that you, the ProjectorNet Administrator, need to have at hand when starting the installation process.

• The name of the machine on which you are installing the server software.

• A user account with system administrator access.
SQL Server and MSDE

MSDE is installed during the ProjectorNet installation process. The ProjectorNet database is automatically added to the established list of databases via the MSDE database attach functionality. ProjectorNet utilizes default MSDE parameters that should not be edited.

If you already have SQL Server 7.0+ or MSDE installed, it is possible that your versions of SQL Server 7.0+ or MSDE may contain custom parameters from other databases. These custom parameters could cause conflicts with the ProjectorNet default parameters. During installation, ProjectorNet examines the default MSDE parameters. If custom parameters are discovered the installation process is stopped.

Please keep in mind that the optimal environment for the ProjectorNet server software is a clean dedicated machine, without SQL Server 7.0+ or MSDE installed. This eliminates the problem.

Microsoft Exchange

Because of network security and other issues, it is strongly recommended that you only use System Account (Local System) for the InFocus Locator Service and InFocus Directory Service (discussed on page 24.)

Installation Steps: ProjectorNet Server Software

Perform the following steps to install the ProjectorNet software. The server software is only appropriate for Windows 2000 Server, Windows 2000 Advanced Server, and Windows 2000 Professional and not other versions of Windows:

- If the label on the back your ProjectorNet CD cover has the term Software Key on it, you have the one-seat trial version and can proceed with the installation.
- If the label on the back your ProjectorNet CD cover has the term Activation Code on it, you have the 5-seat, 20-seat, 50-seat, or 100-seat version and need to acquire a Software Key. See #7 below.
1. Exit all programs.

2. Insert the ProjectorNet CD into your CD drive to launch the ProjectorNet Installation Wizard.

3. At the ProjectorNet CD’s main menu, click the **Install Product** button.

4. At the Installation menu, click the **ProjectorNet Server** button. The server software installs the:
   - InFocus Server Application
   - InFocus ProjectorNet Database
   - Microsoft MSDE Engine
   - Microsoft XML Parser
   - InFocus default projector database

5. Read and accept the license agreement. Click **Next**.

6. If you have the one-seat trial version of the ProjectorNet CD, complete the following steps, otherwise, skip to #7:
   - a. Enter the **Software Key** for a one-seat projector in the text box. This number can be found on your ProjectorNet CD cover.
   - b. Click **Next** and skip to # 8.

7. If you have the 5-seat, 20-seat, 50-seat, or 100-seat version of the ProjectorNet CD, complete the following steps:
   - a. Go to the ProjectorNet website at [www.infocus.com/projectornet](http://www.infocus.com/projectornet) to obtain a **Software Key**.
   - b. Enter the **Activation Code** located on the back of your ProjectorNet CD cover and other requested information to obtain your **Software Key**.
   - c. Once you complete the step above, your **Software Key** will immediately be e-mailed or faxed to you, depending upon your preference.
   - d. If you have any questions or concerns, call InFocus Customer Service at 1 (800) 799-9911.
   - e. Go on to #8.

8. Enter **Primary Username**. This allows you to override the
default primary username, if needed.

9 Although the default location is recommended, if you prefer a different location for the program files, browse to the preferred location. Click Next.

10 After the installation completes, click the Finish button and return to the ProjectorNet CD’s main menu.

**Installation Steps: ProjectorNet MMC Client Software**

Perform the following steps to install the ProjectorNet MMC Client software:

1 At the ProjectorNet CD’s main menu, click the Install Product button.

2 At the Installation menu, click the ProjectorNet MMC Client button.

3 Read and accept the license agreement. Click Next.

4 Although the default location is recommended, if you prefer a different location for the program files, browse to the preferred location. Click Next.

5 Enter the IP Address of the machine on which you installed the server software. Click Next.

6 After the installation completes, start the ProjectorNet MMC snap-in by clicking the Start MMC window button.

7 After the installation completes, start the ProjectorNet MMC snap-in by clicking the Start MMC window button.

Should the MMC Client not connect to the server, check to confirm that the services installed on the server (all four InFocus Services and the MSQL Server Service) are in fact running. If needed, start the InFocus Locator Service, the InFocus Administration Service, and the InFocus Directory Service through the Windows 2000 Services application. This is detailed in the “ProjectorNet Maintenance” section in the User Guide’s “ProjectorNet for Administrators” chapter.

If the ProjectorNet MMC snap-in is running, close it and then restart it.
ProjectorNet Log Files

The installation process creates a log file for the ProjectorNet database. The log tells you the server name, where the Administration database files reside on the server, and if applicable, any error information that resulted from the installation.

To view the installation file navigate to

Start > Search > For Files or Folders >

enter Install_Data*.log in the Search for Files or Folders Named text box, and click OK.

When the Install_DatabaseInstall.log file displays, open it with the Windows Notepad application.

Installation Error Message

ProjectorNet uses the default collation in SQL Server 7.0+ or MSDE. If you have set the collation to something other than the default, then you will receive a message during installation informing you that the MSDE or SQL Server 7.0+ database engine does not meet the minimum requirements for ProjectorNet. To remedy this situation set the collation to the default and start the ProjectorNet installation process over again.
Setting Up ProjectorNet for E-mail Notification

The ProjectorNet server needs to be set up to allow it to send e-mail notifications when a user needs to know of a projector event. To set up the ProjectorNet server, perform the following steps:

1. If it is not already installed on your server, install Microsoft’s Internet Information Services (IIS). Installing IIS installs SMTP Virtual Server, which is necessary for ProjectorNet to send e-mail. Install IIS by navigating to:

   Start > Settings > Control Panel > Add/Remove Programs > Add/Remove Windows Components

   and selecting Internet Information Services (IIS).

2. Select Next and follow the instructions. You need the Windows Professional 2000 Service Pack 2 CD for this process.

3. Once IIS is installed, set up the SMTP Virtual Server by navigating to:

   Start > Settings > Control Panel > Administrative Tools > Internet Services Manager

4. In the Internet Information Services window, select Default SMTP Virtual Server in the left pane.

5. Right-click Domains and select New > Domain...

6. Specify the domain-type as Remote and click Next.

7. In the Select Domain Name text box, enter your company’s domain name. For example, if your company is AcmeXYZ Software, and email received at your company is delivered to “any.employee@acmexyz.com,” enter “acmexyz.com” and click Finish.

8. Right-click the new domain, click Properties, and click Forward all mail to a smart host. Enter the name of your mail server into the text box. For example, if the mail server at your company is named “Picard,” enter “Picard” into the text box. Select OK.
You are now set up to receive email from ProjectorNet. If you require security for your system, contact your network administrator to discuss the settings that should be entered into the Outbound Security dialog box found in the domain’s Properties box.
Setting Up ProjectorNet

Once ProjectorNet is installed on the server, it needs to be set up to fit your needs. To begin this process you need to start ProjectorNet by navigating to

Start > Programs > InFocus Tools > ProjectorNet

and selecting the ProjectorNet MMC snap-in. Once selected, ProjectorNet opens to the ProjectorNet Administration Console (Figure 4).

![ProjectorNet Administration Console](image)

The ProjectorNet Administration Console folder is the root of the ProjectorNet system and it is where you can edit the Locator information. The Locator tells the ProjectorNet software what server it is installed on. It is originally populated when the software is installed.

It is not likely that you would need to edit this information. However, should edits need to be made perform the following steps:

1. Right-click the ProjectorNet Administration Console folder.
2. Select Edit Locator info.
3. In the Edit Locator info dialog box (Figure 5) change the
server Machine Name, IP Address, and TCP/IP Port should there be a need for it.

Changing the TCP/IP Port can create adverse actions within ProjectorNet and is not recommended. Contact InFocus Support if you have a need to make a change to the Port.

FIGURE 5
Edit Locator info dialog box

Inside the ProjectorNet Administration Console are the following five nodes:

- **Services**
- **Users**
- **Events**
- **Projectors**
- **Directory**
Services Overview

The ProjectorNet Server Services are a collection of Windows 2000 Services that reside on a server running the Windows 2000 server operating system. The overall server functions are broken down into smaller functional blocks that are implemented in individual Windows 2000 Services. Within the Services node are the following three subnodes:

- **Master Service**
- **Administration Service**
- **Directory Service**

The functions are distributed between three core Services, and are illustrated in **FIGURE 6** to show their primary relationship.

---

**FIGURE 6**

Services primary relationship
Master Service

The Master Service is the central communications controller for the ProjectorNet system, including the other Services, projector devices, and administration tools. The Master Service, through the use of a Property box, allows viewing of the server name and IP address where the ProjectorNet Services are installed, as well as the TCP/IP ports used by the software (Figure 7).

![Master Service properties box]

This read-only dialog box contains two sections, Service Info and TCP/IP Ports. The information that populates this dialog box was entered when you installed the ProjectorNet software.

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When you want to access a dialog box for an item in the Results Pane, you can highlight it and double-click it, or right-click it and select the Properties option.
Administration Service

The Administration Service is responsible for maintaining up-to-date information on the network projectors and setting projector values. Once a projector has been added to the network the Administration Service periodically requests status from the projector by polling it. If it is able to obtain the current status, it updates the database with the new information. The purpose of the database is to provide persistent storage for the last reported status information for each projector connected to the network.

The Administration Service is also responsible for reporting projector events. A projector event is a condition (such as the reported lamp life exceeding a predetermined threshold) that requires action or intervention by the user. The Administration Service maintains a log of these events that can be reviewed by the user at their convenience. See “Events Overview” on page 32.
From the Administration Service Properties box’s Administration Service tab (FIGURE 8) you can view the Service Info. The information that populates this Properties box tab was entered when you installed the ProjectorNet software. No user intervention is associated with this tab.

From the same Properties box’s Default Shutdown Schedule tab (FIGURE 9) you can set up a global schedule for projectors managed by ProjectorNet to automatically shut down each day on a weekly basis. To schedule a global shutdown, check the Enable Auto Shutdown box and then check the box or boxes for the days when the projectors are to be shut down. Select the time that they are to be shut down from the Shutdown time drop-down list on the right.

The default schedule is used to specify the initial shutdown schedule when a projector is added. It is possible to override the default schedule on a projector by projector basis. For additional information, see “Installations” on page 62.
Keep in mind that once the projectors have been globally shut down with the Auto Shutdown feature, they will need to be manually powered up again. This can be done through the Multiple Projector Setting explained on page 71.

**Directory Service**

The Directory Service builds the database of conference rooms within a company’s facilities. It permits a geographical reference for a projector. The Administration Service can only identify a networked projector by its IP. The Directory Service allows the network projector to be labeled as “Fishbowl Conference Room” or “Aquarium Conference Room” rather than “192.168.254.13” or “192.168.200.47.”

The naming activity is explained in “Directory Overview” on page 36 and “Directory” on page 68.

The Directory Service and its Properties box (FIGURE 10) are read-only.
FIGURE 10

Directory Services Properties box
User Group Overview

As discussed in “About ProjectorNet” ProjectorNet permits the creation of three User Group Categories. These categories are pre-existing; they cannot be edited, added to, or deleted.

- **Administrator** - Similar to a network administrator, the ProjectorNet Administrator User is allowed to modify all projector attributes, users, servers, and directories. Projector values, such as the source information found in the Projector Model Information file (see “Projector Models” on page 60), cannot be accessed.

- **Facilities User** - The Facilities User category provides network privileges for viewing all preventative maintenance statuses and alerts. For example, the group in charge of filter cleaning and lamp replacement would be set up as a Facilities User.

- **Help Desk User** - The Help Desk User category provides network privileges for viewing all help desk statuses, and control issues. For example, the group in charge of troubleshooting all projector problems would be set up as a Help Desk User.

Users may be added and removed from the list, and their privileges may be edited. ProjectorNet utilizes the user’s Windows 2000 logon name. When adding a new user in ProjectorNet, ProjectorNet displays a text box for entering the new user name. An Administrator can add users from different domains, provided he or she has a valid user account in each domain. In addition, the Administrator can only add users from the currently logged-in domain, so he or she needs to log off then log on to each domain.

ProjectorNet can be run on Windows 98, Windows 2000, and Windows Me Operating Systems. However, if a user requests Administrative privileges, he or she must be running Windows 2000. This is because the Operating System support for obtaining valid user names in a domain is not available under Windows 98 or Windows Me. Users requiring only Facilities or Help Desk privileges may run under any of the three supported operating systems.

For additional detail, and tables that contain privileges for each user type, see “User Categories” on page 7.
Adding a User

Perform the following steps to add a user:

1. From the Scope Pane, highlight the category you want to add and right-click it.

2. From the Add New User dialog box (FIGURE 11) complete the following tasks:
   - In the **User Info** section, enter the user’s network name into the **User Name** text box.
   - In the **Privileges** section, pick the level or levels box(es) you want a user to have by selecting the check box or boxes that apply.

Click the **OK** button when you are finished.

---

**FIGURE 11**

Add a New User dialog box

---

A User’s name must already exist on the domain computer server in order to be added as a new user.
Editing a User's Privileges

Perform the following steps to edit a user’s privileges:

1. Highlight the user name in the Results Pane and double-click it.

2. In the Properties dialog box, make the necessary changes and click the OK button.

Deleting a User

Perform the following steps to delete a user:

1. Highlight the user name in the Results Pane and right-click it.

2. Select Delete.

Events Overview

ProjectorNet allows the intelligent monitoring of networked projectors. To accomplish this, the server constantly polls the projectors for their current status, and determines when maintenance attention is required. In ProjectorNet, these are referred to as events and they are defined and reported using the Event node and three subnodes:

- Event Definitions
- Master Event Log
- New Events

Event Definitions

The Event Definitions subnode lists the various maintenance events supported by the ProjectorNet software, and provides users with the tools to set various event parameters. The Event Definitions subnode is managed by the Facilities User Group.

All events can be configured by the Facilities User to send an e-mail message when an event occurs. The e-mail includes information regarding the event type, the location of the projector, the projector model, and more. In addition, some events have additional parameters defined for them. Each event has its own e-mail address field, so different events can be directed to different individuals or groups. For example, in most companies the Lamp Life event would be directed to an employee responsible for
Facilities, while the Possible Projector Theft event could be sent to Security or Facilities. The supported events, along with a description, and any event parameters are shown in the following table.

<table>
<thead>
<tr>
<th>Event</th>
<th>Description</th>
<th>Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Lamp Life</td>
<td>The reported lamp life from the projector has passed the selected percentage of rated lamp life.</td>
<td>Percentage of rated lamp life in 5% increments from 75% to 100% or as an absolute number of remaining hours</td>
</tr>
<tr>
<td>Possible Projector Theft</td>
<td>This event is triggered when the Projector-Net service is no longer able to communicate with the projector (it has been disconnected or the power removed).</td>
<td>None</td>
</tr>
<tr>
<td>Projector Overheat</td>
<td>The internal temperature of the projector is over recommended maximum.</td>
<td>None</td>
</tr>
<tr>
<td>Filter Change</td>
<td>Fan RPMs have exceeded maximum recommended due to clogged filter.</td>
<td>None</td>
</tr>
<tr>
<td>Fan Stuck</td>
<td>The projector's fan is no longer revolving.</td>
<td>None</td>
</tr>
</tbody>
</table>
Master Event Log
The Master Event Log displays all events generated by the Administration Service, regardless of whether e-mail notification was active for the specific event, or not. Entries in the Master Event Log are retained until a user deletes them. The Master Event Log is managed by the Facilities User Group.

New Events
The New Event log node functions much the same as the Master Event Log node, except that only new events are displayed in this log. It too is managed by the Facilities User Group.

An event entry stays in the New Event Log until the Facilities User handles it via a dialog box.

Projectors Overview
The Projector node, along with the Events node discussed above, provides end-users with the tools necessary to manage networked projectors. The Projector node has two subnodes, Projector Models and Installations.

The Projector node is managed and used by both the Facilities User Group and Help Desk User Group.

Projector Models
The Projector node allows users to view operational and parametric information about specific projector models, such as rated lamp life hours in each model’s Properties dialog box. This information is necessary for the ProjectorNet software to correctly display projector status. The model information is read-only. Users can view the data for a specific projector model, but it cannot be edited. The information indicates the capabilities supported by a projector and is entered by the Projector Model Information file (discussed below). The Projector node lists all of the projectors and model information and displays this information in the Results Pane.

To view a projector’s property box, highlight it in the Results Pane, right-click it, and select the Properties option.
InFocus produces a **Projector Model Information** file for each projector model supported by the ProjectorNet software. The **Projector Model Information** files are included with each release of the ProjectorNet software. As new projectors are introduced by InFocus between ProjectorNet releases, the latest model information files are made available to customers on the ProjectorNet website (www.infocus.com/projectornet) or distributed on the product CD.

The Projector node provides a menu item to allow users to import **Projector Model Information** files into the ProjectorNet system. ProjectorNet extracts the data from the **Projector Model Information** file and adds it to the internal database maintained by the Administration Server. If the projector model already exists in the database, then the new information is applied as an update. Be sure to delete the existing PMI file before importing a new one. Installed PMI files can be found in the **Program Files\InFocus\ProjectorNet MMC** folder.

Projector models can be deleted from the Results Pane.
Installations

The Installations subnode displays a list of all network projectors that have been added to the ProjectorNet system. This list is visible in the Results Pane.

From the Installations subnode users can select a projector from the list in the Results Pane and view detailed information regarding the projector in a read-only Projector Information dialog box (see page 67). This information includes the projector’s location, model information, current operating parameters (lamp life and input source, for example), and asset data. From the Projector Properties dialog box the user can power the projector on or off and change the current input source, ceiling mount, and rear projection settings.

Users can also add a projector, edit a projector’s information, and delete a projector from the Installations subnode.

Directory Overview

The Directory node, which is managed by the Facilities User Group, contains information regarding conference rooms, such as the name of the conference room where a projector is, or building in which it is located. Unlike other ProjectorNet nodes, the number and type of nodes displayed in the Directory’s Scope Pane depending on which directory levels you decide to implement. These levels and examples are listed in the following table.

<table>
<thead>
<tr>
<th>Object (Level)</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Company</td>
<td>Root of Directory</td>
<td>InFocus Corporation</td>
</tr>
<tr>
<td>Country</td>
<td>Country where offices are located</td>
<td>USA, Norway</td>
</tr>
<tr>
<td>City</td>
<td>City where offices are located</td>
<td>Wilsonville, Fredriks-tad</td>
</tr>
<tr>
<td>Campus</td>
<td>Campus where offices are located</td>
<td>InFocus Corporation</td>
</tr>
<tr>
<td>Building</td>
<td>Name of building or offices</td>
<td>Forest, Evergreen</td>
</tr>
</tbody>
</table>
The Directory node uses a Property dialog box with checkboxes for each of the possible directory levels. The Administrator initially configures ProjectorNet to support only those objects appropriate for the user’s needs.

The Directory’s format allows the Help Desk and Facilities users to determine the level of hierarchy they wish to use in their directory. Unused levels can be omitted at the Administrator’s discretion.

<table>
<thead>
<tr>
<th>Object (Level)</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Floor</td>
<td>Building Floor</td>
<td>1st Floor, 3rd Floor</td>
</tr>
<tr>
<td>Zone</td>
<td>Sub location with a large floor</td>
<td>North End, South Wing</td>
</tr>
<tr>
<td>Conference Room</td>
<td>Conference room with projector</td>
<td>Wallowa, Multnomah</td>
</tr>
</tbody>
</table>
Adding a Top Directory Level

Perform the following steps to add a top directory level in the Directory node:

1. Highlight, and right-click Directory in the Scope Pane.
2. Select New Location from the menu.
3. In the Add New Location dialog box (FIGURE 13), add the name of the directory level and click the Finish button.
4. The new level appears in the Scope Pane at the top of the Directory node.

![Add New Location dialog box](image)

**FIGURE 13**

Add New Location dialog box for adding a directory
Adding Directory Sub-levels

Perform the following steps to add sub-levels in the Directory node:

1. Highlight, and right-click the parent level where you want to add a new level.
2. Select **New Location** from the menu.
3. In the Add New Location dialog box (**FIGURE 14**), add the name of the new level. Notice that the Name and Level fields of the Parent level are visible in the top half of the dialog box.
4. Click the **Finish** button.
5. The new level displays in the Scope Pane below the Parent level.

![Add New Location dialog box with Parent node information](FIGURE 14)

Deleting Directory Levels

Directories can be easily deleted. To delete levels in the Directory node, perform the following steps:

1. Right-click the Directory to be deleted.
2. Select **Delete** from the menu. The Directory is deleted.
ProjectorNet Maintenance

There are a number of tasks that need to be performed in order to maintain ProjectorNet should a problem occur. The following topics discuss the functions needed for maintaining the ProjectorNet software.

Service Control Manager

The Microsoft Service Control Manager (also an MMC snap-in) is used to manage the services on Windows 2000 computers, set recovery steps that take place if a service fails, and create custom names and descriptions for services so that you can easily identify them. The four InFocus services (Administration, Locator, Serial Filter and Directory discussed in “Service Control Manager” below) are maintained through the Service Control Manager.

Starting, Stopping and Pausing Services

The only reason to start, stop or pause a service is to change a setting would be due to a port or setting conflict, or for diagnostic reasons.

Starting and stopping the four InFocus services is done independently - they cannot be stopped by the same action. Of the four services, the ProjectorNet Administration Service is the only service which can be paused.

To start, stop, or pause a service, perform the following steps:

1. Navigate to

   Start > Settings > Control Panel > Administrative Tools > Services

   and select one of the following four services in the Services window (Figure 15):

   - InFocus Projector Administration Service
   - InFocus Locator Service
   - InFocus Directory Service
   - InFocus Serial Filter Service
2 Scroll down the list and select the service you want to stop, start, or pause.

3 Double-click your choice and select the **Start**, **Stop** or **Pause** button in the specific service’s dialog box.

Or

Right-click your choice and select the **Start**, **Stop**, or **Pause** option.

**InFocus Projector Administration Service**

The InFocus Projector Administration Service communicates with the projectors and stores the state of each projector in the database. The stored information can include remaining lamp life, or a maintenance step that needs to be performed. Administrators can start, stop, or pause this service.

Pausing, rather than stopping, is recommended as pausing keeps the polled list intact, although the projectors are not polled while the system is paused.

When the InFocus Projector Administration Service is stopped, the list of polled projectors clears from the screen, as it displays live and not stored data. When the service is restarted, the projectors again become visible once they are polled.
**InFocus Locator Service**

The InFocus Locator Service is a central service where the ProjectorNet MMC snap-in initially reports when installed, and where the administrative software is installed. The InFocus Locator Service assigns ProjectorNet a specific location to report to once its initial location is recorded. The InFocus Locator Service locates all of the other services, the administrative and directory services. The InFocus Locator Service is also responsible for authenticating the user’s login account and privilege level.

Systems Administrators can start and stop this service but cannot pause it. Stopping the InFocus Locator Service does not result in any loss of data.

**InFocus Directory Service**

The InFocus Directory Service is responsible for storing and then providing the location of projectors and other resources. Administrators can start and stop this service but cannot pause it. Stopping the InFocus Directory Service does not result in loss of data.

**InFocus Serial Filter Service**

The InFocus Serial Filter Service is a Windows NT service that is responsible for forwarding commands from an A/V control system (such as Crestron or AMX) to projectors. While forwarding commands, it filters out “heartbeats” and unwanted characters that may originate with the responses travelling from projectors to the control system.

**Startup Type**

The Startup Type options define how the service is activated.

Your choices are:

- **Automatic** – Service starts automatically when the system starts. This is the default.
- **Manual** – Service must be started manually.
- **Disabled** – Prevents the service from being started by the user or a dependent service. This is not a common choice, as the service will not function if it is disabled.
To specify the Startup Type, perform the following step:

Navigate to **Start > Settings > Control Panel > Administrative Tools > Services**

and double-click the InFocus service whose startup type you wish to change in the Properties dialog box. Then select **Startup Type** and choose the type of startup that works best for you.

**Event Viewer**

The Event Viewer (**Figure 16**), which is part of the Windows 2000 Operating System and not ProjectorNet, allows Administrators to view a list of given events. These events are registered by the respective services (Administrative, Locator, Directory, or SQL Server).

To open the Event Viewer, navigate to

**Start > Programs > Administrative Tools > Event Viewer**

![Event Viewer](image)
The Event Viewer lists events by:

- **Type** - This column contains the following event types:
  - *Error* - A significant problem, such as loss of data or loss of functionality. For example, if a service fails to load during startup, an error is logged.
  - *Information* - An event that describes the successful operation of an application, driver, or service. For example, when a network driver loads successfully, an Information event is logged.
  - *Warning* - An event that is not necessarily significant, but may indicate a possible future problem. For example, when disk space is low, a warning is logged.
  - *Success Audit* - An audited security access attempt that succeeds. For example, a user’s successful attempt to log on to the system is logged as a Success Audit event.
  - *Failure Audit* - An audited security access attempt that fails. For example, if a user tries to access a network drive and fails, the attempt is logged as a Failure Audit event.

- **Date** - This column contains the date that the recorded event took place.

- **Time** - This column shows the time the recorded event took place.

- **Source** - This column includes the service that recorded the event.

- **Category** - This column includes the following categories for the ProjectorNet software:
  - *General* – Information regarding the behavior of the service.
  - *Polling* – Events related to projector polling.
  - *Discovery* – Events related to the recognition of new projector’s by the Projector Administration Service.
  - *Program Value* – Internal service settings.
  - *Fatal Error* – The service cannot continue and stops when the event is logged in the Event Viewer.
• **Error** – The service is not shut down yet, but there is a problem critical for the user to address. In a few seconds or minutes the service may go into fatal error and shut down. This is an event that needs immediate attention and actions need to be taken.

• **Event** - This column contains the event ID, which is a number corresponding to each kind of event. For example, each *Stop* event is identified by the same number. Double-click an event to open the Event Properties box, ([**FIGURE 17**](#)) which contains a description of the selected event.

![Event Properties](image)

**FIGURE 17**

*Event Example from the Event Detail dialog box*

• **User** - This column always displays N/A for events originating from the ProjectorNet Administration Software.

• **Computer** - This column designates the computer name where the event originated.
Filtering Events

Filtering events, which is part of the Windows 2000 Operating System and not ProjectorNet, is helpful because the Event Viewer may display several hundred events, making it difficult to locate events that you want to see immediately. By filtering events you can arrange the Event Viewer to best fit your needs.

To filter events, perform the following steps in the Event Viewer:

1. Select View from the menu bar, then select Filter Events to open the System Log Properties dialog box (Figure 18).

![System Log Properties dialog box](image)

**Figure 18**
Filter tab, System Log Properties dialog box

2. Enter specifications for filtering as follows:
   - In the Event Types section, select the check box for the event you want to see. For example, if you want to see events that warrant immediate attention, select the Warning and Error check boxes.
In the Event Source drop-down box, select any of the Service Control Manager options to filter in events from the InFocus services.

In the Category drop-down box, select All.

If there is an event involving a specific user, enter the user’s network name in the User text box.

If there is an event involving a specific computer, enter the computer’s network name in the Computer text box.

In the From section, select the starting and ending dates and times that you want filtered into the Event Viewer using the various drop-down boxes.

To return to the default criteria, select the Restore Defaults button.

To turn off event filtering, select the View menu and click All Records.

3 Select OK. Your filtered events appears as requested in the Event Viewer (FIGURE 19).

---

**FIGURE 19**

Event Viewer with filter on for “Error”
ProjectorNet for Administrators
PROJECTORNET FOR THE END-USER

Overview
This chapter is intended for the end-users (those in the Facilities and Help Desk user categories) of ProjectorNet. It provides instructions on installing, setting up, and running the software to manage and troubleshoot networked projectors.

System Requirements
The following two topics contain the hardware and software requirements for installing the ProjectorNet client software.

• Client System Requirements
  • Windows 98/NT/2000/Me system connected to the corporate network with access to the server containing ProjectorNet.
  • Pentium® III 350 MHz or higher
  • 64 MB RAM minimum
  • 250 MB free disk space
  • CD-ROM
  • E-mail program

The “Installation” topic in this chapter is written for the client application used by the Facilities and Help Desk User Categories.
Installation

This section lists the information you need to have on hand while installing the ProjectorNet client software, along with the steps for installing the software.

Information Needed for Installation

The following lists the information you need to have at hand when starting the client installation process.

- The name of the machine on which you are installing the ProjectorNet client software.
- The password for the machine on which you are installing the ProjectorNet client software.
- Name and IP address of the machine where the ProjectorNet client system is installed.

Installation Steps

Perform the following steps to install the ProjectorNet MMC Client software:

1. Exit all programs.

2. At the ProjectorNet CD’s main menu, click the Install Product button and navigate to Start > Run > enter X:\Setup where X represents the letter of your CD drive and click OK.

3. At the Installation menu, click the ProjectorNet MMC Client button.

4. Read and accept the license agreement. Click Next.

5. Although the default location is recommended, if you prefer a different location for the program files, browse to the preferred location. Click Next.

6. Enter the IP Address of the machine on which you are installing the software (ProjectorNet Locator Service). Click Next.

7. After the installation completes, start the ProjectorNet MMC snap-in by clicking the Start MMC window button.
Using ProjectorNet

Launch ProjectorNet by navigating to:

Start > Programs > InFocus Tools > ProjectorNet

and selecting the ProjectorNet MMC Snap-in. Once selected, the ProjectorNet Administration Console (Figure 20) opens. The ProjectorNet Administration Console contains nodes and subnodes in the Scope Pane on the left and subnodes in the Results Pane on the right.

Inside the ProjectorNet Administration Console are the following five nodes:

- Services
- Users
- Events
- Projectors
- Directory

Each of these nodes and subsequent subnodes manages specific activities in ProjectorNet. Two of these nodes, Services and Users, cannot be configured by ProjectorNet end-users. As noted in the previous sections, only the ProjectorNet administrator can work with these two nodes.
Services

The ProjectorNet Services are a collection of Windows 2000 Services that reside on a server running the Windows 2000 server operating system. The overall server functions are broken down into smaller functional blocks that are implemented in individual Windows 2000 Services. The smaller functional blocks are:

- Master Service
- Administration Service
- Directory Service

The information contained in the Services is placed there when the software is installed on the server by the ProjectorNet Administrator, and cannot be edited. If you want to read more about the Services node, see “Services Overview” on page 24.

Users

ProjectorNet permits the creation of the following three User Categories.

- **Administrator** - Similar to a network administrator the ProjectorNet administrator is allowed to modify all projector attributes, users, servers, and directories.

- **Facilities User** - An end-user category member, the Facilities User designation provides network privileges for viewing all preventative maintenance statuses and alerts. For example, the group in charge of Events (see “Events” on page 53), such as filter cleaning or lamp replacement, would be set up as a Facilities User.

- **Help Desk User** - Also an end-user category member, the Help Desk User designation provides network privileges for viewing all help desk statuses, and control issues. For example, the group in charge of monitoring all projectors would be set up as a Help Desk User.

Users requiring only Facilities or Help Desk privileges may run under any of the three supported operating systems - Windows 98, Windows 2000, and Windows Me operating systems.
For greater detail and tables that contain privileges for each user category, see “User Categories” on page 7.

You should have been set up as a user in the ProjectorNet database by your administrator prior to installing the ProjectorNet client software on your computer. If you have any problems accessing ProjectorNet following the installation process, or if you want your privileges adjusted, contact your ProjectorNet administrator.

**Events**

ProjectorNet allows the intelligent monitoring of networked projectors by Facilities Users. It is one of the most important tools for users in the Facilities User category.

The ProjectorNet server constantly polls the projectors for their current status, and determines when maintenance attention is required. In ProjectorNet, these are referred to as *events* and they are defined and reported using the **Event** node and three sub-nodes: **Event Definitions**, **Master Event Log**, and **New Events**.

When you are looking for something that has gone wrong or may be going wrong in the near-future with a ProjectorNet-monitored projector, the Events node is where to find it.
Event Definitions

The Event Definitions list the various maintenance events supported by the ProjectorNet software, and provides Facilities Users with tools to set event parameters.

Supported events, along with a description, and any event parameters are shown in the following table.

<table>
<thead>
<tr>
<th>Event</th>
<th>Description</th>
<th>Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Lamp Life</td>
<td>The reported lamp life from the projector has passed the selected</td>
<td>Percentage of rated lamp life in 5% increments from 75% to 100% or as an absolute number of remaining hours</td>
</tr>
<tr>
<td></td>
<td>percentage of rated lamp life.</td>
<td></td>
</tr>
<tr>
<td>Possible Projector</td>
<td>This event is triggered when the ProjectorNet service is no long</td>
<td>None</td>
</tr>
<tr>
<td>Theft</td>
<td>able to communicate with the projector (it has been disconnected or the power removed).</td>
<td></td>
</tr>
<tr>
<td>Projector Overheat</td>
<td>The internal temperature of the projector is over recommended</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>maximum.</td>
<td></td>
</tr>
<tr>
<td>Filter Change</td>
<td>Fan RPMs have exceeded maximum recommended due to clogged filter.</td>
<td>None</td>
</tr>
<tr>
<td>Fan Stuck</td>
<td>The projector's fan is no longer revolving.</td>
<td>None</td>
</tr>
</tbody>
</table>

Events Definitions (Figure 21) may be configured to send an e-mail message when an event occurs. The e-mail includes information regarding:

- Event type
- Location of the projector
- Projector model
Each event has its own e-mail address field, so different events can be directed to different individuals or groups. For example, in most companies the Low Lamp Life event would be directed to an employee in Facilities, while the Possible Projector Theft event could be sent to a Security Department member.

Perform the following tasks to enable e-mail notification for any of the events:

1. Select **Event Definitions** in the Scope Pane.
2. Double-click the event you want to enable in the Results Pane and access the Event Properties dialog box (**FIGURE 22**).
3. Select the check box in the **Notification** section to enable e-mail messages alerting you of an event.
4. Enter an e-mail address in the **E-mail Address** text box.
5. Click the **OK** button, or the **Apply** button if you have more changes to make.
Low Lamp Life is the only event where parameters may be entered. All other events have no parameters. Adjust the Event Parameters to a notification period that works best for you.

**FIGURE 22**
Event Properties dialog box
**Master Event Log**

The Master Event Log displays all generated events regardless of whether e-mail notification was active for the specific event, or not. Entries in the Master Event Log are retained until a user deletes them. You can view the list by location, event type, date, and more in order to provide fast access to the data that’s important to you.

To delete an entry in the Master Event Log:

1. Right-click the event in the Results Pane.
2. Select **Delete** from the ensuing menu.

The **Export List**... is a menu item that allows all, or selected entries, to be exported into either a text or comma-delimited data file.

Perform the following steps to export **all** entries in the Master Event Log:

1. Right-click the Master Event Log in the Scope Pane, or from the menu bar.
2. Select **Export List** in the ensuing menu.
3. Navigate to the Master List *.txt file in the ProjectorNet folder and select **Save**.

Perform the following steps to export **one or more but not all** of the entries in the Master Event Log:

1. Select the Master Event Log in the Scope Pane.
2. Right-click the event or event entries you want to export in the Result Pane.
3. Select **Export List** in the ensuing menu.
4. Navigate to the Master List *.txt file in the ProjectorNet folder and select **Save**.
**New Events**

The New Events subnode functions much the same as the Master Event Log, except that only new events are displayed in this sub-node (FIGURE 23).

**FIGURE 23**

*New Events log subnode*

Once an event appears in the New Events subnode, for example, a Lamp Life Threshold event, it can only be removed after being handled. Once the lamp is replaced, you need to tell ProjectorNet that you have handled the event.

Perform the following steps to let ProjectorNet know that an event has been handled:

1. Select the New Events subnode in the Scope Pane.
2. Double-click the event that has been handled in the Results Pane.
3. In the event’s Properties dialog box (FIGURE 24), place a check in the **Event has been handled** check box.
4. Select the **OK** button.

An event entry marked as handled stays in the New Event Log until the log is refreshed (via a right-click on the entry to display the menu item or toolbar button), or when ProjectorNet is restarted.
The Projectors node is a very important tool for both the Facilities and Help Desk ProjectorNet users. From the Projectors node you can:

- Power projectors on and off.
- Change the projector’s source from video to computer 1 to computer 2 (number and type of inputs vary per projector).
- Change the image orientation from standard to ceiling mount, or rear projection.
- View remaining lamp hours.
- Change or add the identification for a projector’s asset number and three user-defined fields.
The Projector node contains two subnodes:

- **Projector Models**
- **Installations**

**Projector Models**

The Projector Models subnode allows Facilities and Help Desk users to view operational and parametric information about specific projector models, such as rated lamp life hours in each model’s Properties dialog box (**FIGURE 25**). This information is necessary for the ProjectorNet software to correctly display projector status. The model information is read-only. You can view the data for a specific projector model, but it cannot be edited.

The model information indicates the characteristics supported by a projector and is entered by the **Projector Model Information** file discussed below.

To view a projector’s property box highlight it in the Results Pane, right-click it, and select the **Properties** option.

**FIGURE 25**

*Projector properties dialog box*
InFocus produces a **Projector Model Information** file for each projector model supported by the ProjectorNet software. The **Projector Model Information** files are included with each release of the ProjectorNet software. These files are extremely important for the Facilities and Help Desk users because they detail all of the important information you need to know about your projector models. It would be difficult to properly maintain the projectors on ProjectorNet without this information.

As new projectors are introduced by InFocus between ProjectorNet releases, the latest translator .dll files and model information files are made available to customers on the InFocus ProjectorNet website.

The Projector node provides a menu item to allow users to import **Projector Model Information** files into the ProjectorNet system. ProjectorNet extracts the data from the **Projector Model Information** file and adds it to the internal database maintained by the Administration Server. If the projector model already exists in the database, then the new information is applied as an update. Importing a PMI file is only necessary when your projector model is not in the database.

To import projector information, perform the following steps:

1. Right-click the **Projector Models** subnode in the Scope Pane.
2. In the **Import Projector Model Information** dialog box (*FIGURE 26*), enter the name of or browse to the *.PMI file you want to import.
3. Select the **OK** button.

*FIGURE 26*

**Import Projector Model Information dialog box**
ProjectorNet extracts the data from the **Projector Model Information** file and adds it to the internal database maintained by the Administration Server. If the projector model already exists in the database, then the new information is applied as an update.

Projector models can be deleted from the Results Pane by highlighting the model, right-clicking it, and selecting **Delete** from the menu.

**Installations**

The Installations subnode displays a list of all network projectors that have been added to the ProjectorNet system. This list is visible in the Results Pane when **Installations** is selected in the Scope Pane.

The Installations subnode is where you can add, edit, or delete projectors. It is also where you remotely manage a projector’s functions.

Perform the following steps to add a projector to an installation:

1. Right-click **Installations** in the Scope Pane and select **Add a Projector**.

2. In the Add a Projector dialog box (**FIGURE 27**), enter the projector’s IP Address, and select the projector model and location from the drop-down list boxes.

3. Select **Next** when you are ready.
4 In the Shutdown Schedule dialog box (FIGURE 28), enable or disable an automatic shutdown for the projector via the **Enable Auto Shutdown** checkbox.
5 If enabling auto shutdown, place a check in the check box next to the days when the shutdown is to be applied.

6 If enabling auto shutdown, select the time when the shutdown is to be applied from the **Shutdown time** drop down box.

7 If an auto shutdown is not required, deselect the **Enable Auto Shutdown** check box.

8 Select the **Finish** button when you are ready.

Keep in mind that after projectors have been globally shut down, they will eventually need to be manually powered up again. This can be done through the Multiple Projector Setting explained on page 71.
Once a projector has been added to ProjectorNet its functions can be managed by Facilities and Help Desk users. Perform the following steps to manage a projector’s functions:

1. From the Installations subnode, double-click a projector in the Results Pane.

2. In the Projector Properties box (FIGURE 29), note that you can manage the following projector functions:
   - Power a projector on and off (Current Status tab).
   - Set a projector’s source based on its Projector Model Information file (Current Status tab).
   - Set a projector’s image orientation based on if is set up for standard, ceiling, or rear projection (Current Status tab).
   - View a projector’s remaining lamp hours (Current Status tab).
   - Set a projector’s asset number and three user-defined fields (Identification tab).

![Projector Properties box - Current Status tab](image)
Once you have managed the functions of a projector, select the OK, Cancel, or Apply button depending upon your needs.

To edit a projector’s information based upon what was entered when it was added to ProjectorNet, perform the following steps:

1 Right-click the projector to be edited in the Results Pane.

2 Select Projector Information from the ensuing menu.

3 In the Projector Information Properties box (FIGURE 31), make whatever changes you need to make to:
   - Projector model (General tab).
   - Projector location (General tab).
   - Projector IP information (General tab).
   - Projector port (General tab).
   - Projector auto shutdown (Shutdown Schedule tab - see FIGURE 28).
Perform the following steps to delete a projector:

1. Right-click the projector to be deleted in the Results Pane.
2. Select Delete in the ensuing menu.
3. Confirm your choice and select Yes to delete the projector from ProjectorNet.
**Directory**

The Directory node contains location information, such as the name of the conference room where a projector is, or a building in which it is located. The Administrator initially configures ProjectorNet to support only those objects appropriate for the Facilities user’s needs. Directory functions can only be entered and edited by the Facilities end-user.

Unlike other ProjectorNet nodes, the number and type of nodes displayed in the Directory’s Scope Pane are going to vary, depending on which directory levels you decide to implement. These levels and examples are listed in the following table.

<table>
<thead>
<tr>
<th>Object (Level)</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Company</td>
<td>Root of Directory</td>
<td>InFocus Corporation</td>
</tr>
<tr>
<td>Country</td>
<td>Country where offices are located</td>
<td>USA, Norway</td>
</tr>
<tr>
<td>City</td>
<td>City where offices are located</td>
<td>Wilsonville, Fredriksstad</td>
</tr>
<tr>
<td>Campus</td>
<td>Campus where offices are located</td>
<td>InFocus Corporation</td>
</tr>
<tr>
<td>Building</td>
<td>Name of building or offices</td>
<td>Forest, Evergreen</td>
</tr>
<tr>
<td>Floor</td>
<td>Building Floor</td>
<td>1st Floor, 3rd Floor</td>
</tr>
<tr>
<td>Zone</td>
<td>Sub location with a large floor</td>
<td>North End, South Wing</td>
</tr>
<tr>
<td>Conference Room</td>
<td>Conference room with projector</td>
<td>Wallowa, Multnomah</td>
</tr>
</tbody>
</table>

The Directory’s format allows Facilities users to determine the level of hierarchy they want to use in ProjectorNet. Unused levels can be omitted at the Administrator’s discretion.
Adding a Top Directory Level

Perform the following steps to add a top directory level in the Directory node:

1. Right-click **Directory** in the Scope Pane.
2. Select **New Location** from the menu.
3. In the Add New Location dialog box (**Figure 32**), add the name of the directory level and click the **Finish** button.
4. The new level displays in the Scope Pane at the top of the Directory node.

**Figure 32**

Add New Location dialog box for adding a top directory
Adding Directory Sub-levels

Perform the following steps to add sub-levels in the Directory node:

1. Highlight, and right-click the parent level where you want to add a new level.

2. Select **New Location** from the menu.

3. In the Add New Location dialog box (**FIGURE 33**), add the name of the new level. Notice that the **Name** and **Level** fields of the Parent level are visible in the top half of the dialog box.

4. Click the **Finish** button.

5. The new level displays in the Scope Pane, below the Parent level.

**FIGURE 33**
Add New Location dialog box with Parent node information
Deleting Directory Levels
Directories are easily deleted. To delete levels in the Directory node, perform the following steps:

1. Right-click the Directory to be deleted.
2. Select Delete from the menu. The Directory is deleted.

Multiple Projector Settings
One of the advantages of the Directory node is that you can power on and power off multiple projectors in a location at one time. This is managed by using the Multiple Projector settings menu option, which is a way to power up projectors after an auto shutdown.

To manage multiple projectors, perform the following steps:

1. Determine the level, from parent level to sub-level, from which you want to power projectors on or off.
2. Right-click the level and select Multiple Projector settings from the ensuing menu.
3. In the Multiple Projector settings dialog box (FIGURE 34), select some or all of the projectors (Ctrl + mouse select).
4. Select the Power On or Power Off button depending upon your needs.
5. Select the OK button.
FIGURE 34

*Multiple Projector settings dialog box*

**Other Functions**

By highlighting and right-clicking any level except the top Directory level, you can also **Rename** a level, and **Refresh** a view of the Directory.
# APPENDIX

## Supported Projectors

<table>
<thead>
<tr>
<th>Projector</th>
<th>Network Adapter</th>
<th>Networking Onboard/Module</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>InFocus Projectors</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LP280</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>LP290</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>LP340</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>LP350</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>LP500</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>LP530 w/ Campus Xpac</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>LP630</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>LP650</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>LP750</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>LP755</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>LP770</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>LP790</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>LP925</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>LP930</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td><strong>Proxima Projectors</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DP6150</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>DP6155</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>DP6850</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>DP6850+</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>DP6860</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>DP8000</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>DP9250+</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>DP9260</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>DP9260+</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>DP9270</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Proxima X540</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>DP 9270</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>DP 9280</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>DP 9290</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>ProAV 9350</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>ProAV 9400</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>ProAV 9400+</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>ProAV 9410</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>ProAV 9500</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>ProAV 9550</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td><strong>ASK Projectors</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C90</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>C300</td>
<td>✓</td>
<td></td>
</tr>
</tbody>
</table>
Appendix

Menu Items, Tool Bar Icons, and Results Pane Options

The menu item options, tool bar icons, and Results Pane column headings change depending on which node is selected and what its capabilities are. The following three tables contain the menu items, tool bar icons, and Results Pane options available in ProjectorNet.

Menu Items

<table>
<thead>
<tr>
<th>Menu Item</th>
<th>Menu Item Options</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Action</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Action</td>
<td>New Window from here</td>
<td>Creates new window for Master Server within the highlighted node.</td>
</tr>
<tr>
<td></td>
<td>New TaskPad View…</td>
<td>Starts the Create New TaskPad View Wizard within the highlighted node.</td>
</tr>
<tr>
<td>Refresh</td>
<td></td>
<td>Refreshes data that can be refreshed.</td>
</tr>
<tr>
<td>About ProjectorNet Snap-in</td>
<td></td>
<td>Displays software version number and copyright information.</td>
</tr>
<tr>
<td>Export List…</td>
<td></td>
<td>Opens Save File As dialog box.</td>
</tr>
<tr>
<td>Help</td>
<td></td>
<td>Opens MMC on-line help window at the Table of Contents.</td>
</tr>
<tr>
<td><strong>View</strong></td>
<td>Choose Columns…</td>
<td>Opens the Modify Columns dialog box.</td>
</tr>
<tr>
<td>Large Icons</td>
<td></td>
<td>Arranges consoles via cascade method</td>
</tr>
<tr>
<td>Small Icons</td>
<td></td>
<td>Arranges consoles by tile method</td>
</tr>
<tr>
<td>List</td>
<td></td>
<td>Arranges consoles by list method</td>
</tr>
<tr>
<td>Detail</td>
<td></td>
<td>Arranges icons by default spacing</td>
</tr>
<tr>
<td>Customize…</td>
<td></td>
<td>Opens MMC Customize Options dialog box.</td>
</tr>
</tbody>
</table>

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**Tool Bar Icons**

<table>
<thead>
<tr>
<th>Tool Bar Icon</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Back Arrow Icon</td>
<td>Go back one selection</td>
</tr>
<tr>
<td>Forward Arrow Icon</td>
<td>Go forward one selection</td>
</tr>
<tr>
<td>Up Arrow Icon</td>
<td>Go up one selection</td>
</tr>
<tr>
<td>Show/Hide Console Tree Icon</td>
<td>Reveals/hides the tree view of the console</td>
</tr>
<tr>
<td>Refresh Icon</td>
<td>When selection has data that can be refreshed, the refresh action is present in the drop down menu</td>
</tr>
<tr>
<td>Export List Icon</td>
<td>Starts “file save as” dialog</td>
</tr>
<tr>
<td>Help Icon</td>
<td>Opens MMC on-line help window at the Table of Contents.</td>
</tr>
</tbody>
</table>
### ProjectorNet Administration Console Results Pane

<table>
<thead>
<tr>
<th>ProjectorNet Console Item</th>
<th>Results Pane Item</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ProjectorNet Administration Console</strong></td>
<td>Name</td>
<td>Identifies primary node categories</td>
</tr>
<tr>
<td></td>
<td>Description</td>
<td>Useful description of server services</td>
</tr>
<tr>
<td>Services Node</td>
<td>Server Type</td>
<td>Master Server; Administration Server; Directory Server</td>
</tr>
<tr>
<td></td>
<td>Description</td>
<td>Useful description of server services</td>
</tr>
<tr>
<td>Server Subnode</td>
<td>Server</td>
<td>Machine name of server</td>
</tr>
<tr>
<td></td>
<td>Type</td>
<td>Identifies subnode type from: Master Server, Administration Server, Directory Server</td>
</tr>
<tr>
<td></td>
<td>Status</td>
<td>Indicates running vs. stopped status</td>
</tr>
<tr>
<td>Users Node</td>
<td>User Group Type</td>
<td>Identifies sub-node categories</td>
</tr>
<tr>
<td></td>
<td>Description</td>
<td>Short description of sub-node categories</td>
</tr>
<tr>
<td>Users Subnode</td>
<td>Name</td>
<td>Identifies the users that were defined by administrator</td>
</tr>
<tr>
<td></td>
<td>Admin</td>
<td>Lists users with Admin privileges</td>
</tr>
<tr>
<td></td>
<td>Facilities</td>
<td>Lists users with Facilities privileges</td>
</tr>
<tr>
<td></td>
<td>Help Desk</td>
<td>Lists users with Help Desk privileges</td>
</tr>
<tr>
<td></td>
<td>Primary Admin</td>
<td>Identifies the primary ProjectorNet administrator</td>
</tr>
<tr>
<td>Events Node</td>
<td>Projector Events</td>
<td>Identifies sub-node categories</td>
</tr>
<tr>
<td>ProjectorNet Console Item</td>
<td>Results Pane Item</td>
<td>Action</td>
</tr>
<tr>
<td>---------------------------</td>
<td>-------------------</td>
<td>--------</td>
</tr>
<tr>
<td><strong>Events Definitions Sub-node</strong></td>
<td>Event Type</td>
<td>List of projector events supported with email notification</td>
</tr>
<tr>
<td></td>
<td>E-Mail Notification Address</td>
<td>Email address to be contacted when event is detected</td>
</tr>
<tr>
<td><strong>Master Event Log and New Event Subnodes</strong></td>
<td>Event Type</td>
<td>Identifies event type from set of supported events</td>
</tr>
<tr>
<td></td>
<td>Time Occurred</td>
<td>Date that event occurred</td>
</tr>
<tr>
<td></td>
<td>Projector</td>
<td>Identifier for projector model from Model Info List</td>
</tr>
<tr>
<td></td>
<td>Location</td>
<td>Identifies location for installed projector</td>
</tr>
<tr>
<td></td>
<td>Event Description</td>
<td>Short description of event</td>
</tr>
<tr>
<td><strong>Projectors Node</strong></td>
<td>Projector Info &amp; Status</td>
<td>Identifies sub-node categories</td>
</tr>
<tr>
<td></td>
<td>Description</td>
<td>Short description of sub-node categories</td>
</tr>
<tr>
<td><strong>Model Info Sub-Node</strong></td>
<td>Projector Model</td>
<td>List of available supported models (defined by model info files)</td>
</tr>
<tr>
<td></td>
<td>Rated Lamp Life</td>
<td>Data retrieved from Projector Model Info file</td>
</tr>
<tr>
<td><strong>Installations Sub-Node</strong></td>
<td>Location</td>
<td>Selection from locations list</td>
</tr>
<tr>
<td></td>
<td>Model</td>
<td>Selection from supported projectors</td>
</tr>
</tbody>
</table>
Appendix

ProjectorNet Software Options

<table>
<thead>
<tr>
<th>Description</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demo Software with 1-seat Live Key</td>
<td>SW-4PN-1CD</td>
</tr>
<tr>
<td>Software upgrade with 5-seat Live Key</td>
<td>SW-PN-5</td>
</tr>
<tr>
<td>Software upgrade with 20-seat Live Key</td>
<td>SW-PN-20U</td>
</tr>
<tr>
<td>Software upgrade with 50-seat Live Key</td>
<td>SW-PN-50U</td>
</tr>
<tr>
<td>Software upgrade with 100-seat Live Key</td>
<td>SW-PN-100U</td>
</tr>
</tbody>
</table>

* A “seat” is a projector.
### ProjectorNet Accessories

<table>
<thead>
<tr>
<th>Description</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Network Adapter-110V (US version) and Cable Kit</td>
<td>HW-PN-AC1</td>
</tr>
<tr>
<td>Network Adapter -110V (US version) and CableWizard adapter</td>
<td>HW-PN-AA1</td>
</tr>
<tr>
<td>Network Adapter -220V (EU version) and Cable Kit</td>
<td>HW-PN-EC1</td>
</tr>
<tr>
<td>Network Adapter -220V (EU version) and CableWizard adapter</td>
<td>HW-PN-EA1</td>
</tr>
<tr>
<td>Cable Kit - includes all possible cable combinations required for projector install—excluding LP700 series</td>
<td>SP-PN1-CBLS</td>
</tr>
<tr>
<td>Cable Kit - includes cable combinations required for projector install—LP700 series only</td>
<td>SP-PN1-CBLS2</td>
</tr>
<tr>
<td>Mouse Cable 4 meter</td>
<td>301102</td>
</tr>
<tr>
<td>PC Mouse Adapter RS232</td>
<td>301103</td>
</tr>
<tr>
<td>6’ Straight through DB25 pin (male) to DB9 (male)</td>
<td>210-0235-xx</td>
</tr>
<tr>
<td>6’ Null Modem cable DB25 pin (male) to DB9 (Female)</td>
<td>210-0236-xx</td>
</tr>
<tr>
<td>CableWizard to RS-232 Adapter for LP-700 series projectors only</td>
<td>SP-CWRS232</td>
</tr>
<tr>
<td>Network Adapter -110V (US)</td>
<td>HW-PN-A</td>
</tr>
<tr>
<td>Network Adapter -220V (European version)</td>
<td>HW-PN-E</td>
</tr>
</tbody>
</table>

For projector-specific cable configurations, consult the ProjectorNet support website at [www.infocus.com/projectornet](http://www.infocus.com/projectornet).
GLOSSARY

**DHCP – Dynamic Host Configuration Protocol**
Software that automatically assigns IP addresses to client stations logging onto a TCP/IP network. It eliminates having to manually assign permanent IP addresses. DHCP software typically runs in servers and is also found in network devices such as ISDN routers and modem routers that allow multiple users access to the Internet. Newer DHCP servers dynamically update the DNS servers after making assignments.

**DNS – Domain Name System**
Name resolution software that lets users locate computers on a UNIX network or the Internet (TCP/IP network) by domain name. The DNS server maintains a database of domain names (host names) and their corresponding IP addresses.

For Windows networks using TCP/IP, the counterpart to DNS is WINS. In a Windows-only network, only WINS needs to be used. In a mixed Windows/UNIX environment, the Microsoft DNS server integrates the two. When a UNIX station wants to resolve the name for a PC, it queries the Microsoft DNS server, which in turn queries the WINS server if it does not already have it. The most recent releases of Windows 2000, ME, and XP do not need a WINS server and are heavily reliant on DNS for their active directory and network components.

**IP – Internet Protocol**
The IP part of the TCP/IP communications protocol. IP implements the network layer (layer 3) of the protocol, which contains a network address and is used to route a message to a different network or subnetwork. IP accepts "packets" from the layer 4 transport protocol (TCP or UDP), adds its own header to it and delivers a "datagram" to the layer 2 data link protocol. It may also break the packet into fragments to support the maximum transmission unit (MTU) of the network.
Legacy Projectors
A legacy projector is an InFocus, ASK, or Proxima projector that your organization is presently using, but is not presently network-compatible. Through the use of Network Adapters, legacy projectors can be made network-compatible and available to be managed by ProjectorNet.

ProjectorNet Software
The ProjectorNet software is an application integral to the projector which interrogates the projector. When the Network Adapter is polled by the ProjectorNet software, it provides such information as location, operating status, bulb life, etc.

MMC – Microsoft Management Console
Network management software from Microsoft for Windows NT and Windows 2000 that provides a hierarchical view of resources similar to an Explorer view. Microsoft Management Console (MMC) provides the software framework, and "snap-in" components from Microsoft and third parties add the actual device management.

MSDE – Microsoft Data Engine
The MSDE is a smaller database engine, compatible with Microsoft SQL Server 7.0, designed and optimized for use on smaller computer systems, such as a single user computer or small workgroup server.

NIC – Network Interface Card
A printed circuit board that plugs into both the clients (personal computers or workstations) and servers and controls the exchange of data between them. The network adapter provides services at the data link level of the network, which is also known as the "access method" (OSI layers 1 and 2).

SCM – Service Control Manager
The part of Windows NT that launches background tasks. Developers can write executable programs that run under the control of the SCM.
**SMTP – Simple Mail Transfer Protocol**

The standard e-mail protocol on the Internet. It is a TCP/IP protocol that defines the message format and message transfer agent (MTA), which stores and forwards the mail. SMTP was originally designed for only ASCII text, but MIME and other encoding methods enable program and multimedia files to be attached to e-mail messages.

SMTP servers route SMTP messages throughout the Internet to a mail server which provides a message store for incoming mail.

**TCP/IP – Transmission Control Protocol/Internet Protocol**

TCP provides transport functions, which ensures that the total amount of bytes sent is received correctly at the other end.

TCP/IP is a routable protocol, and the IP part of TCP/IP provides the routing capability. In a routable protocol, all messages contain not only the address of the destination station, but the address of a destination network. This allows TCP/IP messages to be sent to multiple networks within an organization or around the world, hence its use in the worldwide Internet.
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