

***PANTHER™***

2-Tier/COM/MTS

Installation for Windows

***Prolifics®***

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# Table of Contents

<b>About this Guide</b> .....	<b>vii</b>
Organization of this Guide .....	vii
Conventions .....	viii
Text Conventions .....	viii
Keyboard Conventions .....	viii
Panther Documentation .....	ix
Online Documentation .....	xi
Installation Checklist .....	1
<b>Chapter 1</b> <b>General Information</b> .....	<b>3</b>
Contents of the Installation Package .....	3
Application Architecture .....	4
Which Panther Software to Install? .....	4
For More Information .....	5
<b>Chapter 2</b> <b>Pre-Installation</b> .....	<b>7</b>
Hardware and Software Requirements .....	7
Before Installing a Web Application Server .....	8
Upgrading the Client on Windows 9x .....	8
<b>Chapter 3</b> <b>Installation</b> .....	<b>11</b>
Installation Procedure .....	11

	Installing a Database Driver .....	12
<b>Chapter 4</b>	<b>Post-Installation .....</b>	<b>17</b>
	Post-Installation Overview .....	17
	Create New Prolifics Executables .....	17
	Configure the Component Development Environment .....	18
	Configuring Panther with COM or DCOM .....	19
	Configuring Panther with MTS .....	19
	Configure the Client Environment .....	19
	Configure the Web Application Server Environment .....	20
	Creating a Web Application .....	21
	Licensing for the Web Application Server .....	21
	Look at Samples .....	22
	Troubleshooting .....	24
	Graph Functionality .....	24
	Windows PATH Settings .....	24
	Online Help and Manuals .....	24
<b>Appendix A</b>	<b>Notes for Microsoft Windows .....</b>	<b>25</b>
	DLLs for JPEG Decoding .....	25
	Environment Space .....	26
	Visual C++ Floating-Point Options .....	26
	Visual Workbench or Developer Studio .....	26
	Using Prolifics Utilities .....	26
	XML Libraries .....	27
<b>Appendix B</b>	<b>New Prolifics Executables .....</b>	<b>29</b>
	Client and Web Application Server Executables .....	29
	Specifying the Executables .....	30
	Linking in the Database .....	31
	Changing the Panther COM Template DLL .....	32
<b>Appendix C</b>	<b>Initialization and Databases .....</b>	<b>33</b>
<b>Appendix D</b>	<b>License Administration .....</b>	<b>37</b>
	Licensing in Prolifics .....	38
	License Daemons and License Types .....	38
	Options File .....	39
	FLEXIm Utilities .....	41

<b>Appendix E</b>	<b>License File</b> .....	<b>53</b>
	Contents of the License File .....	53
<b>Appendix F</b>	<b>Error Messages</b> .....	<b>57</b>
	Prolifics Installation Error Messages .....	57
	DLL Messages .....	59
	TUXEDO-Specific Messages .....	59
	Informix-Specific Messages .....	59
	Microsoft SQL Server-Specific Messages .....	59
	ODBC-Specific Messages .....	60
	Oracle-Specific Messages .....	60
	Sybase-Specific Messages .....	60
	DLL Version Mismatch Messages .....	61
	Graph-Related Messages .....	61
	License Manager Error Messages .....	61
	Prolifics License-Related Messages .....	61
	FLEXIm Informational Messages .....	65
	FLEXIm Configuration Problem Messages .....	67
	Daemon Software Error Messages .....	69
<b>Index</b> .....		<b>73</b>



# About this Guide

The *Installation Guide* contains complete instructions for installing Panther and for setting up the initial configuration on machines for the supported platforms. It also discusses system requirements, contents of the installation package, licensing, and linking in databases.

The guide assumes that the person doing the installation is a system administrator or someone familiar with Windows operating systems.

## Organization of this Guide

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This guide includes the following information:

- Pre-installation information — An overview of application architectures, the Prolifics components which make up Panther, and requirements and procedures necessary to install Panther.
- Installation instructions — Installing Prolifics software components on Windows systems.
- Post-installation notes — Instructions on verifying installation and configuration, how to install the licensing software, and information about sample applications distributed with Panther.

In addition, appendices provide information on modifications you can make to the distributed initialization files, creating new Prolifics executables for your

installation, background information on licensing including license utility programs, and the format and content of the password-enabled license file.

## Conventions

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The following typographical and terminological conventions are used in this guide:

### Text Conventions

- |                         |  |
|-------------------------|--|
| <code>expression</code> | Monospace (fixed-spaced) text is used to indicate: <ul style="list-style-type: none"><li>○ Code examples.</li><li>○ Words you're instructed to type exactly as indicated.</li><li>○ Filenames, directories, library functions, and utilities.</li><li>○ Error and status messages.</li></ul> |
| <b>KEYWORDS</b>         | Uppercase, fixed-space font is used to indicate: <ul style="list-style-type: none"><li>○ SQL keywords.</li><li>○ Mnemonics or Prolifics constants.</li></ul>   |
| <i>numeric_value</i>    | Italicized helvetica is used to indicate placeholders for information you supply.  |
| [ <i>option_list</i> ]  | Items inside square brackets are optional.   |
| { <i>x</i>   <i>y</i> } | One of the items listed inside curly braces needs to be selected.  |
| <i>x ...</i>            | Ellipses indicate that you can specify one or more items, or that an element can be repeated.  |
| <i>new terms</i>        | Italicized text is used: <ul style="list-style-type: none"><li>○ To indicate defined terms when used for the first time in the guide.</li><li>○ Occasionally for emphasis.</li></ul>   |

### Keyboard Conventions

- |             |   |
|-------------|---|
| <b>XMIT</b> | Prolifics logical keys are indicated with uppercase characters. |
|-------------|---|

Alt+A Physical keys are indicated with initial capitalization, and keys that you press simultaneously are connected with a plus sign.

## Panther Documentation

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The Panther documentation set includes the following guides and reference material, as illustrated in Figure 1:

*Installation* — Instructions for installing software and licensing for Panther and its Prolifics products in the following books: *JetNet Installation*, *TUXEDO Installation*, *2-Tier/COM/MTS Installation*, *WebLogic Enterprise Installation*, and *2-Tier Installation (UNIX)*.

*New Features Guide* — Information about new features in Panther, including Java support, enhanced three-tier and Web functionality, new properties, new library functions, and, for Windows 32-bit platforms, tab controls, dockable toolbars, and component development.

*Upgrade Guide* — Information for upgrading from JAM to Panther.

*Getting Started* — Introduction to the Panther framework, its Prolifics products, and the tutorial, with step-by-step instructions that help you get started with understanding, setting up and developing either a two- or three-tier Panther application.

*Developer's Guide* — Introduction and process of how to use Prolifics products to build two- and three-tier Panther database applications. As the major developer's manual, it includes information for each step of the development path.

*Web Development Guide* — Introduction and process of how to build and deploy a Panther web application.

*Using the Editors* — Instructions for using the Prolifics graphical authoring environment—the editor, screen and report wizards, JIF editor, menu bar editor, and styles editor—to build two- and three-tier applications.

*Programming Guide*— Describes JPL, Prolifics's scripting language, and Prolifics's Java programming interface. Also includes alphabetical listings of JPL commands, built-in functions, Prolifics's library functions, transaction manager commands, and database commands and variables.

*Reports* — Instructions for using Prolifics's report generation utility to build, modify and run reports.

*JDB* — Instructions for using JDB, Prolifics's prototyping database, and JISQL, the interactive SQL editor for JDB. Also describes how to build SQL statements and the SQL commands available in JDB.



*Database Drivers* — Instructions for using Prolifics’s database drivers. Each driver has its own section containing the information specific to that relational database engine.

*Configuration* — Instructions for configuring Prolifics on various platforms and to your preferences. Also includes information on GUI resource and initialization files.

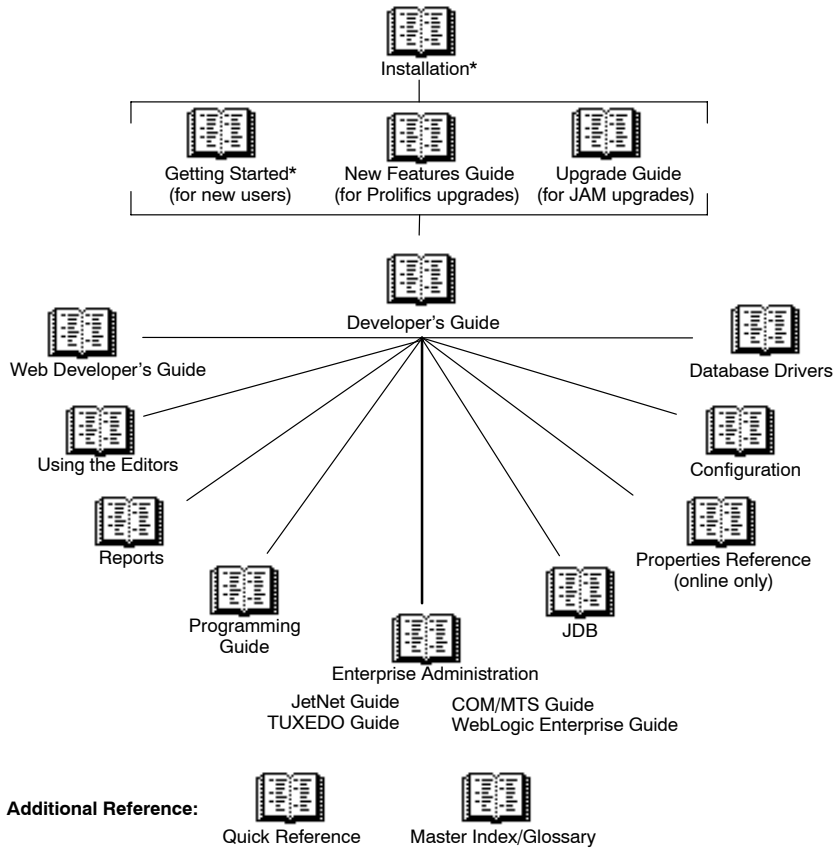


Figure 1. A suggested reading path for the Panther documentation set. An asterisk (\*) indicates that there are multiple versions of the book for different environments.

*JetNet Guide* — Instructions for configuring and monitoring your Panther three-tier JetNet application.

*TUXEDO Guide* — Instructions for configuring and monitoring your Panther three-tier TUXEDO application.

*COM/MTS Guide* — Instructions for building COM components in the Prolifics editor and for deploying components in your Panther application using COM, DCOM, and MTS.

*WebLogic Enterprise Guide* — Instructions for building and deploying WebLogic Enterprise components in your Panther application.

## Online Documentation

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Panther's documentation set is included with the Panther distribution in the `docs` directory or is located online at:

<http://www.prolifics.com/docs/panther/>

### Collateral Documentation

The following information is also provided with your Panther installation:

- Online README file.

### Additional Help

Contact Prolifics for more information on the following services:

- Product Support
- Consulting Services
- Educational Services



# Installation Checklist

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Use this checklist to ensure that you complete the appropriate steps to install and configure your Prolifics development environment for the chosen architecture.

## **Pre-Installation**

- Determine the application architecture. p. 4
- Based on architecture, decide which Prolifics software components to install. p. 4
- Satisfy the hardware and software requirements. p. 7

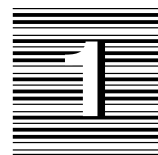
## **Installation**

- Install each Prolifics software component. p. 11

## **Post-Installation**

- (Web application development only) Submit request for permanent license for the web application server. p. 21
- Configure the deployment environment. p. 18
- Configure and verify the client environment. p. 19
- (Web application development only) Configure and verify the web application server environment. p. 20
- Look at sample applications. p. 22

When you complete the appropriate steps in the installation checklist, and set up your application environment, you are ready to build a Panther application.



# General Information

In order to help you install the appropriate software components, this chapter describes the contents of the Panther installation package, application architectures, and the functionality of the Prolifics software components that make up your Panther distribution.

Before you begin the installation process, review the Release Notes for the latest information about Panther, including known problems.

## Contents of the Installation Package

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The Panther installation package consists of the items listed below. Some of these items may not be required or appropriate for your particular installation, and therefore are not included in your package. For a complete list of files included in the installation, refer to `packlist.txt` in the `notes` subdirectory of the installation.

- Prolifics client and web application server executables, with corresponding utilities, tools, and configuration files.
- Database drivers for connecting to third-party relational databases.
- Files for C program development.
- Files for Java program development.

- Online documentation and help system; sample applications and a tutorial; and the Prolifics Gallery, which includes a variety of sample web applications.

## Application Architecture

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The following list provides a description of two-tier and web applications. Choose the appropriate architecture for your application based on your requirements.

- Two-tier application    The two-tier client/server model typically separates data from the logic of an application. Additionally, you can place business logic in COM components and call those components in your Panther application.
- Web application    A web application can be a two- or three-tier application deployed on the web application server and viewed from a web browser. The web application server works with your HTTP server software.

## Which Panther Software to Install?

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For Panther, you are required to install: client and, optionally, a web application server. Each item is described, as well as the platforms on which each is supported. Based on your chosen architecture, install the appropriate Prolifics software purchased.

- Prolifics client — Provides the development and runtime environment for building two-tier applications and COM components. Client platforms supported are:
  - Windows 9x
  - Windows NT 4, 2000 and XP
- Prolifics web application server — Provides the runtime environment for client/server applications that are accessed through web browsers. The web application server platform supported is:
  - Windows NT 4, 2000 and XP

## For More Information

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After Panther is installed and configured, you can refer to the online documentation for information on specific topics. The preface, *About this Guide*, contains a suggested reading path and more information about the documentation.

Refer to:	For:
<i>Getting Started</i>	Step-by-step instructions for building an application, including setting up client and server environments as well as a web application server.
<i>COM/MTS Guide</i>	Configuring and monitoring your Prolifics application and setting up your development and production environments.
<i>New Features</i>	New features in Panther.
<i>Upgrade Guide</i>	Upgrade information from JAM to Panther.
<i>Configuration Guide</i>	Prolifics variables used for configuring Prolifics on various platforms and to your preferences. Information on GUI resource and initialization files.
<i>Application Development Guide</i>	Introduction and process of how to build Panther applications.
<i>Using the Editors</i>	Basic guide to the Prolifics graphical authoring environment.
<i>Web Development Guide</i>	Guide to building and deploying a Panther web application.
<i>Reports</i>	Guide to using Prolifics's report generation utility to build, modify and run reports.
<i>Programming Guide</i>	Guide to JPL, Prolifics's programming language, and using Java and C library functions in Prolifics.
<i>JDB</i>	Guide to JDB, Prolifics's prototyping database, and JISQL, the interactive SQL editor for JDB.
readme.* in the notes subdirectory	Database-specific release notes detailing the setup of your Prolifics application as a database client.

*For More Information*

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Refer to:	For:
fixlist.txt in the notes subdirectory	List of bugs fixed in Prolifics.

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# Pre-Installation

This section discusses hardware and software requirements and upgrade information for Prolifics software running under Windows.

## Hardware and Software Requirements

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The full installation of the Panther development environment requires the following:

- 80486 or better processor; Pentium processor is recommended.
- A maximum of 60 MB of disk space for the client and 40 MB for the web application server. An additional 35 MB is necessary for the installation of online documentation. However, the disk space required can be less depending on the options installed. The installation checks for adequate space.
- Microsoft Windows 9x versions can only run Panther clients, not the server components. You need a Microsoft Windows Server for COM deployment or for running the web application server.
- 32 MB of memory. More memory is recommended.
- Database vendor's client and network software installed. For more information, consult the database-specific release notes online.

For Java, you should have `msjava.dll` version 5.00.3167 or higher, dated 1/25/99 or later. To update this DLL, you can install Microsoft's Virtual Machine using `msjavx86.exe`, provided in *PantherInstallDir*\jvm.

If you are going to add your own C functions to Prolifics, install the Microsoft Visual C++ compiler (version 6 for Windows 9x and NT 4). You also need to install the MFC (Microsoft Foundation Class).

If you are installing a Prolifics client and web application server on the same Windows NT machine, it is recommended that you install them in the same directory. This allows them to share common environment settings that point to the location of required files. It also saves disk space.

To install a web application server, an HTTP server must be configured and running on the same system. Panther supports industry favorites, such as Netscape's Enterprise Server and Microsoft Internet Information Server, and all others using a CGI, NSAPI, or ISAPI interface.

For web applications, Panther supports CGI, ISAPI, NSAPI, and Java servlet architectures. You can select one according to your preferred configuration.

## Before Installing a Web Application Server

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Before installing a Prolifics web application server, determine the HTTP server name and the name of the CGI or ISAPI or NSAPI program directory. Also, verify that your HTTP server is running. Consult your system administrator or your web server administrator to determine the correct names. Enter the names here for future reference:

- My HTTP server name is \_\_\_\_\_
- My HTTP server program directory is \_\_\_\_\_

This directory stores the server's gateway programs. Common names for this directory are `cgi-bin` or `scripts`.

## Upgrading the Client on Windows 9x

---

If you are upgrading the client from an earlier version of Prolifics, install Panther in a separate directory from previous installations, for example, `C:\Panther`.

The Windows 9x setup program unsets any existing `SMVARS`, `SMPATH`, `SMTERM`, `SMMSGS`, `SMKEY`, and `SMVIDEO` settings in your `autoexec.bat` file. The setup program lets you choose from the following three options:

- Let the setup program modify the `autoexec.bat` file. The existing `autoexec.bat` is saved to `autoexec.xxx` where `xxx` is a three-number extension.
- Save the required changes to `autoexec.new` file.
- Not make any changes for the `autoexec.bat` file.

After successfully installing Prolifics software, there are several post-installation steps required to start using Prolifics. Chapter 4 discusses the steps required to set up the environment for each of the Prolifics components installed, licensing for the web application server, and post-installation issues and troubleshooting tips.



# Installation

These instructions apply to both first-time installations and to upgrades from previous versions of JAM and Prolifics. Before beginning the installation, review the requirements and other pre-installation steps discussed in Chapter 2.

This section discusses running the setup program to install a client, a web application server, and database drivers under Windows.

## Installation Procedure

---

Panther is supplied in compressed form on CD-ROM along with a Windows-based setup program.

### **To run the setup program:**

1. Insert the CD-ROM in the appropriate drive.
2. If the setup program does not start automatically, choose Start⇒Run. In the Run dialog box, type `d:\setup` (where `d` is the letter of the drive from which you are installing).

Choose to install the client or web application server.

The setup guides you through the steps to install and configure your installation.

3. During the installation you can select a setup type. Each setup type includes certain Prolifics application components. The components are:
  - Program Files — Required to run Prolifics. Contains all configuration files, utilities, and DLLs necessary to run the Prolifics development environment.
  - Development Files — Optional. Only necessary if you want to add your own C code, link out certain options, or link statically with a database driver.
  - Samples and Tutorial Files — Optional. Installs the sample applications VideoBiz (two-tier application), sample ActiveX controls, sample COM components, and the Tutorial.
  - Help Files and Online Documentation — Optional. Since these can be quite large, consider sharing a copy across a network if disk space is a concern. Or, if you are installing from CD-ROM, leave the files on the CD-ROM rather than copying them to your PC.
4. You are prompted for the following information:
  - User — Specify the user account (login) name (up to 31 characters in length). A value is required to run the development executable (prodev).

The following two steps apply if you are installing a web application server.

5. You are prompted to insert the Start-Up License diskette.
6. You are prompted for the licensing-related information. The information is used to obtain a permanent license file and includes contact information and:
  - Serial Number — Located on the media label.

Prolifics software is installed with a Start-up License, provided on a separate diskette, which lets you get started, but you will need to request a permanent license. Refer to page 21 when you receive your permanent license.
7. Repeat the setup program to install the other software components.
8. When the setup program is complete, reboot your system to set the new application variables.

## Installing a Database Driver

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After you install the Prolifics client and/or web application server on a machine, you can begin the database driver installation.

If your Panther application includes COM components, the technologies which deploy these components (COM, DCOM, MTS) require database access using ODBC. You must install the ODBC driver provided by your database vendor. Support for ODBC databases is built into the Prolifics DLLs.

If you install the web application server on a separate machine from the client, you must also install the database drivers on that machine.

**To install database drivers:**

1. Insert the CD-ROM.
2. If the setup program does not start automatically, choose Start⇒Run. In the Run dialog box, type `d:\setup` (where `d` is the letter of the drive from which you are installing).
3. Choose to install database drivers.
4. Select appropriate database.
5. Select from the following options:
  - Complete Install — Copies the driver files to your PC and configures `PROL5W32.INI` for your database version. Choose this option if you have not previously installed database driver software.
  - Configuration — Updates `PROL5W32.INI` for another version of the database. Choose this option if you already installed the database driver and want to modify the database version in `PROL5W32.INI`.
6. Select or confirm the version of your database software. If your version is not listed, choose the option `Other`.

If you are using a database for which DLLs are not provided (see list of provided DLLs that follows), you must edit the `makefile` to link in your database, and then recompile Prolifics using a C compiler. Refer to page 17 for information on creating new Prolifics executables.

Since database vendors frequently update database versions, your particular database version may not be listed in the Prolifics install program. In this case, choose the latest version for your Prolifics database driver installation. Prolifics provides DLLs for the currently available versions of the following database client software:

## Informix

Windows Clients:	Informix Version 7.20.TDI Informix Version 7.30 Other
Windows Servers:	Informix Version 7.10 Informix Version 7.20.TDI Informix Version 7.20.TEI Informix Version 7.30 Other

For more information, refer to `readme.inf` in the Prolifics `notes` subdirectory.

If you don't know your Informix version, check the release number listed in the text files provided in `INFORMIXDIR\release` where `INFORMIXDIR` is the root Informix installation.

## Microsoft SQL Server

Windows Clients and Servers:	Microsoft SQL Server Version 6 or higher Other
------------------------------	---

## ODBC

Windows Clients and Servers:	Microsoft Open Database Connectivity version 2 Microsoft Open Database Connectivity version 3 Other
------------------------------	---

If your ODBC version is 2.x or earlier, choose Version 2. ODBC version 1 is compatible with version 2.

## Oracle

Windows Clients:	Oracle Version 8.1.5 using Pro*C Oracle Version 9 using Pro*C Other
Windows Servers:	Oracle Version 8.1.5 using Pro*Ct Oracle Version 8.1.5 using Pro*C with XA support Oracle Version 9 using Pro*Ct Oracle Version 9 using Pro*C with XA supportOther

Oracle supports two development interfaces: a C language API called OCI and an embedded SQL language, Pro\*C. Most applications can use Prolifics's OCI or Pro\*C interfaces interchangeably. Typically, Prolifics developers use the OCI interface unless they are linking their own custom Pro\*C functions with Prolifics. To use Oracle's stored procedures, you must use the OCI interface.

## Sybase

Windows Clients and Servers:	Sybase Version 10 using DB-Library Sybase Version 10 using CT-Library Sybase Version 11 using DB-Library Sybase Version 11 using CT-Library Sybase Version 11 using CT-Library with XA Other
------------------------------	---

For versions of Sybase earlier than 10, Prolifics/Sybase requires the DB-Library interface. With Prolifics/Sybase's support for Sybase Open Client Version 10, two interfaces are supported, DB-Library and CT-Library.

If you do not know your Sybase version, run the Sybase Windows program `sqlver.exe` or refer to the About menu option of any of the Sybase Windows program (for example, `sybping.exe`).





# Post-Installation

## Post-Installation Overview

---

As part of post-installation, you need to perform the following general steps, some of which are based on the architecture of your application. The details of the steps are provided in the pages that follow.

1. Configure the component development environment (refer to page 18).
2. Configure the client environment (refer to page 19).
3. Configure the web server environment (refer to page 20).
4. Look at sample applications (refer to page 22).

## Create New Prolifics Executables

---

As part of the Panther installation package, a set of standard Prolifics executables is provided for the client and the web application server, along with a template COM DLL. Depending on your configuration and on the platform and database being used, you might need to create new executables. Specifically, a new executable is required if you are using a database for which DLLs are not provided or if you are adding C functions to your Panther application.

Alternatively, Prolifics distributes workspace and project files for use with Microsoft Developer Studio. Instructions on how to use the workspace are provided in the Release Notes.

For more information on creating new client and web application executables, or modifying the Panther COM template DLL, refer to Appendix B.

## Configure the Component Development Environment

---

A server machine must be configured to deploy COM components. The client can be installed on the same machine as the server or it can be installed separately. The component server can be:

- A Windows 9x machine running COM or DCOM.
- A Windows NT server running COM/DCOM or MTS.

To deploy a COM component, you must register its DLL and type library with the system. The path for the DLL is encoded in the registration, so it is advisable to place that DLL in a specific application directory.

For COM components built with Prolifics, the application libraries containing the service component, which you create when you create the COM component in Panther, must also be available to the system.

Template files provided in the Panther distribution are:

- In the *PantherInstallDir*\config directory:
  - `PrlServer.dll`
  - `PrlServer.inf`

The required files for deployment are:

- In the *PantherInstallDir*\bin directory:
  - `PrlSmCom.dll`
  - `PrlTmCom.dll`
  - `PrlDmCom.dll`
- Files in your application directory:
  - `server.lib`
  - *YourApplication.dll*

## Configuring Panther with COM or DCOM

Confirm that COM and DCOM have been installed on a Windows 95/98 machine.

### To deploy a COM component:

- You must register its DLL and type library (\*.tlb) with Windows. Panther provides `Regsvr32.exe` in the `util` directory to register the COM component on a local machine.
- The application library containing the service component must be available.

The component's `.inf` file and `regcli32.bat` are provided to register the components for DCOM on a remote client machine.

For more information on deploying COM components with COM/DCOM, refer to *COM/MTS Guide*.

## Configuring Panther with MTS

Confirm that MTS has been installed on the Windows NT server.

### To deploy COM components with MTS:

- You must register the DLL (and type library) using the Microsoft Management Console.
- The application library containing the service component must be available.
- The COM component must be installed into an existing component package.

You may also prepare components so that they can be registered remotely on client machines.

For more information on deploying COM components with MTS, refer to *COM/MTS Guide*. For more information on MTS and creating or exporting component packages, see Microsoft's MTS Documentation.

## Configure the Client Environment

---

A Prolifics client provides the development environment required to build two-tier and COM applications. The environment must contain properly set application variables in order to run Prolifics. To set up the development environment, complete the following platform-specific steps. Refer to the *Application Development Guide* for more details on setting up the client environment.

**For each client:**

Set the following variables in the following initialization files: `pro14w32.ini` for Prolifics and `mbedit32.ini` for the menu bar editor.

- `SMFLIBS` — Specify the names of libraries to open automatically during development and at runtime.

**To verify a client installation:**

Select the Panther item from the Start menu or double-click on the Panther icon in the Panther folder created during the installation.

## Configure the Web Application Server Environment

---

To ensure that your Prolifics application can be viewed on a web browser, complete the following platform-specific steps, most of which were applied as part of the Prolifics setup program. For further information on configuring web applications, refer to the *Web Development Guide*.

1. Confirm that the following web application server executables reside in your HTTP server's CGI, NSAPI, or ISAPI program directory; otherwise, copy them from the Prolifics `util` subdirectory:
  - `websetup.exe` (Prolifics Web Setup Manager)
  - `jwsamp.exe` (sample application executable)
2. Confirm that the following initialization file resides in your Windows system directory; otherwise, copy it from the Prolifics `config` subdirectory:
  - `jwsamp.ini`
3. Check `jwsamp.ini` in the Windows directory for the correct setting for each of the following variables:
  - `AppDirectory` — Full pathname to the Prolifics `samples` subdirectory to provide initialization information for the sample web application.
  - `Dispatcher` — Full pathname of the `dispatcher.exe` program in the `util` subdirectory of the installation directory.
  - `Server` — Full pathname of the `jserver.exe` program in the `util` subdirectory of the installation directory.
  - `SMBASE` — Full pathname of the Prolifics installation directory.
  - `PATH` — Full pathname of the `util` subdirectory of the installation directory.

## Creating a Web Application

Prolifics provides the Prolifics Web Setup Manager to guide you through configuring your customized web application. For more information, refer to the *Web Development Guide*. Choose Prolifics Web Setup Manager on the Start Menu.

## Licensing for the Web Application Server

The web application server requires a license. The Panther installation includes a Start-up License, provided on a floppy diskette, that lets you use the web application server immediately. The temporary license, `license.dat`, is installed in the `licenses` subdirectory of the Panther installation directory. Since the license will expire, you must contact the Prolifics License Desk to receive your permanent license file.

During installation, the setup program prompted you to provide the information required by the License Desk for obtaining your permanent license file. It also generated a license request file (`proweb.lcl`) in the `licenses` subdirectory of your Panther installation directory.

### To obtain the license file:

Submit the license request file to the Prolifics License Desk. The License Desk returns the password-enabled file via the requested method specified during setup.

### To install a permanent license file:

1. If you received a license file (`proweb.lic`) via e-mail, copy it to the `licenses` subdirectory on the machine where the web application server (`proweb`) is installed. Proceed to Step 4.
2. If you received a license file via fax or mail, copy the license request file, `proweb.lcl`, to `proweb.lic`.
3. Using a text editor, update `proweb.lic` with the information provided in the password-enabled file that you received.

Replace text in angle brackets (and the brackets themselves) with the corresponding information provided on the `Feature` line. For example, replace `<password>` with the password provided in the license file.

4. Create the `license.dat`:
  - Choose Start⇒Run, and type:

```
PantherInstallDir\licenses\create_license
```

The `proweb.lic` file is converted to a `license.dat` file in the `licenses` subdirectory and the Start-up License is saved as `license.bak`.

## Location of the License File

Prolifics searches for the license file in the following order:

- The pathname given by the `LMLicenseFile` variable in your web application initialization file.
- `license.dat` in `licenses` subdirectory of the Panther installation (recommended location).
- `c:\flexlm\license.dat`.

### To verify a web application server installation:

Run the Prolifics Web Gallery. For instructions, refer to page 23.

### To verify that your web application server configuration and licensing are correct:

- Configure a new application by running Web Setup Manager from the Start Menu.
- Start the web application server from the command line of the `util` subdirectory by typing:

```
monitor -install applicationName
net start applicationName
```

Refer to the `monitor` command for additional installation options.

- Run the application in your browser:

```
http://serverName/program_directory/applicationName
```

If you get the message “No Service Requested!” you were successful.

## Look at Samples

---

Before you begin building your applications, you might want to look at the following sample applications:

### Two-Tier Application

#### VideoBiz

Choose the VideoBiz sample on the Start menu. For more information on VideoBiz, refer to the *Application Development Guide*.

## COM Samples

### **Panther COM Gallery**

Provides screens and COM components illustrating how to call methods and set properties in a Panther application. By opening the samples library in the editor, you can easily view the component's interface and the JPL coding used to implement the processing.

#### **To install the COM samples:**

- Open a DOS prompt.
- Change to the directory:
 

```
PantherInstallDir\samples\com
```
- Run:
 

```
regsvr32 cStrings
regsvr32 cCustomers
```

#### **To configure database access for the COM samples:**

- Open the Control Panel and select ODBC.
- Add a System DSN for the “Restaurants” database:
  - Select System DSN.
  - Choose Add.
  - Select the Microsoft Access Driver.
  - Choose Finish.
  - Enter the Data Source Name as “Restaurants.”
  - Choose Select.
  - Select *PantherInstallDir*\samples\com\restaurants.mdb

#### **To view the COM samples:**

- Choose the COM samples from the Start menu.

For more information on the COM samples, refer to *COM/MTS Guide*.

## Web Application

### **Prolifics Gallery (web application)**

Provides several pre-built sample applications for the web.

- Choose Start Prolifics Gallery Server on the Start Menu.

- Choose View Prolifics Gallery Samples on the Start Menu.
- Choose Stop Prolifics Gallery Server on the Start Menu when you are finished.

## Troubleshooting

---

The information in this section is intended to provide you with additional guidance when you encounter error messages.

### Graph Functionality

Prolifics's graph capabilities rely upon external programs (for example, DLLs), therefore, it is possible for Prolifics to be working properly except for the business graph component. If you have problems with the graph functionality, check the following:

*Note: The setup program normally performs all of these steps.*

- Ensure that `libsti.ini` (distributed in the `config` directory) resides in the Windows directory and contains the correct paths in it for the `IPF` variable.
- Ensure that `libsti.dll` (distributed in the `util` directory) can be found in a directory along the `PATH`.

### Windows PATH Settings

If you are upgrading from JAM or an earlier version of Prolifics, remember that Prolifics's `util` directory must be on your `PATH`. Normally, this is not an issue since the installation process inserts the Prolifics `util` directory at the beginning of the `PATH` variable. However, the `PATH` might contain the older `util` directory. If this is the case, manually edit the `PATH` specification in the `autoexec.bat` file to remove the older `util` directory.

### Online Help and Manuals

Prolifics's online help and manuals for Panther are in the distribution in the `docs` directory and can be found on the Internet at:

<http://www.prolifics.com/docs/panther/>





# Notes for Microsoft Windows

The information in this appendix provides troubleshooting notes for installing and running Prolifics on Microsoft Windows.

## DLLs for JPEG Decoding

---

WECJLIB.DLL is a dynamic link library which performs JPEG decoding. There are two versions of the DLL. The version that comes with Prolifics can be freely distributed. An enhanced version, which has added functionality, can be ordered from Express Compression Labs (ECL).

In the version of the DLL provided with Prolifics, images are rendered using ordered dithering. The enhanced version of the DLL supports Hi-Color and Tru-Color display hardware. With such hardware, dithering is not necessary and the best possible picture quality can be achieved. Two-pass color quantization and improved dithering are also supported in the enhanced version, which results in better picture quality on 256-color display devices.

To order single- and multiple-user licenses for the enhanced version of the DLL, email: [ec1@netcom.com](mailto:ec1@netcom.com), or write:

Dr. Y. Shan  
P.O. Box 367  
Caulfield East VIC 3145, Australia

## Environment Space

---

If `COMMAND.COM` runs out of environment space when you issue a `SET` command, add the following line to your `CONFIG.SYS` file:

```
SHELL=C:\COMMAND.COM /E:1000 /P
```

If `COMMAND.COM` resides on a different drive or directory, modify the line accordingly.

## Visual C++ Floating-Point Options

---

For Microsoft Visual C++ distributions, all the distributed libraries created in the current version of Prolifics are compiled with the `/FPc` switch, so that you can choose at link time which floating-point library to use. You can use either the math coprocessor library (`LLIBC7.LIB`), the emulator library (`LLIBCE.LIB`, the default), or the alternate math library (`LLIBCA.LIB`).

## Visual Workbench or Developer Studio

---

A single `makefile` is provided for creating Prolifics executables. It is not necessary to use Microsoft Visual C++'s Visual Workbench or Developer Studio to create new Prolifics executables. Instead, you can invoke the `nmake` utility directly from the command line to create executables. If you want to use Visual Workbench or Developer Studio, you can use the `makefile` as an external module.

## Using Prolifics Utilities

---

Because of various limitations of Windows, it can be challenging to use Prolifics's utilities when launched from the Program Manager or the Start menu. The problem arises because Windows's notion of the current directory is hidden from the user.

By default, all Prolifics's utilities are designed to be run from the DOS command line, with the following exceptions: `binherit.exe`, `f2asc.exe`, and `isqlw.exe` (refer to the Note below). In the DOS environment, there is a current directory, and when the utilities run they operate on files in that directory by default. Under Windows, however, the current directory is usually set to the directory holding the executable, for example, `c:\prolific\util`.

Therefore, if you launch a utility, such as `f2asc`, from the Program Manager or the Start menu and type `-a foo.asc foo.pro` in the Parameters window, `f2asc` looks for `foo.pro` in the `util` directory and creates its output `foo.asc` there as well. Since this is usually not what you want, consider one of the following approaches:

- Enter full paths in the parameters window, for example, `-a d:\myproj\foo.asc d:\myproj\foo.pro`.
- Edit the `.PIF` files to set the directory elsewhere than the `util` directory.
- Run the utilities from DOS.

*Note: The utilities listed are distributed as Microsoft C QuickWin applications. If you are interested in the behavior of QuickWin applications, refer to the QuickWin chapter in the Programming Techniques manual that comes with Visual C/C++.*

## XML Libraries

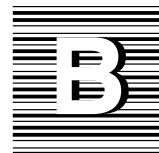
---

Importing XML includes the use of `libxml2`, copyright 1998–2003 by Daniel Veillard.

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# New Prolifics Executables

As part of the Panther installation package, a set of standard Prolifics executables is provided for the client and the web application server. Depending on your configuration and on the platform and database being used, you might need to create new executables. Specifically, a new executable is required if you are using a database for which DLLs are not provided or if you are adding C functions to your Panther application.

Alternatively, Prolifics distributes workspace and project files for use with Microsoft Developer Studio. Instructions on how to use the workspace are provided in the Release Notes.

## Client and Web Application Server Executables

---

To create new executables, Prolifics distributes a single makefile that can be invoked via the command line utility, `nmake`.

### **To create a new Prolifics executable:**

1. Complete the installation process of Prolifics components.

2. Ensure that the appropriate application variables (SMBASE, etc.) have been applied to your environment.
3. Go to your application directory (or create one) and copy all files from the Prolifics Link subdirectory to it.
4. Edit the `makefile` in your application directory, commenting or uncommenting lines as needed to build the appropriate executables. For further information, refer to page 30.
5. Uncomment the appropriate database in the `makefile` and edit the database-specific `makevars.dbs` (where `dbs` is the extension of the database) file to choose the correct version of your database software. For further information, refer to page 31.
6. Type `nmake` at the command line to build the executable. By default, the `makefile` in the current directory is used for the `make` (and `nmake`) command.
7. The `nmake` process creates a new Prolifics executable, `prodev32.exe`. Give the executable file a unique name to distinguish it from the distributed executable or others that you have built differently.
8. If you built a new web application server executable (`jserver`), modify the `SERVER` variable in your application's initialization file to reference the new `jserver` executable in its own directory. Do not overwrite the `jserver` executable in the `util` directory.

## Specifying the Executables

**To indicate the executables to build, edit the `makefile` in your application directory:**

1. Comment or uncomment the appropriate client executables as needed (these are uncommented by default):

<code>PRORUN = prorun32.exe</code>	Runtime executable
<code>PRODEV = prodev32.exe</code>	Development executable
<code>RWRUN = rwrn32.exe</code>	Report utility

If web application server software has been installed, comment or uncomment the server executable as needed:

<code>JSERVER = jserver.exe</code>	Web application server executable (uncommented by default)
------------------------------------	--

2. To override the value of certain application variables such as `SMBASE`, uncomment the appropriate lines in the `PARAMETERS` section.
3. If you have the Prolifics web application server on the same machine as other Prolifics software, it is recommended that they be installed in the same directory. However, if they are not in the same directory, set `WEBBASE` (in `WEB PARAMETERS` section) to the web application server installation directory.
4. The Prolifics debugger allows you to trace JPL and Prolifics screen events and is installed by default for clients. If you do not wish to use the debugger, comment the lines in the `DEBUGGER PARAMETERS` section.
5. You have the option of building a standalone executable. Comment or uncomment the appropriate lines in the `MIDDLEWARE PARAMETERS` section.
6. If you want to add Microsoft Codeview debugging information, uncomment the corresponding block.

## Linking in the Database

If you are using a database for which DLLs are not provided, you must edit the `makefile` in your application directory to link in the appropriate database.

### To include the appropriate database in your executables:

1. Uncomment the appropriate `include` statement in the `SELECT DATABASE SOFTWARE` section of the `makefile`.
2. Edit the corresponding `makevars.dbs` (where `dbs` is the extension of the database) file to choose the correct version of your database software.

In the `makevars.dbs` file, verify or update the following:

- Set the flag `dbs_INIT` to one of the following: `d`, `l`, `u`, `p`. This flag controls the handling for case sensitivity. The default is `d`. To find out what the default is for your database engine, refer to the online database-specific driver notes.
- In the `databaseName PARAMETERS` section of `makevars`, verify your database engine's version. Uncomment the appropriate block of parameters based upon this version. Also, verify and correct the pathnames if necessary.
- Set the flag `dbs_ENGNAME` to specify the default engine name.

For more information, refer to the online database-specific driver notes for additional information on database engines and on case handling.

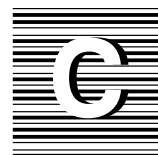
## Changing the Panther COM Template DLL

---

`Pr1Server.dll` is the template for Panther COM components and can be edited to enable you to link your own C functions into your COM component. Files included in the `comLink` directory are:

<code>Pr1Server.c</code>	Source code
<code>Pr1Server.rc</code>	Resource file for copyright information
<code>Pr1Server.dsw</code>	Microsoft Developer Studio Workspace File
<code>Pr1Server.dsp</code>	Microsoft Developer Studio Project File
<code>makefile</code>	For command line makes

Edit the source code in `Pr1Server.c` to include your C Functions, make a new DLL, and in the Prolifics editor, update the name and/or location of the template DLL on the COM tab of the Component Service interface. It is recommended that you give the new DLL a different name (other than `Pr1Server.dll`). For more information on including C Functions in your source code, refer to the *Application Development Guide*.



# Initialization and Databases

The installation procedure for Windows automatically modifies `PROL5W32.INI` to work with your database driver or drivers. The settings corresponding to your database and version are added to the Prolifics initialization file.

## **For Windows Clients and Windows Servers:**

Database and Version	Settings
Microsoft Open Database Connectivity (ODBC) Version 2	<code>[databases]</code> <code>installed=odbc</code> <code>[dbms odbc]</code> <code>driver=odb2dm32.dll</code> <code>model=tmodb132.dll</code>
Microsoft Open Database Connectivity (ODBC) Version3	<code>[databases]</code> <code>installed=odbc</code> <code>[dbms odbc]</code> <code>driver=odb3dm32.dll</code> <code>model=tmodb132.dll</code>
Microsoft SQL Server Version 6	<code>[databases]</code> <code>installed=sqlsrvr</code> <code>[dbms sqlsrvr]</code> <code>driver=mssdm32.dll</code> <code>model=tmmss132.dll</code>



Database and Version	Settings
Sybase Version 10 using DB-Library	[databases] installed=sybase [dbms sybase] driver=db10dm32.dll model=tmsyb132.dll
Sybase Version 10 using CT-Library	[databases] installed=sybase [dbms sybase] driver=ct10dm32.dll model=tmsyb132.dll
Sybase Version 11 using DB-Library	[databases] installed=sybase [dbms sybase] driver=db11dm32.dll model=tmsyb132.dll
Sybase Version 11 using CT-Library	[databases] installed=sybase [dbms sybase] driver=ct11dm32.dll model=tmsyb132.dll
Sybase Version 11 using CT-Library with XA support	[databases] installed=sybase [dbms sybase] driver=ct11xa32.dll model=tmsyb132.dll

#### For Windows Clients:

Database and Version	Settings
Informix Version 7.20.TDI	[databases] installed=informix [dbms informix] driver=inf7dm32.dll model=tminf132.dll
Informix Version 9	[databases] installed=informix [dbms informix] driver=inf9dm32.dll model=tminf132.dll
Oracle Version 8.1.5 using OCI	[databases] installed=oracle [dbms oracle] driver=ora815dm32.dll model=tmora132.dll

Database and Version	Settings
Oracle Version 8.1.5 using Pro*C	[databases] installed=oracle [dbms oracle] driver=emb815dm32.dll model=tmora132.dll
Oracle Version 9 using OCI	[databases] installed=oracle [dbms oracle] driver=ora9dm32.dll model=tmora132.dll
Oracle Version 9 using Pro*C	[databases] installed=oracle [dbms oracle] driver=emb9dm32.dll model=tmora132.dll

**For Windows Servers:**

Database and version	Settings
Informix Version 7.x	[databases] installed=informix [dbms informix] driver=inf7dmt.dll model=tminf132.dll
Informix Version 7.20TE1 or higher	[databases] installed=informix [dbms informix] driver=inf7dmn4.dll model=tminf132.dll
Oracle Version 8.1.5 using OCI	[databases] installed=oracle [dbms oracle] driver=ora815dm32.dll model=tmora132.dll
Oracle Version 8.1.5 using Pro*C	[databases] installed=oracle [dbms oracle] driver=emb815dm32.dll model=tmora132.dll
Oracle Version 8.15 using OCI with XA support	[databases] installed=oracle [dbms oracle] driver=oxa815dm32.dll model=tmora132.dll

Database and version	Settings
Oracle Version 8.15 using Pro*C with XA support	[databases] installed=oracle [dbms oracle] driver=exa815dm32.dll model=tmora132.dll
Oracle Version 9 using OCI	[databases] installed=oracle [dbms oracle] driver=ora9dm32.dll model=tmora132.dll
Oracle Version 9 using Pro*C	[databases] installed=oracle [dbms oracle] driver=emb9dm32.dll model=tmora132.dll
Oracle Version 9 using OCI with XA support	[databases] installed=oracle [dbms oracle] driver=oxa9dm32.dll model=tmora132.dll
Oracle Version 9 using Pro*C with XA support	[databases] installed=oracle [dbms oracle] driver=exa9dm32.dll model=tmora132.dll



# License Administration

This appendix provides background information on licensing in Prolifics. To manage Prolifics usage, the Flexible License Manager (*FLEXlm*), a product of Globetrotter Software, Inc., is used. *FLEXlm* Version 5.0 is installed with Prolifics as part of the installation process only on server machines.

The appendix describes the license options file and the following *FLEXlm* license administration utilities provided with Prolifics.

- `lmcksum` — Performs a checksum of a license file.
- `lmdiag` — Diagnoses licensing problems.
- `lmdown` — Gracefully shuts down the license daemons on all nodes.
- `lmgrd` — Starts the license manager daemon.
- `lmhostid` — Prints the correct hostid value on any machine supported by *FLEXlm*.
- `lmremove` — Removes a single user's license for a specified feature.
- `lmreread` — Causes the license daemon to reread the license file and start any new vendor daemons that have been added.

- `lmstat` — Monitors the status of all licensing activity.
- `lmswitchr` — Switches the log file for the specified feature.
- `lmver` — Reports the FLEXlm version of a library or binary.

## Licensing in Prolifics

---

Prolifics components use local or remote licensing schemes and are defined as follows:

- Local licensing is when the license file for the application resides on the same machine as the Prolifics component being used.
- Remote licensing is when the license file for the application resides on a different machine from the Prolifics component being used.

The setup program recommends a default licensing scheme for each Prolifics component. If you accept the default, the setup program guides you through the appropriate steps to obtain a permanent license file. You can choose a different scheme if your license administrator recommends it. In this case, the setup program requests contact information, and the Prolifics License Desk will contact you or your license administrator to arrange for licensing. Default license schemes are:

Component name	Platforms	Licensing scheme
Prolifics client	UNIX	Local
	Windows 95/98	Remote
	Windows NT 4 or higher	Local
Prolifics application server	UNIX	Local
	Windows NT	Local
Prolifics web application server	UNIX	Local
	Windows NT	Local

## License Daemons and License Types

The license daemons are programs that manage the license types that allow limited access to users. License daemons are only required for node-locked counted and floating licenses. Thus, only the Prolifics development client requires a daemon; and the license daemon always runs on the license host machine.

The license type and number used at your site was determined when Prolifics was purchased.

## Types of Daemons

The two types of daemons are:

- License daemon (`lmgrd`) — Manages the license file and starts the vendor daemon `prold`. Only one license daemon can be active for a given license file. However, there might be other license daemons managing other license files. `lmgrd` runs on the license host.
- Vendor daemon (`prold`) — Works with `lmgrd` to dispense tokens. Each feature of a floating (development client) or node-locked counted license has a limited number of tokens.

## License Types

Two types of licenses are available with Prolifics; both types are specific to the component installed:

- A Prolifics application server uses a license type that allows for an unlimited number of application servers to run on a specific computer. The license is does not require a license daemon. This type of license is referred to as *node-locked uncounted*.
- A Prolifics web application server uses a node-locked uncounted license which allows for an unlimited number of applications to be run on a specific computer. The license does not require a license daemon.
- Prolifics clients use *floating* licenses. This type of license is not associated with a particular machine, but is assigned by the license server to each Prolifics development client when the executable is run. This license type requires a license daemon.

*Note: Because a floating license is associated with the Prolifics development executable, and not with an actual machine, it is possible for a developer to use more than one license. For example, if a developer is running two Prolifics sessions simultaneously on one machine, the license manager assigns two licenses, not one.*

## Options File

---

The daemon options file allows you to customize Prolifics license usage at your site. The information in the file can specify such information as:

- Which users or groups of users can use Prolifics.

- Which messages will be included in the log file.
- How long a copy of Prolifics will remain idle before timing out.

There is no default location or name for the options file. If used, its name appears as the fourth argument on the DAEMON line of the license file `license.dat`, in the optional field `options-file`. If there are multiple DAEMON lines in the `license.dat` file, then there can be multiple options files, one for each DAEMON line. Not all of the lines in an options file refer to a feature, so the site administrator must set up separate options files in order to use the NOLOG and REPORTLOG features.

## Contents of the Options File

The options file has the following basic format:

```
{INCLUDE|EXCLUDE} feature {USER|HOST|DISPLAY|GROUP} name
NOLOG {IN|OUT|DENIED|QUEUED}
GROUP group-name member-list
LINGER feature checkout-time
REPORTLOG filename
RESERVE numlic feature {USER|HOST|DISPLAY|GROUP} name
TIMEOUT feature idletime
```

Lines beginning with a pound sign (#) indicate comments and are ignored.

### INCLUDE/EXCLUDE

INCLUDE and EXCLUDE specify which users (or hosts, displays, or groups) are allowed to use a particular feature. Any user who is EXCLUDED from a feature is not able to use that feature. Specifying an INCLUDE line has the effect of excluding everyone else from that feature; thus, only those users specifically INCLUDED are able to use that feature. The INCLUDE | EXCLUDE line has the following format:

```
{INCLUDE|EXCLUDE} feature {USER|HOST|DISPLAY|GROUP} name
```

### NOLOG

NOLOG causes messages of the specified type to be filtered out of the daemon's log file. Specifying a NOLOG option reduces the amount of output to the log file, which can be useful in those cases where the log file grows too quickly. The NOLOG line has the following format:

```
NOLOG {IN|OUT|DENIED|QUEUED}
```

### GROUP

GROUP defines collections of users, which can then be used in RESERVE, INCLUDE, or EXCLUDE commands. The GROUP line has the following format:

```
GROUP group-name member-list
```

**LINGER**

LINGER prevents the license manager from taking back a license until the indicated *checkout-time* has expired, regardless of whether or not the license token is being used. The LINGER line has the following format:

```
LINGER feature checkout-time
```

**REPORTLOG**

REPORTLOG creates a log file suitable for use with the FLEXlm report writing tools. This log file maintains more detailed information than the standard log file, but is not meant to be human readable. If the filename starts with a plus character (+), the file will be opened in append mode. The REPORTLOG line has the following format:

```
REPORTLOG filename
```

**RESERVE**

RESERVE reserves the specified number of licenses for the specified user, host, display, or group. Reserving a license decreases the number of generally available licenses. The RESERVE line has the following format:

```
RESERVE numlic feature {USER|HOST|DISPLAY|GROUP} name
```

**TIMEOUT**

TIMEOUT sets up a minimum idle time after which a user's license is lost if it is not being used. This can prevent users from wasting a license (by keeping it checked out when it is not in use) when someone else wants one. The TIMEOUT line has the following format:

```
TIMEOUT feature idletime
```

**Example**

The following is an example of an options file:

```
REPORTLOG /usr/adm/gsi.replog
RESERVE compile USER pat
RESERVE compile USER less
RESERVE compile HOST terry
NOLOG QUEUED
```

## FLEXlm Utilities

---

The following sections describe the FLEXlm utility programs provided with Prolifics. These utilities are located in the distributed `util` directory.



# lmcksum

Performs a checksum of a license file

---

`lmcksum [-k] [-c license_file]`

- `-k` Forces the encryption code checksum to be case-sensitive (in general, `lmcksum` is not case-sensitive) and not prompt for any input.
- `-c license_file` Name of license file to checksum. By default `lmcksum` operates on `license.dat` in the current directory. If this switch is not specified, `lmcksum` looks for the environment variable `LM_LICENSE_FILE`. If the environment variable is not set, `lmdiag` looks for the file `/usr/local/flexlm/licenses/license.dat`.
- 

## Description

`lmcksum` prints a line-by-line checksum for the file as well as an overall file checksum. If the license file contains “`lmcksum=nn`” attributes, the bad lines are indicated.

`lmcksum` ignores all fields that do not enter into the encryption code computation; thus the server node name and port number, as well as the daemon pathname and options file names are not checksummed. In addition `lmcksum` treats non-case sensitive fields correctly (in general, `lmcksum` is not case-sensitive.) `lmcksum` takes the `-k` switch to force the encryption code checksum to be case-sensitive.

`lmcksum` takes an optional daemon name; if specified, only license file lines for the selected daemon are used to compute the checksums.

# lmdiag

Diagnoses licensing problems

---

```
lmdiag [-c license_file] [-n] [feature]
```

<code>-c <i>license_file</i></code>	Name of license file to diagnose. If this switch is not specified, <code>lmdiag</code> looks for the environment variable <code>LM_LICENSE_FILE</code> . If the environment variable is not set, <code>lmdiag</code> looks for the file <code>/usr/local/flexlm/licenses/license.dat</code> .
<code>-n</code>	Non-interactive mode; <code>lmdiag</code> does not prompt for any input. In this mode, extended connection diagnostics are not available.
<i>feature</i>	Diagnose only the specified <i>feature</i> .

---

## Description

If no *feature* is specified, `lmdiag` operates on all features in the license file in your path. `lmdiag` first prints information about the license, then attempts to check out each license. If the checkout succeeds, `lmdiag` indicates this. If the checkout fails, `lmdiag` gives you the reason for the failure. If the checkout fails because `lmdiag` cannot connect to the license server, then you have the option of running “extended connection diagnostics.”

Extended diagnostics attempt to connect to each port on the license server node, and can detect if the port number in the license file is incorrect. `lmdiag` indicates each port number that is listening, and if it is an `lmgrd` process, `lmdiag` indicates this as well. If `lmdiag` finds the vendor daemon for the *feature* being tested, then it indicates the correct port number for the license file to correct the problem.

# lmdown

Takes down license daemons

---

```
lmdown [-c license_file] [-q]
```

- `-c license_file` Use the specified *license\_file*. If this switch is not specified, lmdown looks for the environment variable `LM_LICENSE_FILE`. If the environment variable is not set, lmdown looks for the file `/usr/local/flexlm/licenses/license.dat`.
- `-q` Quiet mode; lmdown does not ask for confirmation. If the switch is not specified, lmdown asks for confirmation before asking the license daemons to shut down.
- 

## Description

lmdown sends a message to every license daemon asking it to shut down. The license daemons write out their last messages to the log file, close the file, and exit. All licenses which have been given out by those daemons are rescinded, so that the next time a client program goes to verify its license, it will not be valid.

The end-user system administrator should protect the execution of lmdown since shutting down the servers causes loss of licenses.

**Note:** lmdown can be used only by a “FLEXlm administrator” (i.e., a member of group `lmadmin` or, if the `lmadmin` group does not exist, a member of group `0`).

# lmgrd

Starts up the license manager daemon

---

```
lmgrd [-2] [-b] [-c license_file] [-d] [-l logfile] [-p] [-s interval] [-t timeout]
```

- `-2` Specifies V2 startup arguments, in contrast to the `-b` switch. This switch is required if you intend to use the `-p` switch (available in `lmgrd` v2.4 and later).
  - `-b` Specifies backward compatibility mode. Use this switch if you are running a v2.1 or later `lmgrd` with a v1.5 or earlier vendor daemon. This is the default switch in *FLEXlm* v2.4 and later.
  - `-c license_file` Use the specified *license\_file*. If this switch is not specified, `lmgrd` looks for the environment variable `LM_LICENSE_FILE`. If the environment variable is not set, `lmgrd` looks for the file `/usr/local/flexlm/licenses/license.dat`.
  - `-d` Specifies that hostnames which are read from the license file should have the local domain name appended to them before sending to a client. Useful when clients are accessing licenses from another domain. (Available in `lmgrd` v2.4 and later.)
  - `-l logfile` Specifies the output log file to use.
  - `-p` Specifies that the `lmdown` and `lmremove` utilities can only be run by a license administrator. A license administrator is a member of the `lmadmin` group, or, if the `lmadmin` group does not exist, a member of group 0. (This is available in `lmgrd` v2.4 and later.)
  - `-s interval` Specifies the logfile timestamp interval, in minutes. Default is 360 minutes.
  - `-t timeout` Specifies the timeout interval, in seconds, during which daemons must complete their connections to each other. Default value is 10 seconds. A larger value might be preferable if the daemons are being run on busy systems or a very heavily loaded network.
- 

Environment      UNIX

Description      `lmgrd` is the main daemon program for the *FLEXlm* distributed license management system. When invoked, it looks for a license file containing all required information about vendors and features.

# lmhostid

Prints the correct hostid value on any machine supported by FLEXlm

---

lmhostid [*type*]

*type*

The type of the hostid to print. *type* must be one of `long`, `idmodule`, `ether`, or `string`, and is currently used only on HP and SCO systems. On HP, *type* specifies the ID module, the machine id as returned from the `uname` command, or the Ethernet address. The HP default is `long-uname`. On SCO, `long` specifies the pre-3.0 default, which was a 32-bit long int, while `string` specifies a string host, which is the new default.

---

## Description

Output from `lmhostid` is similar to the following:

```
lmhostid - Copyright (C) 1997, Globetrotter Software, Inc.  
The FLEXlm host ID of this machine is "1700abcd"
```

# lmremove

Removes a user license and returns it to the license pool

---

```
lmremove [-c license_file] [feature] [user] [host] [display]
```

<i>-c license_file</i>	Use the specified license file. If this switch is not specified, <code>lmremove</code> looks for the environment variable <code>LM_LICENSE_FILE</code> . If the environment variable is not set, it looks for the file <code>/usr/local/flexlm/licenses/license.dat</code> .
<i>feature</i>	Remove only from the specified <i>feature</i> .
<i>user</i>	The <i>user</i> to be removed.
<i>host</i>	Node from which the <i>user</i> is to be removed.

---

## Description

`lmremove` allows the system administrator to remove a single user's license for a specified *feature*. This might be required in the case where the licensed user is running the software on a node that subsequently crashed. This situation can sometimes cause the license to remain unusable. `lmremove` allows the license to be returned to the pool of available licenses.

`lmremove` removes all instances of *user* on node *host* at the specified *display* from usage of *feature*. The end-user system administrator should protect the execution of `lmremove` since removing a user's license can be disruptive.

**Note:** `lmremove` can be used only by a "FLEXlm administrator" (i.e., a member of group `lmadmin` or, if the `lmadmin` group does not exist, a member of group `0`).

# lmreread

Tells the license daemon to reread the license file

---

`lmreread [-c license_file]`

`-c license_file` Use the specified license file. If this switch is not specified, `lmreread` looks for the environment variable `LM_LICENSE_FILE`. If the environment variable is not set, it looks for the file `/usr/local/flexlm/licenses/license.dat`.

---

## Description

`lmreread` allows the system administrator to tell the license daemon to reread the license file. This can be useful if the data in the license file has changed; the new data can be loaded into the license daemon without shutting down and restarting it.

`lmreread` uses the license file from the command line (or the default file, if none specified) only to find the license daemon to send it the command to reread the license file. The license daemon always rereads the original file that it loaded. If you need to change the path to the license file, then you must shut down the daemon and restart it with that new license file path.

You cannot use `lmreread` if the `SERVER` node names or port numbers have been changed in the license file. In this case, you must shut down the daemon and restart it in order for those changes to take effect.

`lmreread` does not change any option information specified in an options file. If the new license file specifies a different options file, that information is ignored. If you need to reread the options file, you must shut down the daemon and restart it.

# lmstat

Reports status on license manager daemons and feature usage

```
lmstat [-a] [-A] [-c license_file] [-f feature] [-l reg_expression] [-s server] [-S daemon]
      [-t timeout]
```

<code>-a</code>	Display everything.
<code>-A</code>	List all active licenses.
<code>-c <i>license_file</i></code>	Use the specified license file. If this switch is not specified, <code>lmstat</code> looks for the environment variable <code>LM_LICENSE_FILE</code> . If the environment variable is not set, <code>lmstat</code> looks for the file <code>/usr/local/flexlm/licenses/license.dat</code> .
<code>-f <i>feature</i></code>	List all users of the specified features.
<code>-l <i>reg_expression</i></code>	List all users of the features matching the given regular expression.
<code>-s <i>server</i></code>	Display the status of the specified server nodes.
<code>-S <i>daemon</i></code>	List all users of the specified daemon's features.
<code>-t <i>timeout</i></code>	Specifies the timeout interval, in seconds, during which daemons must complete their connections to each other. Default value is 10 seconds. A larger value might be desirable if the daemons are being run on busy systems or a very heavily loaded network.

## Description

`lmstat` provides information about the status of the server nodes, vendor daemons, vendor features, and users of each feature. Information can optionally be qualified by specific server nodes, vendor daemons, or features.

`lmstat` provides:

- Total licenses available for each feature.
- Who is using the license.
- Who is using features served by a specific daemon.



# lmswitchr

Switches the FLEXadmin log file (REPORTLOG) for the specified feature

---

```
lmswitchr [feature] [new-file]
```

*feature* Any *feature* this daemon supports.

*new-file* New file pathname.

---

## Description

The FLEXlm daemons create an ASCII log file on `stdout`. There are several processes in a parent-child hierarchy which are sharing the same file pointer, so this log file cannot be changed after the vendor daemons have been started, since each process has a copy of the current offset, etc.

There is another way to switch the log file output data, however; this involves piping the `stdout` of `lmgrd` to a shell script that appends a file for each line. Instead of the “normal” startup: `% lmgrd > LOG`

Start `lmgrd` this way:

```
% lmgrd -z | sh -c 'while read line; do echo "$line" >> LOG; done'
```

For more information on the log file, refer to page 41 for a description of REPORTLOG.

# lmver

Reports the FLEXlm version of a library or binary

---

`lmver [filename]`

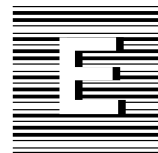
*filename*

Use the specified license file. If a filename is not specified, `lmver` looks for the environment variable `LM_LICENSE_FILE`. If the environment variable is not set, `lmver` looks for the file `/usr/local/flexlm/licenses/license.dat`.

---

**Description**

If the filename is specified, the FLEXlm version incorporated into this file is displayed; otherwise `lmver` looks for the library file `liblmgr.a` to detect its version.



# License File

This appendix describes the basic format and content of the password-enabled license file.

If you already have a license file in place, either from a previous version of JAM or Prolifics, or from another application that uses FLEX $lm$ , you can combine license files by inserting the license file information provided by the License Desk.

## Contents of the License File

---

The license file has the following basic format:

```
SERVER sname hostid port
DAEMON daemon-name path
FEATURE product daemon-name version exp_date number password\
    ISSUED=date SN=serial number HOSTID=hostid ck=checksum
INCREMENT product daemon-name version exp_date number password\
    ISSUED=date SN=serial number HOSTID=hostid ck=checksum
```

*Note:* FEATURE and INCREMENT lines should not be changed: they contain the license password and other information which, if modified, could prevent Prolifics from running. Also, the host ID of the server on the SERVER line should not be changed.

### **SERVER**

Specifies the server on which a license manager can run. License files require a SERVER line only for the Prolifics development client. The SERVER line has the following format:

*SERVER sname hostid port*

*sname* — Server's name.

*hostid* — Host ID of the server.

*port* — TCP/IP port number used by this server.

## DAEMON

Specifies the name and location of the license manager vendor daemon for the Prolifics development client. It also provides the location of the Prolifics options file. It has the following format:

*DAEMON daemon-name path [options\_file]*

*daemon-name* — Name of the daemon; always `prold`.

*path* — Full path for the daemon.

*options\_file* (optional) — Name and path of the options file allowing you to customize Prolifics license management (for more information on the options file, refer to page 39).

## FEATURE

Describes the license for the Prolifics application server or the web application server. It has the following format:

*FEATURE product daemon-name version exp\_date number password\  
ISSUED=date SN=serial number HOSTID=hostid ck=checksum*

*product* — Name of the product with which the license is associated, in this case, the appropriate Prolifics executable: `prolifics-server` (Prolifics application server for JetNet and TUXEDO), `prolifics-wle-server` (Prolifics application server for WLE), `prolifics-web-server` (Prolifics web application server or Jserver), or `prolifics-web-mgr` (dispatcher).

*daemon-name* — Always `no_daemon`; this indicates that the feature requires no license daemons.

*version* — Highest version number of *product*; 4 for Prolifics.

*exp\_date* — Expiration date of the license in the form `dd-mm-yyyy`; normally `01-jan-0000` to indicate that the Prolifics license has no expiration date.

*number* — Number of licenses allowed under this license agreement: it is always 0 for a node-locked uncounted license.

*password* — Encrypted alphanumeric string provided by the License Desk. It contains encoded information about your license, such as the type of license and your system configuration.

*date* — Date issued. The license is not valid before this date.

*serial number* — Product serial number; more than one feature can share a serial number.

*hostid* — Hostid of the server. Used only if the feature is to be bound to a particular host, whether its use is counted or not.

*checksum* — Verifies that the license has been entered correctly by the end-user.

## INCREMENT

Describes the license for the Prolifics development client. It has the following format:

```
INCREMENT product daemon-name version exp_date number password\
ISSUED=date SN=serial number HOSTID=hostid ck=checksum
```

*product* — Name of the product with which the license is associated, in this case, the appropriate Prolifics executable: `prolifics-client` (UNIX or Windows clients).

*daemon-name* — Name of the daemon; always `prold`.

*version* — Highest version number of *product*; 4 for Prolifics.

*exp\_date* — Expiration date of the license in the form `dd-mm-yyyy`; normally `01-jan-0000` to indicate that the Prolifics license has no expiration date.

*number* — Number of licenses allowed under this license agreement: it is always greater than 0 for a counted license.

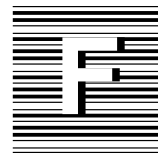
*password* — Encrypted alphanumeric string provided by the License Desk. It contains encoded information about your license, such as the type of license and your system configuration.

*date* — Date issued. The license is not valid before this date.

*serial number* — Product serial number; more than one feature can share a serial number.

*hostid* — Hostid of the server. Required for a Prolifics web application server and absent for a development client.

*checksum* — Verifies that the license has been entered correctly by the end-user.



# Error Messages

## Prolifics Installation Error Messages

---

A Prolifics installation was not successful if you receive an error message and the program terminates. The following messages describe some of the more common error messages and how to resolve them.

*Recurring errors:* Occasionally, errors described in this section seems to recur even though the file `smvars` is in order. More often than not, the problem is that the `smvars` file (in `config` directory), although correct, has not been converted to binary (`smvars.bin`), which is the required format used by Prolifics. If the ASCII version of `smvars` has been edited, be sure to run `var2bin` to convert it to binary format. Otherwise Prolifics is not aware of the changes, and it will seem as though `smvars` was not updated.

Please enter terminal type or <RETURN> to exit.

Cause: `SMTERM` is not set (and, under UNIX, `TERM` is also not set) or the value could not be found in `smvars.bin` (left column of `smvars`).

Action: Enter the terminal type if known or press Enter to set `SMTERM` correctly. Once the variable is defined, run `prodev` again.

See the left column of the `smvars` file and correct the specification. Use `var2bin` to convert the file to binary. And/Or:

UNIX: Set the variable at the command line.

Windows: Set the variable to win in PROL5W32.INI.

If you are running in character mode and the screen appears disorganized, with all the text bunched together along with special characters, check the value of SMTERM; you probably only need to change its value, but you may also need to create a new video file.

[Filename]: No such file or directory

Cause: The filename in brackets is specified as the value of the SMVIDEO, SMKEY, SMMSGs, or some similar configuration variable in the environment or in smvars.bin, but the file could not be found.

Action: Correct the name, and use the full pathname of the file. If you correct it in smvars, recompile smvars with the var2bin utility.

SMMSGs: Environment variable missing

Cause: (or the same message with some other configuration variable). Prolifics could not find an entry for the cited variable in SMVARS or in the environment (refer to the following note). This error usually means that you have some variables defined in your environment, but not all that are required, and SMVARS is not defined.

*Note: Most Prolifics setup variables can be set in the environment, rather than depending on values set in an SMVARS-defined file. If Prolifics can't find a required variable specification in either the environment or in the SMVARS file, that variable will be cited as missing. Refer to the Configuration Guide for more details.*

SMVARS: Bad file format

Cause: SMVARS is set to be the name of an existing file, but it is not a binary SMVARS file. The most common incorrect value for SMVARS in this case is the path and name of the source SMVARS file instead of the binary SMVARS file.

Action: Point to the binary file that has the .bin extension.

SMVARS: Environment variable missing

Cause: SMBASE (or SMVARS, if you are using one) is not set, or not set properly.

Action: Normally, Prolifics looks for smvars.bin in the config directory under the directory pointed to by SMBASE. If SMBASE is not set, you must have an SMVARS variable to tell Prolifics explicitly where the SMVARS file can be found. If SMBASE is not set properly, and Prolifics cannot find an SMVARS variable, the above message is given.

Correct (or set) the SMBASE variable specification, or determine why setting it is not taking effect.

Windows: Check to see that SMBASE is being set in autoexec.bat and that you have not run out of environment space.

UNIX: Make sure that the variable is exported (via the `export sh/ksh` command or `setenv csh` command).

SMVARS: No such file or directory

Cause: SMVARS is not set correctly.

Action: Check that the full pathname (including drive letter under Windows) of the file is included and correct.

## DLL Messages

---

The following error messages might occur after a Windows installation and are specific to DLLs required for Prolifics's database drivers and to DLL version mismatches.

### TUXEDO-Specific Messages

Cannot find LIBWSC.DLL

Cause: Windows is unable to find the BEA TUXEDO DLLs.

Action: Check that TUXEDO is present and configured properly.

### Informix-Specific Messages

Cannot load DLL INF7DM32.DLL

Cannot load DLL INF7DMNT.DLL

Cannot load DLL INF7DMN4.DLL

Cannot load DLL INF9DM32.DLL

Cannot load DLL TMINF132.DLL

Cause: Windows is unable to find the Prolifics database driver DLLs or the Informix software.

Action: Check that the Prolifics `util` directory is on the `PATH`. If you do not wish to use the Prolifics database driver DLLs, edit `PROL5W32.INI` to remove the database name from the `install` entry.

### Microsoft SQL Server-Specific Messages

Cannot load DLL mssdm32.dll

Cannot load DLL tmss132.dll

Cause: Windows is unable to find the Prolifics database driver DLLs or the Microsoft SQL Server software.

Action: Check that the Prolifics `util` directory is on the `PATH`. If you do not wish to use the Prolifics database driver DLLs, edit `PROL5W32.INI` to remove the database name from the `install` entry.



## ODBC-Specific Messages

Cannot load DLL odb2dm32.dll

Cannot load DLL odb3dm32.dll

Cannot load DLL tmodb132.dll

Cause: Windows is unable to find the Prolifics database driver DLLs or the ODBC software.

Action: Check that the Prolifics `util` directory is on the `PATH`. If you do not wish to use the Prolifics database driver DLLs, edit `PROL5W32.INI` to remove the database name from the `install` entry.

## Oracle-Specific Messages

Cannot load DLL ora815dm32.dll

Cannot load DLL emb815dm32.dll

Cannot load DLL oxa815dm32.dll

Cannot load DLL exa815dm32.dll

Cannot load DLL ora9dm32.dll

Cannot load DLL emb9dm32.dll

Cannot load DLL oxa9dm32.dll

Cannot load DLL exa9dm32.dll

Cannot load DLL tmora132.dll

Cause: Windows is unable to find the Prolifics database driver DLLs or the Oracle software.

Action: Check that the Prolifics `util` directory is on the `PATH`. Verify that Oracle is installed correctly. If you do not wish to use the Prolifics database driver DLLs, edit `PROL5W32.INI` to remove the database name from the `install` entry.

## Sybase-Specific Messages

Cannot load DLL db10dm32.dll

Cannot load DLL ct10dm32.dll

Cannot load DLL db11dm32.dll

Cannot load DLL ct11dm32.dll

Cannot load DLL ct11xa32.dll

Cannot load DLL tmsyb132.dll

Cause: Windows is unable to find the Prolifics database driver DLLs or the Sybase software.

Action: Check that the Prolifics `util` directory is on the `PATH`. If you do not wish to use the Prolifics database driver DLLs, edit `PROL5W32.INI` to remove the database name from the `install` entry.

## DLL Version Mismatch Messages

Application Error: Call to Undefined Dynalink

Cause: Prolifics is picking up an older version of `cktb116.dll` from a previous installation.

Action: Check that the current Prolifics `util` directory with the correct `cktb116.dll` is on the `PATH` or copy `cktb116.dll` to the Windows directory.

## Graph-Related Messages

---

If graph widgets are not displaying correctly, the following graph-specific errors might be displayed;

Warning: `chart <Begin> failed: -1`

Cause: All graphs are blank indicating that the `gdsp` program (in the `util` directory) was not found on the path. (UNIX only.)

Warning: `missing graph files in $SMPATH`

Cause: All graphs are blank indicating that: the `grafcap` file is invalid or not found in `SMPATH` (UNIX) and the `IPT` setting in the file `LIBSTI.INI` does not point to the directory that contains the `grafcap` file (Windows).

## License Manager Error Messages

---

In most circumstances, Prolifics license management is transparent to the developer. This section describes the error messages that can be generated from Prolifics and from the underlying license manager software, `FLEXlm`.

### Prolifics License-Related Messages

The messages described in this section can appear when the screen editor is invoked.

#### All License Types

Prolifics License Manager: Bad date in license file.

Cause: The date on one of the `FEATURE` or `INCREMENT` lines is not correct.

Action: Verify that the `FEATURE` and `INCREMENT` lines in the license file are correct or contact your system administrator.

Prolifics License Manager: Bad encryption code in license file.

Cause: The password on one of the `FEATURE` or `INCREMENT` lines is not correct.

Action: Verify that the `FEATURE` and `INCREMENT` lines in the license file are correct and that none of the backspaces indicating continued lines are followed by a space, or contact your system administrator.

Prolifics License Manager: Cannot communicate with server.  
cannot connect to license server ([code,code])

Cause: Could not connect with the license server.

Action: Make sure the license server daemon lmgrd is started on the system specified in the SERVER line of the license file, or contact your system administrator. The two codes can help locate the problem.

Prolifics License Manager: Cannot connect daemon prold with license server.

Cause: There is no DAEMON line in the license file for prold.

Action: Verify that the license file entry is correct or contact your system administrator.

Prolifics License Manager: Cannot find license file.

Cause: The license manager is unable to find the license file.

Action: Make sure LM\_LICENSE\_FILE in your initialization file or environment points to the correct license file and that it is readable.

Prolifics License Manager: Cannot read license file

Cause: The license manager could not read the license file because of a permissions or access problem.

Action: Correct the problem or contact your system administrator.

Prolifics License Manager: ERROR #[code] , [message]

Cause: An unexpected error occurred in the license manager.

Action: Contact your system administrator.

Prolifics License Manager: [product] feature does not exist.

Cause: There is no FEATURE or INCREMENT line in the license file for [product].

Action: Verify that the FEATURE or INCREMENT lines in the license file are correct, obtain a new license file, or contact your system administrator.

Prolifics License Manager: Feature [product], Version [version] has expired.

Cause: The expiration date in the license file of [product] has been reached.

Action: Obtain a new license file or contact your system administrator.

Prolifics License Manager: Initialization failed.

Cause: Problems in the license file.

Action: Contact your system administrator.

Prolifics License Manager: Invalid data received from license server.

Cause: The license server did not respond to a request or the response was invalid.

Action: Contact your system administrator.

Prolifics License Manager: Invalid license file syntax.

Cause: A feature name, daemon name, or server name is too long or a FEATURE or INCREMENT line specifies no hostid, or the number of licenses is not greater than zero.

Action: Verify that the license file entry is correct or contact your system administrator.

Prolifics License Manager: malloc() call failed

Cause: License manager could not allocate memory that it needed. The most likely cause is that the program's heap has been corrupted.

Action: Contact your system administrator.

Prolifics License Manager: Network software (TCP/IP) not available.

Cause: Could not communicate with the license manager because network software is not present or is correctly configured.

Action: Contact your system administrator.

Prolifics License Manager: Platform not enabled.

Cause: Should not happen. Indicates that license daemon prold is not licensed to run on your platform.

Action: Contact your system administrator.

Prolifics License Manager: Server does not support feature [product].

Cause: The feature [product] does not have a FEATURE or INCREMENT line in the license file.

Action: Verify that the license file entry is correct, obtain a new license file, or contact your system administrator.

Prolifics License Manager: Time zone offset from GMT more than 24 hours

Action: Fix the TZ environment variable or contact your system administrator.

Prolifics License Manager: Unknown vendor key type

Cause: Program's object file is corrupt.

Action: Contact your system administrator.

## Floating Licenses

Prolifics License Manager: All [product] licenses are currently in use.

Cause: All available licenses for [product] are in use. If you license request has been queued, you get a series of messages showing who has the licenses reserved or how many licenses are in use.

Action: Try again later or contact your system administrator.

Prolifics License Manager: Cannot communicate with license server or your [product] license was obtained by another user when the license server was restarted.

Cause: Occurs when you select an item from the New or Open menu options; indicates that the license server has been taken down. If the license server was then restarted, another user got the license for the [product] you were using.

Action: You can continue editing and can save any screens that are currently open in the editor but must restart Prolifics (prodev) before you can pick any New and Open menu options.

Prolifics License Manager: FLEXlm key data bad.

Cause: Program's object file is corrupt.

Action: Contact your system administrator.

Prolifics License Manager: Bad server hostname in license file.

Cause: Server named on a SERVER line could not be found.

Action: Obtain a new license file or contact your system administrator.

Prolifics License Manager: No SERVER lines in license file.

Cause: The license file cannot be used because there are no SERVER line for a counted feature.

Action: Verify that the license file entry is correct, obtain a new license file, or contact your system administrator.

Prolifics License Manager: Version [version] not supported on server.

Cause: The version [version] of the program being run is greater than that supported by the license file.

Action: Obtain a new license file or contact your system administrator.

## Node-locked Licenses

The following Prolifics startup error information is specific to node-locked licenses.

Prolifics License Manager: Cannot find ethernet device.

Cause: On most systems, the license manager must locate an ethernet board to verify the password on the FEATURE or INCREMENT lines.

Action: Contact your system administrator.

Prolifics License Manager: [product] not authorized for this computer.

Cause: [product] is not licensed to run on the current computer.

Action: Contact your system administrator.

Prolifics License Manager: Version [version] not supported.

Cause: The version [version] of the program being run is greater than that.

Action: Obtain a new license file or contact your system administrator.

## Create License Utility

The following error information is specific to the `create_license` utility.

No license files (`.lic`) were detected.

Cause: Could not detect any license files (`.lic`) in the current directory.

Action: Check the filenames of the license files in `$SMBASE/licenses`. Your license files should have one of the following names: `proserv.lic` (Prolifics application server), `prodev.lic` (development client), or `proweb.lic` (web application server).

Unable to create `license.dat`

Cause: Encountered an error when trying to create the `license.dat` file.

Action: Check file permissions and disk space to allow the `create_license` utility to write to disk.

Inconsistent DAEMON lines.

Cause: Two license files (`.lic`) have DAEMON lines, but they are inconsistent with each other. Since the resulting `license.dat` file and the vendor daemon (`prold`) are for a single machine, any DAEMON lines among license files should be the same.

Action: Check the license files with DAEMON lines for typographical errors.

Inconsistent SERVER lines.

Cause: Two license files (`.lic`) have SERVER lines, but they are inconsistent with each other. Since the resulting `license.dat` file is meant for one server machine, any SERVER lines among license files should be the same.

Action: Check the license files with SERVER lines for typographical errors.

## FLEXlm Informational Messages

The following messages are generated by FLEXlm license management software, and is provided courtesy of the *FLEXlm Programmer's Guide*.

Connected to *node*

Cause: This daemon is connected to its peer on *node*.

CONNECTED, master is *name*

Cause: License daemon logs this message when a quorum is achieved and everyone has selected a master.

DENIED: *N feature* to *user* (*mm/dd/yy hh:mm*)

Cause: *user* was denied access to *N* licenses of *feature*.

EXITING DUE TO SIGNAL *nnn*

EXITING WITH CODE *nnn*

Cause: An interrupt signal has been intercepted. All daemons list the reason that the daemon has exited.

EXPIRED: *feature*

Cause: *feature* has passed its expiration date.

IN: *feature* by *user* (*N* licenses) (used: *d:hh:mm:ss*)

Cause: *user* at *d:hh:mm:ss*.

IN server died: *feature* by *user* (*N* licenses) (used: *d:hh:mm:ss*)

Cause: *user* has checked in *N* licenses of *feature* by virtue of the fact that his server died.

License Manager server started

Cause: License daemon has been started.

Lost connection to *host*

Cause: A daemon can no longer communicate with its peer on node *host*, which can cause the clients to have to reconnect, or cause the number of daemons to go below the minimum number, in which case clients may start exiting. If license daemons lose the connection to the master, they will kill all vendor daemons; vendor daemons will shut themselves down.

Lost quorum

Cause: Not enough servers to satisfy quorum number. The daemon will process only connection requests from other daemons.

Action: Check network connection between servers.

MASTER SERVER died due to signal *nnn*

Cause: License daemon received fatal signal *nnn*.

MULTIPLE *xxx* servers running.

Please kill, and restart license daemon

Cause: License daemon has detected multiple copies of vendor daemon *xxx* are running.

Action: Kill all *xxx* daemon processes and restart the license daemon.

OUT: feature *feature* by user (*N* licenses) (used: *d:hh:mm:ss*)

Cause: *user* has checked out *N* licenses of *feature* at *d:hh:mm:ss*.

Removing clients of children

Cause: Top-level daemon logs this message when one of the child daemons dies.

RESERVE *feature* for HOST *name*

RESERVE *feature* for USER *name*

Cause: A license of *feature* is reserved for either user *name* or host *name*.

Action: None.

Restarted *xxx* (internet port *nnn*)

Cause: Vendor daemon *xxx* was restarted at internet port *nnn*.

Retrying socket bind (address in use)

Cause: The license server try to bind sockets for approximately 6 minutes if they detect *address in use* errors.

Action: Check for multiple *lmgrds* using the same TCP port number.

Selected (EXISTING) master *node*

Cause: This license daemon has selected an existing master (*node*) as the master.

SERVER shutdown requested

Cause: Daemon received shutdown request from a user-generated kill command.

[NEW] Server started for: *feature-list*

Cause: A (possibly new) server was started for the features listed.

Shutting down *xxx*

Cause: The license daemon is shutting down the vendor daemon *xxx*.

SIGCHLD received. Killing child servers.

Cause: Vendor daemon logs this message when a shutdown is requested by the license daemon.

Started *name*

Cause: License daemon logs this message whenever it starts a new vendor daemon.

Trying connection to *node*

Cause: Daemon is attempting a connection to *node*.

## FLEXlm Configuration Problem Messages

*hostname*: Not a valid server host, exiting

Cause: This daemon was run on an invalid hostname.

Action: Run *lmgrd* on the host(s) specified in the *SERVER* lines.



*hostname*: Wrong hostid, exiting

Cause: Hostid is wrong for *hostname*.

Action: Check the license file and ensure the hostnames match the hostids.

BAD CODE for *feature-name*

Cause: Specified feature name has a bad encryption code.

Action: Check the password received from Prolifics.

CANNOT OPEN options file *file*

Cause: Options file specified in the license file could not be opened.

Action: Check the path for the options file on the DAEMON line in the license file.

Couldn't find a master

Cause: Daemons could not agree on a master.

Action: Kill and then restart lmgrd on servers.

license daemon: lost all connections

Cause: Indicates all the connections to a server are lost, which often indicates a network problem.

Action: Check the network and restart the daemons.

lm\_server: lost all connections

Cause: All the connections to a server are lost; probably indicates a network problem.

lost lock, exiting

Cause: Error closing lock file.

NO DAEMON line for *daemon*

Cause: License file does not contain a DAEMON line for *daemon*.

Action: Add DAEMON line for *daemon* in the license file.

NO DAEMON line for *name*

Cause: Vendor daemon logs this error if it cannot find its own DAEMON name in the license file.

Action: Edit license file.

NO DAEMON lines, exiting

Cause: License daemon logs this message if there are no DAEMON lines in the license file; with no vendor daemons to start, there is nothing to do.

Action: Edit license file.

No features to serve!

Cause: Vendor daemon found no features to serve. This could be caused by bad data in the license file.

Action: Inspect the license file for bad data.

No license data for *feature*, feature unsupported

Cause: No feature line for *feature* in the license file.

Action: Edit the license file.

Unable to re-open lock file

Cause: Vendor daemon has a problem with its lock file, usually because of an attempt to run more than one copy of the daemon on a single node.

Action: Locate the other daemon that is running via a `ps` command, and kill it with `kill -9`.

Unknown host: *hostname*

Cause: *hostname* specified on a SERVER line in the license file does not exist in your host's database.

Action: Check with your system administrator for the correct hostname. FLEXlm uses standard network services to find the host: Domain Name Server (DNS), Network Information Services (NIS or YP) or in `/etc/hosts`.

UNSUPPORTED FEATURE request: *feature* by *user*

Cause: *user* has requested a feature that this vendor daemon does not support. This can happen for a number of reasons: the license file is bad, the feature has expired, or the daemon is accessing the wrong license file.

## Daemon Software Error Messages

ATTEMPT TO START VENDOR DAEMON *xxx* with NO MASTER

Cause: Vendor daemon was started with no master selected. This is an internal consistency error in the daemons.

Action: Report error to Prolifics technical support.

BAD PID message from *nnn*: *xxx* (*msg*)

Cause: Top-level vendor daemon received an invalid PID message from one of its children (daemon number *xxx*).

BAD SCONNECT message: (*message*)

Cause: An invalid `server connect` message was received.

Cannot create pipes for server communication

Cause: The `pipe` system call failed.

Action: Report error to Prolifics technical support.

Can't allocate server table space

Cause: A `malloc` error.

Action: Check swap space

Connection to *node* TIMED OUT

Cause: Daemon could not connect to *node*.

Action: Check the network.

Error sending PID to master server

Cause: Vendor server could not send its PID to the top-level server in the hierarchy.

Action: Report error to Prolifics technical support.

f-do-notify called with no valid feature

Cause: Internal inconsistency error.

Action: Report error to Prolifics technical support.

Illegal connection request to *DAEMON*

Cause: A connection request was made to *DAEMON*, but this vendor daemon is not *DAEMON*.

Action: Report error to Prolifics technical support.

Illegal server connection request

Cause: A connection request came in from another server without a *DAEMON* name.

Action: Report error to Prolifics technical support.

KILL of child failed, errno = *nnn*

Cause: A daemon could not kill its child.

Action: Get PID of daemon and kill with `kill -9`.

No internet port number specified

Cause: Vendor daemon was started without an Internet port.

Action: Specify an Internet port on the *SERVER* line.

Not enough descriptors to re-create pipes

Cause: Top-level daemon detected the death of one of its sub-daemons. In trying to restart the chain of sub-daemons, it was unable to get the file descriptors to set up the pipes to communicate.

Action: This is a fatal error. The daemons must be restarted.

`read: error message`

Cause: An error in a read system call was detected.

`recycle_control BUT WE DIDN'T HAVE CONTROL`

Cause: The hierarchy of vendor daemons has become confused over who holds the control token. This is an internal error.

`return_reserved: can't find feature listhead`

Cause: When a daemon is returning a reservation to the free reservation list, it could not find the listhead of features.

`select: message`

Cause: An error in a select system call was detected.

Action: Report error to Prolifics technical support.

`Server exiting`

Cause: Server is exiting; normally due to an error.

Action: Report error to Prolifics technical support.

`SHELLO for wrong DAEMON`

Cause: Vendor daemon was sent a `server hello` message that was destined for a different DAEMON.

`Unsolicited msg from parent!`

Cause: Normally, the top-level vendor daemon sends no unsolicited messages. If one arrives, this message is logged. This is a bug.

Action: Report error to Prolifics technical support.

`WARNING: CORRUPTED options list (o->next == 0)`

`Options list TERMINATED at bad entry`

Cause: Internal inconsistency was detected in the daemon's option list.

Action: Report error to Prolifics technical support.



# Index

## A

Application, samples, 22  
autoexec.bat, 9

## C

Client  
    configuring environment of, 19  
    executables, 30  
    supported platforms, 4  
COM DLL, template, changing, 32  
COM samples, Panther COM Gallery, 23  
Component development, configure environment for,  
    18  
CONFIG.SYS, environment space, 26  
Create license, error messages, 65

## D

Database driver  
    Informix, 14  
    installing on Windows, 12  
    Microsoft SQL Server, 14  
    ODBC, 14  
    Oracle, 14  
    Sybase, 15  
Databases, defined in Prolifics initialization file, 33  
Debugger, 31  
DLLs  
    database, 13  
    included in Panther, 18  
    JPEG decoding, 25  
    related messages, 59  
    template, changing, 32  
Dynalink, error messages, 61

## E

Environment space, 26  
Executables  
    client, 29

creating, 17  
web application server, 29

## F

FLEXlm, 37  
configuration errors, 67  
error messages, 65  
utilities, 41

## G

Graph widget, error messages, 61

## H

HTTP server, on Windows, 8

## I

Informix  
error messages, 59  
versions supported, 14  
Installation, error messages, 57–59

## J

JPEG decoding, DLLs, 25

## L

License  
daemons, 38  
diagnostics, 43  
file contents, 53  
read file, 48  
remove user, 47  
REPORTLOG, 41  
schemes, 38  
status, 49  
types, 39

version of file, 51

License administration, 37  
utilities, 41

License manager  
messages, 61–71  
start, 45

License options file, 39–41

license.dat, 53–55

lmcksum, 42

lmdiag, 43

lmdown, 44

lmgrd, 45

lmhostid, 46

lmremove, 47

lmreread, 48

lmstat, 49

lmswitchr, 50

lmver, 51

## M

Memory requirements, 7

Microsoft SQL Server  
error messages, 59  
versions supported, 14

Microsoft Visual C++  
floating-point options, 26  
Developer Studio, 26  
Visual Workbench, 26

## N

Node-locked license, 39  
messages about, 64

## O

ODBC  
error messages, 60  
versions supported, 14

Oracle  
error messages, 60  
versions supported, 14

## P

Panther COM Gallery, 23  
Prolifics Gallery, web, 23  
Windows initialization file, databases defined in, 33

## R

Reboot, 12  
REPORTLOG, 41

## S

Sample applications  
Panther COM Gallery, 23  
Prolifics Gallery, web, 23  
VideoBiz, two-tier, 22  
Server, web, executables, 30  
Setup, on Windows, 11  
SMFLIBS, specifying, 20  
Sybase  
error messages, 60  
versions supported, 15

## T

Troubleshooting, 24  
TUXEDO, error messages, 59  
Two-tier application, 4

## U

Upgrade, on Windows, 8  
User specification, 12  
Utilities, using in Windows, 26

## V

VideoBiz sample application, two-tier, 22

## W

Web  
application, 4  
sample application, 23  
supported architecture, 8  
Web application server, 31  
licensing, 39  
supported platforms, 4  
WEBJLIB.DLL, 25  
Windows, requirements, 7

