ENTEGRITY *Solutions* ®

PC-DCE™ and PC-DFS™

Installation and Release Notes

Software Version 5.1

Notices

PC-DCE Installation and Release Notes - Software Version 5.1 - Revised July 2004

Contents

Preface

Intended Audience

The audience for this guide includes experienced system and network administrators responsible for configuring network services. Administrators should have knowledge of Distributed Computing Environment (DCE) and Distributed File System (DFS) concepts as defined by the Open Software Foundation (OSF); this manual is neither a DCE nor a DFS tutorial.

This guide assumes that the supported operating systems have been installed.

Documentation

Entegrity provides the following types of documentation on both the product CD and on the Entegrity Support web site (**support.entegrity.com**):

- *PC-DCE and PC-DFS Documentation Set*
- *The Open Group Documentation*

We are always trying to improve our documentation. If you notice any inaccuracies or cannot find information, please send email to **docs@entegrity.com**. We welcome any comments or suggestions.

PC-DCE and PC-DFS Documentation Set

The following documents are provided:

- *PC-DCE and PC-DFS Installation and Release Notes* (this book)
- *PC-DCE Overview Guide*
- *PC-DCE Administrator's Guide*
- *PC-DCE Developer's Notes*
- *PC-DCE Guide to CAS*

Entegrity provides integrated help with the following tools:

- PC-DCE Service Panel
- PC-DCE Configuration Panel
- PC-DFS Configuration Panel
- DCE Director
- Visual DCE ACL Editor
- DCE setup

Entegrity also provides OSF DCE Version 1.2.2 documentation on the product CD and the Entegrity web site.

The Open Group Documentation

The product CD and the Entegrity Support web site also provide The Open Group (formerly OSF) DCE Version 1.2.2 and DFS documentation, including the following guides:

- *OSF DCE Administration Guide — Core Components*
- *OSF DCE Administration Guide — Introduction*
- *OSF DCE Application Development Guide — Core Components*
- *OSF DCE Application Development Guide — Directory Services*
- *OSF DCE Application Development Guide — Introduction and Style Guide*
- *OSF DCE Application Development Reference*
- *OSF DCE Command Reference*
- *Introduction to OSF DCE*
- *OSF DCE Problem Determination Guide*
- *OSF DCE/File-Access Administration Guide and Reference*
- *OSF DCE/File-Access Users' Guide*
- *OSF DFS Administration Guide and Reference*
- *OSF GDS Administration Guide and Reference*

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For a complete listing of Entegrity Solutions Corporation sales, research and development, and solutions centers worldwide, please see the Entegrity web site at **http://www.entegrity.com**.

Obtaining Technical Support

If you purchased PC-DCE directly from Entegrity Solutions, you are entitled to 30 days of limited technical support beginning on the day the product is expected to arrive.

You may also purchase a support plan that entitles you to additional services. You *must* register prior to receiving this support. For details, refer to the customer support information package that accompanied your shipment or refer to **http://support.entegrity.com**. The web site also contains online forms for easy registration.

If you purchased PC-DCE from a reseller, please contact the reseller for information on obtaining technical support.

Obtaining Additional Technical Information

Contact	Address	Phone/Fax/Email
The Open Group™ Developer of DCE (Distributed Computing Architecture) software and standards.	The Open Group 8 New England Executive Park Suite 325 Burlington, MA 01803-5007 USA	Tel: +1 781-425 6733 **http://www.opengroup.org**

Obtaining Additional Documentation

All documentation for the product is provided in electronic format on the same CD on which the product ships. See the product CD for information on accessing this documentation.

Documentation for Entegrity products is available at **http://support.entegrity.com**. Enter the product's support area and click the Documentation link.

We are always trying to improve our documentation. If you notice any inaccuracies or cannot find information, please send email to **docs@entegrity.com**. We welcome any comments or suggestions.

CHAPTER 1

Product Overview

1

This chapter gives an overview of the product and contains the following sections:

1.1 PC-DCE and PC-DFS

PC-DCE is the Entegrity® implementation of the Distributed Computing Environment (DCE) for Windows®. It is an implementation of OSF DCE Version 1.2.2, and is fully compliant with OSF DCE standards.

Entegrity PC-DFS, a DFS client based on OSF Distributed File Service (DFS) standards, consists of runtime libraries, cache management, and online documentation, that is a separately purchased product. PC-DCE is a prerequisite for PC-DFS.

1.2 Overview of DCE and DFS

DCE and DFS are both implementations of OSF standards. For complete details, see the OSF documentation or visit the OSF web site. Links for these appear in the Preface of this document.

The following sections give a broad overview of each technology.

1.2.1 Distributed Computing Environment (DCE)

Based on proven standards, DCE is the most widely accepted solution for developing and deploying secure distributed computing applications enterprise-wide.

DCE provides network security, transparent service location, and cross-platform communication, allowing organizations to more quickly design client-server and peer-to-peer based applications in a heterogeneous environment. DCE is used by the largest companies in the world to implement mission-critical high-performance applications in their enterprise networks.

Distributed computing services, as implemented in DCE, provide an important enabling software technology for the development of distributed applications. DCE makes the underlying network architecture transparent to application developers. It consists of a software layer between the operating

system and network interface and the distributed application. It provides a variety of common services needed to develop distributed applications, such as name, time, and security services, and a standard remote procedure call interface.

1.2.2 Distributed File Service (DFS)

DFS runs on top of DCE. It is a distributed application that provides a global view of distributed directories and files independent of machine boundaries.The DFS application allows users to share files stored on computers in a network as easily as files stored on a local machine.

For more information on DFS, see the OSF documentation shipped with this product.You can find a list of these documents in the Preface of this guide.

1.3 Licenses and License Agreements

An *electronic license file* is a short, encrypted file necessary for running PC-DCE and PC-DFS. License files are supplied on a diskette or available through Entegrity Solutions Technical Support.Copy the license files to disk. The installation program will ask for the location of the licenses during installation.

A license agreement is a legal agreement between you (either an individual or an entity) and Entegrity Solutions. The license agreement appears if you downloaded this software, you first read and accepted the license agreement.

If you have received the products on a CD, the license agreement is in the **License.txt** file at the same level as the **readme.txt** file. Make sure you read this file before you install the software.

CHAPTER 2

Before You Begin

2

This chapter provides DCE administrators with system requirements and prerequisite information before installing PC-DCE or PC-DFS and contains the following sections:

2.1 System Requirements

This version requires a software and hardware environment consisting of the components detailed in the following sections.

2.1.1 Software Requirements

PC-DCE requires TCP or UDP and can operate on any of the following platforms:

- Microsoft® Windows XP with Service Pack 1
- Microsoft Windows 2003
- Microsoft Windows 2000 with Service Pack 1 (or later)
- Microsoft Windows 2000 Terminal Server with Service Pack 1 (or later)

> NOTE: You must purchase Terminal Server functionality specifically for PC-DCE to work in a Terminal Services environment.

- Microsoft Windows NT Version 4.0 with Service Pack 6a
- Microsoft Windows NT Terminal Server Version 4.0 with Service Pack 6a
- Microsoft Windows 98 (Second Edition recommended)

PC-DFS requires UDP and can operate on any of the following platforms:

- Microsoft Windows XP with Service Pack 1
- Microsoft Windows 2003
- Microsoft Windows 2000 with Service Pack 4
- Microsoft Windows 2000 Terminal Server with Service Pack 4

2.1.2 Hardware Requirements

PC-DCE and PC-DFS require hardware to support the particular operating system, plus enough memory to run your configuration. They require an IBM-compatible PC equipped with an ix86™ processor. (Multi-processor NT systems are also supported.)

Memory requirements depend on the operating system and the configuration. Lightweight clients require only a few megabytes more memory than the operating system itself.

Machines on which you intend to configure a Security or CDS server require more memory; how much more depends on the number of users and the operating system. Entegrity recommends the following minimum amount of memory:

- Windows XP — 128 MB
- Windows 2000 — 64 MB
- Windows 2000 Terminal Server — 64 MB
- Windows NT — 32 MB
- Windows NT Terminal Server — 32 MB

Windows 98 does not support DCE servers.

You can install PC-DCE and PC-DFS in FAT, HPFS, or NTFS partitions.

2.1.3 Location of PC-DCE and PC-DFS

At a minimum, you must install the PC-DCE runtime on the same machine as PC-DFS to be able to install and run PC-DFS.

PC-DFS can interoperate with other vendors' implementations of DCE and DFS on various platforms. Your network may contain any other implementations. Since PC-DFS is a client-only product, your DFS servers will be running on platforms other than Windows.

2.2 Pre-Installation Tasks

Before installing either product, verify that you have the required Windows Service Pack, and that no other applications are running.

2.2.1 Verifying Windows Service Pack

If you are installing PC-DCE or PC-DFS on a system running Windows, first verify the system is running the minimum Service Pack required (See *Section 2.1, System Requirements,* on page 11).

To check the Service Pack level:

1   Open the Windows Control Panel.

2   Select About Windows from the Help menu.

If the system is not running the proper Service Pack, you must apply the Service Pack before installing PC-DCE.

2.2.2 Shutting Down All Applications

Before you install either product, be sure to shut down all applications that are currently running on your system, including Windows system applications.

CHAPTER 3

Installation

3

This chapter providesDCE administrators with information about installing PC-DCE and contains the following sections:

3.1 Software Kits

The PC-DCE/PC-DFS product CD includes the following components, or *kits*. Only those components for which you have an electronic license appear on the Select Components panel during installation, so not all of the components you see here will be listed.

■ RPC Only Runtime Kit

If you need only the Remote Procedure Call (RPC) functionality, install this kit only.

■ PC-DCE Client Runtime Kit

You should always install the PC-DCE Runtime Kit for running and testing your DCE applications. This kit includes the runtime libraries, message catalogs, the *Greet* and *Grade Server* sample programs, some basic administration tools such as **dcecp,** plus the facilities to configure any type of DCE Client.

■ Application Developer's Kit

If you intend to create your own DCE applications, you should install the PC-DCE Application Developer's Kit which includes the libraries, utilities, and header files that you need to create DCE applications to run on the Windows platform.

■ Cell Directory Services (CDS) Server Kit (includes the PC-DCE Client Runtime)

If you intend to configure your Windows system as a CDS Server, you must install the PC-DCE CDS Server Kit. Installing this server kit automatically installs the client runtime kit.

The CDS server can be installed on all supported Windows platforms except Windows 98. If you insert the PC-DCE CD into a Windows 98 system, the option to install this server will not be available.

■ Security Server Kit (includes the PC-DCE Client Runtime)

If you intend to configure your Windows system as a Security Server, you must install the PC-DCE Security Server Kit. Installing this server kit automatically installs the client runtime kit.

The Security server can be installed on all supported Windows platforms except Windows 98. If you insert the PC-DCE CD into a Windows 98 system, the option to install this server will not be available.

NOTE: To maintain the highest level of protection from unauthorized access to the cell servers, Entegrity recommends that you avoid configuring security, cell directory, audit, and password strength servers and the global directory agents on Terminal Server systems. See 3.3.1 Installing Server Kits on Terminal Server .

■ PC-DFS Client Kit

If this system will be used as DFS client, install this kit.

■ Documents

If you would like to install the documentation for PC-DCE/PC-DFS on your system so that you can refer to it online, select this component.

■ Debug Symbols

Install the debug symbols when you want to troubleshoot applications you are developing or when Entegrity Technical Support directs you to. The debug sysmbols available are:

■ Debug Symbols for PC-DCE Client Runtime Kit
■ Debug Symbols for RPC Only Runtime Kit
■ Debug Symbols for PC-DCE ADK
■ Debug Symbols for PC-DCE Cell Directory Server Kit
■ Debug Symbols for PC-DCE Security Server Kit

3.2 Installation Notes

This section contains miscellaneous notes about installation situations.

3.2.1 Error Recovery During Installation

If errors occur during the installation, the system displays failure messages. Errors can occur during the installation if any of the following conditions exist:

- The prerequisite software version is incorrect.
- The system parameter values (such as disk space) for this system are insufficient for successful installation.

3.2.2 Dual Boot Installations

If you have installed multiple Windows operating systems (for example, Windows XP, Windows 2000, Windows NT, and Windows 98) on your system, you can choose to reboot the system under any platform.

If you intend to develop and test PC-DCE/PC-DFS applications using all platforms on the same machine, *install the PC-DCE/PC-DFS kits for each operating system in a different directory.* That is, install PC-DCE/PC-DFS in one directory for use with Windows XP, another directory for use with Windows 2000, and so on.

3.2.3 Dependent Services

If you try to install PC-DCE over an existing installation, and services dependent on PC-DCE are running, the installation program displays an alert listing the dependent services and then exits. The reason for this approach is that certain services, notably DFS, are difficult to stop programmatically.

3.2.4 Installing PC-DCE/PC-DFS Over an Existing Application

When performing a re-installation of PC-DCE or PC-DFS, Entegrity recommends that you re-install the software in the same directory as your original installation. If the Setup program detects an existing version of the product, it overwrites the installation but preserves your existing configuration.

3.2.5 Troubleshooting License Problems

If you do not have the correct license, PC-DCE/PC-DFS will not install. To determine your current license, you can run the command line tool, **license_test.exe**.

To run this tool, you need to know the path to the license files (<*install dir*>/opt/lic) and the license package name. The package names are:

- RPC-only — rts
- Run Time System — rts
- Cell Directory Service — cds
- Security Service — sec
- Application Development Kit — adk
- DFS Client — dfsc

To run the tool, enter the following command, where <install dir> is the name of the directory in which you installed the license:

```
license_test package <install dir>/opt/lic>
```

Example

```
license_test rts c:/licenses
```

The output of the command is similar to the following:

```
License (rts) is valid for PC-DCE 5.0
Standard version
Platform: W2K/NT/98
License will expire in 29 days.
```

Note that an RPC-only license has the same package name (rts), but the output from the license test program is different:

```
License (rts) is valid for PC-DCE 5.0
Standard version
Platform: W2K/NT/98
This license is valid for RPC only.
License will expire in 29 days.
```

If you have an evaluation license, you must purchase the product if you want to run it past the evaluation period. After you purchase the product, you will be given a permanent license. Follow the instructions in *Section 3.4, Upgrading an Evaluation License,* on page 20 to replace the evaluation license with the permanent one.

3.3 Installing PC-DCE/PC-DFS

To install PC-DCE/PC-DFS:

NOTE: To maintain the highest level of protection from unauthorized access to the cell servers, avoid configuring security, cell directory, audit, and password strength servers; and the global directory agents on Terminal Server systems. See *Section 3.3.1, Installing Server Kits on Terminal Server,* on page 20.

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1 Insert the product CD into your CD-ROM drive.

   For Windows 98, Windows NT, Windows 2000, and Windows XP:

   If the setup program does not run automatically, run **setup**.

   For Windows systems running Terminal Server:

   a   A Terminal Server Install Failure popup window appears instructing you to run Add/Remove from the Windows Control Panel. In the popup window, click the Add/Remove Programs icon.

   b   In the Add/Remove Programs window, click Add New Programs.

   c   Under Add a Program from CD-ROM or Floppy Disk, click the CD or Floppy button.

   d   In the Install Program from Floppy Disk or CD-ROM window, click Next.

   e   The Browser section displays the **setup.exe** file located on your product CD. Click Next. The Entegrity PC-DCE **setup** program begins.

2 Follow the prompts to complete the installation, keeping the following points in mind:

   ■ PC-DCE must be installed on a local drive.

   ■ If the installation process detects an existing PC-DCE installation, the Setup program does not prompt for an installation directory, but rather overwrites all files while preserving any configuration information.

   ■ If this is a first-time installation or a repeat installation that has made modifications to any shared PC-DCE files, you must restart your computer for the modifications to take effect. In this case, the Restart Windows dialog is automatically displayed.

3 When you reach the Select Components screen, select the kits you want to install.

4 If you are installing server kits on Windows Terminal Server platforms, see the notes in *Section 3.3.1, Installing Server Kits on Terminal Server*, which follows.

3.3.1 Installing Server Kits on Terminal Server

> **NOTE:** To maintain the highest level of protection from unauthorized access to the cell servers, Entegrity recommends that you avoid configuring security, cell directory, audit, and password strength servers and the global directory agents on Terminal Server systems.

Install the Server kits and the runtime kit on the Terminal Server machine as described in *Section 3.3, Installing PC-DCE/PC-DFS*. The PC-DCE for Terminal Server kit will overwrite the runtime that had been installed with the other servers.

3.4 Upgrading an Evaluation License

If you start with an evaluation license, you need to replace the evaluation license with a permanent license after you purchase the product.

To do so, run the License Installer, as follows:

1 From the Windows Start menu, choose Programs > Entegrity PC-DCE > Tools > License Installer. The License Installation for Entegrity PC-DCE panel appears.

2 Click Browse. The Select License Files dialog appears. Navigate to the directory where the new license files are stored. Select the files and then click Open.

3 Click Install to install the new license files.

You can also launch the License Installer from the PC-DCE Service Panel:

1 Click the License button. The Show License dialog appears.

2 Click the Install License button. The License Installation for Entegrity PC-DCE panel appears.

3.5 Reinstalling or Removing PC-DCE

PC-DCE provides an installation maintenance program that you can use to reinstall PC-DCE or remove PC-DCE components. After the initial PC-DCE install, the Installation Maintenance program displays automatically when you run the PC-DCE setup program again.

3.5.1 Reinstalling PC-DCE

To reinstall PC-DCE:

1 Insert the product CD into your CD-Rom drive.

   For Windows 98, Windows NT, Windows 2000, and Windows XP:

   The Installation Maintenance program displays.

   For Windows systems running Terminal Server:

   NOTE: To maintain the highest level of protection from unauthorized access to the cell servers, avoid configuring security, cell directory, audit, and password strength servers; and the global directory agents on Terminal Server systems.

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   a A Terminal Server Install Failure popup window appears instructing you to run Add/Remove from the Windows Control Panel. In the popup window, click the Add/Remove Programs icon.

   b Select Entegrity PC-DCE.

   c Click the Change/Remove button.

2 The installation maintenance dialog box (called Entegrity PC-DCE Setup) has the following options:

   ■ **Add/Remove** — Displays a dialog box where you can select and deselect PC-DCE components:

   ■ Selecting a component installs it on the system.

   ■ Deselecting a component leaves the component uninstalled. And, if a component was previously installed, and you do not select it this time, the previously-installed component will be removed from the system.

   ■ **Reinstall** — Installs the same components that you selected during the previous PC-DCE installation. You are not prompted to select individual components.

   ■ **Remove All** — Removes all PC-DCE components from the system.

   ■ **Exit Setup** — Exits the installation maintenance program without installing or deinstalling any components.

3.5.2 Uninstalling PC-DCE Components Using Add/Remove Programs

You can also uninstall all PC-DCE components or individual PC-DCE components using the Add/Remove Programs utility in the Windows Control Panel. To do so:

1   Launch the Add/Remove Programs utility in the Windows Control Panel.

2   In the Add/Remove Programs Properties dialog box, select Entegrity PC-DCE from the list of programs, and click Add/Remove.

3   When the Entegrity PC-DCE Setup dialog box appears, select either:

- **Remove** — To uninstall individual PC-DCE components. The Select Components dialog box appears, which lists the components that are currently installed and allows you to select the ones you want to uninstall.

- **Remove All** — To uninstall all PC-DCE components.

3.6 Uninstalling PC-DCE/PC-DFS

To uninstall PC-DCE/PC-DFS, use Add/Remove Programs from the Windows Control Panel.

You can uninstall PC-DFS without uninstalling PC-DCE. However, you cannot uninstall PC-DCE if PC-DFS is still installed.

3.7 Disabling PC-DCE/PC-DFS

To disable PC-DCE from starting automatically at startup:

1   Launch the PC-DCE Configuration Panel using either of the following methods:

- Click the Configure button on the PC-DCE Service Panel
- Select Start > Programs > Entegrity PC-DCE > Tools > PC-DCE Configuration Panel from Windows

2   Click the Options tab.

3   Ensure that the check box labeled "Start daemons during system boot" is not checked.

To disable PC-DFS from starting automatically at startup:

1   Launch the PC-DFS Control Panel.

2   Click on the General tab.

3   Click the Start Mode dropdown list box and choose either Manual or Disabled.

CHAPTER 4

Configuring PC-DCE and PC-DFS

4

This chapter describes how to configure DFS and contains the following sections:

4.1 Configuring PC-DCE

For information on configuring PC-DCE, see the following:

■ PC-DCE Configuration Panel help — Provides information on how to to configure PC-DCE clients and servers.

■ *PC-DCE Administrator's Guide* — Describes how to plan a cell topology, and how to use PC-DCE to manage users and principals, configure DCE authentication, and manage servers and replicas. This guide also includes instructions for setting up a multicell environment.

4.2 Changing PC-DFS Settings

PC-DFS needs no configuration, but you might want to change options for automatic startup, cache management, logging, and preferences. Before you can change settings, you must:

■ Verify that the DCE and DFS software has been installed. DCE must be installed and configured on the system and PC-DFS must be installed.

■ Verify Necessary Privileges. To change settings for PC-DFS, you need Administrator privileges on that system.

To change settings for PC-DFS:

1 From the Windows Control panel, right-click PC-DFS. The PC-DFS Client panel appears.

2 Click the General, Cache Manager, Logging, or Preferences tab and make changes as desired.

4.3 Working with DFS Directories and Files

4.3.1 Accessing Files

You can access DFS directories and files from either of the following Windows file system features:

■ Network Places
■ A mapped drive

The following illustration shows an example of a mapped drive. Notice that the folder name begins with **...**
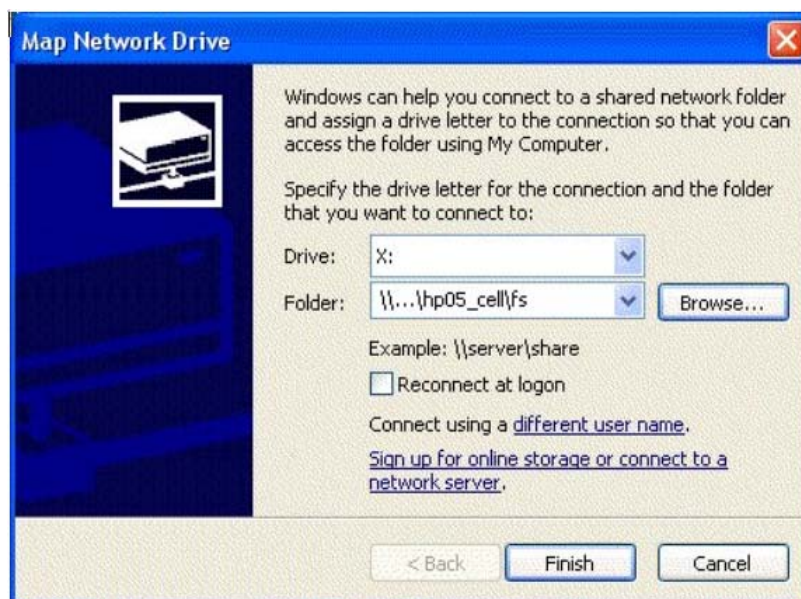
4.3.2 Modifying ACLs

You can modify ACLs with Windows Explorer.

To modify ACLs:

1 Right-click the file or folder whose permissions you want to modify.

2 Choose Properties.

3 Choose the PC-DFS tab.

4 Change the permissions as you would for any Windows file.

CHAPTER 5

Release Notes

5

This chapter provides DCE/DFS developers and administrators information about the current release of PC-DCE™ and PC-DFS™ and contains the following sections:

NOTE: Throughout documents related to Entegrity PC-DCE, use of the term Windows refers to all supported Windows operating systems unless noted otherwise.

5.1 New Features Introduced in v5.1

Distributed File System (DFS) Support

This release is the first release to include PC-DFS, a new product from Entegrity Solutions. The version number for PC-DFS starts with v5.1 so that it will be the same as the version number for PC-DCE. .

5.2 Problems Fixed in v5.1

This section describes problem fixes contained in this release.

Administrator Unable to Add Rights for Stopping Servers

The ACL on the CDS object /.:/hosts/<machine name>/config/srvrexec is used to determine who can stop servers running on <machine name> which are under the control of dced, via the dcecp "server stop" command. The host machine's self credentials are necessary for modifying this ACL.

A Windows admistrator, using the host machine's self credentials, should be able to issue the dcecp command "acl modify /.:/host/<machine_name>/config/srvrexec -io -add {user <dce account name> rws}" to give whomever logs in with <dce account name> the rights to stop servers on <machine name>. However, the Windows permissions on the self-credentials cache file were not being set properly, so the administrator was unable to issue the command.

5.3 Notes on Operation

This section describes operational and other minor changes for this release that are not documented in the PC-DCE guides.

5.3.1 Installing PC-DCE on Hosts Configured with Compaq DCE

Before installing PC-DCE on any Compaq DCE host, Compaq DCE must first be uninstalled. To preserve cell configuration information, replicate any Compaq DCE servers to PC-DCE server hosts prior to uninstalling Compaq DCE from cell server hosts.

5.3.2 DCE Director

Concurrent Access to Security Registry Entries

While DCE Director is accessing security registry entities (principals, accounts, groups, and so on), operations referencing these entities will fail if the entries are deleted from the registry by another DCE user.

Create Group Option in User Account Dialog Boxes

After creating a new group from the User Account dialog boxes, there is no immediate update to the group page or UNIX page. When you select a new page from the view or modify dropdown list, or press OK to proceed, the new group is added to the group page and the UNIX page.

DCE Director Failure

If DCE has not been properly configured and you try to start DCE Director, the application fails, but you may not receive any error messages.

Multiple Copies of the Same View

DCE Director allows the same view to be shown multiple times.

Changing User Account Passwords

To use the DCE Integrated Login feature, you must keep password information in the DCE Registry synchronized with password information in the NT security registry. Currently, modifying user account passwords with DCE Director changes the password only in the DCE Registry; the password in the NT security registry remains unchanged. At present, the only supported method for changing user passwords in both registries simultaneously is by using the Change Password button on the Windows NT Security dialog box (press Ctrl+Alt+Del to get this). Passwords will not remain synchronized if they are changed with the User Manager utility.

5.3.3 Configuration

Multi-homing

For Windows NT v4.0 systems: If you want to export bindings onto multiple network interfaces, you must either install Service Pack 4 or later service pack, or if you want to continue using Service Pack 3, obtain a hotfix from Microsoft. To obtain the hotfix, contact Microsoft, specify article Q188879, and request the hotfix. In addition, read the section in the *PC-DCE Administrator's Guide* on the environment variable RPC_UNSUPPORTED_NETIFS.

5.3.4 Administration

Running Applications With Old Runtime Versions Not Supported

If you build applications using the current PC-DCE Application Developer's Kit, you must run them with the PC-DCE runtime at the current revision or later.

DHCP Support

DHCP is supported on clients; however, DCE interfaces rely on a stable underlying address, and therefore DCE servers do not support DHCP.

ACL_EDIT, DTSCP, RGY_EDIT, and RPCCP

These programs are currently still available in PC-DCE but are no longer officially supported as most of their functionality is now encompassed in the DCE control program (dcecp). In addition, it is likely that these programs will be removed in future releases.

CDSCP

Because of The Open Group licensing changes, we no longer included **cdscp** with our Runtime Kits; however, it is included with our CDS servers.

Synchronizing Client Time with the Security Server

For synchronization to work from the client without the DTS daemon, you must run a DTS server (local or global) on the same machine as your master Security server.

Public Key Infrastructure Implementation

Because of incompatibilities between RFCs 68.3 and 68.4, PC-DCE does not implement the OSF Version 1.2.2 Public Key Infrastructure (PKI) enhancement.

5.4 Known Problems and Restrictions

This section describes known problems and other restrictions for this and previous releases.

Known problems in previous releases are still in effect.

5.4.1 Known Problems and Restrictions in v5.0.1

5.4.1.1 DCE Setup

While DCE Setup is included with PC-DCE, it is not fully functional with this release. To configure DCE services, use the PC-DCE Configuration Panel.

5.4.1.2 DCE Director

Policy and Organization Restrictions

You cannot change the organization attribute of an account, and you cannot set policies such as minimum password length.

Removal of the ACL Entry Allowing the Group's Members to Add/Remove Members Does Not Work

If you modify a group to remove the ACL entry permitting its members to add or remove members, the change does not take effect.

To remove the ACL entry you must use the Visual DCE ACL Editor. With the CDS object highlighted in the Select a kind of object list, choose Access Control from the Actions Menu. Type in /.:/sec/group/*groupname* for the ACL path. Modify the ACL to remove the *groupname* entry.

5.4.1.3 Visual DCE ACL Editor

Displaying ACLs with More Than Eight Permissions

If you are editing an ACL belonging to a user-written ACL Manager that supports more than eight permissions, the necessary display width required may be larger than expected by the Visual DCE ACL Editor. If this is the case, the Visual DCE ACL Editor will cause an exception and not display the ACL.

To edit the ACL, use **dcecp** or acl_edit.

ACL Name not Passed to the Editor

If an instance of the Visual DCE ACL Editor is already running, and you select a directory using DCE Director and press the Access Control button, the existing Visual DCE ACL Editor window will be brought to the foreground but the new ACL will not be opened.

To open the ACL, choose Open from the ACL menu and type in the desired path.

Visual DCE ACL Editor Failure

If your machine has not been properly configured for DCE, and you try to start the Visual DCE ACL Editor, you may get the following error message:

```
An application error has occurred and an application error log is being
generated.
```

To correct the problem, you need to properly configure DCE on your machine.

5.4.1.4 Development

Applications Developed Using Compaq DCE ADK

Applications developed with the Compaq DCE ADK are not compatible with PC-DCE. Such applications must be recompiled and relinked using the PC-DCE ADK. See the *PC-DCE Developer's Notes* for more information about migrating Compaq DCE applications.

Incorrect Dependency Error

During a compile, Microsoft Visual C/C++ Versions 4.2 and earlier may report the following dependent files are missing:

> **sys/file.h**
> **sys/lic.h**

These Entegrity internal include files are commented out, but the Microsoft compiler fails to detect this. You can either ignore the error or upgrade to Visual C/C++ 5.0.

5.4.1.5 Other

Name Service Interface Daemon (nsid) and Windows 98

nsid is not currently functional on the Windows 98 operating system.

DCE Director and DCEsetup Help Files

Accessing DCE Director and DCEsetup help files though help buttons in dialog boxes and at the graphical interface works inconsistently. Launch these help files from the Help menu in each of these tools.

Integrated Login Timeout

If you restart a PC-DCE server or client system that uses Integrated Login, and the system is unable to contact a Master or Replica Security Server, the Windows login is halted. In this case, PC-DCE displays a message box that lets you choose to:

■ Wait 20 seconds before Integrated Login tries again to contact the Security Server.

■ Attempt to contact the Security Server immediately.

■ Skip Integrated Login this time and continue with the Windows login.

Routing File Syntax

DCE service routing is a specification of where DCE serviceability messages are logged. The *dce_install_directory* **/opt/dcelocal/var/svc/routing** file specifies the default routing(s) for serviceability messages from any DCE application server - including **dced**, **cdsadv**, **dtsd**, etc. For example, the routing **FATAL:FILE:/tmp/service.log** specifies that fatal messages are to be logged in the file **/tmp/service.log**.

DCE service library uses a colon (**:**) as the separator in a routing specification. Because of this, pathnames in the routing specification must use a percent sign (**%**) as a separator after the drive, if one is specified. For example, specify **FATAL:FILE:C%/tmp/service.log** rather than **FATAL:FILE:C:/tmp/service.log**. This limitation will be removed in a future release.

See section 9.4.2 of *OSF DCE Administration Guide - Core Concepts* for more information on DCE serviceability routing.

Cell Aliases

Cell renaming does not work reliably. The **dcecp cellalias set** command has been disabled in the Warranty Patch. A defect for The Open Group (OT 12864) has been opened for this problem. If you want to create an alternate cell name, use the **cellalias create** command. This will create a cell alias name without changing the primary cell name.

Cell alias names are not automatically propagated across cell boundaries. Use of cell aliases across cell boundaries is not supported.

Cell alias creation will fail if a cell includes DCE 1.0.*x*-based clients. The
dcecp cellalias script attempts to update every cell-member host by
contacting its DCE host daemon (**dced**). Once the script detects an error (such
as failing on a 1.0.*x*-based client), it will proceed to undo the alias creation
operation for the entire cell.

Transitive Trust

Transitive trust validation is performed using the pathname of the target
principal. Transitive trust will succeed for a cell alias name only if there is a
trust path expressed for that alias.

Ticket requests to alias names for the local privilege server are treated as
foreign cell requests. At DCE 1.2.1, the privilege server removes ERAs from
credentials requested by foreign cells. Therefore, credentials returned by
ticket requests to alias names will not include ERAs.

The following scenario illustrates this limitation:

1   Create **old_cell**.

2   Add **new_cell** as an alias for **old_cell**.

3   dce_login as **/.../old_cell**/*user.*

4   Request credentials to application service **/.../new_cell/**service.*

The credentials returned for **/.../new_cell/**service* will not include ERAs. The
privilege server treats the request to **/.../new_cell** as an intercell request from **/
.../old_cell** to **/.../new_cell**, and removes any ERAs that may be attached to
the principal.

Exception Mapping

Exception mapping from native to DCE exceptions is not supported in the
OMF-compliant link library.

No DCED Support for the Auto Start Option

It is a limitation of The Open Group DCE 1.2.1 and consequently of the
PC-DCE implementation that **dced** cannot start up configured services on
demand when the first RPC is made.

DCED and Endpoint Services

The **PC-DCE Service Panel** may currently show that **dced** is running in a
light-weight configuration even if the **Endpoint Service Only** checkbox is
selected in the **Options** tab of the PC-DCE Configuration Panel. In reality,
only the Microsoft Endpoint Mapper will be running.

DCECP Limitations

The DCE control program (**dcecp**) may not be compatible with any existing
TCL environment setup outside of the PC-DCE installation. In addition, you
cannot execute commands by specifying the full path in **dcecp**.

Required DTS Servers in a Cell

DCE requires there to be three DTS servers configured in a cell to insure stable time management. Though this is the best case scenario, we acknowledge that there may be some situations where this may not be feasible.

To reset the number of required servers:

Use the dcecp command: **dts modify-minservers #**

or

Use the **dtscp** command: **set servers required #**

Where # is the minimum number of DTS servers you wish to require in your cell. This will improve efficiency in cells with fewer than three DTS servers, and eliminate extra warning messages from being logged.

Security Server Mappings Invalid from Non PC-DCE Client

Due to a base DCE bug, clients contacting PC-DCE servers that use the Microsoft Endpoint Mapper will fail due to unrecognized protocol towers. Please check with your DCE vendor to see if they have addressed this problem, and reference The Open Group OT 13669.

5.5 Corrections to Documentation

There are no corrections for this release that have not already been incorporated into the documentation.

5.6 Previous Releases — New Features

5.6.1 New in v5.0

The following list describes new major features for this release.

- PC-DCE 5.0 is supported on Windows XP as well as on previously supported Windows 98/NT/2000.

- Defining the environment variable RPC_ENABLE_LOCAL_HOST enables the use of the loopback IP address (127.0.0.1). This is particularly useful for demonstrations where one might want to configure a cell on a host that is not connected to a network.

- You can now buy and install an RPC-only version of PC-DCE. This version will install no DCE services. It provides only RPCs to applications.

- During installation, you can choose to install the documentation locally.

- To upgrade from an evaluation to a full license, you need to install only the new license. You do not need to re-install the DCE software.

5.7 Previous Releases — Problems Fixed

5.7.1 Problems Fixed in v5.0.5

RPC Buffer Overrun Attack

Fixed a problem described in CERT vulnerabilities VU #259796, VU #568148, VU #326746, and VU #377804 where an exploit program sends invalid packet data which causes a buffer overflow in DCE servers. After numerous attacks, the server will not respond to normal DCE requests.This buffer overflow could also affect DCE clients: If DCE clients have any open associations to a server, the overrun attack could hit that association and also cause it to overflow.

The Entegrity patch fixes the buffer overflow condition and rejects invalid or improperly sized packets.

5.7.2 Problems Fixed in v5.0.4

RPC Timer Thread

Fixed a logic error in the RPC runtime that prevented the RPC timer thread from pausing when there were no timer events to process.

Error in Creating PGO Directories

Fixed an error in creating Principal, Group, Organization (PGO) directories. The security server would fail to create a PGO item in a directory that did not exist, but had the same name as an existing principal. For example, if the principal "test" existed and an administrator issued the dcecp command "principal create test/user", the PGO directory "test" could not be created.

Integrated Login Timeout

A logic error in Integrated Login (IL) prevented it from working either over a low-bandwidth connection (for example, a dialup modem) or with a highly loaded security server. IL would prematurely time out.

Master Did Not Always Propagate State of the Password Invalid Flag

Fixed an error in the security server where the master would not always propagate the state of the password invalid flag.

5.7.3 Changed in v5.0.4

SetEnvironmentVariable Used Instead of putenv

Entegrity has determined that the C runtime function putenv() causes a memory leak on Windows NT and 2000. This function was used to set the environment variable KRB5CCNAME every time the sec_login functions

created a new login context. To prevent PC-DCE applications from leaking memory while using the sec_login API, Entegrity has replaced putenv() with the Win32 function SetEnvironmentVariable. Applications that rely on the value of this environment variable can use Win32 function GetEnvironmentVariable. However, the most reliable way to acquire the path to a credential file is to call sec_login_export_context.

5.7.4 Problems Fixed in v5.0.3

RPC Runtime Deadlock

Fixed a deadlock condition in the RPC runtime. The deadlock occurred when one thread canceled another thread that was waiting for an RPC running over UDP to complete. The second thread would terminate without releasing a lock required by the RPC timer thread. Also, any thread that called rpc_binding_free would have deadlocked.

5.7.5 Problems Fixed in v5.0.2

This section describes problem fixes contained in this release.

Fix for Denial of Service Attack Worm (RPC Attack)

Implemented a fix for the vulnerability to RPC attacks described in CERT Vulnerability VU#377804 (http://www.kb.cert.org/vuls/id/377804). A worm that exploits that vulnerability had been reported to seek out systems that support the RPC endpoint map service on port 135 and attempt to attack those systems.

The Entegrity implementations of DCE RPC were not vulnerable to the DCOM buffer overflow attacks described in CERT VU#568148, however, the exploit tools did cause an error path to be executed that resulted in a NULL pointer dereference and a subsequent service termination, resulting in a denial of service.

dcecp Commands Failed Unexpectedly

Occasionally users would see a dcecp command fail unexpectedly. For example, the object show command would fail on a perfectly valid CDS object. The only way to recover was to restart dcecp. This was due to a stack corruption, which has been fixed.

Configuration Failure When Creating CDS

Occasionally a configuration failure would occur, usually around the point where dce_config was creating CDS entries. It would create an entry, then fail to find it, thus preventing the user from configuring the machine. This was caused by a problem in a CDS routine, which has been fixed.

Endpoints Not Registered

A workaround has been implemented for a bug in the Windows NT 4.0 endpoint mapper where it occasionally would not register an endpoint.

Maximum Ticket Lifetime Incorrectly Recorded

Fixed a problem with sec_salvage_db where it failed to correctly record the maximum ticket lifetime if it was set to the default value.

Configuration Problems in UDP-Only Environment

As of this release, **dce_config** will now work in a UDP-only environment.

Load Balancing

Enhanced load balancing through further improvements to how threads randomly select a binding from a binding vector.

Symbol Files for secd.exe and gdad.exe

The symbol files for secd.exe and gdad.exe were not included in previous releases of this product. If you have symbol files installed on a machine and a demon crashes, the resulting report for third party tools such as Dr. Watson can now more accurately show where the crash occurred.

5.7.6 Problems Fixed v5.0.1

Installing New Licenses via DCE Service Panel

There was a problem with installing a new license via the service panel. When an evaluation license expired, the service panel would no longer run. Now the service panel will run, but only the License button is available. As always, you can still access the license tool directly from the Windows Start button. Choose Start -> Programs -> Entegrity PC-DCE -> Tools -> License Installer.

Uninstalling PC-DCE If Installed with an Evaluation License

The uninstaller now runs even if the evaluation license has expired.

Integrated Login on Windows 2000 and Windows XP

Integrated login failed to work on Windows 2000 and XP. When installing the PC-DCE runtime, the installer failed to create all the registry entries needed to run integrated login. This has been fixed.

Local Administrator Script (preconfig.tcl) Simplified

Unnecessary groups and ACL assignments have been removed from the NetCrusader/Web portion of the split configuration script **preconfig.tcl**. Specifically, the wcsecad-admin group, which is not used, is no longer

created. Also the Security Adapter's principal is no longer added to the cds-admin and dced-admin groups and the local administrator is no longer added to the ACL on /.:/subsys/www/wc-servers.

New Slave Now Receives Updates from New Master

Have fixed the problem described in Entegrity Tech Note 411GR, Slave Does Not Receive Updates from New Master.

When configuring a master Security server, the host machine's self principal is now added to the ACLs for the /.:/sec/replist object and the /.:/subsys/dce/ sec directory. Without these ACLs, if the master Security server becomes a slave then it would not be able to receive updates from the new master.

This change was made to dce_config.exe.

DCE Director Does Not Work After Master Security Server Made Replica

Have fixed a problem related to the one described in Entegrity Tech Note 411GR, Slave Does Not Receive Updates from New Master.

DCE Director would not work once the master Security server was made a replica. The Director used to depend on the value of the window registry entry HKEY_LOCAL_MACHINE\Software\Gradient\DCE\Configuration\Securit yServerName, which becomes out-of-date when the master Security server becomes a slave. Now the Director retrieves the name of the master Security server from the CDS namespace.

Canceling Integrated Login Delayed Windows Login

Fixed a problem where cancelling integrated login too quickly would delay Windows login. A cancel button is displayed during the integrated login process. If the user clicked the cancel button as soon as it was displayed, the integrated login process would not be completely cancelled and the Windows login process would be delayed until some timeouts occurred or the user typed Ctrl-Alt-Del. This has now been fixed.

Waiting Pthread Not Always Canceled

Fixed a problem where one thread calling pthread_cancel() to cancel another thread that was waiting for pthread_join() to complete did not always result in the waiting thread being cancelled.

Memory Associated with a Login Context Not Always Released

Fixed a problem where sec_login_release_context did not always release all of the memory associated with a login context.

Index