

# **QAD Decision Support**

## **Installation Guide**

**FOR UNIX SERVERS**



78-0521B  
Decision Support Version 3.2  
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# About This Guide

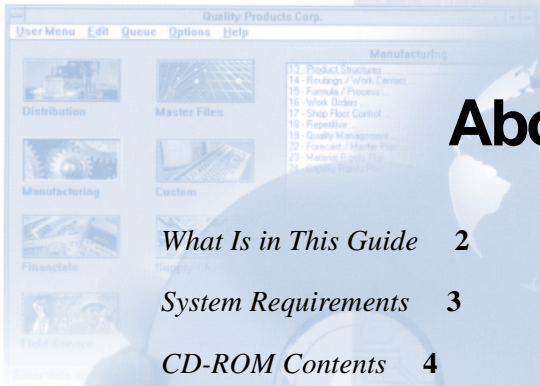
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Routing Maintenance (Date Based)

Routing Code:	10-15000	MANUFACTURE COIL LINE
Operation:	20	
Standard Operation:		
Work Center:	1030	INSPECTION, ALL SITES
Machines:		
Description:	INSPEC PER PROC-000	
Machines per Op:	1	
Overlap Units:	1	
Queue Time:	1.0	
Wait Time:	0.0	
Setup Time:	0.0	

## What Is in This Guide

Use this guide to install Decision Support (DS) Version 3.2 on all UNIX systems. DS consists of the DS engine as well as graphical user interface (GUI) and character user interface (CHUI) clients.

Use the instructions in this guide to:

- Install the DS engine
- Install DS clients
- Install the DS online help
- Install DS libraries
- Install DS documentation

## Audience

These instructions are for the MFG/PRO system administrator who manages the MFG/PRO database and is familiar with the UNIX operating system, the Windows operating system (if implementing DS GUI clients), PROGRESS software, networking, and either ORACLE or PROGRESS databases.

## Installation Errata

In addition to these instructions, you may receive a supplementary errata sheet with changes and additional instructions. Check your product package. Also check the QAD website.

## QAD Web Site

For QAD customers with a Web account, MFG/PRO documentation is available for review or downloading at:

<http://support.qad.com/documentation/>

To obtain a QAD Web account, go to:

<http://support.qad.com/>

# System Requirements

## PROGRESS Versions

The DS installation program requires PROGRESS Version 7 or 8. You will need to know the path to the PROGRESS installation directory for the DS installation program.

DS also requires the availability of the PROGRESS Quoter utility at run time. The system path, not the PROGRESS path, must include the directory containing this utility. The DS installation program modifies the system path during the installation session, but permanent modification of the path on each DS client is required.

If you are implementing DS GUI clients, configure DS to use the PROGRESS AppServer for the best performance. For this configuration, the PROGRESS AppServer 8.2B or higher must be installed on the same server as the DS engine.

▶ See “Deploying Decision Support” on page 10.

## MFG/PRO Versions

DS is supported on MFG/PRO versions 7.3, 7.4, 8.5, 8.6, or 9.0. The installation program requires access to encrypted MFG/PRO source code. You must know the MFG/PRO installation directory path for the DS installation program. You must also know the physical database name and path for at least one of your MFG/PRO databases (`mfgempty` is preferred).

## Disk Space

The installation program verifies that at least 20 MB of space is available in your selected installation directory. Make sure to provide plenty of room for Decision Support data storage. Start with 100 MB to 1 GB and evaluate disk usage after 30 to 60 days of normal DS use.

To check the disk space in kilobytes available for all disks, at the UNIX prompt enter: `bd.f.`

## ORACLE

For ORACLE installations, the PROGRESS ORACLE DataServer must be installed and configured.

### Windows Clients

- Operating System: Windows 95B or higher, Windows 98, Windows NT 4.0 or higher.
- Disk Space: Approximately 10 MB of available space.
- PROGRESS Software: Local PROGRESS Query installation.

**Note** For DS GUI clients to function correctly, PROGRESS Query must be installed locally. Do not attempt to run the PROGRESS software from a remote machine.

## CD-ROM Contents

The DS CD-ROMs you received for the engine and client each contain a `cdrom` directory. The following sections briefly describe the contents of this directory.

### Decision Support Engine CD-ROM

- Installation script (`install`)
- Supporting files (`mfgds.ini` and `ds32x.cpio`)
- Subdirectories (`lib` and `bin`)

### Decision Support Client CD-ROM

- Installation script (`install`)
- Supporting files (`dscli.ini` and `cli32x.cpio`)
- Subdirectories (`lib` and `bin`)

## Decision Support Conversions

Programs for converting Decision Support Versions 2.08 and 3.1 to the current release are included in the Decision Support engine installation.

▶ See “Converting an Existing DS Database” on page 79.

## Document Conventions

This guide uses the conventions listed in the following table.

<b>If you see...</b>	<b>It means...</b>
<code>monospaced text</code>	A command or file name.
<i>italicized</i>	A name for a value you enter as part of an operating system command; for example, <i>CDROMDir</i> .
<code>indented command line</code>	A long command that you enter as one line although it appears in the text as two lines.



# Installation Overview

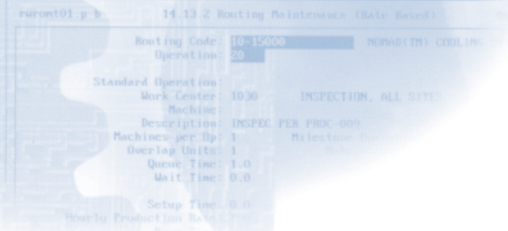
This chapter presents basic topics that you should understand before beginning a Decision Support (DS) installation or conversion.

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Routing Maintenance (Date Based)

Routing Code:	10-15000	MANUFACT: CHILIN
Operation:	20	
Standard Operation		
Work Center:	1030	INSPECTION, ALL SITE
Machines:		
Description:	INSPEC PER PROC-000	
Machines per Op:	1	
Overlap Units:	1	
Queue Time:	1.0	
Wait Time:	0.0	
Setup Time:	0.0	

Route to Production &...

## Decision Support Databases

Before you create the DS database, the installation script first creates a set of empty and initialized databases upon which the DS database is based. You should make a backup of these databases in case you need to restore the system. Table 1.1 lists the databases created during the DS engine installation.

**Table 1.1**  
Decision Support  
Databases

Database	Description
dsemtpy	Empty Decision Support database, with standard database schema, but no data. Used as base for all other Decision Support databases.
ds	Initialized Decision Support database. Includes Decision Support menus, messages, and other default data.

**Warning** Do *not* use these databases directly. Always use the copies of them as the working DS databases.

The DS database contains the following disk files.

- A database file (extension `.db`)
- A before-image file (extension `.bi`)
- A database log file (extension `.lg`)

For example, a database called `mfgds` includes: `mfgds.db`, `mfgds.bi`, and `mfgds.lg`. Be sure to include all of the database files whenever you move, back up, or restore a database.

## Decision Support Architecture

The DS engine and database are deployed on a UNIX server and the DS clients can be deployed on Windows 95, 98, NT, and UNIX machines.

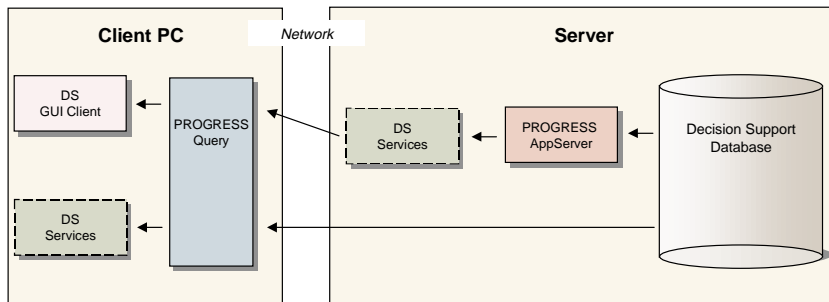
The system supports all PROGRESS versions 7 through 8. You can implement both character user interface (CHUI) and graphical user interface (GUI) clients in the same DS environment.

DS supports GUI client deployment using the PROGRESS AppServer. The AppServer lets client applications request server processing, reducing the number of records carried over the network. This results in dramatic performance benefits across both local-area networks (LANs) and wide-area networks (WANs). Operations that require intensive processing—such as shuffles and filters—also perform faster when using the PROGRESS AppServer.

The DS architecture includes a *DS Services* layer that lets DS GUI clients operate both with and without the AppServer. The DS Services layer is installed on both the DS client and server to enable both client side (local) and server side (AppServer) processing.

- When the AppServer is present, the DS GUI client uses the DS Services layer on the server to access the AppServer and perform processing on the server.
- When the AppServer is not present, the DS GUI client uses the DS Services layer on the client to access the DS database directly.

Figure 1.1 illustrates how data moves from the DS database to the DS GUI client via the DS Services layer both with and without the AppServer present.



**Fig. 1.1**  
DS Services Layer  
Architecture

**Note** The DS Services layer is only used by GUI clients. The DS CHUI client does not use DS Services.

## Deploying Decision Support

When deploying DS in your environment, you should consider the following issues.

- Whether to install the DS engine and database on the MFG/PRO server
- Whether to implement the AppServer

### Deploying the DS Engine and Database

Depending on your network infrastructure, the number of PROGRESS licenses, and expected user loads, you may want to deploy the DS engine and database on the same or on a different server than the MFG/PRO databases.

#### Single Server Installation

Installing the DS engine and database on the same server as the MFG/PRO databases offers the following advantages.

- Quicker updates. Because the MFG/PRO databases from which the DS database gets its data are on the same machine, no records are transmitted over the network making updates substantially faster.
- Reduced PROGRESS license requirements. Because DS is a module of MFG/PRO, you can use the same PROGRESS licenses for both MFG/PRO and DS.

A single server installation is recommended for most environments. However, when multiple DS and MFG/PRO sessions are run simultaneously against a single server, system performance can suffer for both applications. If a heavy DS user load is expected, you may want to consider a multiple server installation.

## Multiple Server Installation

Installing the DS engine and database on a separate server from the MFG/PRO databases offers the following advantages.

- Separate resources for each application. DS and MFG/PRO users do not share a single server and will not affect each other.
- Separate reporting and operational systems. Because of administration and security concerns, you may want keep the reporting system (DS) separate from the operational system (MFG/PRO).

A multiple server installation requires a better network infrastructure since the DS update process must move numerous MFG/PRO database records across the network. Also, extra PROGRESS licenses are required for the DS engine and database server.

## Deploying the PROGRESS AppServer

Depending on your PROGRESS version and whether you are implementing DS GUI clients, you may want to implement DS with or without the PROGRESS AppServer.

### DS Without the AppServer

If you are not implementing GUI DS clients or you are installing DS in a pre-PROGRESS 8.2 environment, install and configure DS without the PROGRESS AppServer.

**Note** If you are implementing GUI DS clients, QAD recommends configuring DS using the PROGRESS AppServer to improve GUI client performance.

### DS with the AppServer

QAD recommends configuring DS using the PROGRESS AppServer to optimize performance for DS GUI clients running over both LANs and WANs. Your environment must use PROGRESS Version 8.2 or higher to implement the AppServer.

## Installing the AppServer

To achieve optimum performance for DS GUI clients in an AppServer environment, you must install the AppServer on the same machine as the DS engine and database. Having the DS database and AppServer on the same machine reduces the number of records moving across the network.

## AppServer Licensing

DS does not require that you have an equal number of AppServer and DataServer licenses. For example, you can combine a five-user AppServer license with a 32-user DataServer license.

DS lets you manage the users and hierarchies that can use AppServer connections to provide enhanced performance. For example, you can configure GUI clients accessing the DS server over a WAN to use AppServer connections. Similarly, access to hierarchies with large amounts of data can be configured to use AppServer connections.

To configure AppServer connections for users and hierarchies, use the DS engine application. For detailed instructions, see the System Administration section of the Decision Support Engine chapter in the *QAD Decision Support User Guide*.

## Implementing the AppServer

The following list is a summary of the tasks required to configure DS to use the AppServer. Instructions to complete most of these tasks are included in this guide. However, the last two tasks are performed in the DS engine application and are explained in the *QAD Decision Support User Guide*.

- Install the AppServer on the machine where you will install the DS engine. To install the AppServer, follow the installation instructions provided by PROGRESS.
- Install the DS engine. During the installation, take note of the service name you specify for the PROGRESS AppServer. The default is `dsappserv`.
- Register the WAN product in the DS engine registration screen.
- Modify the `services` file on the DS engine server and DS clients to include the AppServer service name.

- Start the DS AppServer service on the DS engine server.
- Install the DS clients and configure the GUI client WAN options in the DS client Options menu.
- In a DS engine session, specify the DS clients for which you want to enable AppServer connections. For complete instructions, see the *QAD Decision Support Users Guide*.
- In a DS engine session, specify the hierarchies for which you want to enable AppServer connections. For complete instructions, see the *QAD Decision Support Users Guide*.

## Preliminary Setup

Use this section to prepare for the DS installation.

### Creating the Installation User

Complete these steps to create the user under which the DS installation runs.

To install the DS software, you must create a group called `qad` and a user called `mfg` on your database server. The DS installation and maintenance programs store pertinent information under this user's home directory. This strategy enables QAD scripts to find data about installed products automatically and reliably. Also, you can maintain your system without having to log on as the root user ID.

- 1 Start your UNIX system administration utility.

**Important** Use the utilities provided with your UNIX system since they typically handle a shadow password file.

- 2 Create a group called `qad`.
  - a This group does not require a specific group ID (gid). If possible, try to use gid 65535 because this is the gid of the files on QAD CD-ROMs.
  - b To verify that the group has been created successfully, type the following command at the system prompt.
- c The output should resemble the following but may vary depending on your system.

```
grep ^qad /etc/group
```

```
qad : : 65535 :
```

- 3 Create a user called `mfg`.
  - a If possible, specify user ID 65535 because this is the user ID of the files on QAD CD-ROMs.
  - b Assign the Korn login shell to this user. All of the scripts delivered on a QAD CD-ROM use Korn shell syntax.
  - c Use any standard file system location for the user; it is not important where this user is created. However, make sure the `$HOME` environment variable is set, because the scripts and programs that access this user directory reference this variable.
  - d Assign the standard umask of 022 to maintain permissions and security.
  - e To verify that the user was created with the proper values, type the following command at your system prompt.

```
grep ^mfg /etc/passwd
```

- f The output should resemble the following but may vary depending on your system.

```
mfg : * : 65535 : 65535 : login : , , , : /home/mfg : /user/bin/ksh
```

- 4 Create a directory called `cfg` under the home directory of user `mfg`. This directory is *mandatory* for storing important installation and configuration information. The directory must have read, write, and execute permissions (`rxw`) for the owner group and others.

- a Log on as user `mfg`.
- b To verify that the directory has been created successfully, type the following command at the system prompt.

```
ls -ld $HOME/cfg
```

- c The output should resemble the following but may vary depending on your system.

```
drwxrwxrwx 7 mfg qad 1024 Jun 18 11:03 cfg
```

- 5 Now that the user and group have been created, here are some optional but useful things that you can add to the user’s profile (`.profile`).

Profile Setting	Description
<code>PROPATH=\${PROPATH:-YourPROPATH}</code>	Sets a default PROPATH.
<code>DLC=\${DLC:-YourPROGRESSDir}</code>	Sets a default PROGRESS directory.
<code>PATH=\$PATH:\$DLC/bin</code>	Adds the default PROGRESS <code>/bin</code> subdirectory to the execution path.

- 6 Set the terminal type to a PROGRESS-supported terminal such as `vt100`.

**Important** During the installation, you will need to log on as the super-user (also known as `root`) to mount the CD-ROMs, then login again as `mfg` to execute the DS installation scripts.

## Verifying System Prerequisites

Complete these steps to verify the prerequisite information for you installation.

- 1 If you are planning to use the PROGRESS AppServer, install it using the PROGRESS documentation.
- 2 Determine the following information.

- a DS engine and client installation directories. Be sure you have full read, write, and execute permissions for these directories.
  - b The location of the PROGRESS installation directory.
- 3 Locate the registration codes for the DS engine and, if necessary, PROGRESS AppServer (WAN) products. The DS registration codes are shipped with your product package.
- 4 Make sure the server for a main MFG/PRO database—such as production, training, or demonstration—is started. The DS installation scripts use an MFG/PRO main database to compile the DS application code.

**Important** During the installation, be sure to specify this database when prompted for an MFG/PRO database.

# DS Engine Installation for PROGRESS

◆ For ORACLE, see Chapter 3, “DS Engine Installation for ORACLE,” on page 29.

This chapter contains DS engine installation instructions for PROGRESS database environments.

*Mount the Engine CD-ROM* 18

*Run the Engine Install Script* 18

*Monitor the Engine Install Script* 23

*Change the Services File* 27



Routing Maintenance (Main Screen)	
Routing Code:	10-15000
Operation:	20
Standard Operation	
Work Center:	1030
Machines:	INSPECTION, ALL SITE
Description:	INSPEC PER PROC-000
Machines per Op:	1
Overlap Units:	1
Queue Time:	1.0
Wait Time:	0.0
Setup Time:	0.0
Ready to Production:	0.0

## Mount the Engine CD-ROM

Use these instructions to mount the DS engine CD-ROM.

- 1 Log on as the root user ID.
- 2 Make a CD-ROM directory if it does not already exist. These instructions refer to this directory as `/cdrom`.
- 3 Insert the Decision Support Engine CD-ROM into the CD-ROM drive.
- 4 Mount the CD-ROM. The mount command differs from system to system. The following are the commands for mounting a CD-ROM on two common systems.

Hardware	Mount Command
Sun	<code>volcheck cdrom</code>
HP	<code>-F cdfs -r /dev/dsk/YourCDROMDevice /YourCDROMDrive</code>
All others	Refer to your hardware system documentation or vendor for requirements to mount a CD-ROM in ISO-9000 format. You may be able to type <code>man mount</code> to determine the correct command.

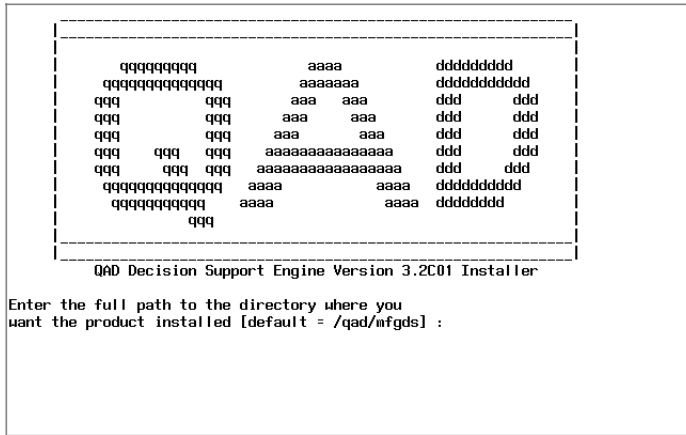
## Run the Engine Install Script

Use these instructions to run the DS engine installation script.

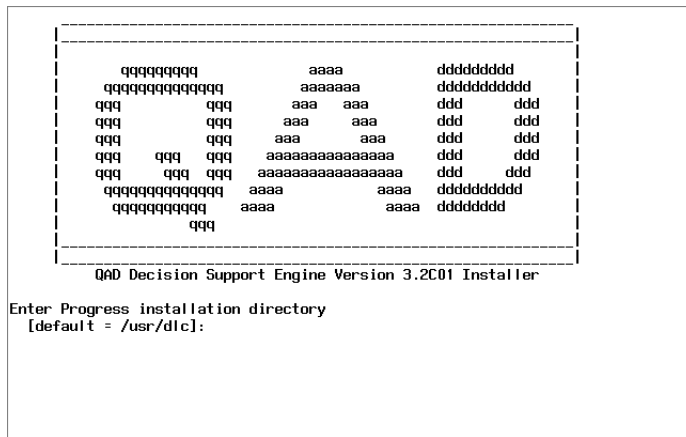
- 1 Log on as user `mfg`.
- 2 Start the installation script from the `cdrom` directory.
 

```
./install
```

- 3 Enter the directory where you want to install the DS engine.

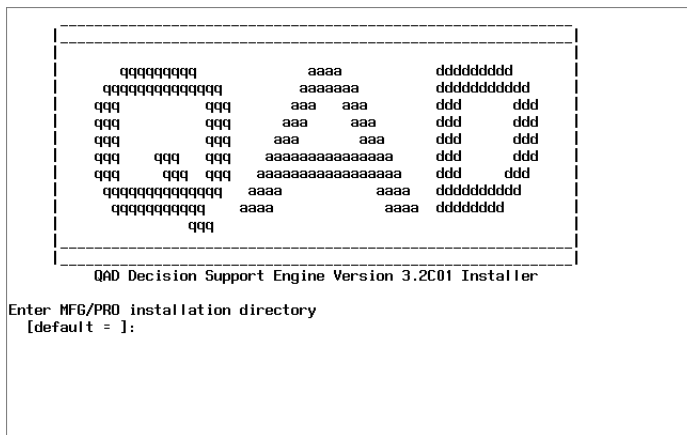


- 4 Enter the directory containing your PROGRESS database server software.

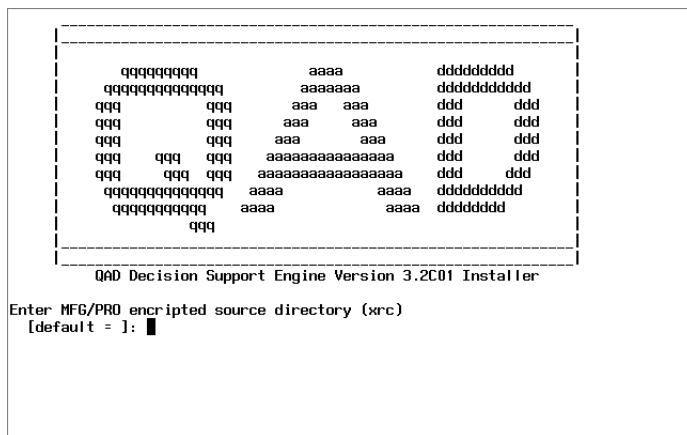


- 5 When prompted, confirm the version of your PROGRESS software.

- 6 Enter the directory where your MFG/PRO database servers are located.

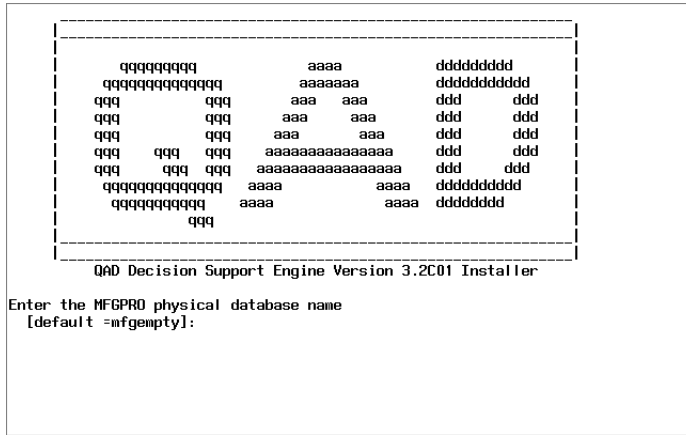


- 7 Enter the full path to the directory containing the MFG/PRO source code. Depending on whether you purchased unencrypted source code, this can either be the `xrc` or `src` subdirectory, below the MFG/PRO language code directory, below the MFG/PRO database server installation directory.

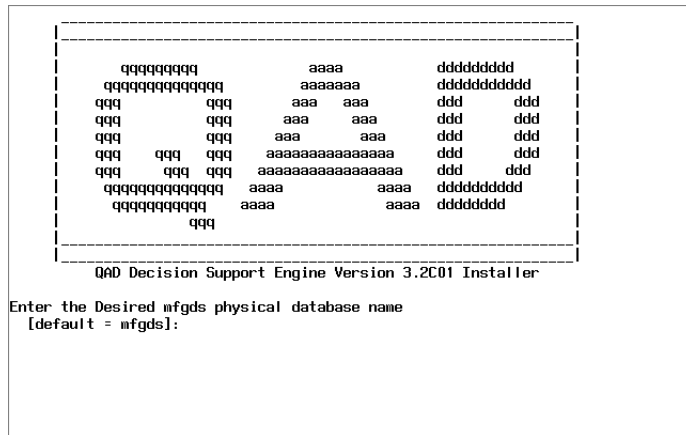


- 8 Enter the path to and name of an MFG/PRO main database (production, demonstration, training, and so on).

**Important** A database server must be started for the database you specify. If a server is not running, the DS engine code will not compile correctly.



- 9 Enter the name you want to use for your initial DS database. These instructions refer to this database using the default database name, mfgds.



- 10 If you are implementing the PROGRESS AppServer in your DS environment, enter the full path to the AppServer. If you are not implementing the AppServer, enter No at this prompt.

```

          qqqqqqqqqq          aaaa          dddddddddd
        qqqqqqqqqqqqqqqq          aaaaaaaa          dddddddddd
        qq          qq          aaa          aaa          ddd          ddd
        qq          qq          aaa          aaa          ddd          ddd
        qq          qq          aaaaaaaaaaaaaaaaa          ddd          ddd
        qq          qq          aaaaaaaaaaaaaaaaa          ddd          ddd
        qq          qq          aaaa          aaaa          dddddddddd
        qq          qq          aaaa          aaaa          dddddddd
          qq
    
```

QAD Decision Support Engine Version 3.2C01 Installer

Enter the full path to the Progress AppServer  
 Type in the word NO, if you will not be using the AppServer  
 [default = /usr/dtc]: █

- 11 If you are implementing the AppServer, enter the service name you want to use for the DS AppServer. These instructions refer to this service using the default, dsappserv. If you are not implementing the AppServer, skip this step.

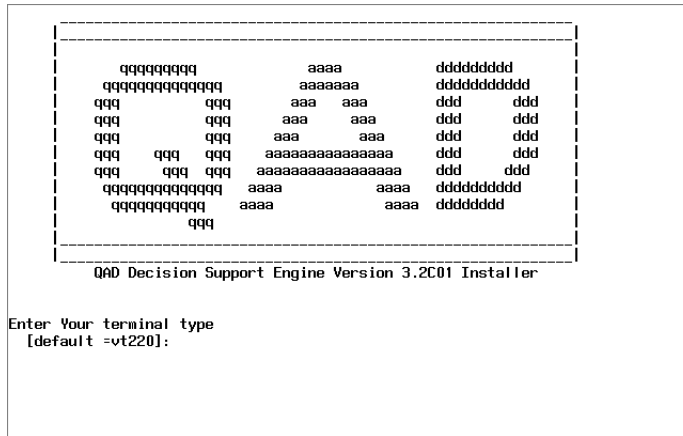
```

          qqqqqqqqqq          aaaa          dddddddddd
        qqqqqqqqqqqqqqqq          aaaaaaaa          dddddddddd
        qq          qq          aaa          aaa          ddd          ddd
        qq          qq          aaa          aaa          ddd          ddd
        qq          qq          aaaaaaaaaaaaaaaaa          ddd          ddd
        qq          qq          aaaaaaaaaaaaaaaaa          ddd          ddd
        qq          qq          aaaa          aaaa          dddddddddd
        qq          qq          aaaa          aaaa          dddddddd
          qq
    
```

QAD Decision Support Engine Version 3.2C01 Installer

Enter the AppServer Service name that will be used for QAD DS  
 [default = dsappserv]: █

- 12 Enter your terminal type or accept the default.



- 13 At the confirmation screen, verify that the variables for your installation environment are set correctly. Choose Yes to begin the installation, or choose No to return to the first installation prompt and reenter any incorrect information.

## Monitor the Engine Install Script

Use these instructions to monitor the DS engine installation script and perform any additional steps.

To install the DS engine and build the DS database, the installation script completes the following tasks.

- 1 Determines available disk space. If less than 20 MB, the program exits.
- 2 Displays the following prompt.  
Expand media now?  
This is the first point where modifications are made to your disks.  
Choose Yes to continue or No to abort the installation.
- 3 Modifies the PATH, PROPATH, and DLC environment variables.
- 4 Creates the initial DS database (mfgds).

**5** Installs the `dsempy` schema.

If you do not have a full PROGRESS license, the script stops at this point and lets you load the DS schema using the PROGRESS Data Dictionary. In this case, use the following instructions to load the DS schema.

- a** In the PROGRESS Data Dictionary, choose the Admin menu and select Load Data Definitions.
- b** In the Load Data Definitions screen, change the default `.df` file to `mfgds.df`. Figure 2.1 shows the DS schema being loaded.

**Fig. 2.1**  
Loading DS  
Schema

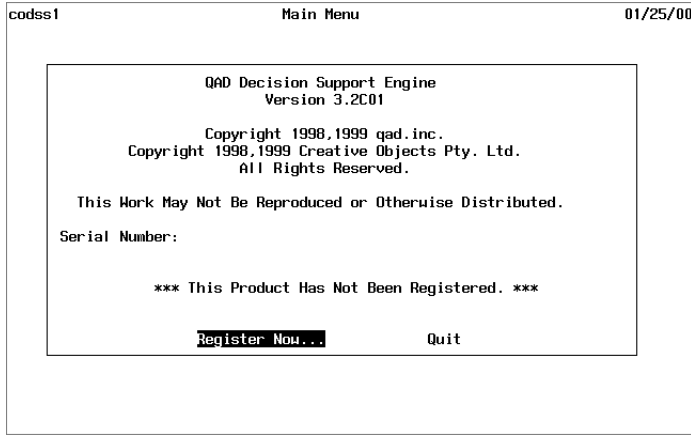
```

Loading Definitions. Press CTRL-C to terminate load process.
-----
Database: mfgdss
Table: pex
Field: control4
Index:
Sequence:

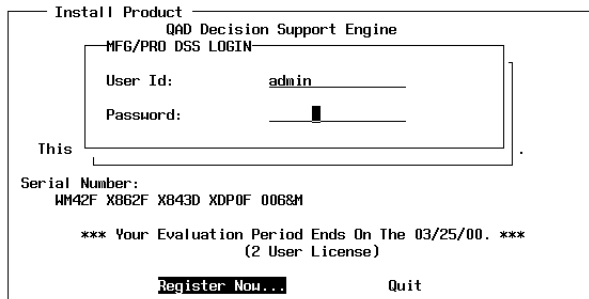
```

- c** When the load is complete, exit the dictionary and quit the PROGRESS editor. The install script resumes where it left off.
- 6** Compiles the DS engine application code source.
- If errors occur while the DS engine code is compiling, an error dialog displays. Click OK to continue with the installation. When the installation competes, check the `progerr` file in the `build` subdirectory below the DS engine installation directory to resolve the compile errors.
- 7** Moves the resulting compiled code to the `object` and `services/object` subdirectories below the DS engine installation directory.
- 8** Uses the `mfgds` database to create `dsempy`.
- 9** Loads the DS data files.

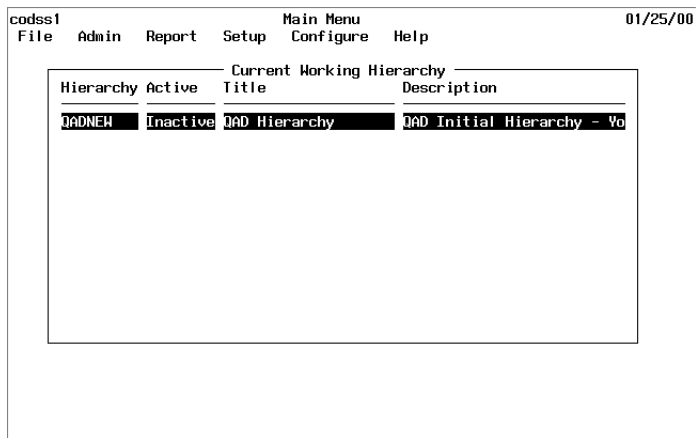
- 10 When prompted, register DS and, if applicable, the AppServer products (WAN) by choosing the Register Now button and entering the DS product serial numbers. The serial numbers appear on a separate sheet of paper included in the shrink-wrapped package containing the DS software.



- 11 An initialization screen displays, confirming the installation. Choose OK.
- 12 In the MFG/PRO DSS LOGIN frame, enter admin in the User ID and Password fields.



- Once you accessed the DS engine main menu, press Enter to access the File menu and choose Exit. The installation script creates a default DS hierarchy called QADNEW.



Depending on whether you implemented the AppServer, the installation process creates the following DS scripts.

Script	Description
apsstart.ds	If you implemented the PROGRESS AppServer in your DS environment, this script starts the DS AppServer. <b>Note:</b> Start the AppServer before you start the DS database server.
apsstop.ds	If you implemented the PROGRESS AppServer in your DS environment, this script stops the DS AppServer.
start.ds	Starts a DS database server process that multiple users can access.
stop.ds	Stops the DS database server process.
client.ds	Launches a stand-alone DS engine session against the database server process started by the start.ds script.

## Change the Services File

Use the following instructions to modify the `services` file to include entries for your DS servers.

If you implemented the AppServer, complete steps 1 and 2. If you did not, complete only step 1.

**Note** The following socket numbers are examples only and may not be available on your system. Be sure to assign available sockets to your DS services.

- 1 The UNIX installation process creates a service name, `ds-srv`, for the DS database. Edit the `services` file located in the `etc` directory to include an entry for this service. Failing to modify the `services` file prevents the `start.ds` script from working.

Use the following service entry as an example.

```
ds-srv 2500/tcp
```

**Important** The `services` file on the DS client machines must also contain an entry for this service.

- 2 The UNIX installation process creates a service name, `dsappserv`, for the DS AppServer. Edit the `services` file located in the `etc` directory to include an entry for this service. Failing to modify the `services` file prevents the `apsstart.ds` script from working.

Use the following service entry as an example.

```
dsappserv 2501/tcp
```



# DS Engine Installation for ORACLE

◆ For PROGRESS, see Chapter 2, “DS Engine Installation for PROGRESS,” on page 17.

This chapter contains DS engine installation instructions for ORACLE database environments.

<i>Preliminary Setup</i>	<b>30</b>
<i>Mount the Engine CD-ROM</i>	<b>30</b>
<i>Copy the DS Engine Files</i>	<b>31</b>
<i>Create the DS ORACLE Database</i>	<b>31</b>
<i>Create the DS Schema Holder</i>	<b>32</b>
<i>Compile the DS Engine Programs</i>	<b>33</b>

Field	Value	Field	Value
Routing Code	10-15000	Work Center	INSPECTION, ALL SITE
Operation	20	Description	INSPEC PER PROC-000
Standard Operation		Machines per Op	1
Work Center		Overlap Units	1
Machines		Queue Time	1.0
Description		Wait Time	0.0
Machines per Op	1	Setup Time	0.0
Overlap Units	1	Ready Production	
Queue Time	1.0		
Wait Time	0.0		
Setup Time	0.0		

## Preliminary Setup

Before beginning the DS engine installation, make sure the PROGRESS 8.2B or higher DataServer for ORACLE 7.x is installed and configured.

## Mount the Engine CD-ROM

Use these instructions to mount the DS engine CD-ROM.

- 1 Log on as the root user ID.
- 2 Make a CD-ROM directory if it does not already exist. These instructions refer to this directory as `/cdrom`.
- 3 Insert the Decision Support Engine CD-ROM into the CD-ROM drive.
- 4 Mount the CD-ROM. The mount command differs from system to system. The following are the commands for mounting a CD-ROM on two common systems.

<b>Hardware</b>	<b>Mount Command</b>
Sun	<code>volcheck cdrom</code>
HP	<code>-F cdfs -r /dev/dsk/YourCDROMDevice /YourCDROMDrive</code>
All others	Refer to your hardware system documentation or vendor for requirements to mount a CD-ROM in ISO-9000 format. You may be able to type <code>man mount</code> to determine the correct command.

## Copy the DS Engine Files

- 1 Create an installation directory for the DS engine files.

```
mkdir DSInstall
```

- 2 From the `cdrom` directory, copy the `ds32cx.cpio` file to the DS engine installation directory.

```
cd cdrom
cp ds32c02.cpio /DSInstall
```

- 3 Change directories to the DS engine installation directory and expand the `.cpio` file.

```
cd /DSInstall
cpio -ivcdum < ds32c02.cpio
```

- 4 After the `.cpio` file is expanded, verify that the following directory and files exist below the DS engine installation directory.

- An `mfgds.df` data definition file.
- An `oracle` subdirectory.
- An `oracle32c.sql` script below the `oracle` subdirectory.

## Create the DS ORACLE Database

- 1 Log out of your current session and log back on as a member of the ORACLE database administration group on your system. This group does not usually include the root user. You must be a member of the ORACLE database administration group to run the `oracle32c.sql` script.
- 2 Run the `oracle32c.sql` script to create the DS ORACLE instance.

```
svrmgr1 < oracle32c.sql
```

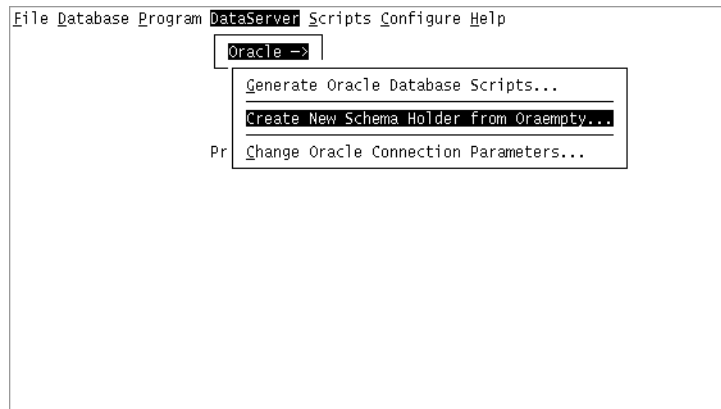
## Create the DS Schema Holder

- 1 Log out and log back on as a user with MFG/PRO administration privileges.
- 2 From the MFG/PRO database server installation directory, launch MFG/UTIL.

```
cd /MFGInstall
```

```
./mfgutil
```

- 3 In the MFG/UTIL main screen, select Oracle from the DataServer menu and choose Create New Schema Holder from Oraempty. Use the following instructions to copy an empty PROGRESS schema holder database from your MFG/PRO installation to use as the DS schema holder.



- a In the Original Database field, enter the path to the oraempty.db PROGRESS schema holder.
- b In the New Database Name field, enter the directory path to the DS engine installation directory followed by mfgdsosh.db. This is the DS schema holder you will use to connect to the DS ORACLE instance.
- c Choose OK to copy oraempty.db to mfgdsosh.db.

- 4 From the MFG/UTIL main screen, select the Database menu and choose Update Schema. Use the following instructions to load the DS data definition file (`mfgds.df`) into the DS schema holder.
  - a In the Update This Database File field, specify the path to the DS engine installation directory and the `mfgdsosh.db` schema holder.
  - b In the Using This Data Definition File field, specify the `mfgds.df` file in the DS engine installation directory.
  - c Select Allow CRC changes.
  - d Choose OK to load the DS schema.

## Compile the DS Engine Programs

- 1 Launch the PROGRESS Data Dictionary and connect to the MFG/PRO schema holder.
- 2 From the Data Dictionary Tools menu, choose Procedure Editor.
- 3 Include the DS source code in the PROPATH. In the following example, the file containing the DS source code (`ds32c02.cpio`) was expanded in the `DSInstall` directory.

```
PROPATH=.,/DSInstall/services/xrc,
        /DSInstall/services/runtime,/DSInstall/src,
        /DSInstall/runtime
```

- 4 Include the directory containing the MFG/PRO source code in the PROPATH. The MFG/PRO source code is installed by default in the `xrc` subdirectory below the two letter language code directory below the MFG/PRO database server installation directory.

For example, in a US-English installation, the MFG/PRO source code is located in the following directory.

```
MFGInstallDir/us/xrc
```

- 5 Run the PROGRESS compilation program.

```
run comp.p
```

- 6 Move all of the compiled code (extension `.r`) from the `/DSInstall/src` directory to the `/DSInstall/object` directory.
- 7 Move all of the compiled code (extension `.r`) from the `/DSInstall/services/xsrc` to the `/DSInstall/services/object` directory.

## Change the Services File

Use the following instructions to modify the `services` file to include entries for your DS servers.

**Note** The following socket numbers are examples only and may not be available on your system. Be sure to assign available sockets to your DS services.

- 1 Locate your `services` file and open it in a text editor.

```
vi /etc/services
```

- 2 In the `services` file, enter the service names of your DS engine—one for the PROGRESS schema holder and one for the ORACLE database. The following examples use the default DS engine service names.

```
ds32_osh 2506/tcp
```

```
ds32_ora 2507/tcp
```

- 3 If you are using the AppServer in your environment, enter the name of your AppServer service into the `services` file. The default entry for the AppServer is `dsappserv`.

```
dsappserv 2501/tcp
```

# DS Client Installation

This chapter contains installation instructions for both graphical user interface (GUI) and character user interface (CHUI) DS clients.

*Installing CHUI Clients*    **36**

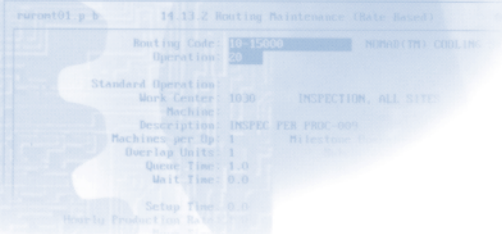
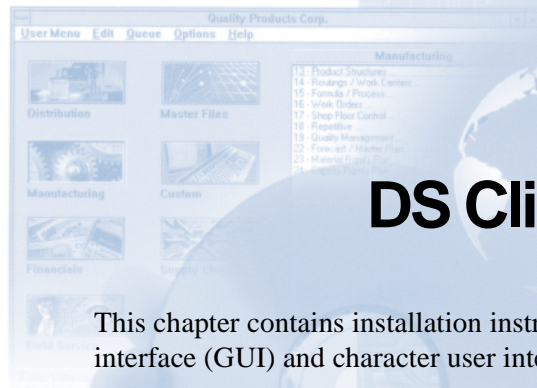
*Installing GUI Clients for PROGRESS*    **42**

*Installing GUI Clients for ORACLE*    **48**

*Performing a Network Installation*    **56**

*Configuring GUI Clients for the AppServer (Optional)*    **60**

*Running Decision Support from MFG/PRO*    **61**



## Installing CHUI Clients

Use this section to install the DS CHUI client on UNIX machines. This section contains the following tasks.

- Mount the Client CD-ROM on page 36
- Run the Client Install Script on page 37
- Monitor the Client Install Script on page 41
- Modify the Client PROPATH on page 42

### Mount the Client CD-ROM

Use these instructions to mount the DS CHUI client CD-ROM.

- 1 Log on as the root user ID.
- 2 Make a CD-ROM directory if it does not already exist. These instructions refer to this directory as `/cdrom`.
- 3 Insert the Decision Support Client CD-ROM into the CD-ROM drive.
- 4 Mount the CD-ROM. The mount command differs from system to system. The following are the commands for mounting a CD-ROM on two common systems.

Hardware	Mount Command
Sun	<code>volcheck cdrom</code>
HP	<code>-F cdfs -r /dev/dsk/YourCDROMDevice /YourCDROMDrive</code>
All others	Refer to your hardware system documentation or vendor for requirements to mount a CD-ROM in ISO-9000 format. You may be able to type <code>man mount</code> to determine the correct command.

## Run the Client Install Script

Use these instructions to run the DS CHUI client installation script.

- 1 Log on as user `mfg`.
- 2 Start the installation script from the `cdrom` directory.

```
./install
```

- 3 Enter the directory where you want to install the DS CHUI client.

```

          qqqqqqqqqq          aaaa          dddddddddd
        qqqqqqqqqqqqqqqqqq      aaaaaaa      dddddddddd
        qq          qq          aaa   aaa      ddd   ddd
        qq          qq          aaa   aaa      ddd   ddd
        qq          qq          aaa   aaa      ddd   ddd
        qq          qq          aaaaaaaaaaaaaa  ddd   ddd
        qq          qq          aaaaaaaaaaaaaa  ddd   ddd
        qq          qq          aaaa          aaaa dddddddddd
        qqqqqqqqqqqqqqqqqq      aaaa          aaaa dddddddd
          qq
    
```

QAD Decision Support Client Version 3.2C01 Installation Script ....

Enter the full path to the directory where you  
want the product installed [default = /dscli] :

**Important** QAD recommends that you install the DS engine, client, and libraries in different directories.

- 4 Enter the directory where your PROGRESS software is located.

```
-----  
          qqqqqqqqqq          aaaa          dddddddddd  
          qqqqqqqqqqqqqqqqq          aaaaaaaa          dddddddddd  
          qq          qq          aaa          aaa          ddd          ddd  
          qq          qq          aaa          aaa          ddd          ddd  
          qq          qq          aaaaaaaaaaaaaaaaaa          ddd          ddd  
          qq          qq          aaaaaaaaaaaaaaaaaa          ddd          ddd  
          qq          qq          aaaaaaaaaaaaaaaaaa          ddd          ddd  
          qq          qq          aaaa          aaaa          dddddddddd  
          qq          qq          aaaa          aaaa          dddddddd  
          qq  
-----  
QAD Decision Support Client Version 3.2C01 Installation Script ....  
  
Enter Progress installation directory  
[default = /usr/dlc]: █
```

- 5 When prompted, confirm the version of your PROGRESS software.
- 6 Enter the directory where your MFG/PRO database servers are located.

```
-----  
          qqqqqqqqqq          aaaa          dddddddddd  
          qqqqqqqqqqqqqqqqq          aaaaaaaa          dddddddddd  
          qq          qq          aaa          aaa          ddd          ddd  
          qq          qq          aaa          aaa          ddd          ddd  
          qq          qq          aaaaaaaaaaaaaaaaaa          ddd          ddd  
          qq          qq          aaaaaaaaaaaaaaaaaa          ddd          ddd  
          qq          qq          aaaaaaaaaaaaaaaaaa          ddd          ddd  
          qq          qq          aaaa          aaaa          dddddddddd  
          qq          qq          aaaa          aaaa          dddddddd  
          qq  
-----  
QAD Decision Support Client Version 3.2C01 Installation Script ....  
  
Enter MFG/PRO installation directory  
[default = ]: █
```

- 7 Enter the full path to the directory containing the MFG/PRO source code. Depending on whether you purchased unencrypted source code, this can either be the `xrc` or `src` subdirectory, below the MFG/PRO language code directory, below the MFG/PRO database server installation directory.

```

      qqqqqqqqqq      aaaa      dddddddddd
      qqqqqqqqqqqqqqq      aaaaaaa      dddddddddd
      qq      qq      aaa      aaa      ddd      ddd
      qq      qq      aaa      aaa      ddd      ddd
      qq      qq      aaa      aaa      ddd      ddd
      qq      qq      aaaaaaaaaaaaaa      ddd      ddd
      qq      qq      aaaaaaaaaaaaaa      ddd      ddd
      qq      qq      aaaa      aaaa      dddddddddd
      qq      qq      aaaa      aaaa      dddddddd
      qq

QAD Decision Support Client Version 3.2C01 Installation Script ....

Enter MFG/PRO encrypted source directory (xrc)
[default = ]: █
    
```

- 8 Enter the path to and name of an MFG/PRO main database (production, demonstration, training, and so on).

**Important** A database server must be started for the database you specify. If a server is not running, the DS client code will not compile correctly.

```

      qqqqqqqqqq      aaaa      dddddddddd
      qqqqqqqqqqqqqqq      aaaaaaa      dddddddddd
      qq      qq      aaa      aaa      ddd      ddd
      qq      qq      aaa      aaa      ddd      ddd
      qq      qq      aaa      aaa      ddd      ddd
      qq      qq      aaaaaaaaaaaaaa      ddd      ddd
      qq      qq      aaaaaaaaaaaaaa      ddd      ddd
      qq      qq      aaaa      aaaa      dddddddddd
      qq      qq      aaaa      aaaa      dddddddd
      qq

QAD Decision Support Client Version 3.2C01 Installation Script ....

Enter the MFGPRO physical database name
[default =mfgempty]: █
    
```



## Monitor the Client Install Script

Use these instructions to monitor the DS CHUI client installation script and perform any additional steps the script may require.

During the installation, the script completes the following tasks.

- 1 Determines available disk space. If there is less than 10 MB of available disk space, the program exits.

- 2 Displays the following prompt.

```
Expand media now?
```

```
This is the first point where modifications are made to your disks.  
Enter Yes to continue or No to abort.
```

- 3 Modifies the `PATH`, `PROPATH`, and `DLC` environment variables.

**Important** You must make additional changes to the `PROPATH` on each DS client. See “Modify the Client `PROPATH`” on page 42.

- 4 Compiles the DS client code.

If errors occur while the DS client code is compiling, an error dialog displays. Click OK to continue with the installation. When the installation completes, check the `dscli.log` file in the `log` subdirectory below the DS client installation directory to resolve the compile errors.

- 5 Moves the resulting compiled code to the `object` and `services/object` directories.
- 6 The installation process creates a client application start-up script, `client.dscli`. The client start-up script launches a stand-alone DS client session against the database server process started by the `start.ds` script.

## Modify the Client PROPATH

Use these instructions to modify the PROPATH on each DS client machine. You must modify the PROPATH whether you are running DS as a stand-alone application or from within the MFG/PRO menus.

If you plan to run DS programs from the MFG/PRO menu, you must also modify the PROPATH in the MFG/PRO client start-up scripts and icons. For instructions, see “Running Decision Support from MFG/PRO” on page 61.

- 1 Ensure that the first entry is the user’s current working directory (`.`).
- 2 Add the following directories to the PROPATH for each DS client, where *home* is DS client installation directory.
  - Current Directory (`.`)
  - *home/services/object*
  - *home/services/runtime*
  - *home/object*
  - *home/runtime*
  - *home/libs*

For example:

```
PROPATH=.,home/services/object,home/services/runtime,  
home/object,home/runtime,home/libs
```

## Installing GUI Clients for PROGRESS

Use these instructions to install the DS GUI client on Windows machines. This installation is designed for PROGRESS databases. If you are implementing DS in an ORACLE database environment, see “Installing GUI Clients for ORACLE” on page 48.

## Performing a Network Installation

To reduce the amount of time it takes to install multiple DS GUI clients, you can perform a network installation. A network installation consists of two basic steps.

- First, perform an initial DS GUI client installation on a file server or on a client PC that you can access from the other PCs you want to set up. QAD recommends using an existing Windows NT file server in your network.

Use the instructions in this section to perform the initial DS GUI client installation. During the initial installation, the DS GUI client code is compiled.

- Second, from each client PC, access the DS GUI client installation directory you created during the initial installation. Then, run the network installation program to download the DS GUI client code and files.

Use the instructions in “Performing a Network Installation” on page 56 to set up each DS GUI client.

**Important** Because the DS GUI client code is compiled using the PROGRESS software on the PC where you perform the initial client installation, subsequent DS GUI client PCs must have the same version of PROGRESS. If the versions of PROGRESS do not match, the DS GUI client will not run. Be sure to select a machine with the appropriate PROGRESS version installed as the first DS GUI client.

## Preliminary Setup

Before beginning client installation, complete the following.

- Verify that the client machine `services` file includes the DS database and, if applicable, AppServer service names and socket numbers.
- Check that PROGRESS Query 8.2B or higher is installed on the client machine.
- Make sure the server for the DS database is started.

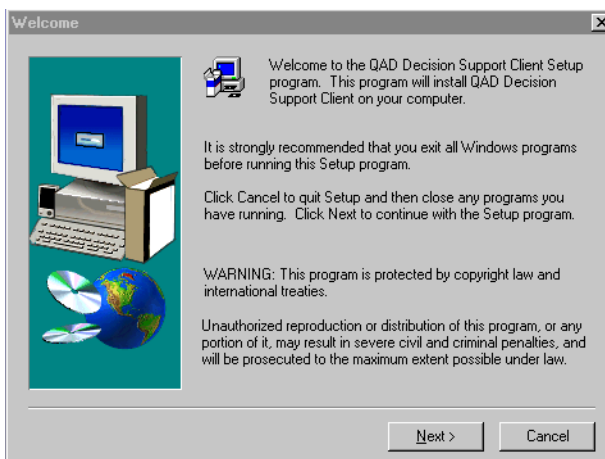
▶ See “Change the Services File” on page 27.

## Run the Client Installation

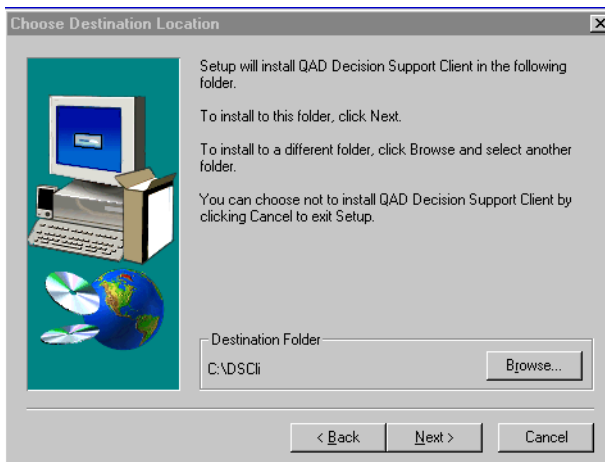
- 1 Insert the Decision Support Client CD-ROM in the CD-ROM drive.
- 2 Run the `setup.exe` program for the GUI client using the Windows Explorer or the Start button.

`DriveLetter:INTEL\Win Gui\PROGRESS\setup.exe`

- 3 The following window advises you to quit all other applications before continuing the installation. Do so, then click Next to continue.

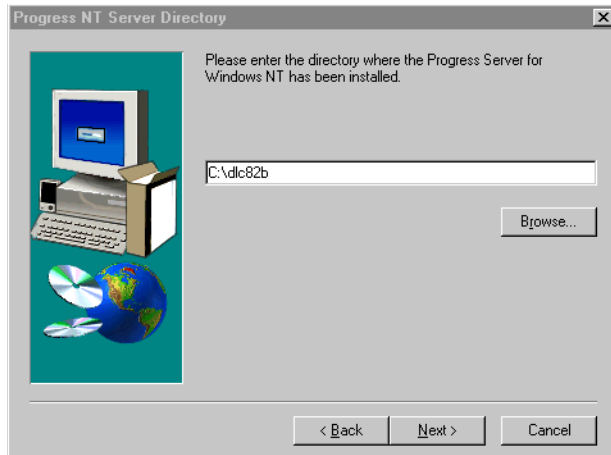


- 4 Specify the destination folder for the DS client files. Generally, this should be a new folder that the setup creates for the installation. You cannot use spaces in the folder name.

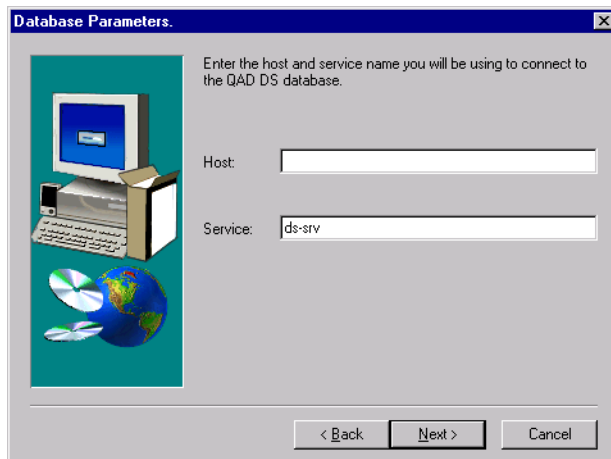


- 5 Specify the PROGRESS directory containing the PROGRESS Query product in the following window. You can use the Browse button to search for the directory.

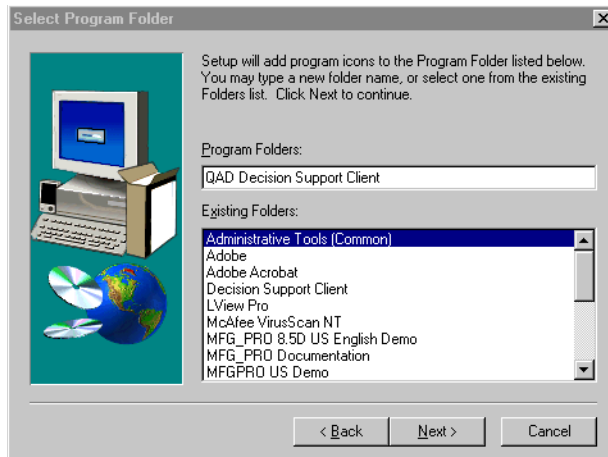
**Important** The PROGRESS Query client must be installed locally on the client machine.



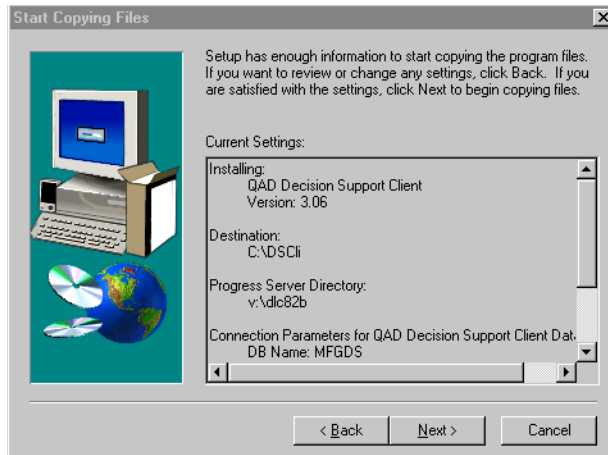
- 6 Enter the physical database and host machine names for the DS database.



- 7 Enter the Windows program folder where you want the DS client icon stored.



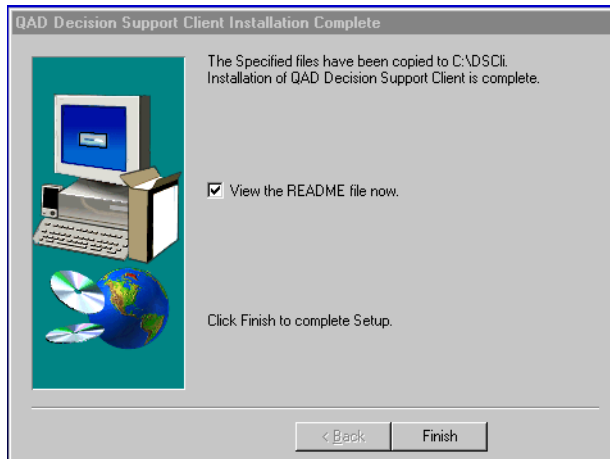
- 8 The next window displays the client setup environment, and prompts you to make last-minute changes. Click Back to make changes to previous screens. Click Next to begin the DS client installation.



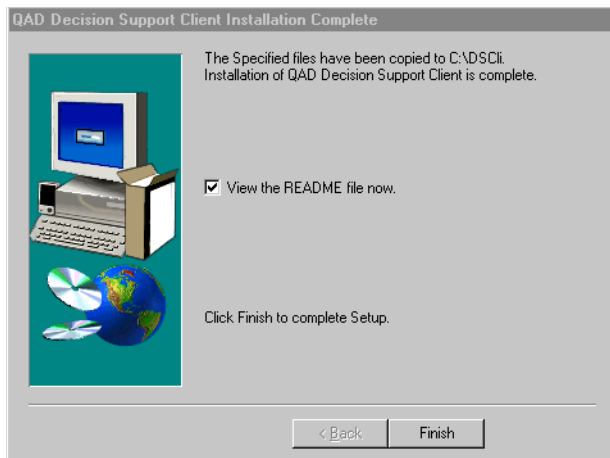
The DS client installation script compiles the DS engine code and loads the default DS system data.

If errors occur while the DS client code is compiling, an error dialog displays. Click OK to continue with the installation. When the installation complete, check the `dsccli.log` file in the `log` subdirectory below the DS client installation directory to resolve the compile errors.

- 9 When the installation completes, the DS client is added to the list of Windows desktop applications. Click the README file box to launch release notes that list the changes between DS releases.



- 10 If problems occur during the installation, an error window displays.



Review the error log `dssetup.log` located in your working directory. Correct any problems, delete the files created during your previous installation, and rerun the installation.

To remove the installation, using the Windows Explorer or the Start menu, select Control Panel|Add/Remove Programs.

- 11 Start the DS client by double-clicking its icon in the Windows Start menu.

## Installing GUI Clients for ORACLE

Complete this section to install DS GUI for Windows machines. This installation is designed for ORACLE databases. If you are implementing DS in a PROGRESS database environment, see “Installing GUI Clients for PROGRESS” on page 42.

### Performing a Network Installation

To reduce the amount of time it takes to install multiple DS GUI clients, you can perform a network installation. A network installation consists of two basic steps.

- First, perform an initial DS GUI client installation on a file server or on a client PC that you can access from the other PCs you want to set up. QAD recommends using an existing Windows NT file server in your network.

Use the instructions in this section to perform the initial DS GUI client installation. During the initial installation, the DS GUI client code is compiled.

- Second, from each client PC, access the DS GUI client installation directory you created during the initial installation. Then, run the network installation program to download the DS GUI client code and files.

Use the instructions in “Performing a Network Installation” on page 56 to set up each DS GUI client.

**Important** Because the DS GUI client code is compiled using the PROGRESS software on the PC where you perform the initial client installation, subsequent DS GUI client PCs must have the same version of PROGRESS. If the versions of PROGRESS do not match, the DS GUI client will not run. Be sure to select a machine with the appropriate PROGRESS version installed as the first DS GUI client.

## Preliminary Setup

Before beginning client installation, complete the following.

- Verify that the client machine `services` file includes the DS database and, if applicable, AppServer service names and socket numbers.
- Check that PROGRESS Query 8.2B or higher is installed on the client machine.
- Make sure the server for the DS schema holder is started.

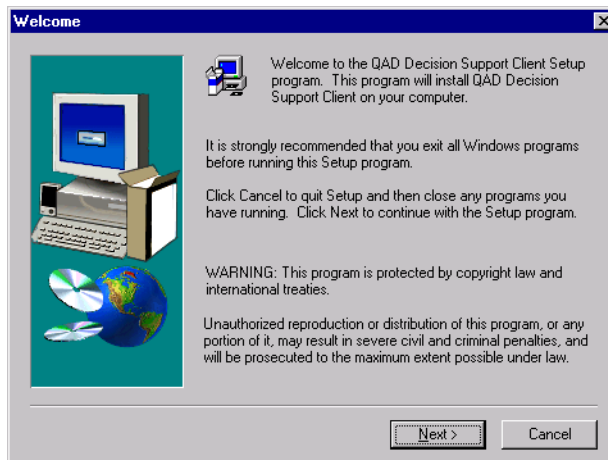
▶ See “Change the Services File” on page 34 for instructions.

## Run the Client Installation

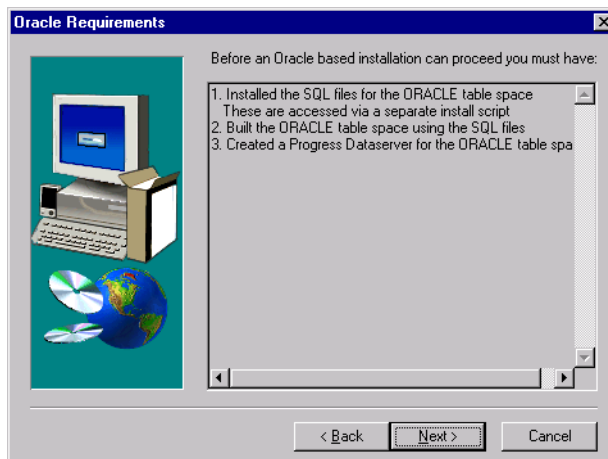
- 1 Insert the Decision Support Client CD-ROM in the CD-ROM drive.
- 2 Run the `setup.exe` program for the DS ORACLE GUI client using the Windows Explorer or the Start menu.

`INTEL\Win Gui\ORACLE\setup.exe`

- 3 The following window advises you to quit all other applications before continuing the installation. Do so, then click Next to continue.

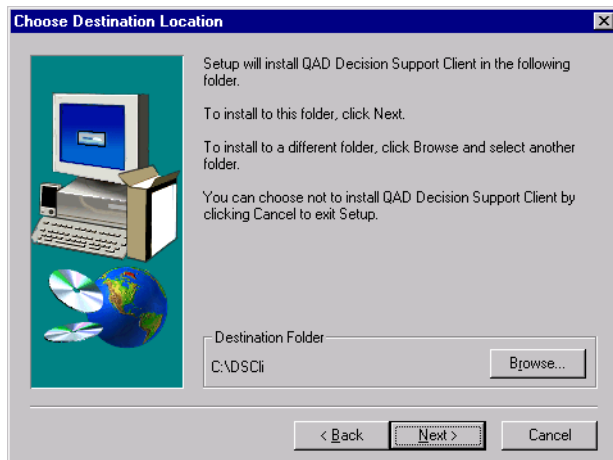


- 4 At the following window, verify that you have completed the installation requirements for the DS client. Use the following table as a guide.



Requirement	Description
Installed the SQL files for the ORACLE table space. These are accessed via a separate install script	You installed the DS engine for ORACLE. See “Copy the DS Engine Files” on page 31.
Built the ORACLE table space using the SQL files	You built a DS ORACLE database. See “Create the DS ORACLE Database” on page 31.
Created a Progress Data server for the ORACLE table space	You built the DS PROGRESS schema holder. See “Create the DS Schema Holder” on page 32.

- 5 Specify the destination folder for the DS client files. Generally, this should be a new folder that the setup creates for the installation. You cannot use spaces in the folder name.

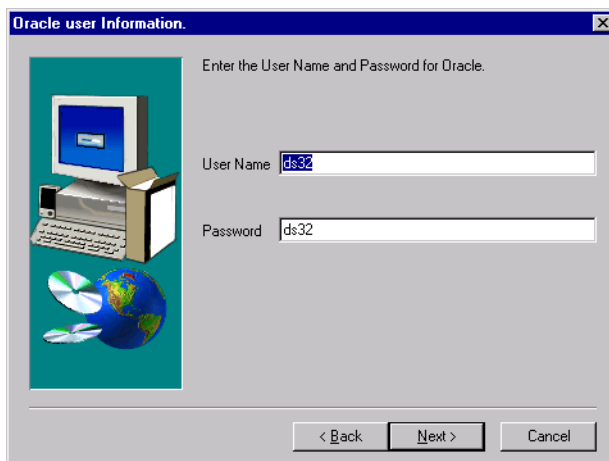


- Specify the PROGRESS directory containing the PROGRESS Query product in the following window. You can use the Browse button to search for the directory.

**Important** The PROGRESS Query client must be installed locally on the client machine.



- Enter the user name and password for the DS ORACLE database. These were created by the DS SQL script when you built the DS ORACLE database.



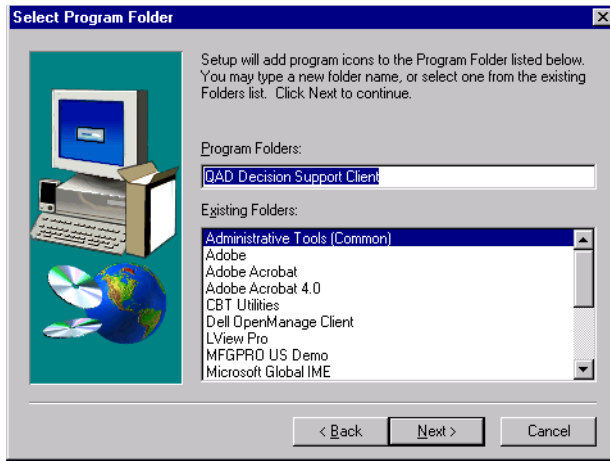
- 8 Enter the database parameters for the DS schema holder. Use the following table as a guide.

Field	Description
Name	Enter the physical name of the DS schema holder.
Host	Enter the name of the machine where the schema holder is located.
Service	Enter the service name of the DS schema holder.

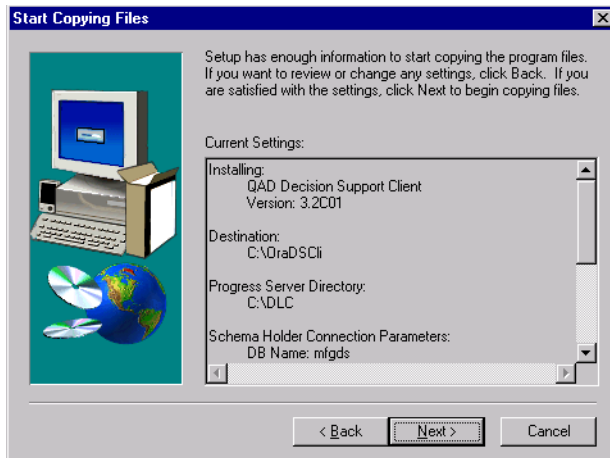
- 9 Enter the database parameters for the DS ORACLE database. Use the following table as a guide.

Field	Description
Name	Enter the physical name of the DS ORACLE database.
Host	Enter the name of the machine where the ORACLE database is located.
Service	Enter the service name of the ORACLE database.

- 10 Enter the Windows program folder where you want the DS client icon stored.



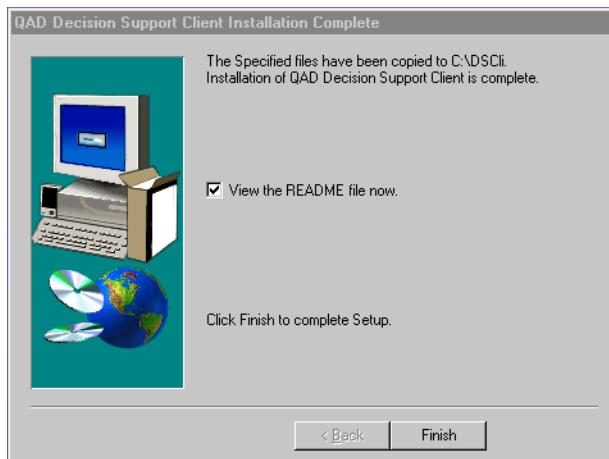
- 11 The next window displays the client setup environment, and prompts you to make last-minute changes. Click Back to make changes to previous screens. Click Next to begin the DS client installation.



The DS client installation script compiles the DS client code and loads the default DS system data.

If errors occur while the DS client code is compiling, an error dialog displays. Click OK to continue with the installation. When the installation complete, check the `dsccli.log` file in the `log` subdirectory below the DS client installation directory to resolve the compile errors.

- 12 When the installation completes, the DS client is added to the list of Windows desktop applications. Click the README file box to launch release notes that list the changes between DS releases.



- 13 If problems occur during the installation, an error window displays. Review the error log `dssetup.log` located in your working directory. Correct any problems, delete the files created during your previous installation, and rerun the installation.  
To remove the installation, using the Windows Explorer or the Start menu, select Control Panel|Add/Remove Programs.
- 14 Start the DS client by double-clicking its icon in the Windows Start menu.

## Performing a Network Installation

During a Decision Support (DS) GUI client installation, the installation process builds and compiles the DS GUI client. This increases the time required to install the DS client. To avoid compiling the DS client code during each client installation, you can perform a network DS GUI client installation. A network installation consists of two basic steps.

- First, perform an initial DS GUI client installation on a file server or on a client PC that you can access from the other PCs you want to set up. QAD recommends using an existing Windows NT file server in your network.

Use the instructions in either “Installing GUI Clients for PROGRESS” on page 42 or “Installing GUI Clients for ORACLE” on page 48 to perform the initial DS GUI client installation. The instructions in this section assume you have already completed the initial DS GUI client installation.

**Note** You can perform full GUI client installations on each client machine using the instructions in the appropriate section.

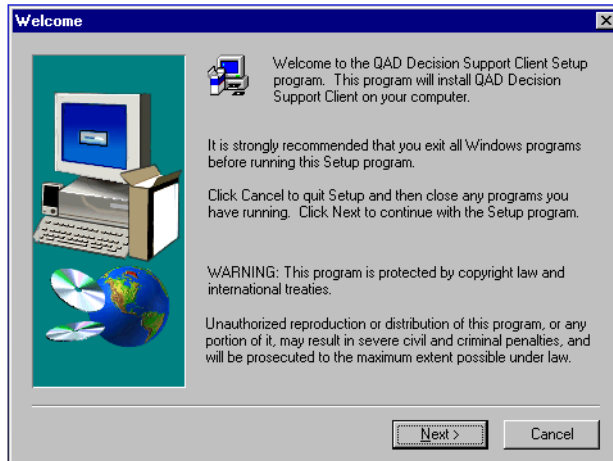
- Second, from each client PC, access the DS GUI client installation directory you created during the initial installation. Then, run the network installation program to download the DS GUI client code and files.

Use the following instructions to run the network installation program and set up each DS GUI client.

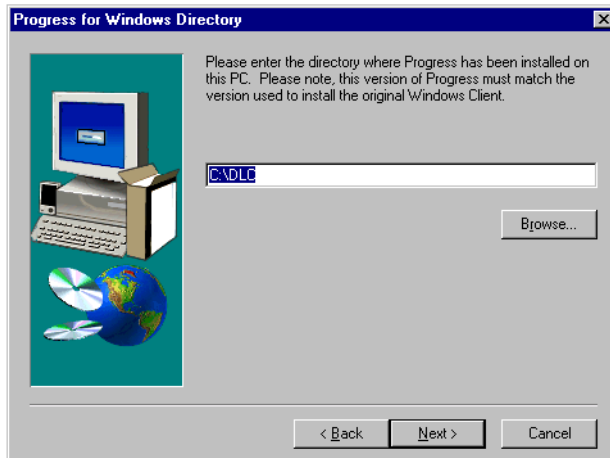
- 1 Perform the DS GUI Client installation on a PC that is accessible to all of the other PCs where you want to install the GUI client.  
Make a note of the directory where you install the DS GUI client.
- 2 From a DS GUI client PC, access the directory where you installed the DS GUI client. For example, these instructions assume the client was installed in `C:\DSCLI` and that the other client PCs map this directory as `H:\DSCLI`.
- 3 Run the `setup.exe` located in the `INSTALL` subdirectory. For example:

```
H:\DSCLI\INSTALL\SETUP.EXE
```

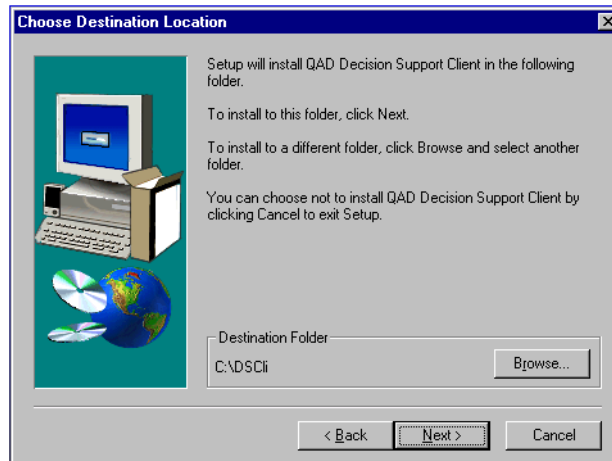
- 4 At the Welcome window, click Next.



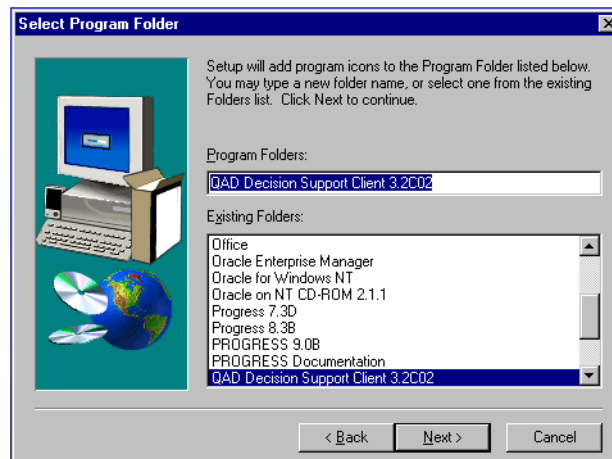
- 5 Enter the path to the local PROGRESS installation directory. You can use the Browse button to select a directory. When ready, click Next.



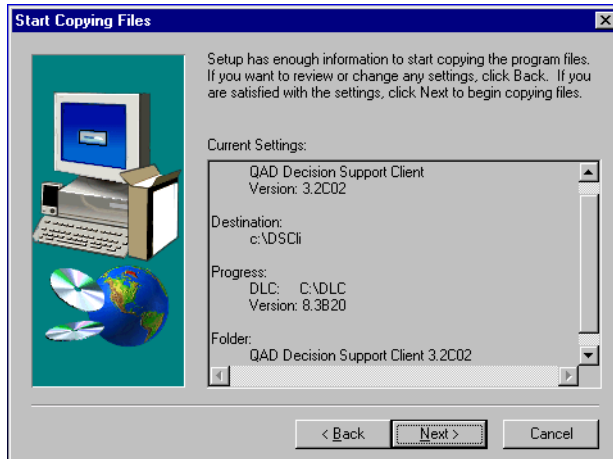
- Specify the directory where you want to install the DS GUI client files and click Next.



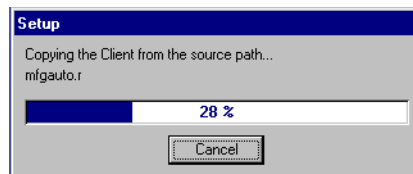
- Specify the folder where you want the DS GUI client shortcuts created and click Next.



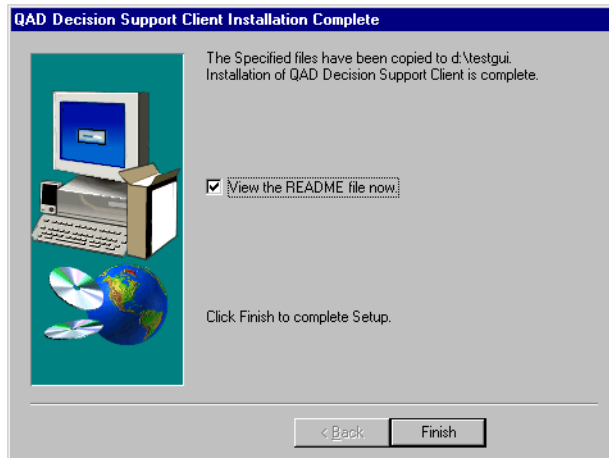
- At the Start Copying Files window, verify that the installation information is correct. If the information is incorrect, click Back to make changes to your previous entries. If the information is correct, click Next.



As the files are copied, the following status window displays.



- 9 Click Finish to complete the DS GUI client installation.



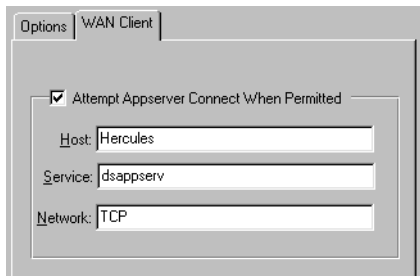
- 10 Repeat steps 2 through 9 to set up each DS GUI client.

## Configuring GUI Clients for the AppServer (Optional)

If you are implementing the AppServer, complete the following instructions to set up your DS GUI clients to access the DS AppServer.

- 1 Start the DS GUI client by double-clicking the client icon.
- 2 If you have not added any DS users, login using `admin` as the user ID and password.

- 3 Open Setup|Options and click the WAN Client tab.



**Note** If the WAN Client Tab is not active, you must register the WAN product. See step 10 on page 25.

- 4 Check the Attempt Appserver Connect When Permitted option.
- 5 In the Host field, enter the name of the machine where the DS AppServer service is running.
- 6 In the Service field enter the DS AppServer service name. The default name is dsappserv.
- 7 In the Network field, enter TCP.

## Running Decision Support from MFG/PRO

Use the instructions in the following sections to run DS from within MFG/PRO.

### Modify the MFG/PRO Server Start-Up Scripts

There are several methods of starting PROGRESS database applications such as MFG/PRO. Which one you use determines what you must do to start the DS database when you start your MFG/PRO session. In general, you need the following information.

- Logical database name
- A connection mode
- A database type
- Location of the database
- Any connection parameters

The logical database name for your DS database is `mfgdss`. The database type is `PROGRESS`, and the location of the database is in the `database` subdirectory below the DS engine installation directory.

The connection mode (single or multiuser) and the connection parameters depend on your installation and needs.

If you are running MFG/PRO Version 8.5 or later, you can use QAD's MFG/UTIL program to add the DS database to your MFG/PRO start-up parameters. Refer to your *MFG/PRO Installation Guide* for details on using MFG/UTIL.

### Add DS to MFG/PRO Menus

Adding DS to the MFG/PRO menus enables the DS report programs to run, and provides a home menu location for anchoring DS-generated reports. If you are completing this step after an installation, you must exit your initial DS session first.

- 1 Start MFG/PRO and run Menu System Maintenance (36.4.4 in versions 8.6 and 9.0, and 36.7.4 in versions 7.3 through 8.5).
- 2 Skip the language code field. Enter the menu number with periods between each menu level. Select a location that suits your intended use. If you have a blank line on the Main Menu (for instance, menu 0) or on a submenu (for example, the Sales Analysis menu 9), you can assign the DS menu there. Press Go.
- 3 Enter the program details and press Go when ready. Use the following table as a guide.

Field	Description
Sel	This field is the menu number associated with DS.
Selection Label	This is the label name for this menu selection, such as DS Browser.
Exec File	This is the function to be executed when this menu selection is chosen. This may be the name of a PROGRESS program (for example, <code>codssup.p</code> ), or it may be the menu number for a submenu.

- 4 Repeat steps 2 and 3 for each DS user-level program. You can use the following example as a guide.

**Example** In the following tables and in Figure 4.1, a DS browse (codssbr.p), the DS engine (codss.p), and the DS Update program (codssup.p) are added to the MFG/PRO menu structure.

- DS Browse

Field	Value
Sel	1
Selection Label	DS Browser
Exec File	codssbr.p

- DS Engine

Field	Value
Sel	2
Selection Label	DS Menu
Exec File	codss.p

- DS Update

Field	Value
Sel	3
Selection Label	DS Update
Exec File	codssup.p

Figure 4.1 is the Menu System Maintenance screen with completed DS menu assignments.

Sel	Selection Label	Name	Exec File	Help File
1	Decision Support Browser		codssbr.p	
3	Decision Support Menu		codss.p	
4	Decision Support Update		codssup.p	
—				

**Fig. 4.1**  
Menu System Maintenance

- 5 Press End to exit Menu System Maintenance.

## Modify the MFG/PRO Client Start-Up Scripts and Icons

DS engine and DS client programs require different PROPATH values. Depending on the programs you are launching—DS engine programs, client programs, or both—the PROPATH in the MFG/PRO client start-up scripts or icons must be modified.

Using the instructions appropriate for the type of client that will run DS programs, modify the MFG/PRO start-up scripts or icons.

### MFG/PRO Windows Clients

- 1 Right-click the MFG/PRO client start-up icon and select Properties.
- 2 In the Properties dialog, select the Shortcut tab.
- 3 In the Target field, locate the `-ini` parameter and record the name of and path to the MFG/PRO initialization file.
  - For MFG/PRO Windows GUI clients, the initialization file is `progress.svg` or `progress.vga` depending on the client's display.
  - For MFG/PRO Windows character clients, the initialization file is `progress.chr`.
- 4 Open the initialization file in a text editor and locate the PROPATH variable.
  - For Windows GUI clients, modify the PROPATH variable in the `[Startup]` section of the initialization file.
  - For Windows character clients, modify the PROPATH variable in the `[WinChar Startup]` section of the initialization file.
- 5 Add the directories listed in Table 4.1 to the existing PROPATH.

*DSInstallDir* refers to the DS installation directory that contains the DS programs you want to launch. For example, if you are modifying the MFG/PRO start-up icon to call DS client programs from the MFG/PRO menu, *DSInstallDir* is the DS client installation directory.

**PROPATH Elements Required to Run DS from the MFG/PRO Menu**

- Current working directory (.)
- *DSInstallDir*\services\object
- *DSInstallDir*\services\runtime
- *DSInstallDir*\object
- *DSInstallDir*\runtime
- *DSInstallDir*\libs
- *DSInstallDir*\climages (For DS client programs only.)

**Table 4.1**  
DS PROPATH  
Elements

The following example is for MFG/PRO session from which DS engine programs are launched.

```
PROPATH=.,Existing MFG_PRO PROPATH,
        DSInstallDir\services\object,
        DSInstallDir\services\runtime,
        DSInstallDir\object,DSInstallDir\runtime,
        DSInstallDir\libs
```

The following example is for MFG/PRO session from which DS client programs are launched.

```
PROPATH=.,Existing MFG_PRO PROPATH,
        DSInstallDir\services\object,
        DSInstallDir\services\runtime,
        DSInstallDir\object,DSInstallDir\runtime,
        DSInstallDir\libs,DSInstallDir\climages,
```

- 6 Save your changes and close the text editor.

## MFG/PRO UNIX Character Clients

- 1 Access the MFG/PRO database server directory and open the MFG/PRO client start-up script you want to modify in a text editor.

```
cd /DBServerInstallDir/
vi client.Production
```

- 2 Add the directories listed in Table 4.1 to the existing PROPATH.

*DSInstallDir* refers to the DS installation directory that contains the DS programs you want to launch. For example, if you are modifying the MFG/PRO start-up icon to call DS client programs from the MFG/PRO menu, *DSInstallDir* is the DS client installation directory.

**Table 4.2**  
DS PROPATH  
Elements

**PROPATH Elements Required to Run DS from the MFG/PRO Menu**

---

- Current working directory (.)
- *DSInstallDir/services/object*
- *DSInstallDir/services/runtime*
- *DSInstallDir/object*
- *DSInstallDir/runtime*
- *DSInstallDir/libs*
- *DSInstallDir/climages* (For DS client programs only.)

The following example is for MFG/PRO session from which DS engine programs are launched.

```
PROPATH=.,Existing MFG_PRO PROPATH,
        DSInstallDir/services/object,
        DSInstallDir/services/runtime,
        DSInstallDir/object,DSInstallDir/runtime,
        DSInstallDir/libs
```

The following example is for MFG/PRO session from which DS client programs are launched.

```
PROPATH=.,Existing MFG_PRO PROPATH,
        DSInstallDir/services/object,
        DSInstallDir/services/runtime,
        DSInstallDir/object,DSInstallDir/runtime,
        DSInstallDir/libs,DSInstallDir/climages,
```

**3** Save your changes and close the text editor.

**Example** In the previous example, the DS Character Client Browse (codssbr.p), DS Menu (codss.p), and DS Update (codssup.p) programs were added to the MFG/PRO menu.

Because the DS Browse program uses the DS client, and the DS Menu and Update programs use the DS engine, the required PROPATH values are different. Therefore, two different MFG/PRO user start-up scripts or icons, must be created or a PROGRESS program must be set up to set the appropriate PROPATH values before initiating the DS functions.

For clients using the DS character client browse, modify the PROPATH variable in the MFG/PRO UNIX character client script.

```
PROPATH=.,Existing MFG_PRO PROPATH,
      DSClientInstallDir/services/object,
      DSClientInstallDir/services/runtime,
      DSClientInstallDir/object,
      DSClientInstallDir/runtime,
      DSClientInstallDir/libs,
      DSClientInstallDir/climages,
```

For clients using the DS engine Menu and Update programs:

- Copy the UNIX character client script and modify the PROPATH variable to contain the DS engine directories.

```
PROPATH=.,Existing MFG_PRO PROPATH,
      DSEngineInstallDir/services/object,
      DSEngineInstallDir/services/runtime,
      DSEngineInstallDir/object,
      DSEngineInstallDir/runtime,
      DSEngineInstallDir/libs
```

- Modify the PROPATH variable in the Windows client icons.

```
PROPATH=.,Existing MFG_PRO PROPATH,
      DSEngineInstallDir\services\object,
      DSEngineInstallDir\services\runtime,
      DSEngineInstallDir\object,
      DSEngineInstallDir\runtime,
      DSEngineInstallDir\libs
```

## Add the DS Application Code to the MFG/PRO Directory Structure

Use the following instructions to copy the DS application code for the DS programs you want to run from the appropriate DS installation directory into the MFG/PRO directory structure.

- 1 Locate the DS application code for the programs you entered as Exec File values in step 3 on page 62.

You must locate both the DS compiled code (extension .r) and the DS source code (extension .p).

- For DS engine programs, the compiled code is located in the `object` subdirectory below the DS engine installation directory. The source code is located in either the `src` or `runtime` subdirectories below the DS engine installation directory.
  - For DS client programs, the compiled code is located in the `object` subdirectory below the DS client installation directory. The source code is located in either the `src` or `runtime` subdirectories below the DS client installation directory.
- 2 Use the following steps to copy the DS application code—both the compiled and source code—from the DS installation directories into the MFG/PRO environment.

**Important** DS application code sometimes uses the same program name for two different functions. For example, a DS engine program and a DS client program can have the same name, but two different functions. If you are adding a DS engine program and a DS client program with the same name to the MFG/PRO menu, see 3 on page 69 to change one of the program names.

- a Access the MFG/PRO language-code subdirectory for your environment. This subdirectory is located below the MFG/PRO database server directory.

```
cd /DBServerInstallDir/us
```

- b If one does not already exist, create a new subdirectory below the language-code directory that corresponds to the first two letters of the DS program name. In the previous examples, each of the DS programs began with `co`, so you would create a `co` subdirectory.

```
mkdir /DBServerInstallDir/us/co
```

- c Copy the DS application code from the DS environment into the two-letter subdirectory you created.

```
cp /DSEngineInstallDir/object/codss.r
  /DBServerInstallDir/us/co
cp /DSEngineInstallDir/src/codss.p
  /DBServerInstallDir/us/co
```

- 3 If you are adding DS engine and client programs with the same name to the MFG/PRO menu structure, use the following instructions to change the name of the DS client application code.

- a Change the name of the Exec File value you entered in step 3 on page 62 to make it unique. For example, `xxcodss.p`.
- b If one does not already exist, create a new subdirectory below the language code directory that corresponds to the first two-letters of the modified DS program name.

```
mkdir /DBServerInstallDir/us/xx
```

- c Copy the DS application code from the DS environment into the two-letter subdirectory you created and rename it.

```
cp /DSEngineInstallDir/object/codss.r  
  /DBServerInstallDir/us/xx/xxcodss.r
```

```
cp /DSEngineInstallDir/src/codss.p  
  /DBServerInstallDir/us/xx/xxcodss.p
```

- 4 Check the MFG/PRO menus to verify the menu assignments.



# Help, Documentation, and Library Installation

This chapter contains installation instructions for the DS online help, documentation, and libraries.

*Install Decision Support Online Help* 72

*Install Decision Support Documentation* 74

*Install Decision Support Libraries* 74

Routing Code	Operation	Standard Operation	Work Center	Machines	Description	Machines per Op	Overlap Units	Queue Time	Wait Time	Setup Time
10-15000	20	1030	INSPECTION, ALL SITE		INSPC PER PROC-000	1	1	1.0	0.0	0.0

## Install Decision Support Online Help

DS online help is supplied in two help files (extension `.fhd`) located in the `help` subdirectory below the DS engine installation directory.

- `dshelp.fhd`: This file contains DS online help in English. You do not need to include a language code when you load this help file.
- `fieldhlp.fhd`: This file contains DS online help for all of the languages in Table 5.1. When loading this help file, you must include a language code to indicate the language for which you want to load help.

**Table 5.1**  
Translated DS Help

Language	Code	Language	Code
Chinese (Simplified)	CH	Korean	KO
Spanish (Castilian)	CS	Spanish (Latin)	LS
Czech	CZ	Norwegian	NO
Dutch	DU	Polish	PL
French	FR	Portuguese	PO
German	GE	Swedish	SW
Hungarian	HU	Turkish	TU
Italian	IT	Chinese (Traditional)	TW
Japanese	JP		

Complete the following instructions to load DS online help.

- 1 Start an MFG/PRO session and make sure no other users are logged on.
- 2 Open Field Help Load (36.7.19 in versions 7.3 through 8.5; 36.4.19 in versions 8.6 and 9.0).

### 3 Complete the fields according to the following table.

Field	Enter
Language	<p>If you are loading the <code>dshelp.fhd</code> file, leave this field blank.</p> <p>If you are loading the <code>fieldhlp.fhd</code> file, enter the two-letter language code for the translated help you want to load. For a list of language codes, see Table 5.1.</p>
Field	Leave these fields blank.
Procedure	Leave these fields blank.
Status	Leave these fields blank.
Text Type	Leave these fields blank.
Field Help Load File	<p>To load the <code>dshelp.fhd</code> file, enter the following directory path.</p> <pre><i>DSEngineInstallDir</i>/help/dshelp.fhd</pre> <p>To load language-specific help from the <code>fieldhlp.fhd</code> file, enter the following directory path.</p> <pre><i>DSEngineInstallDir</i>/help/fieldhlp.fhd</pre> <p><b>Note:</b> <i>DSEngineInstallDir</i> refers to your DS engine installation directory.</p>
Skip loading help with lower status	Enter Yes.

### 4 Press Go to begin the load. Exit Field Help Load when finished.

## Install Decision Support Documentation

Use the following instructions to install the DS documentation. Using the viewer included on this CD (Adobe Acrobat® Reader) lets you view documents online as you would a hard-copy document. You can also print single pages, a range of pages, or the entire document.

- 1 Insert the Decision Support Document CD-ROM in the CD-ROM drive.
- 2 To install the Adobe Acrobat® Reader, run the `ar32e30.exe` file from the following directory.

`CDROMDrive\install_acrobat`

- 3 Once the reader is installed, open the `welcome.pdf` file located in the `ds` directory. This document introduces the Decision Support Documents on CD-ROM.

From the welcome page you can:

- Open any Decision Support book.
- Open the Acrobat® Reader help system.
- Access the QAD website. You must have an internet browser installed on your machine for this link to function.

## Install Decision Support Libraries

The Decision Support Library CD-ROM contains a directory with the following contents.

- Installation script, `install`.
- Supporting files, `dslib.ini` and `dslib.cpio`.
- Subdirectories, `/lib` and `/bin`.

### Run the Library Installation

- 1 Mount the Decision Support Library CD-ROM using the instructions in “Mount the Engine CD-ROM,” on page 18.
- 2 On your database server, log on as user `mfg`.

- 3 Change to the CD-ROM directory and launch the library installation script.

```
cd cdrom
./install
```

- 4 When prompted, enter the following information.
  - The PROGRESS installation directory.
  - The terminal type of the installation session. The default is based on your `TERM` environment variable.
- 5 When prompted, enter the full path name of the directory where you want to install the Decision Support Library. QAD recommends that you install DS libraries in a different directory than the DS engine and client directories. Choose Finish when you are ready.

- 6 At the following prompt, choose Yes to continue the installation or No to abort. The variable `DSLlibInstallDir` refers to your DS library installation directory.

```
Expand the media to DSLlibInstallDir now (y/n)?
```

- 7 At the following prompt, specify Yes to remove the temporary directories used by the DS library installation script.

```
Cleanup the /tmp/dslib stage directory (y/n)?
```

- 8 Review the DS library installation log file for installation errors.

```
vi DSLlibInstallDir/log/dslib.log
```

## Implement the Library in Your Environment

To complete the DS library installation, you must implement the library files in your DS environment. Before beginning the implementation, make sure that you know path and file name for each DS library you want to implement.

- 1 Start the DS database.

```
run ./start.ds
```

- 2 Start the DS engine.

```
start ./client.ds
```

- 3 Login using `admin` for user ID and password.

- 4 Run the Install Library program.

- a Choose Library from the DS Setup menu.

- b Choose Install Library from the Library submenu. The Load Details frame displays.

- 5 Enter the path and file name for each DS library. For example, to load the Sales Library, enter the following command and press Enter.

```
DSLlibInstallDir/newsales.lib
```

- 6 A message displays informing you that you need to create a new data source or accept the data source from the library. Choose OK.

- 7 A second message displays, giving you the opportunity to replace the library data source with one of your own. Choose No. This enables the program to create the library data source. You can edit the data source later.

- 8 The following prompt displays if library records have the same name as default components in Decision Support. Choose OK.

```
Record naming overlaps are addressed
```

The content of the components in the libraries and the default product is identical; the following steps enable the current library contents to overwrite existing content.

- a Press End to exit from the Name Changes selection window.

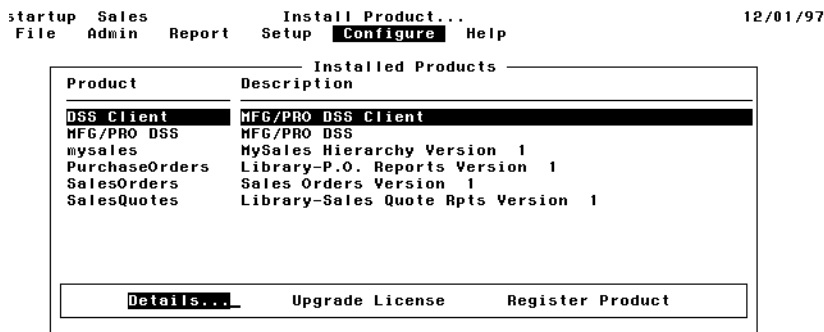
- b** The following message appears, stating that you have not renamed the first component. Choose Yes All to enable the overwrite.

Replace all existing component content

- 9** At the following prompt, choose OK. Selecting No returns you to the Installed Products selection window.

Load the library

- 10** Repeat steps 4 through 9 until all libraries are loaded. Figure 5.1 is the Install Products Programs screen showing the complete suite of installed DS libraries.



**Fig. 5.1**  
Install Products  
Program

- 11** Press End to exit the Install Library program and return to the Decision Support screen.

## Deleting the QAD Hierarchy

To finish installation of the libraries, delete the QAD1 hierarchy, which the installation process created to enable access to the menus.

- 1** Choose Delete Hierarchy from the File menu.

Ensure that QAD1 is the current file name in the upper left corner of the screen. If not, reopen the QAD1 hierarchy in Open Hierarchy.

- 2** Choose OK.



# Converting an Existing DS Database

This chapter contains instructions for converting DS Version 2.08 or 3.1 databases to Version 3.2. In this chapter, the term *former* refers to your previous version of Decision Support, and *new* refers to your new version.

*Decision Support Conversions*     **80**

*Convert Tracking Information (Optional)*     **81**

Routing Code	Operation	Standard Operation	Work Center	Machines	Description	Machines per Op	Overlap Units	Queue Time	Wait Time	Setup Time
10-15000	20	1030	INSPECTION, ALL SITE		INSPC PER PROC-000	1	1	1.0	0.0	0.0

## Decision Support Conversions

If you are upgrading your DS software from Version 2.08 or 3.1 to Version 3.2, use the database conversion utilities, `208to32` and `31to32`, in the DS engine installation directory.

Open the `convert` folder and read the instructions in the `ReadMe` file.

The conversion utilities take the data stored in your former DS database and dump it in the new format required for loading into DS Version 3.2. This data can then be loaded into an empty DS 3.2 database.

The following instructions use a DS Version 2.08 conversion to Version 3.2 as an example. However, the instructions apply to conversions between Version 3.1 and 3.2 as well.

- 1 From a system command prompt, change directories to the appropriate conversion utility directory. For example, if you are converting a DS 2.08 database to 3.2, change directories to `208to32`.
- 2 Modify the file `Start` to point to your `PROGRESS` directory and your DS 2.08 database. This is done by modifying the `DLC` and `DS208DB` environment variables in the `Start` file.
- 3 Run the `Start` file. This starts the conversion utility.
- 4 Enter the directory where you want to dump the DS data. If you also want to dump the data currently stored in your hierarchies, specify `Yes` in the `Dump Hierarchy Data` field.
- 5 Press `Enter`. When the program finishes, the number of records dumped displays. After the dump is complete, your dump directory contains `.d` files with the DS 2.08 data. These `.d` files can now be loaded into the new DS 3.2 database.
- 6 You need to start with an empty DS 3.2 database. An empty database is a DS database with no libraries loaded or hierarchies defined. An empty database is created when DS 3.2 is first installed on your system.
- 7 Make a copy of your empty database, and start a single-user `PROGRESS` session against it.
- 8 Access the data administration functions from the menu.

▶ See “Decision Support Databases” on page 8 for more information.

- 9 Choose the load data function and select all tables to load.
- 10 Enter the path to and name of your dump directory.
- 11 After the load is complete, the new DS 3.2 database contains all of your DS 2.08 data.
- 12 If you are converting a DS Version 2.08 database, complete the instructions in the “Convert Tracking Information (Optional)” section before beginning a DS Version 3.2 session.

## Convert Tracking Information (Optional)

When converting from DS Version 2.08, the conversion utility does not automatically convert tracking information. However, tracking information is converted automatically when updating from Version 3.1. In Version 3.2, this results in the DS engine not recognizing that some, or all, of the data in your new DS database was previously processed and does not need to be updated again.

If you answered Yes to the Dump Extract Data prompt during your conversion, and you can use the Start Update routine with dates that overlap those for data already contained in your DS 2.08 database, the same data is extracted twice and duplicate records are created.

The following example outlines the procedure required to convert tracking data after completing a DS Version 2.08 to 3.2 conversion.

**Example** A DS Version 2.08 database contains data for 10 hierarchies with records from January 1, 1997, to April 1, 1998. To convert the hierarchy data and have DS track all the data loaded this year, complete the following steps.

- 1 During the conversion, answer Yes when prompted to dump hierarchy data.
- 2 Load the dumped data into your DS Version 3.2 database.
- 3 Start the DS engine and connect to your new DS database.

- 4 Start an Update for all hierarchies. In the Date From field enter January 1, 1998. In the Date To field enter the current date. Because the conversion process brings no tracking information over from your former DS database, this step creates a record of hierarchical data between the dates. After this step, the hierarchy data becomes temporarily incorrect.
- 5 When the update is complete, start a purge for all hierarchies. Set the Date From field to January 1, 1998, and the Date To field to the current date.
- 6 The new database now contains your former data from January 1, 1997, to December 31, 1997, and new data after that.

Do not update dates for these hierarchies before January 1, 1998. This causes a duplicate data to be extracted.