



QAD Enterprise Applications
Standard Edition

Installation Guide Progress Database

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Planning a Progress Installation

This chapter presents basic topics that you should understand before beginning a QAD Standard Edition installation or conversion.

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Important If you have experience installing QAD Standard Edition from previous versions, numerous significant changes have occurred to streamline the process.

Planning an Installation

There are three types of installation:

- A new installation
- A new installation including a service pack
- An installation to support a conversion from an earlier version to the current release

If you are migrating from an earlier version, start your planning with the *QAD StandardEdition Conversion Guide: Progress Database*. The installation steps covered in this guide are treated as a step within the larger conversion process. There are several changes to the conversions, including the introduction of an in-place conversion option. The steps you complete to install your new version in this guide depend on which conversion method you choose to follow.

For the installation component of both new installs and conversions, you must plan for the following:

- An installation addressing:
 - Pilot and production databases
 - Training databases
- The languages you are implementing
- Configuration of side databases including QAD Standard Edition administration and help databases, as well as custom and other side databases
- The resulting network, disk, and client layouts

Enhanced Controls Installation

Separate steps are required by sites implementing the optional Enhanced Controls module, which includes audit trail and electronic signature features. Complete your full installation or conversion, and then follow the steps in this guide to install Enhanced Controls.

A discussion of key planning areas related to auditing can be found in *Deployment Guide: Audit Trails* located on the QAD Global Support Web site:

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

Make sure you have reviewed the most recent copy of the deployment information before proceeding with the Enhanced Controls installation.

Security Plan

A successful installation includes a complete security plan. During an installation or conversion, full permissions are required for system and application tools that can be used to load, edit, or delete data. In addition, an installation results in at least one user, *mfg*, with full administrative access to QAD Standard Edition. For these reasons, a security plan is essential. The basic components of a security plan are:

- Operating-system-level security for intrusive tools such as:
 - Progress Editor
 - Progress Data Dictionary

- Progress Data Administrator
- QAD MFG/UTIL
- Operating-system log-in security
- Operating-system permissions and ownership set appropriately for:
 - Database files
 - Before-image and after-image files
 - Log files
 - Application source and compiled source files
 - Application startup and shutdown scripts
- Log-in security
- Domain security
- Specific security features such as menus, fields, and sites

See the “Users and Security” chapter in *User Guide: Manager Functions*.

A security plan should address the tasks of the initial administrative user to set up valid users and secure the system by user and group before giving users access to the application.

Service Pack Installs

If you are installing or converting from a previous product release to QAD Standard Edition with a service pack, this guide covers all steps. If you are installing a service pack for an existing installation, use the instructions shipped with the service pack.

DataSynchronization Users

With QAD Standard Edition, DataSync no longer requires a separate installation; the DataSync database has been merged with the main QAD Standard Edition database.

Deployment

You can install QAD Standard Edition on UNIX or Windows servers with character or GUI clients, or a mix of these. QAD Standard Edition consists of three distinct components:

- A database server
- A file server
- Remote clients

Database Server

The database server consists of the QAD Standard Edition databases. You build these databases as part of the installation. Clients connect to these databases directly or through a file server.

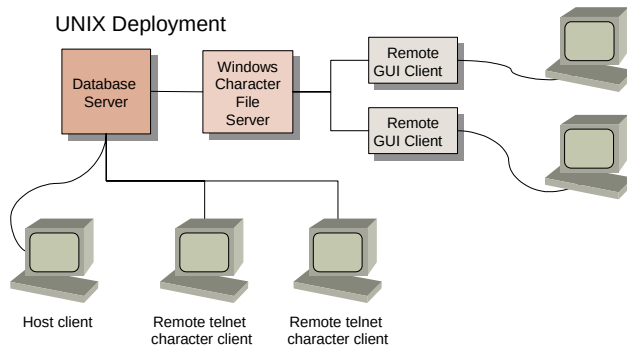
File Server

The file server is the location of the QAD Standard Edition source code, compiled specifically for this machine. The resulting .r code is run by the connected clients.

If the file server is a UNIX machine, shown as the host client connecting to the database server in Figure 1.1, then additional UNIX character clients can connect to QAD Standard Edition on this machine using telnet startup scripts generated for the host client.

If the file server is a Windows machine using character or GUI clients as in Figure 1.2, or if you want to run GUI clients against a UNIX file server as in Figure 1.1, a remote client setup is required for each client PC.

Fig. 1.1
UNIX Deployment

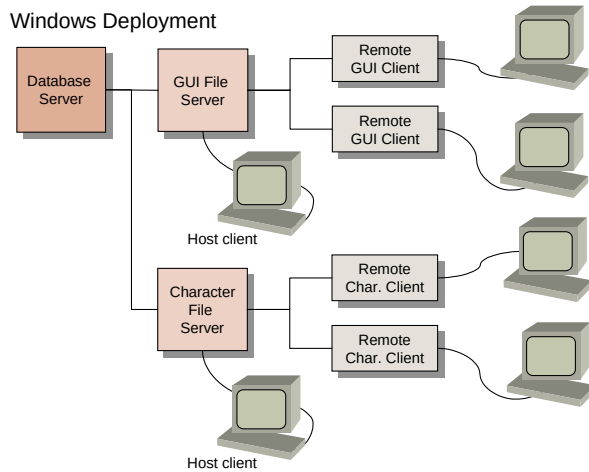


Remote Clients

A remote client setup is required for all GUI clients and for all character clients connecting to a Windows file server. The remote client setup creates a copy of MFG/UTIL on the client PC. You then run MFG/UTIL on the client, connected to the file server, to generate local startup scripts. The resulting client runs source code on the file server and accesses the databases on the database server.

For information on MFG/UTIL, see “Installation Utilities” on page 9.

Fig. 1.2
Windows Deployment



Database Server Installation

Working QAD Standard Edition databases are created in two stages. You first create empty databases, then use the empty databases as a template to build production, training, development, and other databases.

Create the Empty Databases

You create four empty databases during a QAD Standard Edition on Progress installation. The primary empty database is `mfgempty`; it is the template for your training, pilot, development, and production databases.

The other empty databases are:

- An administration database, `admempty`
- A help database, `hlpempty`
- An audit database, `audempty`

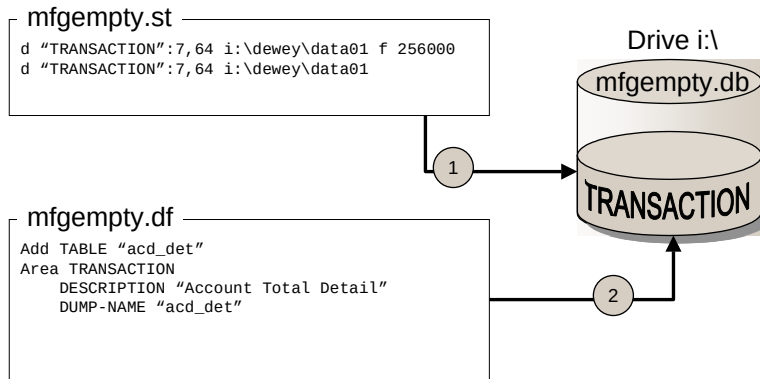
Important All standard QAD Standard Edition installations must create an empty audit database and include it in the Compile database set. The database is required for compiles only and has no other system impact unless you are using the optional Enhanced Controls module. See “Installing Enhanced Controls” on page 12.

Each empty database is created in two steps. First, a structure file for the database—for example, `mfgempty.st`—is used by the installation script to create a void database. The structure file defines disk locations and the size of database storage areas. A default structure file is shipped for each QAD Standard Edition database that requires one.

Once you have created the void database, you load data definitions into it that define each table, field, and index in the database. The data definitions file—for example, `mfgempty.df`—also places each table and index into a specific storage area as defined in the structure file.

In Figure 1.3, the database is created using the `mfgempty.st` structure file, which adds the storage area TRANSACTION to the disk. The storage area shown consists of two extents. One is a fixed-length extent of 256 MB (`f 256000`). The other is a variable-length extent that grows as needed during database use.

Fig. 1.3
Creating an Empty Database



Next, the tables, fields, and indexes are created in those extents by the data definition file (`mfgempty.df`). Note the Area line directly below the Add Table instruction in Figure 1.3.

The empty databases you created are now available to create the main and support databases.

Create the Full Databases

The main databases—production, pilot, training, and development—are created by copying the empty database into a structure you edit during the installation. The training database, for example, contains the data structures (tables, fields, and indexes) from the empty database, but is mapped to specific, separate disk locations.

Files on Disk

When you create a database structure in Progress 9.1, your single logical database includes several physical files. The file components of a QAD Standard Edition database are:

Structure description files (.st). This is the structure file. It is a text file used during the creation of a database to define the number, location, and size of the database extents. Use the default (QAD) structure files for `mfgempty`, `mfgtrain`, `mfgdemo`, `admempty`, `hlpeempty`, `audempty`, `mfgprod`, `admprod`, and `hlpprod`.

Storage area extent (.db). This is the main database extent. It contains the location of all of the extents that make up the database. During system administration activities, such as data dumps and loads, the database accesses database files by referring to this file.

Database extents (.dn). These extents contain database records. The *n* is a sequential number; for example, `.d1` and `.d2`.

Before-image (.bn). These extents contain before-image (BI) records. The before-image extents should be stored on a separate disk drive with a different input/output (I/O) channel than the storage area and database extents. This guards against a single point of failure and improves system performance. The *n* is a sequential number.

The database can also include after-image (AI) and two-phase commit extents. The storage areas for these are controlled much like that of the BI file. These features are optional. For more information on implementing these features, see the *Progress Database Administration Guide and Reference*.

Load Default Data

Once your databases are created, you load default QAD Standard Edition data into them. The data is separated into language-independent and language-dependent data. Perform the load of the language-dependent data for each language you plan to implement.

The main databases you load data into are:

mfgprod. This is your production database. This database is a multi-volume database with the files and extents typically optimized across multiple disks to enhance performance and security and to take advantage of your existing contiguous disk space. The production database is grouped with its own administration database (*admprod*) and its own help database (*hlpprod*). The production database is also typically used as the basis for a development database.

mfgdemo. Optional. This is your conference room pilot database. QAD supplies working data for *mfgdemo* that you can use to support a pilot or for development testing.

mfgtrain. Typically, you create one *mfgtrain* database and use the Progress PROCOPY tool to create copies of it for each user in individual training environments. QAD supplies data for this database specifically designed to support QAD Standard Edition training materials and scenarios. Each of these copies can share access to a single help database (*hlpprod*). However, each database must have its own administration database (*admprod*).

seattle, *chicago*, *newyork*. These databases are used for multi-site implementation training. Like *mfgtrain* and *mfgdemo*, they have their own data, they require help and administration databases, and you need as many copies as you have students in the training sessions.

All QAD Standard Edition on Progress implementations also require that at least two support databases be connected with any main database at startup. QAD ships the required support databases (administration and help). These are also built from empty databases during the installation.

Note You can modify your startup scripts after you complete your installation to launch additional side databases such as custom, shop floor, warehousing, or taxes.

admprod. The administration database contains system data used by QAD Standard Edition to manage displays, connections, and databases. Each database you implement must have its own administration database.

hlpprod. The help database can be shared by all your databases depending on server mounts and access.

File Server Installation

The file server is often installed on the same machine as the database server, though this is not required. The creation of a file server consists of the following steps:

- Install QAD Standard Edition source code.

- Install host client code.
- Configure database sets.
- Compile the source code.
- Generate startup scripts for the host client (and for remote UNIX clients).

The file server is a character server, a GUI server, or both. You install the character file server from the character client CD and the GUI file server from the GUI client CD. If you plan to use both types of clients, both file servers are required.

Database Sets

Database sets are the group of databases launched by a startup script or stopped by a shutdown script from a client machine. The main database, the support databases, and any other side databases are all included in database sets, and startup and shutdown scripts are generated for each. Each set consists of a full database and two or more support databases. The installation process from empty database to completed startup scripts (or shortcuts for Windows) is shown in Figure 1.4 on page 9.

You define database sets as part of the installation. The typical sets are:

- Demo
- TrainN (one for each student)
- Development
- Production
- Compile

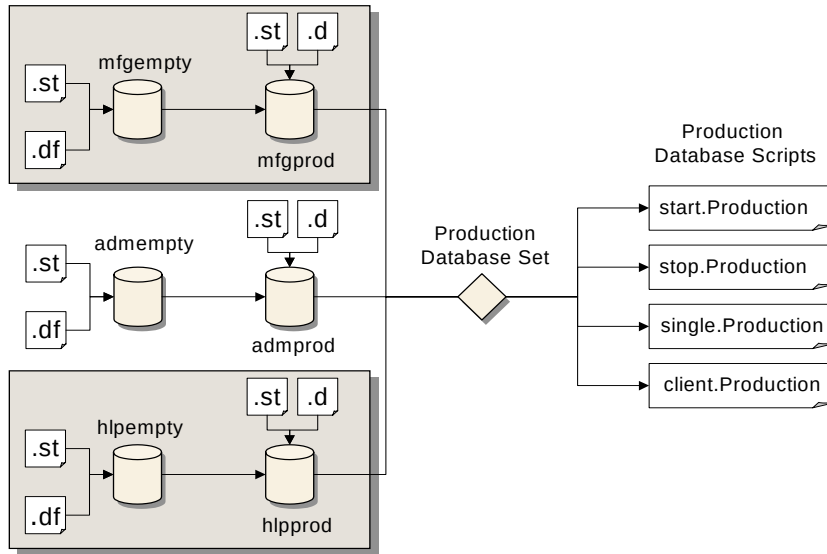
Important One connected empty audit database during compile is required for all installations, regardless of whether you intend to use audit trails or not. QAD Standard Edition code references tables in the audit database.

Once you have created the database sets, you generate the startup and shutdown scripts that launch or stop the databases within each set.

Create Database Sets

Figure 1.4 summarizes the entire database creation process for one set of databases. Empty databases are created for the main and support databases. The schema is then loaded into the empty databases (.df files). The empty databases are combined with edited structure files to create the databases. Data is loaded into the databases (.d files). They are combined as database sets and scripts are generated to start and stop the servers and to start client sessions.

Fig. 1.4
Database Creation Work Flow



Note The production database set may include an audit database as well as other databases for other QAD products, such as the qxevent's database for QXtend Outbound.

Remote Client Installation

Installing remote clients for Windows character or GUI clients requires that you have first installed a file server for the specific interface—character or GUI. You then install remote clients by connecting to that file server and running the client installation routine on the remote machine.

Online Help

The help database is loaded after the client install. You can add custom help to the database using Field Help Maintenance (36.4.13). Data is shipped translated when you order additional languages. The help database is accessible on GUI, character, and .NET UI clients.

Network, Disk, and Client Layout

At the machine level, QAD recommends deployment of QAD Standard Edition on a single database server with the character client installed on the main server for administration and batch processes. On UNIX, this character client supports additional terminal connections to the database.

If you are planning to use Windows clients—GUI or character—QAD recommends that you install the appropriate client files on a file server separate from the database server.

Installation Utilities

A large portion of the installation is managed by a QAD utility called MFG/UTIL. This product can be used for numerous database management tasks. For the installation, several of these tasks are scripted together to guide you through the steps.

Guided Setup

The entire installation process is semi-automated by a Guided Setup within MFG/UTIL. Guided Setup uses initialization files to control which install steps are followed in what order. The files step you through the creation of the empty databases, main and support databases, and database sets, and the generation of scripts.

This installation guide follows the installation method defined by the Guided Setup initialization files:

- Create Progress Empty Databases—`wk0300.ini`
- Create Progress Production Databases—`wk0305.ini`
- Create Progress Demo and Training DBs—`wk0306.ini`
- Create Progress Multi-Site Databases—`wk0307.ini`
- Configure Character Client—`wk0400.ini`
- Configure Windows Client—`wk0410.ini`

MFG/UTIL keeps track of where you are in the steps so that you can leave the installation and restart later. Text tokens for each group of steps are written to the initialization files to create this status: Not Run, Started, Error, and Done.

Important If you need to rerun the last set of steps from the beginning, the Guided Setup may not let you return to the initial entry screen to re-enter setup data. In this case, use a text editor to change the Status token back to Not Run for that set of steps in the initialization file.

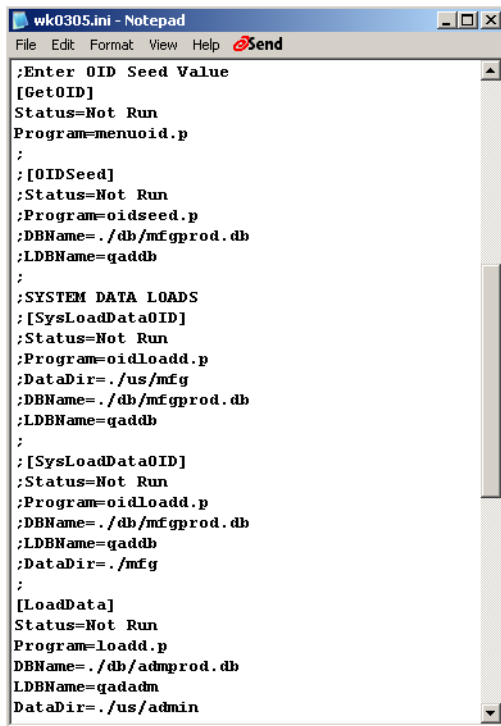
Editing Workflow .ini Files for US English Installs

You will probably need to edit the Guided Setup production database workflow, `wk0305.ini`. For each installation, review the workflow file and determine which databases you are implementing. The default `wk0305.ini` creates the production databases.

For example, if you are converting an existing MFG/PRO database using the buffer copy method, you must comment-out the two data loads and the OID seed load program for the production database in `wk0305.ini` as shown in Figure 1.5. Use the semicolon (;) to comment lines out.

See the *Conversion Guide: Progress Database* for details.

Fig. 1.5
Required Edits to wk0305.ini for Conversions



```

;Enter OID Seed Value
[GetOID]
Status=Not Run
Program=menuoid.p
;
;[OIDSeed]
;Status=Not Run
;Program=oidseed.p
;DBName= ./db/mfgprod.db
;LDBName=gaddb
;
;SYSTEM DATA LOADS
;[SysLoadDataOID]
;Status=Not Run
;Program=oidload.p
;DataDir= ./us/mfg
;DBName= ./db/mfgprod.db
;LDBName=gaddb
;
;[SysLoadDataOID]
;Status=Not Run
;Program=oidload.p
;DBName= ./db/mfgprod.db
;LDBName=gaddb
;DataDir= ./mfg
;
[LoadData]
Status=Not Run
Program=load.p
DBName= ./db/admprod.db
LDBName=gadadm
DataDir= ./us/admin

```

Note You do not need to edit the Guided Setup initialization files specifically for Windows installations. MFG/UTIL translates the UNIX path statements (./db) to Windows paths (c:\mfgsvr\db). This is true for both .ini files and structure files (.st).

MFG/UTIL Keyboard Commands

Keyboard commands for MFG/UTIL are listed in Table 1.1.

Table 1.1
MFG/UTIL Character Interface Commands

Keyboard Entry	Command Name	Description
F1	Go	Moves to next frame or runs a program
F2	Help	Displays context-sensitive help (may not be available for all functions)
F3	Menu Bar	Accesses the menu bar
F4	End	Exits a frame, program, or menu
Spacebar	Select	Selects check boxes and on/off options
Enter or Tab	Tab	Moves to next field or command
Shift+Tab or Control+U	Back Tab	Moves to the previous field or command

Note In the character interface, buttons appear within angle brackets: <OK>. To choose a button, Tab to the button and press Enter.

OID Generator Codes

During a QAD Standard Edition installation, you must specify an OID generator code for each database. This code is used to create values that uniquely identify database records. If you are performing a conversion, the OID code is specified during the conversion process.

Note Currently, only some records take advantage of this new feature. However, it will be used more extensively in future QAD development.

You can choose any numeric code you want. The OID generator code you enter is used by QAD Standard Edition as the registration ID of the full OID value written to database records as they are created. The generator code is stored and displayed in Database Control (36.24) and can be modified later, if necessary.

Once the OID generator code has been specified, OID fields in the database are populated using an algorithm that ensures uniqueness across all records, tables, and databases within the company. The value stored in the OID field for each record has the following decimal format:

```
<date><seq_value>.<registration_id>
```

Where:

<date> is the server date with format `yyyymmdd`.

<seq_value> is obtained from a Progress database sequence.

<registration_id> identifies the origin of the OID value.

The registration ID is derived from the OID generator code by reversing the digits of the generator code.

Installing Enhanced Controls

Enhanced Controls provides important security and tracking functionality. Enhanced Controls is an optional module that lets you configure your system to maintain audit trails on key transactions and to use electronic signatures.

Audit trail records are created and stored in a separate audit database. They contain facts about changes made in the QAD Standard Edition primary database. The electronic signatures feature provides a means of attaching electronic signatures to automated processes. You can configure your system to require users of some QAD Standard Edition programs to enter a valid user ID and password before they can create or update records. Additionally, they must provide a reason code that defines the meaning of the signature; for example, Approved or Tested. Based on setup data, users may be able to enter a related remark as part of the signature.

These modules are part of an overall approach—including System Security and Enhanced Controls—to meeting the auditing requirements of QAD Standard Edition customers in regulated environments.

Enhanced Controls is an optional module and is licensed separately. Both the audit trails feature and electronic signatures require additional installation steps, and both use the separate audit database. This book describes the installation of this module.

Before beginning an Enhanced Controls installation, make sure you have carefully reviewed the planning information in *Deployment Guide: Audit Trails* located on the QAD Global Support Web site:

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

Installing Multiple Languages

All installs, including English-only installs, are language specific. You receive media for your database server and client installs, as well as separate media for each language you are implementing.

To create a US English-only install, no special steps are required. To create a single-language install that is not US English, you load your base language data, as well as a set of translated schema definitions. You then set your compile destination and client scripts to point to the language-specific directories.

To support multiple languages, you create empty database sets for each language, loading each with translated schema definitions. You then compile each language separately against these databases, setting the compile destination to point to the language-specific directory. You create one set of production databases from the empty databases and load the language-specific data files for each language you are implementing into them.

The steps you follow are documented in this guide.

Installing Shared and Compatible Code Page Languages

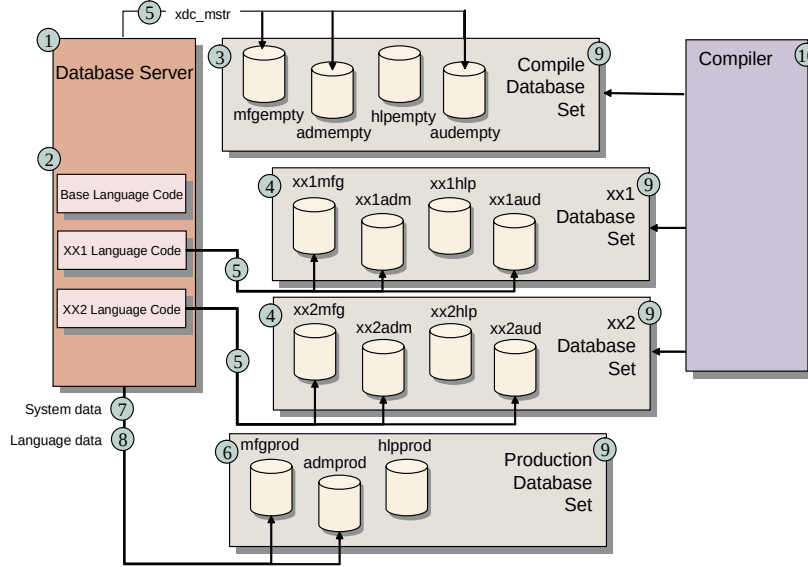
If all the languages you are implementing share the same code page—for example, English, French, German, Spanish that share the ISO-8859-1 code page; or Russian, Ukrainian, and Romanian that share the ISO-1251-1 code page—no special install steps are required.

If you are installing multiple languages with a compatible code page, such as non-Western European languages like Japanese or Chinese and US English, you must first follow the instructions in the Progress documentation for setting up Progress for a non-Western European language. Then the steps in this guide apply.

If you are installing a double-byte language such as Korean or Chinese, always install the double-byte language media before installing any other languages.

Figure 1.6 provides a graphic overview of a multi-language install. The numbered steps are described following the graphic.

Fig. 1.6
Multiple Language Installation Stages



A general overview of the required steps is as follows:

- 1 Install the QAD Standard Edition database server.
- 2 Install language media for each language.
- 3 Create base empty QAD Standard Edition databases.
- 4 Copy the empty databases for each language you are implementing (XX1mfg, XX1adm, XX1hlp, XX1aud, XX2mfg, XX2adm, and so forth, where XX1 is the language code).
- 5 Load translated labels (xdc_mstr.d) into each set of language-specific empty databases. If you are not implementing US English, load the base language xdc_mstr into mfgempty, admempty, and audempty.
- 6 Create one set of production databases from the base empty databases and structure files.
- 7 Load system data into the main and admin production databases.
- 8 Load language-specific data for each language into the main and admin production databases.
- 9 Create database sets and generate scripts. You will need a compile database set pointing to the language-specific empty databases for each language.
- 10 Compile each language against a language-specific empty database set.
- 11 Install clients.
- 12 Generate client scripts and edit scripts for language specifics.

Note Each user can have a separate client script that sets language-specific components such as date format. Then in QAD Standard Edition, each user's default language for menus, messages, and labels is set in User Maintenance (36.3.1).

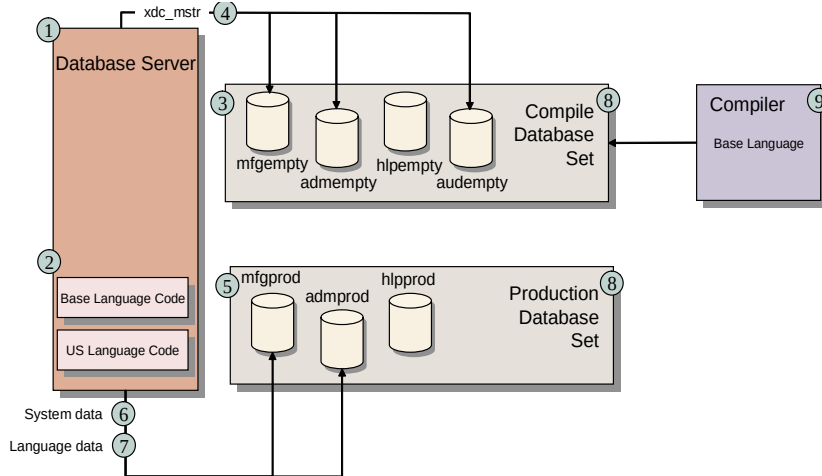
Install a Single, Non-US English Language

The following describes the general steps to create a single, non-English language installation.

Important If the language code page is not ISO8859-1, follow the instructions for setting up Progress for a non-Western European language.

Figure 1.7 provides a graphic overview of a single, non-US English language install. The numbered steps are described following the graphic.

Fig. 1.7
Single Language Install for a Non-US English Language



- 1 Install the QAD Standard Edition database server.
- 2 Install the language media.
- 3 Create empty QAD Standard Edition databases.
- 4 Load translated labels (xdc_mstr) into the empty databases.
- 5 Create production databases.
- 6 Load system data into the main and admin production databases.
- 7 Load language-specific data into the main and admin production databases.
- 8 Create database sets and generate scripts. You will need a compile database set pointing to the language-specific empty databases for each language.
- 9 Compile against the empty compile database set.
- 10 Install clients.
- 11 Generate client scripts and edit for language specifics.

Edit MFG/UTIL for Multiple Languages

Not all steps in a multiple-language installation can be added to a workflow. The copy of empty databases and the subsequent load of translated schema labels is best accomplished using Progress and MFG/UTIL tools. You can, however, incorporate the language-specific data loads to the `admprod` and `mfgprod` databases.

To add languages to `wk0305.ini`, which loads the language-specific data into the production databases, search for all instances of the base language (`/us`) and copy the section where it is found. There will be two in the original: one for `mfgprod`, and one for `admprod`.

Paste the section below the copied section and modify the base language abbreviation to reflect the correct language abbreviation for the additional language. Figure 1.8 shows the addition of a French data load to a US English base.

Fig. 1.8

Language-Specific Load

```
;CREATE PRODUCTION DATABASES
[CreateMSDB]
Status=Not Run
Program=crtpdbsa.w
STName=c:\mfgsvr\db\mfgprod.st
FromDB=c:\mfgsvr\db\mfgempty.db

[LoadData]
Status=Not Run
Program=rapload.p
DataDir=c:\mfgsvr\us\mfg
DBName=c:\mfgsvr\db\mfgprod.db
LDBName=qaddb

[LoadData]
Status=Not Run
Program=rapload.p
DataDir=c:\mfgsvr\fr\mfg
DBName=c:\mfgsvr\db\mfgprod.db
LDBName=qaddb
Added section for French data load.

[LoadData]
Status=Not Run
Program=rapload.p
DataDir=c:\mfgsvr\mfg
DBName=c:\mfgsvr\db\mfgprod.db
LDBName=qaddb
```

The only change to the copied section is the change from `\us` to `\fr`.

Add a section for each language you are implementing for the production database and the administration database.

Loading Translated Labels Using a Workflow

If you want to load translated schema labels (`xdc_mstr`) in the empty database workflow, you can add the following step into `wk0300.ini` for `mfgempty`, `admempty`, and `audempty`. A French load would look like the following:

```
[LoadXlat]
Status=Not Run
Program=rapldlbl.p
DBName=./db/mfgempty.db
Language=fr

[LoadXlat]
```

```
Status=Not Run
Program=rapldlbl.p
DBName=./db/admempty.db
Language=fr
```

```
[LoadXlat]
Status=Not Run
Program=rapldlbl.p
DBName=./db/audempty.db
Language=fr
```

Client CD Contents

Each customer receives a printed Release Media Report as part of the product shipment. This is an important document. It is not available on the release media, so locate this and store it in a safe location.

The Release Media Report lists the QAD Standard Edition modules you are licensed to run. If you ordered source code for a module, an X appears under Src.

On the release media are files with an .lst extension. These list the individual programs that are licensed within each module. For example, valid Purchase Order module programs are listed in po.lst. The installation process places these lists on your disk under *QADInstallDir/dist/lst*.

The .rp files contain a list of reports and inquiries for each module. The iv.lst file is a listing of shared include files.

If you attempt to run a program and get a message that says you are not licensed to run it, first check your Release Media Report to make sure the module is licensed. Then check the module list to make sure the program is in the module you expect it to be in.

System Requirements

A QAD Standard Edition installation requires planning for adequate system resources. This chapter provides system requirements and software prerequisites for database server, file server, clients, and the network.

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A QAD Standard Edition system consists of a database server, optionally a file server (for remote clients), and remote clients with an adequate network. For requirements for the QAD .NET UI, see *Installation Guide: QAD .NET UI*.

General Requirements

The system administrator must be an experienced Progress database administrator with at least one to two years of experience, and must know how to manage Progress client processes.

Before installing QAD Standard Edition, Progress must be installed following the product installation guide. The Progress install for each platform may include UNIX kernel changes and patches.

QAD Product Installs and MFG/UTIL

When you install any QAD product that contains MFG/UTIL—QAD Standard Edition, .NET UI, JIT/S, AIM, TrM—to the *QADInstallDir*, the existing MFG/UTIL is overwritten. Some MFG/UTIL functions, including conversion routines, are specific to certain versions of MFG/UTIL. As a result, some functions may not work correctly if you overwrite the existing MFG/UTIL version.

To correct this, back up your existing MFG/UTIL version before the new install. Once you have installed the new product containing MFG/UTIL, back up that version of MFG/UTIL as well. If you need the prior version of MFG/UTIL—for example if you are running a QAD Standard Edition conversion after installing .NET UI—restore the prior version.

To create a backup, include the following directories:

- *QADInstallDir*
- *QADInstallDir/xmfgusrc*

Important Do not use spaces when defining the directory structure paths of the required components that will interface with this QAD product.

Database Server

The database server contains QAD Standard Edition and Progress server software, as well as your production data. You should estimate the eventual size of your production database and the demands placed on different components of the database before starting an installation so that you can lay out your disks appropriately.

Hardware Requirements

- 2.0 GB of free disk space (includes Progress and QAD Standard Edition)
- 700 MB for each additional language
- Approximately 10 GB of disk space spread across three or more disks for data structures. This is an estimate based on a 5 to 7 GB production database.
- 100 Mbps network card
- ISO9660 CD-ROM

- 2 disk controller channels (minimum).
- 200 system file handles per simultaneous QAD Standard Edition process.

Operating Systems

- HP-UX 11i 32- and 64-bit
- AIX 5.2
- Solaris 9 and 10
- Red Hat Linux 2.1 (32-bit) and Red Hat AS/ES 3.0, 4.0, and 5.0 (32- and 64-bit)
- SuSe Linux Enterprise Server 8, 9, and 10
- Microsoft Windows 2000, 2003, and XP

Software Prerequisites

- Operating system patches
- Progress OpenEdge 10.2B01 Service Pack 1 Enterprise DB Server, licensed for the appropriate number of users, is recommended. Progress OpenEdge 10.1C03 Service Pack 3 is also supported.
- Progress OpenEdge 10.2B01 Service Pack 1 4GL Development, one license required. Progress OpenEdge 10.1C03 Service Pack 3 is also supported. You can use Service Pack 3 or a greater service pack, but not a greater Progress OpenEdge version except for 10.2B01.

Important On the required Progress products, select a Complete installation, not Typical or Custom.

- In a multi-language installation, Progress language-specific releases for each language
- Optionally, a Web browser to view MFG/UTIL help files in HTML format and access online support

File Server

The file server requirements cover shared remote client requirements, implemented on a separate server.

Hardware Requirements

- 1 GB of free disk space (includes Progress and QAD Standard Edition)
- 700 MB for each additional language

Software Prerequisites

- Microsoft Windows 2000, 2003, XP
- Operating system patches
- Progress OpenEdge 10.2B01 Service Pack 1 Client Networking. Progress OpenEdge 10.1C03 Service Pack 3 is also supported.
- Progress OpenEdge 10.2B01 Service Pack 1 Query/Results. Progress OpenEdge 10.1C03 Service Pack 3 is also supported.

- Progress patches

Remote Clients

The requirements for remote client PCs assume that all shared files are on a file server.

Hardware Requirements

- 10 MB of disk space
- 600 MHz or faster Intel Pentium (or compatible) processor
- 128 MB of RAM
- Super VGA video
- 1 GB or larger hard drive for future data storage
- 100 Mbps network card

Software Prerequisites

- Microsoft Windows 2000, 2003, XP, and/or current UNIX server software
- QAD Standard Edition GUI or Character client media
- Progress OpenEdge 10.2B01 Service Pack 1 software with the following is recommended:
 - Query/Results (one Query license per client required)
 - Client Networking

Progress OpenEdge 10.1C03 Service Pack 3 is also supported.

- Optionally, a Web browser to view MFG/UTIL help files in HTML format and to access online support resources

Network

Set up your network to support the Progress specifications. Minimum requirements from the QAD Standard Edition standpoint are:

- 10 Mbps Ethernet or faster network

Database Server Install

Use this chapter to load the QAD Standard Edition database server and language media and build the QAD Standard Edition databases. This chapter supports new and existing (conversion) installations. It includes the creation of the empty audit database since all installations of QAD Standard Edition require this for compiles.

Note While setting up the database server, you can simultaneously load the QAD Standard Edition remote GUI or character client media onto the file server—provided it is a separate machine. See Chapter 4, “Installing Windows File Servers,” on page 50 for instructions.

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Preliminary Steps

Prior to install, review the following cautions and requirements:

- For multi-language installations on Windows and SunOS, load any OS-specific language files to support multi-language character displays. Other operating systems may have similar requirements; check with your operating system vendor.
- Set your \$TERM variable to a standard terminal type such as vt100 or vt200 while installing QAD Standard Edition. You can switch to a language-specific terminal if necessary when you launch the clients.
- Determine the following information:
 - The directory where you want to install QAD Standard Edition database server files, referred to as *QADInstallDir*
 - The Progress directory
 - The host name for the database server

Setup for Non-Western European Languages

If you are installing non-Western European languages, do the following:

- Back up the `startup.pf` and `empty.db` in the database server Progress directory.
- From the appropriate Progress language-code directory, copy the following files to the top level of the database server Progress directory:
 - The parameter file (extension `.pf`) corresponding to the language you are installing
 - The empty database file (`empty.db`) and associated files

See the Progress *Internationalization Guide* for details.

Windows Installation Setup (Windows Only)

If you are installing on a Windows client, you must set up the Windows server as an application server.

- 1 Choose Start|Settings|Control Panel.
- 2 Double-click Network and Dial-Up Connections.
- 3 Right-click Local Area Connection and click Properties.
- 4 Click File and Print Sharing for Microsoft Networks, then click Properties.
- 5 Click Maximize Throughput for Network Applications and click OK.

Create the Installation User and Group (UNIX Only)

QAD Standard Edition installations on UNIX require a group called `qad` and a user called `mfg` on the database server. All QAD Standard Edition installation and maintenance programs store pertinent information under the `mfg` user home directory. This enables QAD scripts to find data about installed products automatically and reliably and lets you maintain your system without logging on as `root`.

- Create a group called `qad` with a group ID (gid) of 65535 with your UNIX system administration utility. (65535 is the user ID of the files on QAD Standard Edition media.)
- Create a user called `mfg` with a user ID of 65535.
 - Assign the Korn shell to this user. All of the scripts delivered on QAD media use Korn shell (ksh) syntax.
 - For the `mfg` user, set the `$HOME` environment to a user directory where working and temporary files can be written.
 - Assign the standard `umask` of 022 to set permissions and security.
 - Update the `mfg` user `.profile` to include the `PROPATH`, `DLC`, and `PATH` variables.

Permissions

The QAD Standard Edition installation uses or creates several directories. If you choose to use the default directories and they do not exist at the time of the install, they are created automatically. This applies the ownership and appropriate permissions for the installation user (`mfg`). However, if you choose to create or use other directories outside of the installation process, make sure these are owned by `mfg` and have read and write permissions for `mfg` assigned.

Modify the Services File

If you are implementing a client/server environment, tailor your `services` files. If you add any new service names after installation, you must modify your `services` file. All service names, host names, and port numbers must match in the `services` files of each client and each database server on the network. The location of the UNIX `services` file on the server is typically the `/etc` directory. On Windows it is located in:

```
c:\winnt\system32\drivers\etc
```

Add the names of your database services to your `services` file. Add one for each main database and support database you plan to connect to. Limit the service name to 16 characters. You can use any unused port numbers. Table 3.1 shows example service names and port numbers for a production database set.

Note The more users you expect to have, the more numbers you should leave open between port numbers.

Table 3.1
Service File Example

Service Name	Port #/Protocol	Comment
mfgprod-srv	5500/tcp	# Production Database
admprod-srv	5510/tcp	# Admin Database
hlpprod-srv	5520/tcp	# Help Database

Installing Server Files

In this set of steps, you mount the Database Server media and copy the files to the server. Choose the steps for the media you received. For Windows servers, just insert the CD and go to “Install Database Server Files” on page 26.

Mount the CD-ROM

For Windows installs, just insert the CD in the CD-ROM drive. For UNIX installations, use the following instructions:

- 1 Log on as mfg.
- 2 Mount the CD-ROM. Example commands are listed in Table 3.2.

Table 3.2
UNIX CD Drive Mount Commands

Hardware	Mount Command
Sun	<code>volcheck cdrom</code>
HP	<code>/etc/mount -F cdfs /dev/dsk/YourCDDevice /cdrom</code>
Digital	<code>mount -r -o noversion -t cdfs /dev/YourCDDevice /cdrom</code>
AIX	<code>smitty mountfs</code> Then select file system, directory, and file system type (cdrfs).
Linux	<code>mount /dev/hdb /mnt/cdrom</code> Where /hdb could be hdc or hdd among other possibilities.
All others	Refer to your operating system documentation or vendor for requirements to mount a CD-ROM. You may be able to type <code>man mount</code> to determine the correct command.

- 3 Continue with “Install Database Server Files” on page 26.

Installation Directory

Your selection of an installation directory for QAD Standard Edition can be important. If this is a new install, the easiest and simplest method to support is to accept the default. If this is a conversion from a previous MFG/PRO version, install to a separate directory structure.

In addition, do not select a directory path containing spaces such as `C:\Program Files\qad2010Std`. Database scripts generated by MFG/UTIL cannot locate a database in a path with spaces.

Install Database Server Files

Complete this section to install the QAD Standard Edition database server files on the server.

- 1 In UNIX, log on as user mfg under the group qad. For Windows, log in as a user with Administrator privileges.
- 2 On the CD, change to the directory containing the database server media.

- 3 Change to the install directory:

```
cd install
```

- 4 Launch the database server installation script in that directory:

```
./install.ksh
```

For Windows, run `install.exe` from Run on the Start menu.

A welcome screen displays. Press Enter.

```
Welcome to QAD's QAD 2010 - Standard Database Server installation.
We are installing QAD 2010 - Standard Database Server for solaris.
Press <Enter> to view license agreement.
```

- 5 Accept the software license agreement. Press Ctrl+C to jump to the end of the agreement.

```
Do you accept all the terms of the preceding License Agreement? If you choose no,
the install will stop.
```

```
To install QAD 2010 - Standard Database Server, you must accept this agreement.
(y/n)?
Default is n
->y
```

- 6 Accept the default or enter a different installation log files location. Later installs (language files, host client, and others) look in this location for installation information. If you enter a different location, make note of it for later installations.

```
Please enter the location where the log file should be written.
Default is /users/mfg/instlog
->/users/mfg/instlog
```

On Windows systems, the default is `c:\instlog`.

The log directory is used to record information about this installation. That information is used during the installation of subsequent media. If you choose not to use the default location, remember the location that you choose so you can use the same location during installation of subsequent media.

- 7 Enter the Progress installation directory path or accept the default. The script verifies the location and version. Specify Yes to confirm.
- 8 Enter the path and directory where you want to install the QAD Standard Edition database server files (*QADInstallDir*). If this directory does not exist, it is created.
- 9 You are asked whether this is an Oracle data server installation. Respond No and press Enter.
- 10 On Windows, you are prompted to enter the folder name for the MFG/UTIL program icons. The default is QAD Standard Edition Database Server. Modify or accept the default, and press Enter.
- 11 Review the summary and confirm by entering y and pressing Enter. By default, the installation log is written to `c:\instlog` on Windows and `/users/mfg/instlog` on UNIX.
- 12 Choose the Finish button and press Enter to begin copying the files. The log is written to `/instlog/mfgdbsv.log`.

Install QAD Assist

QAD .NET UI includes QAD Assist. For information on installing this feature, refer to “Installing QAD Assist” in the *QAD .NET User Interface 2.9.1 Release Notes*.

Install Language Files

Complete these steps to install the QAD Standard Edition language files, which include the language-specific menu and message data files. This is a required step even if you are installing only one language.

The first language you install becomes the base language. You cannot change this without a re-installation. If you are installing an QAD Standard Edition environment with multiple languages, you must repeat these language file installation steps for each language. Always install a double-byte language first if you are installing any double-byte languages at all.

The US language media is required for all installations, even if you are not implementing US English.

The language files for each language you purchased are installed in subdirectories below *QADInstallDir*. The language subdirectories are identified by the two-letter QAD Standard Edition language code. For example, for US-English the subdirectory is */us*.

- 1 For Windows, insert the language CD. For UNIX, load the language media on your system using the instructions in “Mount the CD-ROM” on page 26.
- 2 In UNIX, log on as user *mfg* under the group *qad*. For Windows, log in as a user with Administrator privileges.
- 3 On the CD, change to the directory containing the language media.
- 4 Change to the *install* directory:
`cd install`
- 5 Launch the database server installation script in that directory:
`./install.ksh`
For Windows, run *install.exe* from Run on the Start menu.
A welcome screen displays. Press Enter to continue.
- 6 Accept the software license agreement.
- 7 Enter the log file location from step 6 in “Install Database Server Files” on page 26. If you used the default, accept the default here.
- 8 Enter the Progress installation directory.
- 9 Enter the *QADInstallDir* from step 8 in “Install Database Server Files” on page 26.
- 10 Review the summary and confirm by entering *y* and pressing Enter. The log is written to */instlog/mfglang.log*.

If you are installing multiple languages, repeat steps 1 to 10 for each language. If you are installing a single non-US English version, you must load the base language media and the US English language media.

Modify *mfgutpro.ini* File (Single Non-US English Only)

To use MFG/UTIL in a language other than English, open *mfgutpro.ini* from the *QADInstallDir* and alter all instances of */us* with the two-letter code for the installed language.

Modify the Workflow .ini Files

The `wk0300.ini` file controls the Guided Setup creation of empty databases; `wk0305.ini` controls the creation of production databases. In addition, there is a separate workflow to create the Train and Demo databases, and one to create the multi-site databases. Use a text editor to edit these files.

For more information, see “Guided Setup” on page 10.

wk0300.ini

- Add language-specific loads of schema labels as necessary for multi-language installs.

wk0305.ini

- Change any path or database name references that do not match your intended installation.
- Modify all paths to reflect the correct language. For example, if you are installing French as the base language, you would change all instances of `/us` to `/fr`.
- Add additional language loads. For example, if you are installing French, you would add data loads for both `/fr/mfg` and `/fr/admin`.
- For buffer copy conversions, comment-out the following sections:
 - `[OIDSeed]`
 - `[SysLoadDataOID]` where `DBName=mfgprod.db` (two instances)
 - `[TruncBI]` where `DBName=mfgprod.db`

See *Conversion Guide: Progress Database* for additional information.

- For in-place conversions, comment-out the same sections as for buffer copy conversions above, and in addition, comment out the `[CreateMSDB]` section where the `STName=mfgprod.st`.

wk0306.ini and wk0307.ini

These workflows create the train and demo databases, and the multi-site databases, respectively. The assumption for conversions is that you would be creating new databases for each of these scenarios. If not, you would follow the same instructions provided for `wk0305.ini`, commenting-out the applicable production database sections.

For a standard installation, do the following:

- Edit out any databases you do not intend to create.
- Change any path or database name references that do not match your intended installation.

Set Up MFG/UTIL Clients (Windows Only)

If you are installing on a Windows machine, you must make temporary settings to enable the tools and DOS windows to work correctly. These settings are as follows:

- The graphical interface does not perform some functions, such as compiling, at high screen resolutions. Reset your screen resolution to 800 x 600 before starting the graphical MFG/UTIL.

- The character interface requires resetting your DOS window layout. The symptoms of incorrect settings are deceptive; the screens do not refresh properly after tabbing through menu and button selections.

To reset the DOS window for MFG/UTIL, complete the following steps:

- 1 Launch the character MFG/UTIL from the Start menu icon.
- 2 Right-click the DOS window title bar and select Properties.
- 3 Select the Layout tab.
- 4 Set Screen Buffer Size Width to 80 and Height to 25 and choose OK.
- 5 When you are prompted, select Modify Shortcut.
- 6 Restart MFG/UTIL to enable the change.

Reset the window to the defaults (Width 80, Height 300) after you complete the Windows client installations to ensure adequate buffers for other applications.

Creating Empty Databases

In the following section, you create the empty production, administration, help, and audit databases from the default QAD structure files. You then use the empty databases as a template to build your production, training, demonstration, and other main databases, as well as their administration and help support databases in the next section.

- 1 Launch MFG/UTIL from the *QADInstallDir* using the following command: `./mfgutil`.
For Windows, launch MFG/UTIL from the icon on the Start menu.
For information on MFG/UTIL keyboard commands, see page 11.
- 2 Choose Guided Setup from the Configure menu.

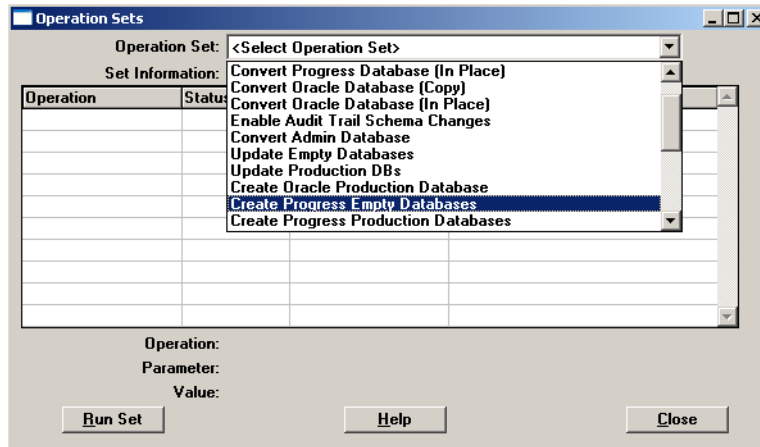
Fig. 3.1
MFG/UTIL Configure Menu



- 3 Select Create Progress Empty Databases in the Operation Set drop-down list box.

Fig. 3.2

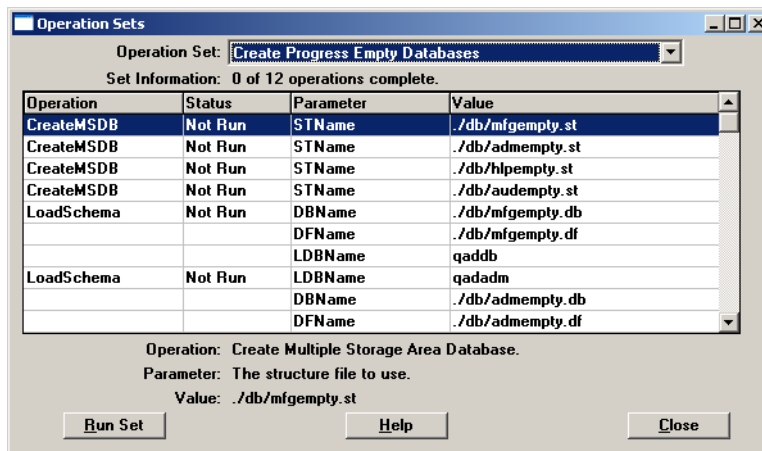
Selecting an Operation Set



The Guided Setup program provides a workflow of the operations involved in setting up your QAD Standard Edition environment. You can use this program to access the different configuration utilities in MFG/UTIL with proper default information and in proper sequence. Review the following figure to become familiar with Guided Setup.

Fig. 3.3

Create Progress Empty Databases Workflow

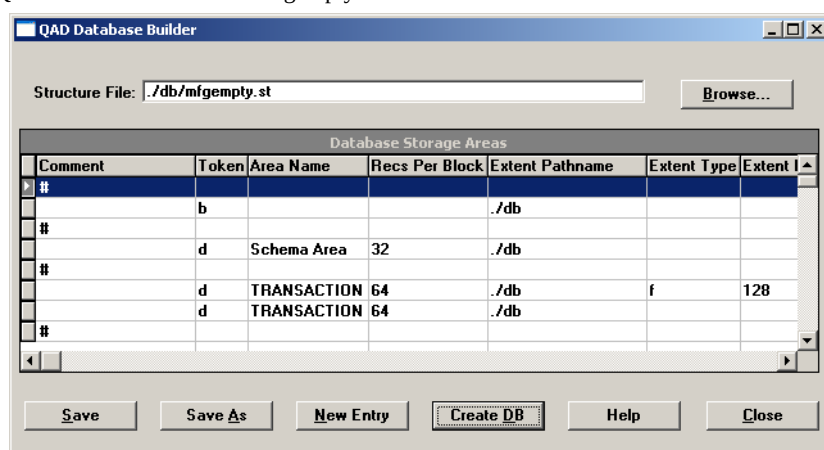


Operation sets are groups of installation activities. The operations in a set display in the Operation frame. On completion, the status changes to Done. If errors occur or if you cancel processing prior to completing a step, the status is Error. Below the Operation frame, the operation, the key variable required, and default value for that variable display.

If you stop the workflow and an Error status is written to a step, this is the first step run when you restart the operation set.

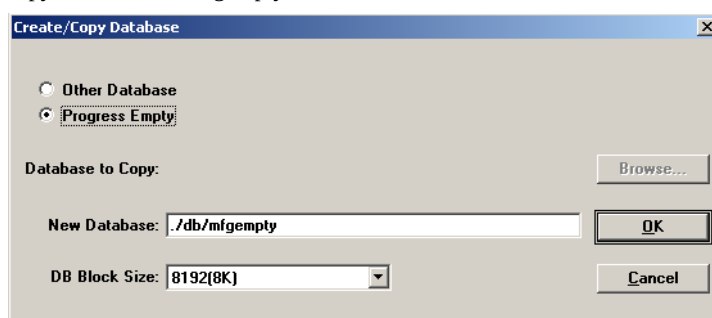
- 4 Select Run Set and press Enter.
- 5 The QAD Database Builder screen displays with the default QAD empty structure file, mfgempty.st. Generally, you do not need to edit this file for the empty databases. Choose Create DB.

Fig. 3.4
QAD Database Builder for mfgempty



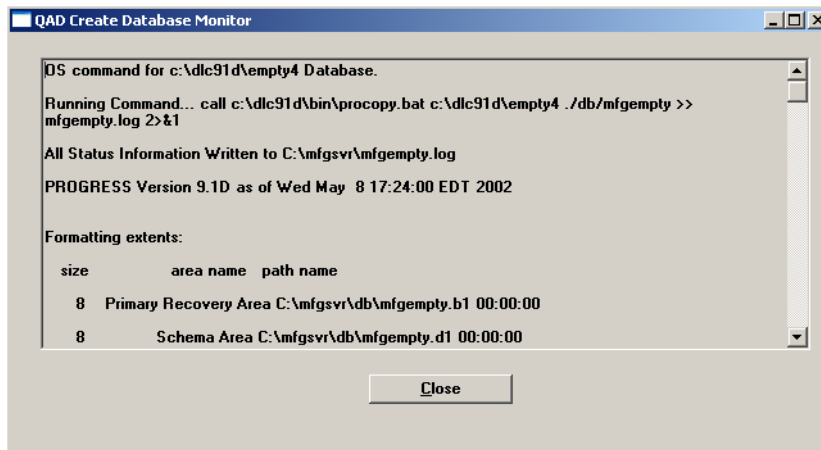
- 6 In the Create/Copy Database screen, verify that Progress Empty is selected and accept the defaults in the New Database and DB Block Size fields.

Fig. 3.5
Create/Copy Database for mfgempty



- 7 Choose OK to build the main empty database, mfgempty.
- 8 When mfgempty is built, a log of the database build process displays. You can verify that the database was created successfully by checking:
- *QADInstallDir*/mfgempty.log
 - The storage area extents created in *QADInstallDir*/db

Fig. 3.6
QAD Create Database Monitor for mfgempty



- 9 Choose Close to exit the log window.
- 10 The QAD Database Builder for mfgempty displays again, this time with the Close button selected. Choose Close to complete the creation of mfgempty. The screen redisplay ready for the admempty database.
- 11 Repeat steps 5 through 10 above for the administration, help, and audit databases. The file names and directories are listed in Table 3.3.

Table 3.3
Values for Administration, Help, and Audit Databases

DB	Structure File	DB Type	New Database	Block Size	Log
Admin	admempty.st	Progress	./db/admempty	8192(8K)	admempty.log
Help	hlpempty.st	Progress	./db/hlpempty	8192(8K)	hlpempty.log
Audit	audempty.st	Progress	./db/audempty	8192(8K)	audempty.log

Important The empty audit database is required for all installations. It must be used for compiles.

- 12 When the QAD Database Builder screen displays after the last empty database has been created, choose Close. The workflow starts the schema loads.

Load Schema in Empty Databases

The database schema consists of the sequences, tables, fields, and indexes in the database. In this task, you load the schema into the empty main, administration, help, and audit databases using data definition files mfgempty.df, admempty.df, hlpempty.df, and audempty.df. The resulting empty databases are used to build all your main and support databases such as mfgprod, mfgtrain, and mfgdemo.

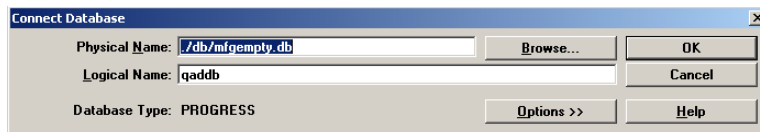
For multi-language implementations, you also must load the language-specific `xdc_mstr` for each language you are implementing. These are the translated schema labels required for compiles in multiple languages.

- 1 After you close the QAD Database Builder screen, the Connect Database screen displays. Accept the defaults and choose OK to connect to `mfgempty`. Use Table 3.4 and the screen as guides.

Table 3.4
Connect Database Values for `mfgempty`

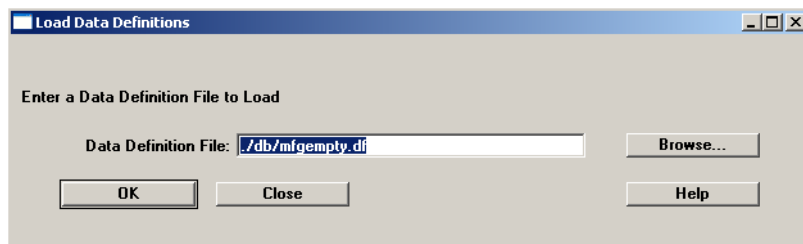
Field	Value
Physical Name	Path to <code>mfgempty</code> (<code>./db/mfgempty.db</code>)
Logical Name	Logical database name (<code>qaddb</code>)
All other fields	Leave blank

Fig. 3.7
Connect Database for `mfgempty`



- 2 The default data definition file displays. Choose OK to begin loading the database schema.

Fig. 3.8
Loading `mfgempty.df`

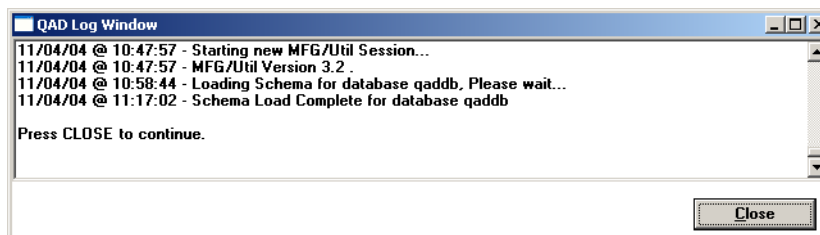


The program first writes the schema to a buffer, then loads it into the database. The write displays a progress screen; the load process does not.

Warning Due to Progress limitations in the character interface, almost half the load time you see the message, “Processing schema load. Please wait...” In the GUI version of MFG/UTIL, the schema load is complete when the log window displays.

- 3 The QAD Log Window displays.

Fig. 3.9
QAD Log Window Following the `mfgempty.df` Load



- 4 When the load completes, close the log window.
- 5 The Connect Database screen displays with the correct data to connect to `admempty.db`. Repeat steps 1 through 4 in this section for the administration database, then do the same for the help and audit databases. The database names and directories are listed in Table 3.5.

Table 3.5
Schema Load Values for Support Databases

	Physical name	Logical	Data definition file
Admin	./db/admempty.db	qadadm	./db/admempty.df
Help	./db/hlpempty.db	qadhelp	./db/hlpempty.df
Audit	./db/audempty.db	qadaud	./db/audempty.df

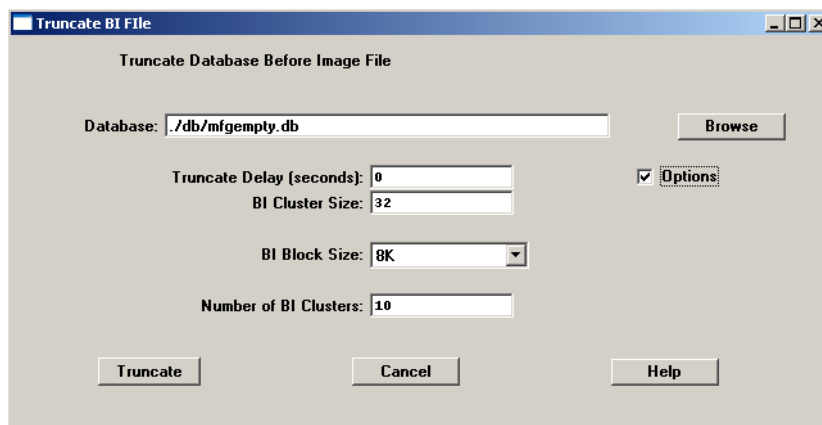
- 6 When the final schema load is complete, choose Close.
- 7 Unless you are loading translated schema labels, the Truncate Database Before Image File screen displays. If you are loading translated labels, go to “Load Translated Labels (Multi-Language Only)” on page 37.

Truncate Before-Image Files

You now truncate the empty database before-image (BI) files. These files contain data awaiting writes to the database. Truncation updates the file so that the database is fully synchronized and then deletes the temporary data, bringing the files back to their minimum size. Little has occurred to increase the size of your BI file at this point, but the synchronization is required before creating copies of these databases.

- 1 In the Truncate BI File screen, accept the default path to `mfgempty` and choose Truncate. The default Progress delay is 60 seconds before starting the truncate. This protects databases in current use from missing writes from the before-image file. Since the databases in the installation are all new, you accept the workflow setting of 0.
- 2 If you choose Options, MFG/UTIL connects to the database and retrieves information about the BI clusters. For more information on changing these settings, see the *Progress Database Administration Guide and Reference*. For installations, changes to these are not necessary.

Fig. 3.10
Truncate BI File for `mfgempty`



- 3 Close the QAD Database Monitor window that displays on completion.

- 4 Repeat steps 1 and 3 for the empty administration, help, and audit databases.
- 5 On completion, the Operation Set window displays showing all operations complete.

This completes the workflow to create the empty databases.

Copy Empty Databases (Multi-Language Only)

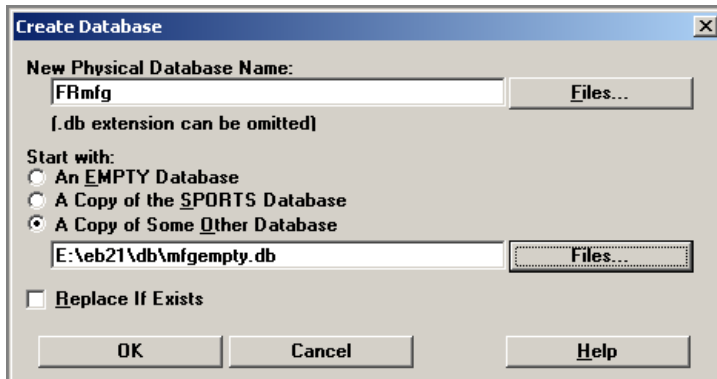
Each language requires a database set to compile against in order to read in the correct schema labels. The simplest means of creating additional empty databases is to use Progress tools. You will need four databases for each language. The recommended naming convention is:

- mfgempty = XXmfg
- admempty = XXadm
- hlpempty = XXhlp
- audempty = XXaud

Where XX is the two-letter language code.

- 1 In MFG/UTIL, select Progress Editor from the File menu.
- 2 In the Progress Editor, select Data Administration from the Tools menu (this is called Data Dictionary in the character interface).
- 3 In the Data Administration tool, select Create from the Database menu.
- 4 Enter the database name and path you want to create, set Copy of Some Other Database, and locate the empty database to copy.

Fig. 3.11
Creating FRmfg from mfgempty



- 5 Choose OK.
- 6 The Connect Database screen displays. Connect to the database to verify it was created correctly.
- 7 Select Disconnect Database from the Database menu.
- 8 Repeat steps 3 through 7 to create a copy of mfgempty for each language you installed.
- 9 Repeat steps 3 through 7 to create one copy of admempty, hlpempty, and audempty for each language you installed.

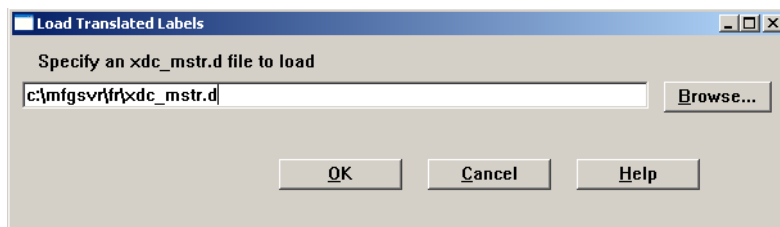
Load Translated Labels (Multi-Language Only)

These steps are required for any multi-language or non-US English installation. See “Loading Translated Labels Using a Workflow” on page 16 for information on automating this process.

Note No `xdc_mstr` load is required in your base empty databases if these are to be used for the US English compile. If you are implementing a single non-US English version, you can load that language’s `xdc_mstr` into the base empty databases.

- 1 In MFG/UTIL, select Load Translated Labels from the Database menu.
- 2 In the Connect Database screen, locate or enter your the language main empty database, `XXmfg`. Choose OK.
- 3 Locate the `xdc_mstr` for the language. It is located in the language directory of each language except US English, which is preloaded. Choose OK to start the load.

Fig. 3.12
Loading Translated Labels



- 4 The load completes. Choose OK to close the load window.
- 5 Repeat steps 1 through 4 for all instances of `XXmfg` and `XXadm`.
- 6 Exit and restart MFG/UTIL to clean up the load screens.

Creating Working Databases

In this task, use the empty databases and the default structure files to create working production databases. Cycle through the entire process for `mfgprod`, `admprod`, and `hlpprod`. For example, you create `mfgprod`; then load language-dependent and language-independent data. Then the Guided Setup returns to the beginning of the process to create `admprod`.

Important If you are performing these steps as part of a conversion, you should have modified your workflow files as described in “Modify the Workflow .ini Files” on page 29. For buffer-copy conversions, you will create `mfgprod`, `admprod`, and `hlpprod`. For in-place conversions, you will create only `admprod` and `hlpprod`.

Edit the Structure Files

The Guided Setup starts with the production database. By default this is `mfgprod`. The first step is editing the structure file. The Structure File Record Detail screen lets you edit the Storage Area Path and the Extent Size for fixed-length extents.

- Use the Extent Pathname to distribute your database onto drives to maximize performance and optimize disk access.

- Use the Extent Size on fixed-length extents to control the size of each storage area. (This field does not appear for variable-length extents.)

See Chapter 9, “Storage Area Reference,” on page 101 for default table-to-storage area assignments.

Note Most storage areas consist of two extents—one fixed length, the other variable to allow for growth.

Warning Do not edit the Comment line in a storage area. This converts the storage area definition to a comment and nullifies the storage area. To add a comment to the file, select a comment line (#) from the Database Storage Area’s selection list and press Enter.

Warning Do not change the storage Area Name. This name matches the Area definition in the Data Definition files (.df) for the database. When Progress encounters data files without defined storage areas, it creates them in the system storage area, which is also used to maintain the database structure.

- 1 Choose Guided Setup from the Configure menu.
- 2 Select Create Progress Production Databases in the Operation Set drop-down list.
- 3 Choose Run Set. The QAD Database Builder screen displays. A structure file for the production database, `mfgprod.st`, defaults in the Structure File field. (If you’re doing an in-place conversion, the first structure file you see will be `admprod.st`.) The MFG/UTIL screen that displays lets you assign disk locations and sizes to your storage areas.

Fig. 3.13
QAD Database Builder for `mfgprod`

QAD Database Builder

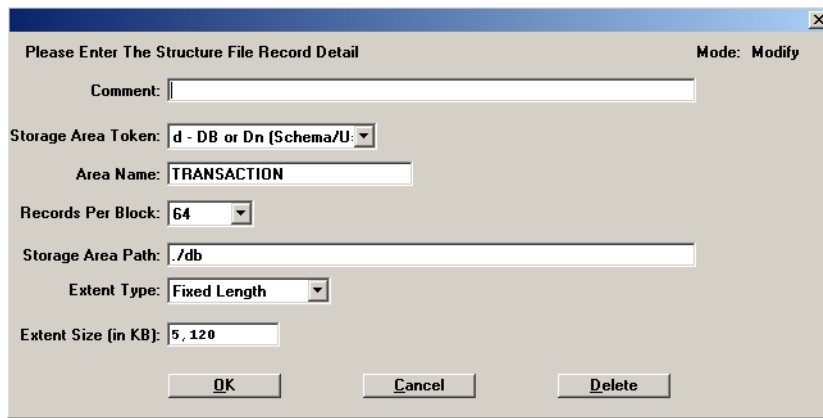
Structure File: `./db/mfgprod.st` Browse...

Comment	Token	Area Name	Recs Per Block	Extent Pathname	Extent Type	Extent I
#						
#	b			./db		
#	d	Schema Area	32	./db		
#	d	TRANSACTION	64	./db	f	5120
#	d	TRANSACTION	64	./db		
#						

Save Save As New Entry Create DB Help Close

- 4 Modify any storage area by tabbing to the row and pressing Enter.

Fig. 3.14
Structure File Editor



The dialog box is titled "Please Enter The Structure File Record Detail" with a "Mode: Modify" label in the top right corner. It contains the following fields and controls:

- Comment:** A text input field.
- Storage Area Token:** A dropdown menu showing "d - DB or Dn (Schema/U:)".
- Area Name:** A text input field containing "TRANSACTION".
- Records Per Block:** A dropdown menu showing "64".
- Storage Area Path:** A text input field containing "./db".
- Extent Type:** A dropdown menu showing "Fixed Length".
- Extent Size (in KB):** A text input field containing "5,120".
- At the bottom are three buttons: "OK", "Cancel", and "Delete".

- 5 Edit the storage area definition. Typically you would edit only the Storage Area Path and Extent Size.
- 6 Choose OK to save the edits.
- 7 Choose Create DB to save your entries.

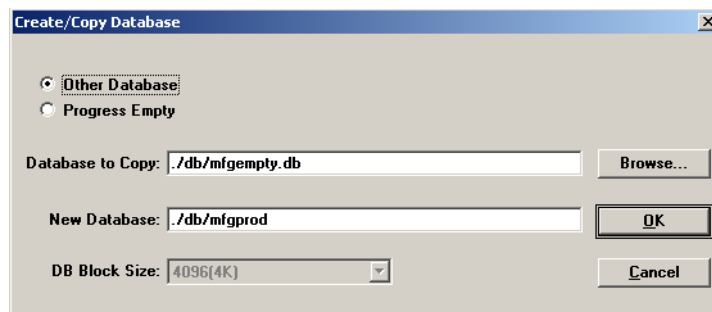
Build the Main Databases

In these next steps, you use the structure files you configured in the last set of steps and the empty databases you created earlier to create the working databases.

- 1 The Create/Copy Database screen displays. Accept the default of Other Database and verify the path to mfgempty.db. Choose OK.

The New Database name defaults from the .st file name. In some instances, this default name is controlled by the wk0305.ini file (where the database name does not match the .st file name). In either case, you can enter a different database name here if you choose.

Fig. 3.15
Create/Copy Database for mfgprod



The dialog box is titled "Create/Copy Database" and contains the following fields and controls:

- Other Database:** A radio button that is selected.
- Progress Empty:** A radio button that is unselected.
- Database to Copy:** A text input field containing "./db/mfgempty.db" with a "Browse..." button to its right.
- New Database:** A text input field containing "./db/mfgprod" with "OK" and "Cancel" buttons to its right.
- DB Block Size:** A dropdown menu showing "4096(4K)".

- 2 When mfgprod is built, a log of the database build process displays. Scroll through the log and verify that mfgprod was created successfully. This information is also recorded in mfgprod.log in the QADInstallDir. When ready, choose Close to continue.

- 3 The Database Storage Areas screen displays with the Close button selected. Press Enter to close the screen.
- 4 You now repeat this process for admprod and hlpprod.

Specify the Database OID Values

Important You will skip steps 2 through 3 for the production database if this installation is creating the target database for a conversion. You will still perform step 1.

See “Editing Workflow .ini Files for US English Installs” on page 10.

The Enter OID Generator Code screen displays. Enter a numeric value as described in “OID Generator Codes” on page 12.

- 1 The Enter OID Generator Code screen displays. This value is reversed and used as the registration ID portion of all OID values in the database.

Fig. 3.16
Entering the OID Generator Code



- 2 The Connect Database screen displays. Make sure the database is mfgprod, and choose OK.

Fig. 3.17
Connect Database for mfgprod



- 3 The Log Window displays showing the creation of the qaddb_ctrl record. Choose Close to continue.

Load Language-Specific System Data

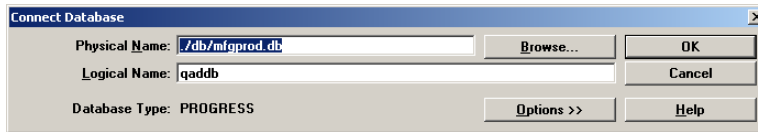
Important You should skip this step for the main production database, mfgprod, if this installation is creating the target database for a conversion.

See “Editing Workflow .ini Files for US English Installs” on page 10.

In this task, you load the default system data supplied by QAD into each database. You first load language-specific data such as menu and message files, then the language-independent control data. After completing both loads, you go to the next database and complete the loads for it.

- 1 After the OID Generator Code creation log window closes, the Connect Database screen displays. Accept the defaults to connect to the production database, mfgprod. Choose OK.

Fig. 3.18
Connect Database for mfgprod Schema Load



- 2 The QAD Log Window displays showing the database connection. Choose Close.
- 3 The Table Selection for Load screen displays the data files in the mfgprod database in the language-specific mfg subdirectory, for example /us/mfg. This screen may take a minute or more to load the data file list for larger directories. Choose OK to start the load.

Fig. 3.19
First Table Selection for Load for mfgprod



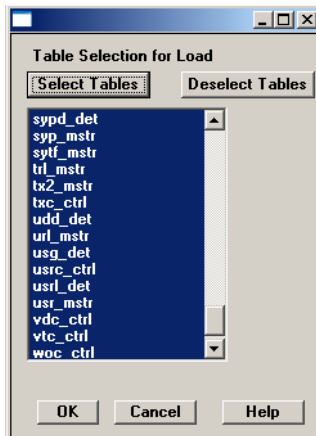
- 4 The Log Window displays to show load progress and any load errors. When the load completes, choose Close to continue.
- 5 If you edited the Guided Setup wk0305.ini initialization file to load data for additional languages into mfgprod, those loads should take place at this point. For details on modifying this file, see “Edit MFG/UTIL for Multiple Languages” on page 16.

Load Language-Independent System Data

You now load the language-independent system data.

- 1 The Connect Database screen displays with mfgprod.db entered by default. Accept the defaults by choosing OK.
- 2 The QAD Log Window displays confirming the database connection. Choose Close.
- 3 The Table Selection for Load screen displays. The tables to be updated with language-independent data files are listed from the /mfg directory. All are selected by default. Choose OK to load the data.

Fig. 3.20
Second Table Selection for Load for mfgprod



- 4 The Log Window displays to show load progress. When the load completes, choose Close to continue.

Load Admin Data

You now complete two schema loads for admprod.

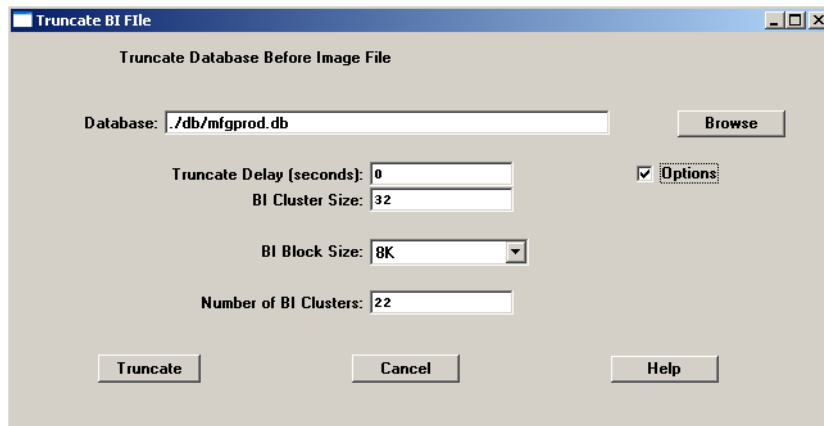
- 1 To begin the first load of language-dependent data:
 - a Connect to admprod in the Connect Database screen.
 - b The Log Window displays the database connection. Close.
 - c Accept the tables in the Table Selection for Load screen.
 - d The log window displays, showing the load progress. On completion, choose Close.
- 2 Repeat these steps for language-independent admin data.
- 3 If you edited the Guided Setup wk0305.ini initialization file to load data for additional languages into admprod, those loads should take place at this point.

Truncate Before-Image Files

You now truncate the production database before-image (BI) files.

- 1 In the Truncate BI File screen, accept the default path to mfgprod and choose Truncate.

Fig. 3.21
Truncating mfgprod



- 2 Close the log window that displays on completion.
- 3 Repeat steps 1 and 2 for the administration and help databases.
- 4 When the h1pprod.db BI file is truncated, choose Close.
- 5 If you have additional language-specific production databases, these are truncated here.
- 6 This completes the Create Progress Production Databases workflow.

Load Source Code System Cross-Reference (Optional)

Once you have loaded the help schema, you can load the source code cross-reference data into the help database. Loading source code cross-reference data into the help database is optional. This data supports the functions on the System Cross-Reference menu (36.18), which identify how and where fields and files are used.

Loading the source code cross-reference data increases the size of the help database by approximately 300 MB and must be taken into account when defining the size of the help database extents.

Note Load the cross-reference data only once for all languages.

- 1 From MFG/UTIL, select Database|Load Data into Database.
- 2 In the Connect Database window, connect to the help database, h1pprod.
- 3 The QAD Log Window displays showing the database connection. Choose Close.
- 4 In the Load Data Contents window, specify the path to the mfghelp subdirectory below the *QADInstallDir* and click OK.

- 5 When the Table Selection for Load window displays, all tables in the hlpprod database with corresponding data files (extension .d) in the mfghe1p subdirectory are selected. Click OK to begin loading data.
- 6 When the load completes, choose Close to exit the log window.

Creating the Remaining Databases

Which remaining databases you create is controlled by two workflow files, wk0306.ini and wk0307.ini. Table 3.6 shows the default order set up in these files and whether the databases are created and loaded or copied from an existing database.

The demo and training databases, mfgtrain and mfgdemo, do not have OIDs. Because of this, one table, prd_det, will not load using standard MFG/UTIL tools. If you are creating train or demo databases, follow these steps before proceeding with Populate OID Values for the databases.

- 1 Create the mfgtrain and mfgdemo databases using the standard workflow.
- 2 Open the Progress Data Dictionary and connect to mfgtrain.
- 3 Load prd_det.
- 4 Repeat these steps for mfgdemo.

Loading prd_det after loading the Enhanced Controls schema will fail due to errors.

Table 3.6
Databases in wk0306.ini

	Step	Database	Structure File	Logical DB Name	From (db/dir)
Training Databases	Create	mfgtrain	mfgtrain.st		mfgempty.db
	Load	mfgtrain		qaddb	./us/mfg
	Load	mfgtrain		qaddb	./mfgtrain
	Copy	admtrain	admprod.st		admprod.db
	Copy	hlptrain	hlpprod.st		hlpempty.db
	Truncate	mfgtrain			
	Truncate	admtrain			
	Truncate	hlptrain			
Demonstration Databases	Create	mfgdemo	mfgdemo.st		mfgempty.db
	Load	mfgdemo		qaddb	./us/mfg
	Load	mfgdemo		qaddb	./mfgdemo
	Copy	admdemo	admprod.st		admprod.db
	Copy	hlpdemo	hlpprod.st		hlpprod.db
	Truncate	mfgdemo			
	Truncate	admdemo			
	Truncate	hlpdemo			

Table 3.7
Databases in wk0307.ini

	Step	Database	Structure File	Logical DB Name	From (db/dir)
Multi-Site Training Databases	Create	chicago	chicago.st		mfgempty.db
	Load	chicago		qaddb	./us/mfg
	Load	chicago		qaddb	./chicago
	Create	newyork	newyork.st		mfgempty.db
	Load	newyork		qaddb	./us/mfg
	Load	newyork		qaddb	./newyork
	Create	seattle	seattle.st		mfgempty.db
	Load	seattle		qaddb	./us/mfg
	Load	seattle		qaddb	./seattle
	Copy	admmulti	admprod.st		admprod.db
	Copy	hlpmulti	hlpprod.st		hlpprod.db
	Truncate	chicago			
	Truncate	newyork			
	Truncate	seattle			
	Truncate	admmulti			
	Truncate	hlpmulti			

After each load, errors are written to .e files in the directory you loaded from. If an error occurs loading from the co_ctlr.d file in ./mfg, a co_ctlr.e file with the errors is created in ./mfg.

After you create the final working database, choose Close. Then complete the truncate step from page 43. This completes the database server installation.

File Server and Host Client Installs

Use this chapter to install the UNIX host client, or the character or GUI file server and remote client software. This chapter supports both new and existing (conversion) installations.

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Installing UNIX Host Clients 49

Installing Windows File Servers 50

Setting Up Remote Clients 51

Overview

In this chapter, you install one or all of the configurations listed in Table 4.1.

Table 4.1
UNIX and Windows Client Configurations

	Host machine	Remote clients
UNIX	Character client	Telnet to host
Windows Character	Character file server	Character client
Windows GUI	GUI file server	GUI client

On UNIX, you install a host client and then telnet in from other UNIX terminals to connect with the host client session.

If you are running Windows clients (character or GUI) in addition to the UNIX host clients, then you first install a character or GUI file server, and then install remote clients on each additional machine. Remote character clients connect with a character file server; GUI remote clients connect with a GUI file server.

Installing on a Windows database server is exactly parallel except there is no host client. If you want to install a client on the host machine, it is the same as installing a character or GUI file server.

While the choice of database server is largely dependent on company policy, most companies install the Windows character file server and remote clients rather than the GUI for performance reasons. The character deployment fully supports a QAD .NET UI implementation.

For additional information on .NET UI requirements and deployment, see *Installation Guide: QAD .NET UI*.

Preliminary Steps

Before install, review the following cautions and requirements:

- Change to the Korn shell.
- Log on as user `mfg` under the group `qad`. You should have created this group and user during the installation of the database server files.
- Use a standard terminal type such as `vt100` while installing.
- Verify adequate disk space.
- The client PC that you use must have read, write, and execute permissions for the directory on the Windows file server where you want to create the GUI client.
- Set the `DLC` variable correctly and ensure the `%DLC%\bin` directory is included in the `PATH` environment variable on the client PC.
- You must have access to the data definition files containing the schema: `mfgempty.df`, `admempty.df`, and `hlpempty.df`. You can also copy these files from the `db` subdirectory below the `QADInstallDir` on your server.

See page 9 for a summary of the Windows client install.

Installing UNIX Host Clients

This installation assumes you are installing the host client on the database server machine.

- 1 Starting with your base language, load the language-specific UNIX character client media. See “Mount the CD-ROM” on page 26.
- 2 Log on as user mfg.
- 3 On the CD, change to the directory containing the client media.
- 4 Change to the `install` directory:

```
cd install
```
- 5 Launch the install script:

```
./install.ksh
```

A welcome screen displays. Press Enter to continue.
- 6 Review and accept the software license agreement. Press Ctrl+C to jump to the end.
- 7 Accept the default installation log file location, or enter the correct location if you did not use the default during the database server install.
- 8 Enter the Progress installation directory.
- 9 Enter the *QADInstallDir*. This is the database server directory. It defaults in if your log files are correctly identified in the previous step.
- 10 Enter or accept the destination for the client installation. The default is `/mfgsvr`.

Important Do not select a directory path that has spaces in it such as `C:\Program Files\mfgpro`. Database scripts generated by MFG/UTIL cannot locate a database in a path with spaces.
- 11 Review the installation summary and enter `y` to install.

Note If you are installing more than one language, you do not need to repeat these client install steps for additional languages. You compile for each language later on.
- 12 You are asked if you would like additional information on the SV product. Select Yes to view this information, No to continue.

This ends the install script. The installation log is written to the log directory as `mfgchrc li . log`. To complete the host client install, go to “Configuring Database Sets” on page 70.

Additional UNIX Clients

To connect additional UNIX clients to your QAD Standard Edition server, make startup scripts such as `client . Production` available to those clients.

See “Generating Scripts and Shortcuts” on page 81.

Installing Windows File Servers

In the following steps, you install a character or GUI file server on a Windows system. The instructions for each install are nearly identical; you use different media and the default directories are different. The media is labeled Character Client for the character file server or GUI Client for the GUI file server.

Preliminary Steps

For Windows, if you have not done so, reset your DOS command window buffers. See “Set Up MFG/UTIL Clients (Windows Only)” on page 29.

A summary of the remote client install appears on page 9.

If you are installing the file server on a different drive than the database server, you must have mapped the drive from the intended file server drive or created a TCP/IP network connection.

Installation Steps

- 1 Starting with your base language, load the language-specific character client or GUI client media. See “Mount the CD-ROM” on page 26.
- 2 On the CD, change to the directory containing the client media.
- 3 Launch the install script `install.exe`.
A welcome screen displays. Press Enter to continue.
- 4 Review and accept the software license agreement.
- 5 Accept the default installation log file location, or enter the correct location if you did not use the default during the database server install.
- 6 Enter the *QADInstalldir*. This is the database server directory. It defaults in if your log files are correctly identified in the previous step.
- 7 Enter the destination for this file server installation. By default the directory is *QADInstalldir*. The default directories for the different possible installations are:

Windows Character Default

`c:\mfgsvr`

Windows GUI Default

`c:\mfgsvr\guicli`

Note In previous releases, character server code was installed under `mfgsvr\us` by default. It is now installed to `\mfgsvr` by default.

Important Do not select a directory path that has spaces such as `C:\Program Files\mfgpro`. Database scripts generated by MFG/UTIL cannot locate a database in a path with spaces.

- 8 You are prompted for the folder name for MFG/UTIL icons. Accept the defaults or enter new ones.
- 9 Review the installation summary and enter `y` to install.

10 Respond to the prompt:

Would you like to view more information about SV?

Supply Visualization (SV) is a Web-based service for managing inventory by inventory visibility, schedules, or Kanban, offered through MFGx.net, the QAD Web portal.

At the MFGx.net home page, click the Services tab, then the Supply Visualization button to display the SV home page. Select Request a call or Send e-mail from the Request More Information section.

11 Repeat these steps to complete an install of the other file server type, if you require it.

Note If you are installing more than one language, you do not need to repeat these client install steps for additional languages. You compile for each language later on.

Setting Up Remote Clients

If you installed a character or GUI file server in the preceding steps, you must complete the following steps on each additional client you want to use to connect to the file server. In other words, use the following steps to install a remote character or GUI client on a Windows machine.

Preliminary Steps

For Windows, if you have not done so, reset your DOS command window buffers. See “Set Up MFG/UTIL Clients (Windows Only)” on page 29.

If you are installing the file server on a different drive than the database server, you must have mapped the drive from the intended file server drive or created a TCP/IP network connection.

Installation Steps

1 On the remote machine, use Start|Run to launch a DOS session:

```
cmd
```

2 Change to the `install` directory on the character client or GUI client CD-ROM:

```
cd CD-ROMDrive:\install
```

3 Run the following command:

```
install -remote FileServerInstallDir
```

This should point to the same directory you identified in step 7 on page 71. For GUI clients, the *FileServerInstallDir* is typically something like `c:\mfgsvr\guicli`. For Windows character clients, the *FileServerInstallDir* is typically something like `c:\mfgsvr`. The file server directory must contain the file `version.mfg` and a directory named `client`. The command launches the GUI client or character client install—depending on the directory it is referencing—on the remote machine.

4 Click Next when the Welcome window displays.**5** To continue with the installation, read the license agreement and enter `y` to accept it.

- 6** Enter or accept the installation log location. This should match the location used for the file server installation. If it does not match, you are asked to reenter path information about the previous install. See “Install Database Server Files” on page 26.

- 7** Enter or accept the directory where the file server was installed. The defaults are:

Windows Character Default	Windows GUI Default
c:\mfgsvr	c:\mfgsvr\guicli

- 8** Enter or accept the destination for the client installation. The defaults for the different installations are:

Windows Character Default	Windows GUI Default
c:\qadchrcli	c:\qadguicli

This directory is created if it does not exist.

- 9** Enter or accept the name of the MFG/UTIL icon directory. This directory is created if it does not exist.
- 10** A summary screen displays. Review the information and confirm by entering y. The file copy starts.

```
Platform is MSWin32.
Product is MFGPRO eB2 GUI Client Setup.
Database type is Progress.
Progress directory is c:\Program Files\Progress.
Language directory is us
Installing from c:\mfgsvr\guicli\guicli\client.
MFG/PRO Database Server is located in c:\mfgsvr.
Destination location is c:\qadguicli.
MFGUtil icons will be in MFGPRO eB2 GUI Client Setup

Proceed using these values? (y/n)
Default is y
->_
```

- 11** Respond to the prompt:

Subscribe to QAD Supply Visualization?

Supply Visualization (SV) is a Web-based service for managing inventory by inventory visibility, schedules, or Kanban, offered through MFGx.net, the QAD Web portal.

At the MFGx.net home page, click the Services tab, then the Supply Visualization button to display the SV home page. Select Request a call or Send e-mail from the Request More Information section.

- 12** Exit the log window.

Create Locales

Each user is defined with a locale that sets their date and number formats. The `locale.dat` file contains the 30 available locales. The default file contains the languages and countries for which the software is translated. For example, the French entry is:

```
FR, fr, FR, , dmy, European
```

The entry consists of the language code, the ISO language code, the ISO country code, an optional variant (not currently used), the date format, and the Progress number format.

An entry must exist for each country where you are setting up users. If you are implementing QAD Standard Edition in a country not listed in the `locale.dat` file, open the file in an editor and add any countries that are missing. The file is in the root *QADInstallDir*.

Enhanced Controls Install

This chapter describes how to install the optional Enhanced Controls module in your QAD Standard Edition empty and production databases.

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Overview

Before installing the Enhanced Controls module, review the information in *Deployment Guide: Audit Trails* located on the QAD Global Support Web site:

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

This chapter describes initial steps before you begin the install, installing the required data in your QAD Standard Edition empty and production databases, creating production audit databases, and creating startup and shutdown scripts for your Enhanced Controls environment.

Remaining steps are described in Chapter 6, “Database Setup and Application Compile,” on page 69 including:

- “Create an Enhanced Controls DB Set” on page 74
- “Compile QAD Standard Edition” on page 77

Preliminary Steps

Prior to starting an Enhanced Controls install, you must:

- Complete a QAD Standard Edition installation.
 - This loads the Enhanced Controls source code, schema, and data files onto the database server in preparation for this install.
 - It also creates the empty audit database.
- Add services for your audit databases.
- Modify and copy the production audit database structure file.
- Modify the Create Production Progress Audit Databases workflow.

Important Before running the Enhanced Controls installation, set the Progress `-L` (lock tables) value to a level that will accommodate all rows in the largest table in your database. This parameter must be set in the database server startup script of each database set (Production, Training, and so forth) that will have OID values added. OID population will fail if the `-L` value is insufficient to handle all the rows being modified.

Add Enhanced Controls Services

If you are implementing a client/server environment, tailor your `services` files. If you add any new service names after installation, you must modify your `services` file. All service names, host names, and port numbers must match in the `services` files of each client and each database server on the network. The location of the UNIX `services` file on the server is typically the `/etc` directory. On Windows it is located in:

```
c:\winnt\system32\drivers\etc
```

For Enhanced Controls, you will need a service for each audit database server you are running. For example, if you create monthly audit databases named `aud0105`, `aud0205`, `aud0305`, and so forth, and plan to connect to six month’s worth of audit databases at a time—four past, one current, one future—you will need to define six services.

Add the names of your database services to your `services` file. Limit the service names to 16 characters. You can use any unused port numbers. Table 5.1 shows example service names and port numbers for a production database set and the added audit databases.

Table 5.1
Audit Database Services Example

Service Name	Port #/Protocol	Comment
mfgprod-srv	5500/tcp	# Production Database
admprod-srv	5510/tcp	# Admin Database
hlpprod-srv	5520/tcp	# Help Database
aud01-srv	5530/tcp	# Audit Database 1
aud02-srv	5540/tcp	# Audit Database 2
aud03-srv	5550/tcp	# Audit Database 3
aud04-srv	5560/tcp	# Audit Database 4
aud05-srv	5570/tcp	# Audit Database 5
aud06-srv	5580/tcp	# Audit Database 6

Modify and Copy Audit Database Structure Files

QAD uses database structure files to define database names and the disk locations and sizes of database extents during database creation. You can edit the files during the database creation process. However, it is much easier to perform that task before launching the creation process.

Before launching the audit database creation workflow, you must:

- Edit the master `audprod.st` file for database extent and sizing.
- Create an `.st` file for each audit database you plan to create.
- Name each `.st` file exactly as the database name it will create.
- Edit each `.st` file for correct disk locations.

The standard `audprod.st` looks like:

```
#
b ./db
#
d "Schema Area":6,32 ./db
#
d "ATMSTR":7,64 ./db f 256000
d "ATMSTR":7,64 ./db
#
d "ATMSTR_IDX1":8,32 ./db f 128000
d "ATMSTR_IDX1":8,32 ./db
#
d "ATMSTR_IDX2":9,32 ./db f 128000
d "ATMSTR_IDX2":9,32 ./db
#
d "ATMSTR_IDX3":10,32 ./db f 128000
d "ATMSTR_IDX3":10,32 ./db
#
d "ATFDET":11,8 ./db f 2000000
d "ATFDET":11,8 ./db
#
#
d "ATFDET_IDX1":12,32 ./db f 128000
d "ATFDET_IDX1":12,32 ./db
#
d "ATFDET_IDX2":13,32 ./db f 128000
d "ATFDET_IDX2":13,32 ./db
```

```
#
d "ATKDET":14,64 ./db f 256000
d "ATKDET":14,64 ./db
#
d "ATKDET_IDX1":15,32 ./db f 128000
d "ATKDET_IDX1":15,32 ./db
#
d "ATKDET_IDX2":16,32 ./db f 128000
d "ATKDET_IDX2":16,32 ./db
#
d "ATKDET_IDX3":17,32 ./db f 128000
d "ATKDET_IDX3":17,32 ./db
#
d "AESIG":18,16 ./db f 256000
d "AESIG":18,16 ./db
#
d "AESIG_IDX":19,32 ./db f 256000
d "AESIG_IDX":19,32 ./db
```

As you can see, the file creates a default Schema Area and extents for four tables and nine indexes. The extents are paired: a fixed size extent, and a variable extent, and all extents are defined to be created in the *QADInstallDir/db* directory.

A detailed discussion of audit database sizing is included in *Deployment Guide: Audit Trails* located on the QAD Global Support Web site:

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

Use that document to estimate your audit database sizing requirements; then use those estimates to modify the base *audprod.st* file.

Creating a Structure File for Each Audit Database

Once you have adjusted the extent sizes in the base *audprod.st* file, you can copy that file, name the copies for the databases you are going to create, and modify the directory locations as necessary.

- 1 Copy *audprod.st* to *newDatabaseName.st*; for example, *aud0105.st*.
- 2 Open the new structure file and modify all instances of *./db* to reflect the desired target location of the new database extent. For example:

```
d "ATMSTR":7,64 ./db/aud0105 f 256000
d "ATMSTR":7,64 ./db/aud0105
```

Or:

```
d "ATMSTR":7,64 j:\mfgaudit\2005\aud0105 f 256000
d "ATMSTR":7,64 j:\mfgaudit\2005\aud0105
```

- 3 Save your changes.
You should save all *.st* files in the directory where you intend to create the default Schema Area for the database. For example, if you are creating the database in *j:\mfgaudit\2005\aud0105*, place the edited structure file there as well.
- 4 Repeat steps 1 through 3 for all the production databases you intend to create.

Modify Workflow .ini Files

There are two Enhanced Controls workflows:

- One enables Enhanced Controls in the main QAD Standard Edition empty and production database schemas.
- One creates the new audit databases.

Only the create database workflow needs to be modified.

Modifying the Audit Database Create Workflow

By default, the Create Production Progress Audit Databases workflow, `wk0310.ini`, creates and truncates a single audit database named `audprod.db`. This workflow should be modified to create and truncate all the audit databases for which you have defined structure files.

The default workflow looks like:

```
WorkFlowDesc=Create Progress Production Audit DB
[CreateMSDB]
Status=Not Run
Program=crtpdbsa.w
STName=./db/audprod.st
FromDB=./db/audempty.db
;
;TRUNCATE PRODUCTION DATABASES
[TruncBI]
Status=Not Run
Program=truncbi.w
DBName=./db/audprod.db
Delay=0
;
```

A modified workflow to create three audit databases might look like:

```
WorkFlowDesc=Create New Audit Databases
[CreateMSDB]
Status=Not Run
Program=crtpdbsa.w
STName=j:/mfgaudit/2005/aud0105.st
FromDB=./db/audempty.db
;
[CreateMSDB]
Status=Not Run
Program=crtpdbsa.w
STName=j:/mfgaudit/2005/aud0205.st
FromDB=./db/audempty.db
;
[CreateMSDB]
Status=Not Run
Program=crtpdbsa.w
STName=j:/mfgaudit/2005/aud0305.st
FromDB=./db/audempty.db
;
;TRUNCATE PRODUCTION DATABASES
[TruncBI]
Status=Not Run
Program=truncbi.w
DBName=j:/mfgaudit/2005/aud0105.db
Delay=0
;
[TruncBI]
Status=Not Run
Program=truncbi.w
DBName=j:/mfgaudit/2005/aud0205.db
Delay=0
;
[TruncBI]
```

```
Status=Not Run
Program=truncbi.w
DBName=j:/mfgaudit/2005/aud0305.db
Delay=0
;
```

Note that the same empty database in the `./db` directory is used each time. Save the modified workflow.

Warning If you change the workflow file name—to `wk0311.ini` for example—you must change the workflow title that appears on the first line of the file as well to avoid seeing a duplicate title in MFG/UTIL. This title is limited to 35 characters.

Installing Enhanced Controls

The following section provides instructions for enabling Enhanced Controls in your production databases, creating the audit databases, and loading e-signature data.

Populate OID Values

If you have completed a conversion or a service pack install rather than a new QAD Standard Edition installation, you must populate OID values in the production database.

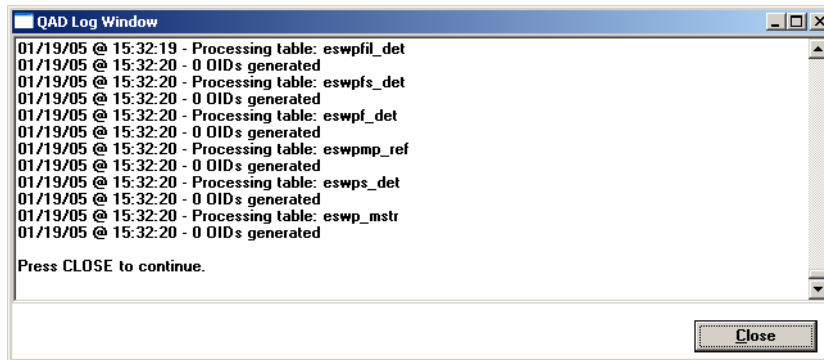
- 1 Launch MFG/UTIL on the database server.
`./mfgutil`
 In Windows, double-click the GUI or character MFG/UTIL icon.
- 2 Select Populate OID Values from the Database|Enhanced Controls Options menu.
- 3 The Connect Database screen displays. Make sure you are connecting to your main production database, `mfgprod`. Choose OK.

Fig. 5.1
Connecting to mfgprod



- 4 The QAD Log Window displays while MFG/UTIL updates any uninitialized or missing OID values in your production database.

Fig. 5.2
OID Updates Complete in Log Window



- 5 Choose Close on completion.

Validate Database Tables

When you are using the Enhanced Controls auditing feature, a background process monitors and records auditable events. This process does not work correctly for a table that has ever had fields deleted. While this is unlikely to occur, it may happen through customizations.

Before installing Enhanced Controls, you should verify that none of the tables you want to audit has this problem. To do this, use three functions on the Database|Enhanced Controls Options menu in MFG/UTIL:

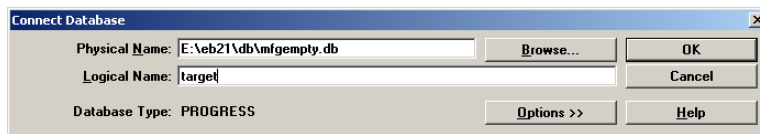
- Validate Table for Auditing checks the format of the table and generates a list of tables that fail the validation.
- Display Audit Table Fix List displays the list of tables that failed the validation.
- Fix Tables for Auditing corrects the problem that prevents the audit process from working for the files in the failure list.

Enable Enhanced Controls

This set of steps validates OIDs in the target database and then loads the two necessary audit trail schema files into the mfgempty and mfgprod databases.

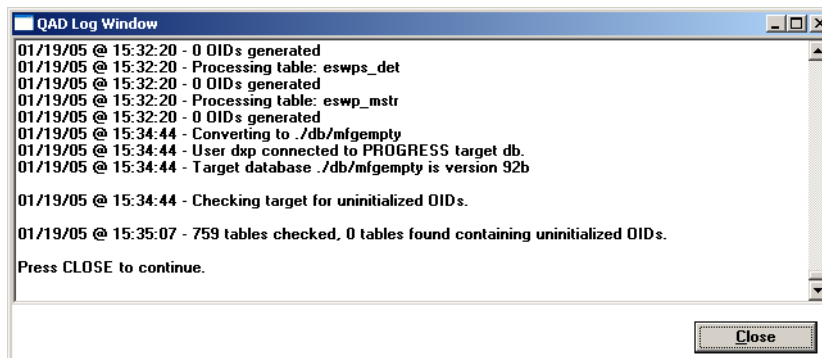
- 1 Launch MFG/UTIL on the database server.
`./mfgutil`
 In Windows, double-click the GUI or character MFG/UTIL icon.
- 2 Select Guided Setup from the Configure menu. The Operation Sets screen displays.
- 3 In the Operation Sets screen, select Enable Enhanced Controls Schema Changes in the Operation Set drop-down list box.
- 4 Select Run Set and press Enter.
- 5 The Connect Database screen displays. Make sure Physical Name references mfgempty.db and set the Logical Name to target. Choose OK.

Fig. 5.3
Connect to mfgempty



- 6 The QAD Log Window displays, showing the number of tables the program has checked for uninitialized OIDs and the number of tables that have them. There should be no tables with uninitialized OIDs. Choose Close to continue.

Fig. 5.4
No Uninitialized OIDs in the Log Window

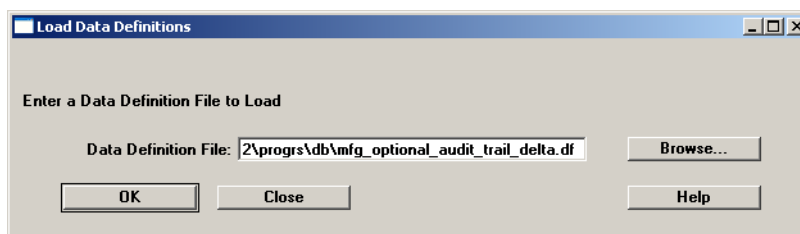


- 7 The Connect Database screen displays again. Accept the defaults to connect to mfgempty. Choose OK.
- 8 The Load Data Definitions screen displays, showing the first data definition file, mfg_optional_audit_trail_delta.df.

Warning Choose Browse and manually select the correct file if you are installing after a service pack upgrade. In these instances, the default location is *QADInstallDir\SPx\progrs\db* where x is the latest service pack number.

- 9 Choose OK to initiate the load.

Fig. 5.5
Load Data Definitions



- 10 The Log Window opens to show progress. Wait until the log displays the message Schema Load Complete, then choose Close.
- 11 The Connect Database screen displays again. Accept the defaults to connect to mfgempty. Choose OK.

- 12 The Load Data Definitions screen displays again, showing the second data definition file, `./db/mfg_optional_oid_delta.df`. Choose OK to initiate the load.

Warning Choose Browse and manually select the correct file if you are installing after a service pack upgrade. In these instances, the default location is `QADInstallDir\SPx\progrs\db` where `x` is the latest service pack number.

- 13 The Log Window opens. Wait until the load is complete; then choose Close to continue.
- 14 The Connect Database screen displays. Make sure you connect to the next database to be updated. Choose OK.

Warning If you have not already edited workflow `wk0060.ini` to add `mfgprod`, you can do that now, changing the instances of `mfgempty` to `mfgprod`, and setting all Status values to Not Run.

- 15 Repeat steps 6 through 13 for the `mfgprod` database.

Creating Production Audit Databases

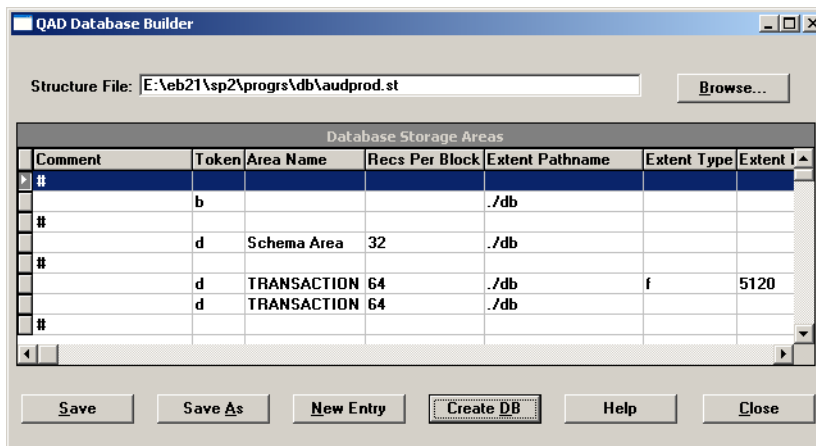
In this task, use the empty audit database, `audempty`, and the structure files you created in “Creating a Structure File for Each Audit Database” on page 58, to create production audit databases. Cycle through the entire process for each new audit database defined in the modified workflow from “Modifying the Audit Database Create Workflow” on page 59.

Warning If you are installing after a service pack upgrade, use the Browse button in each dialog to verify the database and file paths. The default location for structure files is `QADInstallDir\SPx\progrs\db` where `x` is the latest service pack number. For databases, the default path is `QADInstallDir\db`.

- 1 Choose Guided Setup from the Configure menu.
- 2 Select Create Progress Production Audit DB in the Operation Set drop-down list. Choose Run Set.
- 3 The QAD Database Builder screen displays. A structure file for the first audit database, for example `aud0105.st`, displays in the Structure File field. The MFG/UTIL screen that displays lets you assign disk locations and sizes to your storage areas.

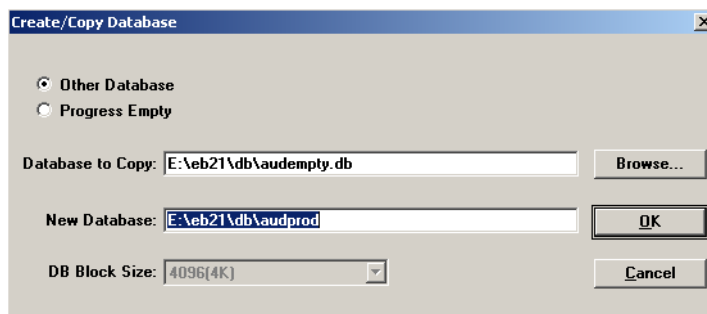
Important For production audit databases, QAD strongly recommends that you make all changes to storage areas in the structure file itself as described in “Creating a Structure File for Each Audit Database” on page 58.

Fig. 5.6
QAD Database Builder for mfgprod



- 4 Choose Create DB to continue.
- 5 The Create/Copy Database screen displays. Accept the default of Other Database and verify the path to audempty.db. The New Database name defaults from the .st file name identified in the workflow. Choose OK.

Fig. 5.7
Create/Copy Database screen for audprod



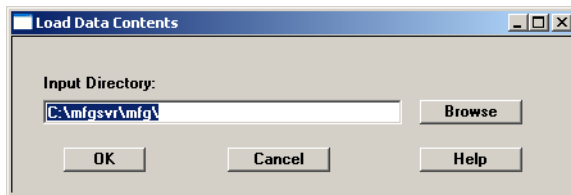
- 6 When the audit database is built, a log of the build process displays. Scroll through the log and verify that the database was created successfully. This information is also recorded in *DBName.log* in the *QADInstallDir*. When ready, choose Close to continue.
- 7 The Database Storage Areas screen displays with the Close button selected. Press Enter or choose Close to close the screen.
- 8 The Truncate BI File screen displays. Accept the default path to the audit database and choose Truncate.
- 9 Close the Log Window that displays on completion.
- 10 Steps 3 through 9 repeat for each audit database you have defined in the modified workflow.

Loading Enhanced Controls Data

Several data files must be loaded for Enhanced Controls.

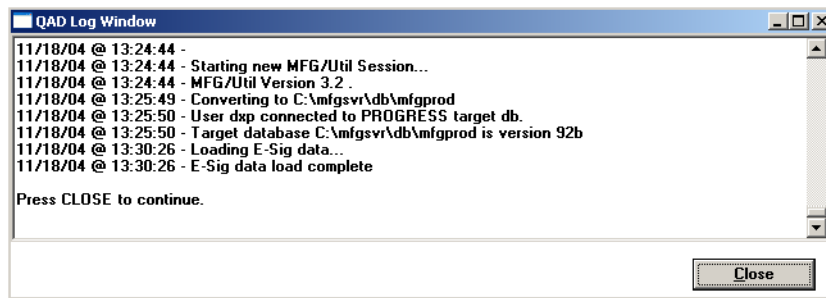
- 1 In MFG/UTIL, select Database|Enhanced Controls Options|Load Enhanced Controls Data. The Database Connect screen displays.
- 2 Make sure to connect to your main production database, `mfgprod` and set the Logical Name to `target`. Choose OK.
- 3 The QAD Log Window displays to show the connection. Choose Close.
- 4 You are prompted for the input directory. Browse to locate the `QADInstallDir/mfg` directory. Following a service pack install, this directory will be `QADInstallDir/SPx/mfg` where `x` is the latest service pack number. Select any file in the directory and choose Open.

Fig. 5.8
Input Directory for E-Signature Data Load



- 5 Choose OK to initiate the load. The QAD Log Window displays on load completion.

Fig. 5.9
E-Signature Data Load Confirmation



- 6 Choose Close to continue.

Starting Enhanced Controls from Batch

To automate the startup of Enhanced Controls and begin extracting audit data from your production databases, you must copy and modify a production client startup script, then launch all the components in the correct order.

Depending on the number of users and the number of tables being audited, you may want multiple background processes running. Each background process consists of a client session that is running Audit Trail Creation Process (`attpui.p` or 36.12.13.23).

To start these processes, you create a startup script that launches a batch program, which in turn launches a CIM file. The CIM file automatically starts the Audit Trail Creation Process program.

The advantage of this method is that you do not have to start Audit Trail Creation Process sessions manually. However, the CIM file contains an unencrypted user name and password. If you choose to follow this method, make sure the user is defined in QAD Standard Edition with access only to the single Audit Trail Creation Process menu item.

To use a batch startup process, follow the steps outlined below. Details are provided in subsequent sections.

Implementation

- 1 Create a batch client startup script.
- 2 Create a CIM file.
- 3 Create a Progress program to launch QAD Standard Edition using the CIM file.

Operation

- 1 Start your database servers, including those for the audit databases.
- 2 Start one or more background clients to flush the audit staging table in QAD Standard Edition.

Create a Batch Client Startup Script

Use the following steps to copy and update the batch client startup script.

- 1 Locate the following script in your *QADInstallDir* and make a copy of it. The name of the copied script is a suggested name and is used for convenience in these instructions.

On UNIX systems, the file extension is `.ksh`; on Windows, `.bat`.

Existing Script:	Copied Script:
<code>client.Production</code>	<code>client.ECBatchProd</code>

- 2 Open `client.ECBatchProd` in a text editor. Locate the Progress executable, and make the following changes:

- a Change the Progress executable name for the Progress client from `mpro` or `_progres` in UNIX, and from `mpro` or `_progres.exe` in Windows, to `mbpro`, the Progress batch mode executable.

Alternatively, you can add the `-b` parameter after the Progress executable, as in:

```
mpro -b
```

- b Replace `mf.p` with the batch launch program name, `ttpb.p`. This program runs QAD Standard Edition using a CIM file as input.

Note The instructions for writing the CIM file and the batch launch program follow this section.

The result, in a Windows script, looks like the following with changes shown in **bold**.

```
REM loop-db-start
%DLC%\bin\_progres -b -c 30 -d mdy -yy 1920 -Bt 350 -D 100 -mmax 3000 -nb 200 -s 63
-noshvarfix -p ttpb.p -pf c:\mfgsrvr\Production.pf -iname progress.chr
REM loop-db-end
pause
```

- 3 Save the file.

Create a CIM File

CIM files are text files that QAD Standard Edition reads, treating each entry as an interface command. The CIM file to launch Audit Trail Creation Process should be named `ttp.cim`, and should contain a single line for each entry in the following table, in the exact order shown.

For details on CIM, see *User Guide: Manager Functions*.

Create the file in a text editor and save it as `ttp.cim` in your *QADInstallDir*.

Table 5.2
Enhanced Controls CIM File Example

CIM Entry	Descriptions
fr33 Na66Sand	Specifies a valid QAD Standard Edition log-in ID (fr33) and password (Na66Sand).
atttpui	Launches Audit Trail Creation Process (<code>atttpui.p</code>); the <code>.p</code> extension can be left off in the CIM file.
-	A blank line or dash (-) accepts the default log file. For CIM to accept the default, the default value must be populated in User Accountability Control (36.12.13.24). Alternatively, a fully qualified file path can be entered.
Yes	Provides a response to the message, "Please confirm start of Audit Trail Creation process."
.	Reproduces an End key to complete or exit a program component.
.	Same as above, returning the program to the menu level.
N	No response to the QAD Standard Edition exit prompt.
.	End key to exit the QAD Standard Edition session.
Y	Confirms the exit from QAD Standard Edition.

Create a Progress Batch Launch File

The batch launch program is a simple Progress program that loads the `ttp.cim` file, sends program output to a specified log file, starts a QAD Standard Edition client session, and then closes itself down. To use the batch launch program, follow these steps:

- 1 Open the Progress Editor. One method is to run the editor from the File menu in MFG/UTIL.
- 2 Enter the following program:

```
input from ttp.cim.
output to ttpb.log.
run mf.p.
input close.
output close.
```

- 3 Save this program as `ttpb.p` in your *QADInstallDir*.

Running the Audit Process

- 1 Be sure that your audit database servers are running. If not, use the following script to start them:
`start.EnhancedControls`

- 2 Be sure that your QAD Standard Edition database servers are running. If they are not included in the Enhanced Controls script, use the following script to start them:

```
start.Production
```

- 3 Start one or more background clients to move audit data from the staging table in QAD Standard Edition:

```
client.ECBatchProd
```

Database Setup and Application Compile

Use this chapter to configure database sets, generate client startup scripts and shortcuts, and compile application code.

<i>Configuring Database Sets</i>	70
<i>Compiling Application Code</i>	75
<i>Generating Scripts and Shortcuts</i>	81
<i>Express Setup for Remote Clients</i>	85
<i>Progress Initialization File</i>	86

Configuring Database Sets

QAD Standard Edition is a multi-database application that requires a minimum of three databases connected concurrently to a single session. Each QAD Standard Edition client session connects to at least a main QAD Standard Edition database, the help database, and the administration database. If you are using the optional Enhanced Controls module, you can connect to one or more audit database. You can also connect to QAD integrated applications, third-party databases, and custom side databases in the same session.

MFG/UTIL uses the concept of database sets to link your various databases together. Each database set you create in MFG/UTIL is then used to generate startup and shutdown scripts (UNIX) or shortcuts and initialization and parameter files (Windows) that allow client sessions to correctly launch and close all the related databases together.

You create database sets for:

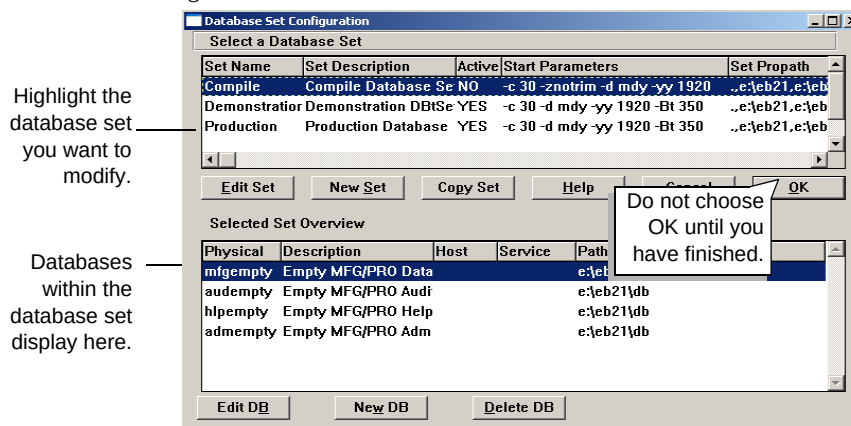
- Each group of production databases
- Compiles (one set for each language you are compiling)

Each database in a set must be configured for the server and clients.

Database Set Configuration Screen

Review the following figure to become familiar with the Database Set Configuration screen.

Fig. 6.1
Database Set Configuration Overview



Once you launch the Guided Setup and the Database Set editor opens, you can scroll up and down in the list of database sets. Potential database sets display by default. When the set you want to edit is highlighted, you can Tab to the Set buttons such as Edit Set or New Set. If you continue to Tab, the cursor jumps to the list of databases at the bottom of the screen under the heading Selected Set Overview. Another Tab takes you to the database buttons; Edit DB, New DB, or Delete DB.

After verifying and modifying all the database sets you want to generate scripts for, Tab to the OK button below the Database Set list. This button saves your work. The process is described in greater detail in the following sections.

Set Up Database Sets

- 1 Launch the character client MFG/UTIL on the database server.

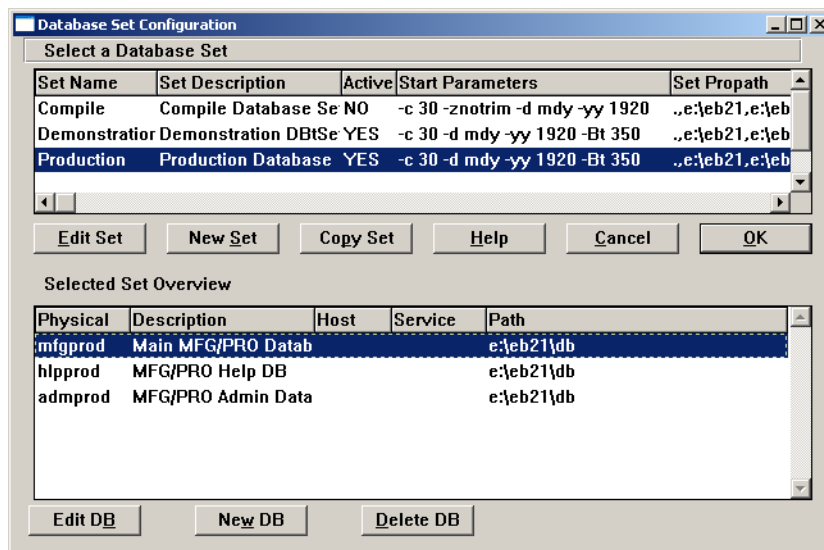
`./mfgutil`

In Windows, double-click the GUI or character MFG/UTIL icon.

Important You must use the Character Client MFG/UTIL to ensure correct compile environments, and that the correct executables and paths are generated in the scripts.

- 2 Select Configure|Database Set Maintenance. The Database Set editor opens.
- 3 Select the database set you want to edit. The following screens show the Production database set.

Fig. 6.2
Production Database Set



- 4 Select Edit Set and verify that the Active value is set to Yes in the Database Sets screen. (The Compile database set does not require scripts or shortcuts and does not need to be Active.)
When the Database Sets screen displays, complete the fields using the following figure and Table 6.1 as guides.

Fig. 6.3
Edit Set for Production Database Set

Table 6.1
Client Database Parameter Values

Field	Description
Set Description	Specify an optional description of the database.
Start Parameters	This field contains the default start parameters for the Progress database servers. For more information, refer to the <i>Progress Database Administration Guide and Reference</i> .
Desktop Start Parameters	This field contains the default start parameters for the database set under QAD .NET UI. For more information, refer to <i>Installation Guide: QAD .NET UI</i> .
Active	Indicate whether scripts are created for this database set when using the Generate Scripts option on the Scripts menu. Set this to No for the Compile set, Yes for all others you are using.
Set Propath	Specify the Progress search path (PROPATH) the databases in the set use to access programs during a QAD Standard Edition session.

- In Database Set Maintenance, highlight the main database and tab to the Selected Set Overview frame. The default databases in the database set are listed. See Table 6.2 for what databases should appear for each database set. Select the main database in the set.

Table 6.2
Database Sets

Set Name	Main DB	Help DB	Admin DB	Audit DB
Compile	mfgempty	hlpempty	admempty	audempty
Production	mfgprod	hlpprod	admprod	
Training	mfgtrain	hlpprod	admprod	
Multi-Site	seattle newyork chicago	hlpprod	admprod	
Demonstration	mfgdemo	hlpprod	admprod	
Each additional language	XXmfg	XXhlp	XXadm	XXaud

Note The empty audit database is required for all compiles, even if you are not implementing Enhanced Controls.

- 6 Configure the production database by selecting it and choosing Edit Database.
 - a When the Database Parameters screen displays, complete the fields using the following figure and Table 6.3 as guides.

Fig. 6.4
mfgempty Database Parameters

The screenshot shows a 'Database Parameters' window with the following values:

- Physical: mfgempty
- Logical: qadddb
- Description: Empty MFG/PRO Database
- Connect Params: -RO -trig triggers
- Connection Type: Local
- Host: (empty)
- Service: (empty)
- Path: e:\eb21\db
- Server Params: (empty)

Buttons at the bottom: OK, Cancel, Help, New, Delete.

Table 6.3
Client Database Parameter Values

Field	Description
Physical	Specify the physical name of the database; accept the default if there is one.
Logical	Do <i>not</i> change the logical name for any database.
Description	Specify an optional description of the database.
Connect Params	Leave this field as-is for default client connections, or enter additional Progress startup parameters as required. For more information, refer to the <i>Progress Database Administration Guide and Reference</i> .
Connection Type	For localhost connections, use Local, the default. Use the client/server option if the client is connecting to a remote database server using Progress networking.
Host	If you choose a client/server connection, enter the host name of the machine where the database is located.
Service	For client/server connections, enter a service name for the database that corresponds to an entry in your <code>/etc/services</code> file. You must make the entries in the <code>services</code> file separately; the installation does not change this file. For more information, see “Set Up MFG/UTIL Clients (Windows Only)” on page 29.
Path	If you choose a Local connection type, enter the full path to the directory containing the database file (extension <code>.db</code>). By default, this is the <code>QADInstallDir/db</code> .
Server Params	Leave this field as-is for default server connections, or enter additional Progress startup parameters as required. For more information, refer to the <i>Progress Database Administration Guide and Reference</i> .

- b When ready, choose OK to continue.
- 7 Once you have configured each database in a set—including help and administration—verify the database set in the Selected Set Overview frame.
- 8 Repeat steps 1 through 7 for each database set.

Note To add a database set, copy an existing, fully configured database set using the Copy Set button; then edit the set values.

- 9 When you have configured the databases you are implementing, click OK in the Database Set Configuration window.

Create an Enhanced Controls DB Set

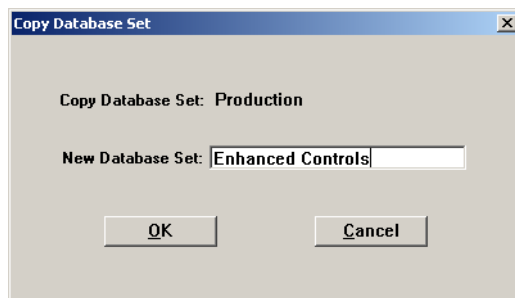
If you have installed the optional Enhanced Controls module, you must configure a production set with audit databases.

During the QAD Standard Edition install, you created a minimum of two database sets: a Production and a Compile set. The Compile database set should already include the empty audit database because it is required for all QAD Standard Edition compiles. The following steps cover how to copy the Production database set and add as many of the new audit databases as you need to get started.

Important If you are using Enhanced Controls in a demonstration or training environment, create separate audit databases for these environments to ensure the purity of the production audit databases.

- 1 In MFG/UTIL, select Configure|Database Set Maintenance. The Database Set editor opens.
- 2 Select the Production database set.
- 3 Choose Copy Set and enter the new database set name.

Fig. 6.5
Copying the Production Database Set



- 4 Make sure the Enhanced Controls database set is selected, then choose New Database to add a new database.

Fig. 6.6
Adding a New Client Database

- 5 Enter the physical name, logical name, and the client/server attributes of the database. The logical name must be qadaud for all audit databases. Enter a valid service name, as entered in the services file in “Add Enhanced Controls Services” on page 56.
- 6 Choose OK to continue.
- 7 Repeat steps 4 through 6 for each audit database you want to add to the Enhanced Controls database set.
- 8 When you have added all the audit databases, choose OK in the Database Set Maintenance screen to save your changes.

Compiling Application Code

A full compile of the server code is required after installation. This was a recommended step in previous releases to ensure your QAD Standard Edition environment was synchronized and compatible across all programs and with the Progress code. It is a requirement in QAD Standard Edition because compiled programs (the .r code) are no longer shipped with the product.

Compiling a source file creates an object file with the same name and the .r extension. Compiled programs are saved into a subdirectory using the first two letters of the program name. This subdirectory is located below the two-letter language code directory below *QADInstallDir*. For example, *sosomt.p* compiled for US English is placed in *QADInstallDir/us/so*.

Important If you are compiling for a non-English language, you must first create a language-specific compile database set.

Use the following instructions to compile QAD Standard Edition code on a UNIX database server with MFG/UTIL. You can also use these instructions as a guide when compiling Windows client code on a Windows machine; the user interface is different.

Non-US English Base Language Compiles

If your base language is not US English, compile this language against the Compile database set. You should have loaded translated schema labels for the language in “Load Translated Labels (Multi-Language Only)” on page 37. For the compile, you will select the appropriate language code in the Compiler Options screen, the Compile database set, and then compile.

Multiple Language Compiles

For multiple language compiles, you must have:

- Loaded the language media (page 26)
- Created empty databases for each language (page 36)
- Loaded translated schema labels in the language-specific empty databases (page 37)
- Loaded language-specific data in the production databases (page 40)
- Created a language-specific compile database set (page 71)

For each language you are implementing, including US English, set the Compiler Options screen to point to the correct language code and the correct database set. Compile each language in this way.

Set the Correct PROPATH

When configuring database sets using MFG/UTIL, a value defaults to the PROPATH field. Depending on the specific system configuration, the default value may not be correct. Continuing an MFG/UTIL operation without updating an incorrect value will cause unforeseen errors. Typically, the PROPATH value defaults from the value defined in the Paths for QAD Standard Edition and MFG/UTIL screen.

Note the following points when working with MFG/UTIL:

- In MFG/UTIL, select Configure|Set Paths for QAD Standard Edition and MFG/UTIL. Review and update the values as needed.
- When using MFG/UTIL to generate any script or complete any task, always carefully review the PROPATH values displayed for each screen you access.
- When working with database sets, verify the PROPATH for each database in the Database Set Parameters screen. Access this screen by selecting Edit in the Select a Database Set screen.
- The typical PROPATH for a new QAD Standard Edition installation includes these directories in this order:
 - a** The current directory (.)
 - b** The directory where the client code was installed (c:\mfgsvr)
 - c** The xrc directory

Example ., c:\mfgsvr, c:\mfgsvr\xrc

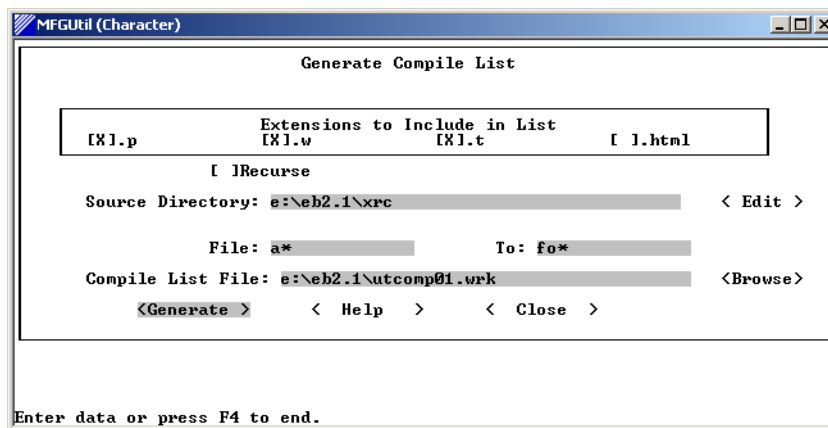
Multithreaded Compiles

Depending on your system, compiles can take as long as two hours. You can set up the compile to multithread using multiple compile listings and by initiating multiple compile sessions. The following steps summarize details in the next section:

- 1 In the Generate Compile Listing screen, use the From and To fields to limit the scope of the file you are generating. Enter a unique file name.
- 2 Run Generate Compile Listing again for the next set of files.

For example, assuming you compile every program (7746 files), you could include programs from A to FO in utcomp01.wrk (1736 files), FS to H in utcomp02.wrk (1882 files), I to RC in utcomp03.wrk (2007 files), and RE to Z in utcomp04.wrk (2120 files).

Fig. 6.7
Generating a Multithreaded Compile List



- 3 You then launch separate, concurrent MFG/UTIL sessions for each compile process. Launch them all concurrently. Four sessions save 50% to 75% of the processing time.

Important Errors display in each compile session stating that the process cannot open mfgulog.log. This occurs when another process is writing to the file. The file is eventually updated and the errors do not harm the compiles.

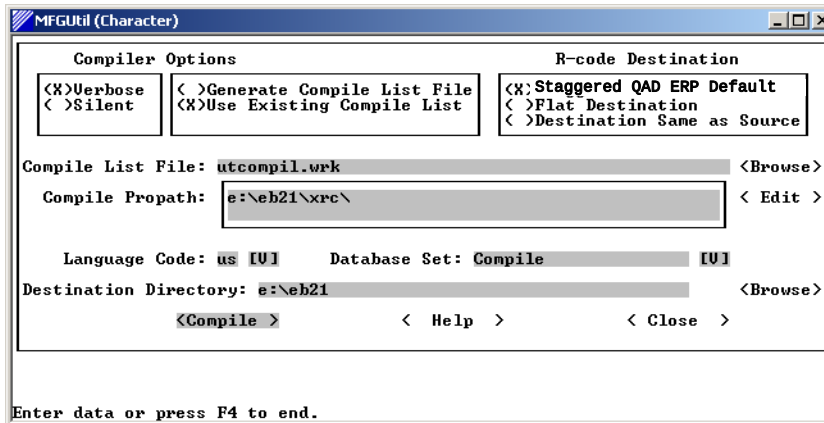
Compile QAD Standard Edition

The files MFG/UTIL compiles are those listed in the file utcompil.wrk. By default, this file lists the files shipped with QAD Standard Edition. You can change the file listing in utcompil.wrk during the process of setting up for the compile, but this is usually done only for subsequent compiles for custom development.

Important To compile for a character client, run the character version of MFG/UTIL.

- 1 In MFG/UTIL, choose Compile Procedures from the Programs menu.
- 2 Use the screen example and field descriptions to select compile options. The Compiler Options in the upper left of the screen let you set feedback levels and select a compile list.

Fig. 6.8
MFG/UTIL Compiler



Verbose. MFG/UTIL displays compile information on the screen and writes it to the MFG/UTIL log file (`mfgutil.log`). During the compile, the following information displays:

- Date and time
- Percentage of the compile completed
- Path and name of the program currently compiling
- Number of compile errors that occur

The log file is in the directory from which MFG/UTIL was launched.

Silent. MFG/UTIL writes to `mfgutil.log` only.

Generate Compile List File. Generates or regenerates a file listing the programs to compile. When you select this option, the Generate Compile List screen displays.

Use Existing Compile List File. By default, this is `utcompil.wrk`, which is shipped with QAD Standard Edition and contains the full list of files.

Staggered QAD ERP Default. Saves compiled code in the default structure of language directories underneath `QADInstallDir`. See “Compiling Application Code” on page 75.

Flat Destination. Select this option to save the compiled code in a single destination directory.

Destination Same as Source. Select this option to save the compiled code into the same directory where the uncompiled source resides. No files are overwritten; the source is `.p`, `.i`, `.w`, and `.t` files; the compile creates `.r` files.

Compile List File. Specify the name of the compile list file, by default `utcompil.wrk`. If the file is located in a directory other than the one from which MFG/UTIL was launched, include the directory path and the file name.

Compile Propath. The compile PROPATH must contain:

- The `QADInstallDir`
- The `xrc` subdirectory in `QADInstallDir`
- Any language-specific directory containing the source code for the programs you are compiling

- Any language-specific directory containing any include files for the source code you are compiling

Use the Edit button to open the Directory List Editor. See “Using the Directory List Editor” on page 80 for details.

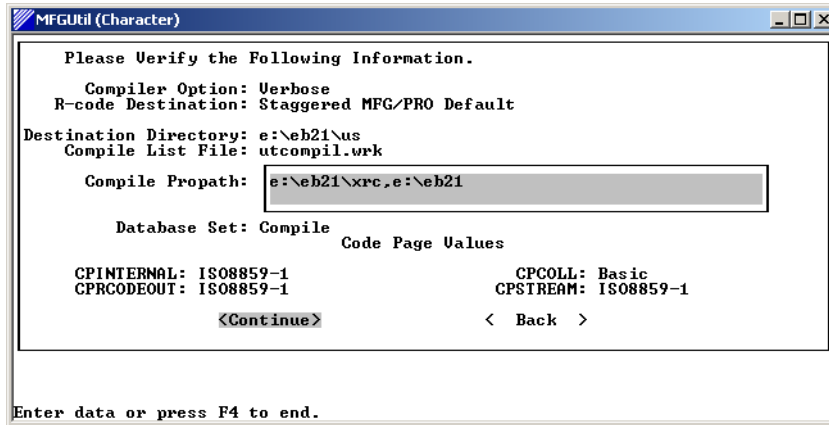
Language Code. If you selected Staggered QAD ERP Default option, enter the language code where you want the code saved.

Database Set. Specify the database set against which to compile.

Destination Directory. Specify the directory where you want compiled code saved. This is typically the *QADInstallDir*. If Staggered QAD ERP Default is selected, the compile places compiled code in the appropriate language directory beneath this directory and within two-letter directories beneath that. For example, a US English *sosomt.p* is compiled to:

./QADInstallDir/us/so/sosomt.r

- 3 If you selected the Generate Compile List File option, complete the following instructions. If you selected Use Existing Compile List File, skip to step 5.
 - a Select the file extensions to include in the compile. For QAD Standard Edition compiles, these are *.p*, *.w*, and *.t*.
 - b Select Recurse if there are multiple source directories with subdirectories. The recurse option compiles down through each source directory, then returns to the next top-level directory specified, and compiles it. This is not required for QAD Standard Edition compiles.
 - c In the Source Directory field, specify the path to the directory containing the source programs you want to compile. By default, this is *QADInstallDir/xrc*. To build a source directory list, select Edit.
 - d To compile a subset of the programs, specify the subset using the File and To fields (limited to alphanumeric sorts). See “Multithreaded Compiles” on page 77.
 - e Specify the file name to use in the Compile List File field. The default file name is *utcompil.wrk*.
If you want the list file created in a specific directory, include the path. If you do not specify a path, the file is generated in the directory from which MFG/UTIL was launched (usually *QADInstallDir*).
 - f Choose Generate to create the compile list file.
 - g You are asked to confirm the overwrite of the *QADInstallDir* and *QADInstallDir\us* directories. No files are overwritten during the compile; it is safe to respond Yes.
 - h The Compiler Options screen displays with the Use Existing Compile List option selected. Enter the correct compile list name.
- 4 When ready, choose Compile.
- 5 In the compile verification screen, verify the compile information. If the settings are correct, choose Continue. If the settings are incorrect, choose Back to make changes.



Note If you are compiling code for a non-Western European language, you may have to modify the code page values for the compile. The compile code page values default from the startup.pf file located in the Progress directory.

- 6 If you selected Verbose, an Installation Log screen displays. When the compile ends, choose Print or Close.
- 7 Once the compile completes, check the MFG/UTIL log file for errors. If errors occur, correct them and rerun the compile.

If you encounter compile errors, the most common reasons are:

- PROPATH is missing the /src or /xrc directories.
- Progress database version does not match the code version.

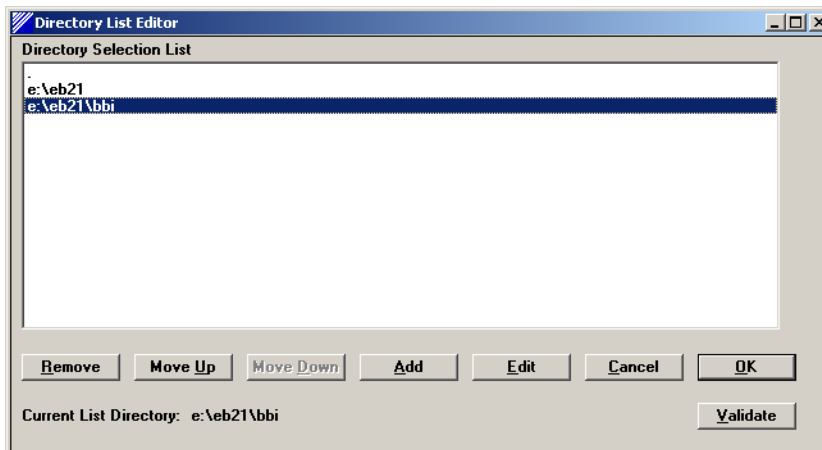
Note MFG/UTIL saves the settings entered in the QAD Compiler screen so that you can reuse or modify them for the next compile.

Using the Directory List Editor

You can manually enter a comma-delimited path in Set Propath; however, you cannot easily edit, browse for, or validate paths. Choose Edit to open the Directory List Editor. The Directory List Editor lets you enter and maintain a sequential list of directories.

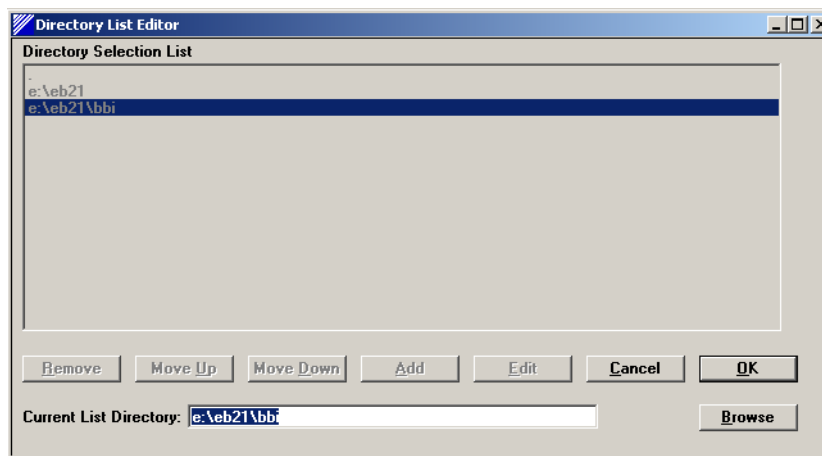
See "Compile Propath" on page 78.

Fig. 6.9
MFG/UTIL Directory List Editor



- 1 Select a directory and choose Remove to delete a directory; choose Move Up or Move Down to change the directory order.
- 2 Choose Edit to modify a directory; choose Add to insert a new directory. The path editor displays. Choose Browse to search for the directory on networked drives.

Fig. 6.10
Editing a Directory Path



- 3 Select any directory and choose Validate. A message displays confirming the directory, or informing you that it is not accessible on the currently networked drives.
- 4 Choose OK to save and exit the editor.

Generating Scripts and Shortcuts

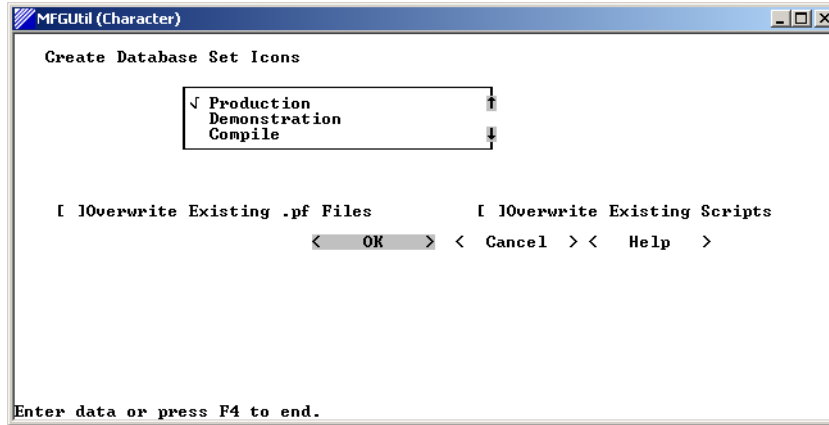
The next steps create startup and shutdown scripts or shortcuts for each active database set. You can edit these scripts and icons after you generate them if you choose. There are three different types of scripts or icons:

- UNIX scripts
- Windows character session icons

- Windows GUI session icons

The following instructions cover all three types:

- 1 If you are using Guided Setup, the Server Script Creation screen displays by default when you choose OK in the Database Sets screen.



Note The screens in this section are from the UNIX script creation sequence.

- 2 Press spacebar or click in Windows to select all database sets you want to generate server scripts for and choose OK.

Note You do not need to create Compile scripts, as these databases are only connected to during compiles, not launched with scripts.

- 3 When prompted, choose Yes to confirm the generation.
 - 4 For Windows shortcuts, select the program folder where you want the shortcuts stored.
 - 5 In Windows, you view a confirmation screen. Click Next to generate the shortcuts.
- Note** The Windows icon build is completed by the `makeicon.exe` program. This program must be in your `PROPATH`. It is located in `QADInstallDir` by default.
- 6 For UNIX systems, MFG/UTIL creates the scripts listed in Table 6.4 for each database set. Use these scripts, or copies of them, for all startup and shutdown processes. The scripts are created in the `QADInstallDir`.

Table 6.4
UNIX Scripts Generated by MFG/UTIL

Script	Description
<code>start.DBsetName</code>	This script starts servers for the databases in the set. <code>start.Production</code> starts servers for <code>mfgprod.db</code> , <code>admprod.db</code> , and <code>hlpprod.db</code> .
<code>stop.DBsetName</code>	This script shuts down servers for all databases in the set. If database sets share a help database and you shut down one set, the servers are shut down for all sets. You can avoid this by removing the help database from the stop scripts and creating a standalone shutdown script for it.
<code>client.DBSetName</code>	This script starts a QAD Standard Edition character client session in multiuser mode. This script functions only after you install the QAD Standard Edition character clients.

Script	Description
<code>qma.DBSetName</code>	This script is created only for UNIX servers and is used by QAD Standard Edition .NET UI clients. In .NET UI, some QAD Standard Edition maintenance programs function in a telnet environment. This script specifies the connection parameters for the database set and launches the QAD Standard Edition telnet program. See <i>Installation Guide: QAD .NET UI</i> .
<code>qma2.DBSetName</code>	This script is created only for Tomcat servers and is used by QAD Standard Edition QAD .NET UI clients. This script specifies the connection parameters for the database set and launches the QAD Standard Edition Tomcat program. See <i>Installation Guide: QAD .NET UI</i> .

Windows shortcuts are Start and Shutdown for each database set and a client script to launch the QAD Standard Edition character client.

- 7 After the scripts or shortcuts are generated, choose Close in the Installation Log Window.
- 8 Review the log file, `mfgulog.log`, for any errors.

Editing UNIX Scripts

- 1 To edit scripts to start sessions in other languages, copy the scripts you just created to a new file name. For example, copy `client.Production` to `frclient.Production`. Make the following modifications:

- a Modify the `PROMSGS=` setting to use a language-specific Progress messages file (`promsgs.LanguageCode`). This file is located in a three-letter Progress language code subdirectory below the `prolang` directory in the Progress directory. The following example is for a French startup script:

```
PROMSGS=$DLC/prolang/fre/promsgs.fre; export PROMSGS
```

- b Modify the `PROPATH=` setting to use the language-specific `bbi` subdirectory. This subdirectory is located below the two-letter language code directory where you installed the QAD Standard Edition character client. Typically, the character client is installed in the `QADInstallDir`. The following example is for a French startup script:

```
PROPATH=${PROPATH:-./QADInstallDir,
/QADInstallDir/fr};export PROPATH
```

Note Progress and QAD Standard Edition language codes are not always the same.

Create Language-Specific Windows Shortcuts

After you run client setup and generate a client startup shortcut, make the following modifications to create a language-specific startup shortcut. For directions on running the client setup program and generating the initial client startup shortcut, see “Generating Scripts and Shortcuts” on page 81.

- 1 Copy your initialization file, `progress.svg` or `progress.vga`, to one with a new name, for example, `progressXX.svg`, where `XX` is the two-letter language code.

Check the `-iname` parameter in the Target field of the Shortcut Properties dialog window, or check the `-iname` parameter in your `clientDBSetName.bat` file, to determine the initialization file the client is using.

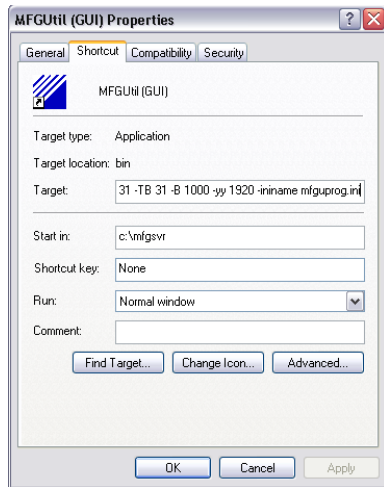
For possible edits to the initialization file, see “Initialization File Entries” on page 87.

- 2 Modify the PROPATH setting in the file to reflect the specific language this file will be used for. For example, changing it to read:

```
PROPATH=.,c:/MFGSVR/images.pl,c:/MFGSVR,c:/MFGSVR/XX
```

Where XX is the two-letter language code.

- 3 Right-click the shortcut icon to verify Shortcut Properties entries.



Modify Windows Startup Parameters

Once you have modified the initialization file, you must change the shortcut icon parameters to reference it.

- 1 Right-click the QAD Standard Edition shortcut icon and select Properties.
- 2 Scroll down the Target field to the `-iname` parameter. This references a path and file with an `.svg` extension.
- 3 Enter the new file name and click OK.

Test the Client Installation

Before you test the remote client installation, make sure the database servers are started for the chosen database set.

- 1 To start the database servers for a set, access the *QADInstallDir* on the database server; then launch *start.DBSetName* (UNIX) or *startDBSetName.bat* (Windows) from that directory.
- 2 Start the client:
 - a To start a QAD Standard Edition GUI client on Windows, open Start|All Programs|QAD <release> Standard Client Client. Click the GUI Client shortcut for the appropriate database set.
 - b To start a character client, launch *DBSetName.client* (UNIX) or *clientDBSetName.bat* (Windows) from *QADInstallDir*.
- 3 When the Sign-On window displays, click OK or Exit.

Express Setup for Remote Clients

Before installing additional remote clients with the express setup method, compile the application code.

See “Compiling Application Code” on page 75 for detailed instructions.

After installing the client files on the file server, you must configure each client machine. The goal of configuration is to copy needed files onto the client machine and generate client startup shortcuts. Generating the startup shortcuts requires that you configure database sets.

Once you configure the database sets on the first client, MFG/UTIL gives you the option of storing your settings on the file server so that subsequent client installations can reuse them. This feature is called *express setup*.

Note These steps assume you have loaded the correct (GUI or character) client files onto a file server—not on each client machine.

Setup Prerequisites for Remote Clients

Before setting up remote clients, verify that you have met the following prerequisites:

- You have met the system requirements for remote clients. See page 22.
- You have configured your database servers to use client/server connections or are installing this client on the Windows server machine.
- You have set up the `services` files on the database server and client machines.
- Your network is operating.
- Progress client software is installed on each client PC or is accessible from a network file server.
- You have mapped network drives on each remote client for any components installed on a file server, including QAD Standard Edition client files and Progress software.
- The first client PC has write access to the Windows file server installation directory. Write access is needed to use the express setup feature.

Use Express Setup

Express setup implements Windows clients without configuring database sets on each client. You can save the configuration settings from the first client setup to the file server, then download these settings to additional Windows clients.

- 1 After you set up the first client, select File|Save default mfgutil.ini in the MFG/UTIL Main Window.
- 2 Click Yes in the confirmation dialog box.
- 3 Repeat the steps in “Setting Up Remote Clients” on page 51 on each Windows client.
- 4 At the end of the client setup process, launch MFG/UTIL.
- 5 From the MFG/UTIL Main Window, select File|Load default mfgutil.ini.
- 6 Click Yes in the confirmation dialog box.

- 7 When the database settings are loaded, access Scripts|Generate Scripts. Generate the client startup shortcuts using the instructions in “Generating Scripts and Shortcuts” on page 81.

Change Express Setup Settings

You can change the express setup settings if you choose.

- 1 Start MFG/UTIL from any Windows client by double-clicking the MFG/UTIL shortcut.
- 2 Open Configure|Database Set Maintenance.
- 3 Make your changes in Database Set Configuration and click OK.
- 4 In the MFG/UTIL Main Window, select File|Save Default mfgutil.ini. MFG/UTIL stores your changes in the Windows client administration directory on the file server, as well as on the current machine. You can now use these settings to set up additional clients.

Progress Initialization File

The Progress initialization file is created during the installation of QAD Standard Edition clients. When you start QAD Standard Edition, the system uses this file to determine values for variables during initialization.

Important Depending on your drive relationships, the `progress.svg` or `.vga` file may not get properly updated to reflect your Progress or QAD Standard Edition paths. Always verify all paths in these files before launching a client.

The file has an extension of `.vga` or `.svg`—`progress.vga` or `progress.svg`—depending on the display resolution of the computer. You can edit this file as required with a text editor such as Notepad or Wordpad.

The following is an excerpt from a Progress initialization file:

```
;mfgprod.svg

[Startup]
;SCCS: @(#)progress.svg 1.2 05/17/02 16:21:31>
v6Display=no
;ImmediateDisplay=yes
;MultitaskingInterval=100

;SVGA - low-resolution (800 x 600)
CharWidth=8
DefaultFont=MS Sans Serif, size 8 bold
DefaultFixedFont=Courier New, bold, size=8

;* New frame spacing parameter from Progress -
;* required for legacy code
FrameSpacing=1
Use3D-Size=no

DLC=c:/dlc91e
CONVMAP=c:/dlc91e
PROMSGS=c:/dlc91e\PROMSGS
PROBUILD=C:/dlc91e/PROBUILD
PROPATH=., c:/MFGSVR/images.pl, C:/MFGSVR, C:/MFGSVR/US

[Applications]
;* Enable Spinning QAD 2008 - Standard Globe
spin=no

;* Enable Graphs with the Browse
graph=yes
GRAFPATH=\stageobj\grafsman

;* Specifies executable to run when you select edit image
paint=pbrush.exe
```

Initialization File Entries

The following entries in the Progress initialization file have a direct bearing on QAD Standard Edition:

CharWidth. You can change these font settings, but you must use only fonts with the same metrics.

Frame Spacing. Leave this setting as it is; it is required to support legacy code in QAD Standard Edition.

Use-3D-Size. This setting determines the three-dimensionality of fields in QAD Standard Edition. Leave this setting as it is.

PROBUILD and PROPATH. Leave the settings as they are.

Spin. This setting determines whether or not you can spin the globe on the QAD Standard Edition Sign-On screen.

Set to Yes, the globe spins when you click it. Double-click to stop.

Graph. This setting allows graphing and points to the Graftsman directory. Graftsman is distributed with QAD Standard Edition.

Paint. This setting determines which imaging program you use when you edit graphics associated with a field. The default setting is Microsoft Paintbrush. The images you create and edit are stored in the working directory.

Note Some versions of Windows include Microsoft Paint rather than Paintbrush. If this is true of your computer, use a text editor to change this setting to `paint=mspaint.exe`.

Fonts. This section lists the fonts available to QAD Standard Edition, including the name of each font and the code number associated with it. Do not change any of the fonts on this list.

The end of the fonts section includes the code numbers of the fonts used by Windows print devices for 80-column (portrait orientation) and 132-column (landscape orientation) reports:

```
80ColumnReportFont=21  
132ColumnReportFont=22
```

The default values for these variables are font codes 21 and 22. To reassign fonts, change these codes to the corresponding values from the font list.

For information on making fonts available to the Progress initialization file, see “Maintaining User Environments” in the Progress *Client Deployment Guide*.

Setting Up QAD Standard Edition

Use this chapter to set up QAD Standard Edition by registering the application and setting up initial users.

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Next Steps 93

Starting and Registering QAD Standard Edition

Test your startup scripts with the following steps. You can use these same steps on a regular basis to start *QADInstallDir* servers and character clients.

- 1 **UNIX only:** Change to the *QADInstallDir* and launch the server script:

```
./start.DBSetName
```

- 2 Then start a multiuser session:

```
./client.DBSetName
```

For Windows, launch QAD Standard Edition from the Start menu icon.

QAD Standard Edition starts.

Register QAD Standard Edition

You must register your QAD Standard Edition license the first time you log in. These steps require that you have the license code sheet included with your release media.

For details on User Licensing, see *User Guide: Manager Functions*.

- 1 At the QAD Standard Edition Sign On screen, press Enter. You are automatically logged in to the system domain.
- 2 In the License Details screen, choose Register.

- 3 In the Registered Products screen, choose Add.

- 4 In the Add Product screen, complete the License Code fields by entering the codes from the license code sheet included with your release media. Choose OK.

Note If you need to modify your license code, use License Registration (36.16.10).

- 5 When the Registered Products screen reappears, choose OK. Your license code and details display in the License Detail screen.
- 6 Choose OK at the License Detail screen. You are returned to the operating system. To begin a session, restart QAD Standard Edition and log in.

Loading Online Help

You can load online help data at any time after you create your databases.

- 1 From the QAD Standard Edition Main Menu, open Field Help Load (36.4.19).
- 2 In the Language field, enter the QAD Standard Edition language code of the language that you are loading help for, and press Enter.
- 3 Skip to Field Help Load File, leaving all other fields blank, and enter the two-letter language code directory followed by the name of the help file, which is always `fieldhlp.fhd`. For example, for US English, enter `us/fieldhlp.fhd`.

mgflld.p e+ 36.4.19 Field Help Load 04/04/00	
Language: us english (U.S.)	
Field:	
To:	
Procedure:	To:
Status:	To:
Text Type:	To:
Field Help	
Load File: <u>us/fieldhlp.fhd</u>	
Skip loading help with lower status: <u>yes</u>	

- 4 Accept the default values in all other fields.
- 5 Press Go to begin the load process.

As the load proceeds, the number of records that have been read and loaded displays at the bottom of the screen.

mgflld.p e+ 36.4.19 Field Help Load 04/04/00							
Language: us english (U.S.)							
Field:							
To:							
Procedure:	To:						
Status:	To:						
Text Type:	To:						
Field Help							
Load File: us/fieldhlp.fhd							
Skip loading help with lower status: yes							
<table> <tbody> <tr> <td>Loaded flhm_mst : 40</td> <td>Loaded flhd_det : 2,400</td> </tr> <tr> <td>Read flhm_mst : 40</td> <td>Read flhd_det : 2,400</td> </tr> <tr> <td>Expected flhm_mst: 0</td> <td>Expected flhd_det : 0</td> </tr> </tbody> </table>		Loaded flhm_mst : 40	Loaded flhd_det : 2,400	Read flhm_mst : 40	Read flhd_det : 2,400	Expected flhm_mst: 0	Expected flhd_det : 0
Loaded flhm_mst : 40	Loaded flhd_det : 2,400						
Read flhm_mst : 40	Read flhd_det : 2,400						
Expected flhm_mst: 0	Expected flhd_det : 0						

- 6 Load help for any other languages in your environment, using the appropriate language code and help file.

Test the Language Installation

Once you associate QAD Standard Edition users with particular languages, use the following instructions to test each of the languages you set up:

- 1 Using your language-specific script or shortcut, launch an QAD Standard Edition session.
- 2 At the QAD Standard Edition log-in screen, specify a QAD Standard Edition user ID associated with the language you want to test.
- 3 Open menu item 1.4.1 (Item Master Maintenance) and verify that the field labels are translated.
- 4 Press Help to access the browse associated with the first field (Item Number) and verify that the labels in the browse are translated.
- 5 Press Help again to access the field help for the first field (Item Number) and verify that the help is translated.
- 6 Enter a numeric value in the first field and press Go. A translated message that a new record is being added to the database should display (in English, Adding new record).
- 7 Press Go to access the second field in 1.4.1 (in English, UM). Press Delete on the test item and return to the first field. A translated prompt asking you to verify that you want to delete the item should display (in English, please confirm delete). Select No to cancel, Yes to delete.

If the language you are testing does not display correctly during these tests, review the following list of typical errors. If correcting these does not eliminate the problem, then visit the Support area of the QAD Web site or contact QAD Support.

- In User Maintenance (36.3.1), verify that the QAD Standard Edition user ID you are trying to log in with exists and is associated with the appropriate language.
- Verify that Translate Frames is set to Yes in Label Control (36.4.17.24).
- Make sure you have loaded the language-specific system data—translated menus, messages, administration data, and help—into the main and administration databases. See “Load Language-Specific System Data” on page 40.
- Verify the two-letter language subdirectory and the two-letter compiled code subdirectories were created below *QADInstallDir*.
- Determine if the directories in the client PROPATH contain multiple copies of the compiled code. Depending on the type of client you are using for your test, the PROPATH is located in different places:
 - For character clients, the PROPATH is listed in the client startup script; for example, `client.Production`.
 - For GUI clients, the PROPATH is listed in the GUI client initialization file located in the GUI client directory. The file has an extension of `.vga` or `.svg`—`progress.vga` or `progress.svg`—depending on the display resolution of the computer. See “Progress Initialization File” on page 86.
- Verify that the correct language-specific `bbi` subdirectory is in the client PROPATH. The `bbi` subdirectory is located below the two-letter language subdirectory.

- QAD Standard Edition uses the Progress promsgs file for simple message components such as the Yes and No delete confirmation messages. For programs that use this file, prompts do not display correctly unless the appropriate promsgs file is referenced in the client startup script or shortcut.

Exit QAD Standard Edition

1 Exit QAD Standard Edition by pressing End at the Main Menu.

2 Shut down the database servers within this database set:

```
./stop.DBSetName
```

In Windows, select Shut Down *DBSetName* from the Start menu.

Backing Up the Database

At this point you should do a complete backup of the entire database and directory structure.

Next Steps

This completes your installation. Use information in the following guides to set up your base data:

- *User Guide: Master Data*
- *User Guide: Manager Functions*

QAD recommends that as a first step, you create a new system admin user account, and make the mfg user account inactive. The mfg user is familiar to anyone who has installed or worked on a technical level with QAD Standard Edition, and is an obvious security risk. See the “Users and Security” chapter in *User Guide: Manager Functions* to complete these steps.

Additional Setup

The instructions in this chapter let you create training environments from your master training databases and set up a full multi-language environment.

***Creating Training Environments* 96**

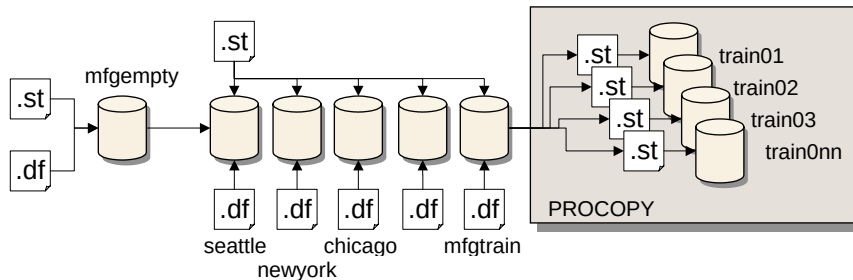
***Changing Installation Script Commands* 98**

Creating Training Environments

Once you have created the `mfgtrain`, `seattle`, `chicago`, and/or `newyork` databases, you must create training environments for each person being trained and each instructor. This provides a database for each user that cannot be changed by other users and eliminates file contention during course exercises.

Progress offers several methods for creating database copies. This guide covers the most straightforward method using the PROCOPY command. In this method, you create home directories for each user and then run PROCOPY to create a structure file and database in the user's directory.

Fig. 8.1
Training Database Creation



The following methods assume you are creating training environments for each student for each training. After a training is complete, all databases are deleted and new databases created for subsequent sessions.

Training Prerequisites

Requirements for a complete training environment are:

- Full Progress installation including patches and the Enterprise Database Server software
- Exceed or another terminal server
- Training user IDs (`train01` through `trainNN`)
- User initialization files (`.profile`)

Creating Training Databases

The default structure file, `mfgtrain.st`, uses a relative path to define where database files are created. For each database extent created, the file includes the following path statement to describe where the files are written:

```
./db
```

During PROCOPY this places the tables associated with these extents in the location where PROCOPY is run, in the subdirectory `/db`.

The following instructions step through the process in greater detail. These steps assume you have created the `mfgtrain` database in the `QAD2008StdInstallDir/db` directory.

- 1 Create the student directories, one for each student in the course. Create an additional directory for your instructor. From the `<root>:/home` directory, this command sequence would be as follows for each student and instructor account:

```
mkdir student01
cd student01
mkdir db
cd ..
```

Create each student directory with a sequential number such as `student01`, `student02`, `student03`.

- 2 Each user requires an individual administration database. Create a copy of `admprod.st` in the `/db` directory:

```
cd /QAD2008StdInstallDir/db
cp admprod.st admtrain.st
```

- 3 Edit `admtrain.st` in a text editor. Change each instance of a period (.) for a path declaration to a relative path (`./db`).

- 4 Copy `admtrain.st` to each student directory:

```
cd /home/student01
cp /QAD2008StdInstallDir/db/admtrain.st
```

- 5 You can now create the databases in the student and instructor directories. Move to each home directory and enter the Progress PROCOPY command:

```
cd /home/student01
procopy QAD2008StdInstallDir/db/mfgtrain train01
procopy QAD2008StdInstallDir/db/admprod admtrain.st
```

This last command copies the database and identifies which structure file to apply during the copy.

The files are created in the `/db` subdirectory.

Most QAD trainings for QAD Standard Edition are supported by the data you have already loaded into `mfgtrain`. This is also true for the `seattle`, `new york`, and `chicago` databases.

See “Load Language-Specific System Data” on page 40.

- 6 Create the help database in the base `/home` directory. Change to the base `/home` directory and PROCOPY the databases:

```
cd /home
procopy QAD2008StdInstallDir/db/hlpprod trhelp.st
```

This last command copies the database and identifies which structure file to apply during the copy.

The help database uses absolute paths, and thus is placed in the directory where the PROCOPY command is issued.

- 7 Create startup and shutdown scripts for each training database. The easiest method for this is to copy the `mfgtrain` scripts generated by MFG/UTIL.

The scripts each user needs are copies of `start.mfgtrain`, `stop.mfgtrain`, and `single.mfgtrain` or `client.mfgtrain`. In each of these scripts, modify the database name and path as required. If you want to modify startup parameters, refer to the *Progress Database Administration Guide and Reference*.

See “Generating Scripts and Shortcuts” on page 81.

- 8 After the training is complete, use Progress tools to remove the databases:

```
PRODEL /home/student01/db/train01
```

Repeat this step for each training database.

This leaves the administration databases, the help database, the user directories, `.profile` files, and all the scripts. The next time you create training environments, you can just do the PROCOPY of `mfgtrain` into the same directory structure and environment.

Changing Installation Script Commands

The QAD Standard Edition installation scripts were designed for the following UNIX systems:

- HP-UX 11.0
- Sun Solaris SPARC 2.6 and 2.7
- IBM AIX 4.2.1 and 4.3

While you can install QAD Standard Edition on UNIX systems other than those listed, the operating system-dependent commands the scripts use may not function correctly in all environments.

If an installation script does not function correctly, you can use the following instructions to copy the installation script to a temporary directory, modify the commands it uses for your system, and complete the installation.

- 1 Access the directory containing the QAD Standard Edition media:

```
cd /cdrom
```

- 2 Copy the `install` script as well as the `lib` and `bin` directories to a directory on your system. These instructions refer to this directory as *tempinstall*:

```
cp install /tempinstall
```

```
cp -r bin /tempinstall
```

```
cp -r lib /tempinstall
```

- 3 Modify the commands in the `install` script and `lib` directory to conform to your operating system.
- 4 To launch the script from a directory on your system, you can use one or both of the following parameters in the command statement.

Parameter	Description
-s	Use this parameter to specify the directory containing the QAD Standard Edition media. This is the source directory from which the installation script will copy files into your target installation directory. Be sure to use the full path to the directory.
-w	Use this parameter to specify the directory containing the installation script. Be sure to use the full path to the directory.

Example Using the directories in these instructions as an example, the following command would launch the install script from the *tempinstall* directory:

```
./install -s /cdrom
```


Storage Area Reference

This chapter contains a list of the default storage areas and the tables assigned to them for standard QAD Standard Edition databases. If you are using the optional Enhanced Controls module, a detailed discussion of audit database sizing is included in *Deployment Guide: Audit Trails* located on the QAD Online Support Center Web site.

Storage Areas and Tables 102

Storage Areas and Tables

ATTMPMSTR Storage Area

attmp_mstr

CONTROL Storage Area

adc_ctrl	fact_ctrl	qqc_ctrl
apc_ctrl	fas_ctrl	rcf_ctrl
apm_ctrl	gl_ctrl	rmc_ctrl
arc_ctrl	icc_ctrl	rpc_ctrl
bic_ctrl	ivs_ctrl	rqf_ctrl
bl_ctrl	kbc_ctrl	rsc_ctrl
cac_ctrl	lac_ctrl	sac_ctrl
ccc_ctrl	lblc_ctrl	sbic_ctl
ccl_ctrl	mfc_ctrl	seoc_ctrl
cfc_ctrl	mrpc_ctrl	shc_ctrl
clc_ctrl	ncc_ctrl	shpc_ctrl
cmc_ctrl	opc_ctrl	soc_ctrl
cnc_ctrl	ops_ctrl	spc_ctrl
cns_ctrl	pcc_ctrl	src_ctrl
co_ctrl	pgc_ctrl	sroc_ctrl
crc_ctrl	pic_ctrl	svc_ctrl
drp_ctrl	pjc_ctrl	txc_ctrl
egc_ctrl	poc_ctrl	usrc_ctrl
emc_ctrl	pshc_ctrl	vdc_ctrl
esc_ctrl	qaddb_ctrl	vef_ctrl
et_ctrl	qcc_ctrl	vrc_ctrl
euc_ctrl	qoc_ctrl	vtc_ctrl
fac_ctrl	wlc_ctrl	woc_ctrl

GLECDET Storage Area

glec_det

GLRPWRTR Storage Area

gr_ctrl	grcd_det	grit_wkf
gra_mstr	grdf_mtx	grqd_det
grac_det	grhd_det	grr_mstr
grad_det	gri_mstr	grrd_det
gral_det	grib_det	grtx_det
gras_det	gric_det	grv_det
grbg_det	grid_det	grx_mstr
grc_mstr	grig_mtx	grx1_wkfl
grx2_wkfl	grx3_wkfl	

GLTDET Storage Area

glt_det

GLTRHIST Storage Area

gltr_hist

GRS Storage Area

em_mstr	rqda_det	rqc_mstr
rqj_mstr	rqd_det	rqm_mstr
rql_mstr	rqa_mstr	
rqr_mstr	rqcd_det	

HISTORY Storage Area

cah_hist	ihcc_hist	rh_d_hist
cctr_hist	ihr_hist	rqh_hist
cmh_hist	iph_hist	sab_det
cph_hist	itmhist	sadh_hist
edlg_hist	kbtr_hist	sah_hist
flcrh_hist	knbadc_hist	salh_hist
fnh_hist	mph_hist	sfh_hist
ftch_hist	nrh_hist	shp_hist
glptr_hist	op_hist	shpd_hist
ibh_hist	pgh_hist	six_ref
idh_hist	pih_hist	sph_hist
idhlc_hist	pjsh_hist	vph_hist
idhr_hist	prh_hist	wl_mstr
ih_hist	pth_hist	wlt_mstr

INTRASTAT Storage Area

csid_det	iec_ctrl	ieh_hist
csim_mstr	ied_det	ie_mstr

MRPDET Storage Area

mrp_det

QADWKFL Storage Area

qad_wkfl

REFERENCE Storage Area

code_mstr	lngd_det	msg_mstr
fldf_mstr	mnd_det	rqpo_ref
flh_mstr	mnt_det	

STATIC Storage Area

ac_mstr	famt_mstr	pould_det
acdf_mstr	famtd_det	pp_plan
acm_mstr	famtr_mstr	pq_mstr
acod_mstr	famtrd_det	pr_mstr
act_mstr	fcc_mstr	prd_det
acx_mstr	fcd_mstr	ps_mstr
ad_mstr	fcg_mstr	pt_mstr
al_mstr	fct_mstr	pta_det
ald_det	fis_mstr	ptc_det
apmr_mstr	fkt_mstr	ptls_det
apr_mstr	flcr_mstr	ptp_det
aprm_mstr	flff_mstr	ptqa_det
art_mstr	flp_plan	ptr_det
asc_mstr	flpw_mstr	pts_det
ast_mstr	flsc_mstr	ptt_det
atd_mstr	flscd_det	ptv_det
bg_mstr	fm_mstr	qc_mstr
bgd_det	fn_mstr	qcd_det
bk_mstr	fnd_det	qcs_mstr
bkd_det	fpc_mstr	qr_test
bkfm_mstr	fpci_mstr	qro_det
bom_mstr	fpd_cost	reg_mstr
cal_det	fpst_mstr	req_det
caq_mstr	fr_mstr	rnd_mstr
cas_mstr	frcd_det	ro_det
cb_mstr	frd_det	rps_mstr
cc_mstr	frm_mstr	rs_mstr
ccd_mstr	frzd_det	rsd_det
ccd1_det	fsc_mstr	rsn_ref
ccd2_det	fsd_mstr	rst_mstr
ccls_mstr	fsu_mstr	rstd_det
cclsc_mstr	ft_mstr	rsu_mstr
cclscd_det	fwk_mstr	rsud_det
cct_mstr	giap_mstr	sal_mstr
cdf_mstr	gimd_mstr	sb_mstr

STATIC Storage Area

cf_mstr	gip_det	sbcmstr
chm_mstr	gisi_mstr	sbd_det
cls_mstr	glc_cal	sca_mstr
cm_mstr	glr_mstr	scc_mstr
cncs_mstr	glrd_det	sd_mstr
cnss_mstr	glrd_mstr	sdt_mstr
com_mstr	hd_mstr	sdt_det
comd_det	hlp_mstr	seq_mstr
cont_mstr	ild_det	sfb_det
cost_cal	in_mstr	shm_mstr
cp_mstr	ind_det	shop_cal
cpc_mstr	is_mstr	shv_mstr
cpd_det	isd_det	si_mstr
cr_mstr	isp_mstr	slr_mstr
cres_mstr	iss_mstr	slrd_det
cs_mstr	isvc_mstr	sm_mstr
csa_mstr	itm_det	sop_det
csbd_det	its_mstr	sp_mstr
csc_mstr	itsd_det	spd_det
csil_mstr	kbdmstr	ssd_det
csld_det	kbmd_mstr	ssm_mstr
cslm_mstr	kbpp_mstr	sttq_mstr
css_mstr	knb_mstr	sttqd_det
cssi_det	knbfd_det	suf_mstr
cst_mstr	knbi_mstr	sufd_det
ct_mstr	knbism_det	sv_mstr
ctd_det	knbl_det	syp_mstr
ctry_mstr	knbs_det	sypd_det
cu_mstr	knbsm_mstr	sypj_det
dal_mstr	knpp_mstr	syps_det
dald_det	knpp_det	sytf_mstr
dbk_mstr	lc_mstr	tag_mstr
dbm_mstr	lgs_mstr	tax_mstr
dc_mstr	lgsi_det	taxd_det
decl_mstr	ln_mstr	tbl_mstr
delt_mstr	lna_det	tblc_mstr
djr_mstr	lnf_det	tblcd_det
djrc_det	lng_mstr	tm_mstr
dom_mstr	loc_mstr	tot_mstr
dpc_mstr	locc_det	totd_det
dpr_mstr	lot_mstr	trl_mstr
dprt_det	lpm_mstr	trld_det

STATIC Storage Area

dpt_mstr	lpmd_det	txbd_det
ea_mstr	ls_mstr	txe_mstr
eca_mstr	ma_mstr	txed_det
ecm_mstr	max_mstr	txhd_det
ect_mstr	maxt_det	txr_mstr
egd_det	mfrel_mstr	txz_mstr
egs_det	mnp_det	typ_mstr
emp_mstr	mp_mstr	tzo_mstr
emsg_mstr	mpd_det	tzod_det
en_mstr	mpp_det	udd_det
encd_det	mu_mstr	ufd_det
eng_mstr	ocm_mstr	um_mstr
es_mstr	opm_mstr	upd_det
esh_mstr	pac_mstr	url_mstr
esp_mstr	pal_mstr	usr_mstr
ess_mstr	pald_det	usrl_det
eu_mstr	pc_mstr	vdf_mstr
eud_det	pcd_det	vec_mstr
exc_mstr	pcl_mstr	vecd_det
excd_det	pcl_d_det	vee_mstr
fa_mstr	pct_mstr	vew_mstr
faadj_mstr	pfd_det	vex_mstr
fab_det	pgm_det	vp_mstr
faba_det	pi_mstr	vt_mstr
fabk_mstr	pid_det	wc_mstr
facd_det	pj_mstr	wcr_route
fac_l_cal	pjt_mstr	whl_mstr
facld_det	pl_mstr	wlbd_det
facsl_mstr	pld_det	wlbn_mstr
fad_det	plsd_det	wld_det
fadf_mstr	plt_det	wlrd_det
fal_mstr	pou_mstr	wlrm_mstr
faloc_mstr	poul_mstr	qaddb_ctrl
atak_det	atap_mstr	atc_ctrl
atdc_mstr	atgt_ref	atg_mstr
att_mstr	atwk_det	atwp_mstr

TRANSACTION Storage Area

abd_det	emap_det	qod_det
abs_mstr	emg_msg	qodr_det
absc_det	eraw_det	qor_mstr

TRANSACTION Storage Area

abscd_det	ers_mstr	qps_det
absd_det	exr_rate	rbm_mstr
absi_mstr	exru_usage	rcc_mstr
absl_det	fabd_det	rccs_mstr
absr_det	fauop_det	rcsd_det
abss_det	fc_det	rcsx_ref
accd_det	fcs_sum	rdf_mstr
acd_det	ff_mstr	rma_mstr
adx_det	fh_mstr	rmd_det
alm_mstr	flsd_det	rq_mstr
an_mstr	fp1_plan	rqm_det
anl_det	fp2_plan	sa_mstr
ans_det	fp3_plan	sad_det
anx_det	fslp_pln	sap_det
ap_mstr	fsp1_pln	sar_mstr
ar_mstr	fsp2_pln	sbi_mstr
ard_det	fsp3_pln	sbid_det
arsd_det	glcd_det	sc_mstr
atp_det	glct_det	sch_mstr
aud_det	gltm_mstr	schd_det
ba_mstr	gltnmd_det	sct_det
bc_mstr	hwm_det	scx_ref
bcd_det	ib_det	sg_mstr
bdl_mstr	ilg_hist	sgad_det
bdld_det	im_mstr	sgcd_det
bdp_det	imap_det	sgid_det
bkad_det	img_msg	shd_det
bkpd_det	ins_mstr	shft_det
bkpm_mstr	insd_det	shtr_det
btb_det	ip_mstr	sim_det
ca_mstr	ipd_det	so_mstr
cd_det	iraw_det	sob_det
chg_mstr	iro_det	socc_mstr
cil_mstr	isb_mstr	sod_det
cild_det	kbtrd_det	sodlc_det
ck_mstr	knbd_det	sodr_det
ckd_det	lacd_det	sor_mstr
cksd_det	lad_det	sosr_mstr
cmd_det	lcap_hist	sosrd_det
cmf_mstr	ld_det	spt_det
cmt_det	lnd_det	sr_wkfl
cncix_mstr	lua_det	sro_mstr

TRANSACTION Storage Area

cncu_mstr	lvr_det	srr_mstr
cncud_det	mof_mstr	stx_mstr
cnsix_mstr	mon_mstr	swc_det
cnsu_mstr	mps_mstr	te_mstr
cnsud_det	mrpp_det	trcs_det
cnt_mstr	nr_mstr	trq_mstr
defr_det	oa_det	tx2_mstr
df_mstr	opgl_det	tx2d_det
dprd_det	pex_mstr	txrd_det
ds_det	pfc_det	umsg_det
dsd_det	pig_mstr	usg_det
dsr_mstr	pigc_det	vd_mstr
dss_mstr	pigp_det	vep_mstr
dy_mstr	pin_mstr	vepd_det
dyd_mstr	pjd_det	ver_mstr
ecd_det	pjs_mstr	verd_det
ecd1_det	pjsx_det	ves_mstr
ecd2_det	pk_det	vesd_det
ecd3_det	pli_mstr	vo_mstr
ecd4_det	plid_det	vod_det
ecd5_det	po_mstr	vpo_det
ecd9_det	pod_det	wo_mstr
ecl_list	prj_mstr	wod_det
ecx_ref	pvo_mstr	wr_route
ega_mstr	pvod_det	wtx_mstr
egt_mstr	qo_mstr	
elg_hist	qob_det	

TRGLDET Storage Area

trgl_det
TRHIST Storage Area

tr_hist
WORKFILE Storage Area

dmw_wkfl	fsd_det	qtbl_ext
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fabch_mstr	ifs_mstr	
fabchd_det	lotw_wkfl	

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