



QAD Enterprise Applications

**Installation Guide**  
**QAD Integrated Customization**  
**Toolkit**

70-3260-4.0-Rev2  
QAD ICT 4.0  
July 2012

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# Change Summary

The following table summarizes significant differences between this document and previous versions.

<b>Date/Version</b>	<b>Description</b>	<b>Reference</b>
July 2012/QAD ICT 4.0	Corrected message range reference to say 39100-39199	page 4
	Removed reference to icacc.p	page 24
	Replaced screen capture of ICT Control Table	page 25
June 2012/QAD ICT 4.0	Removed "Upgrade" chapter; replaced with upgrade instructions as part of normal installation	various
May 2012/QAD ICT 4.0	First formal release of document	



# Overview

This section contains basic topics that you should understand before attempting a QAD ICT installation or upgrade.

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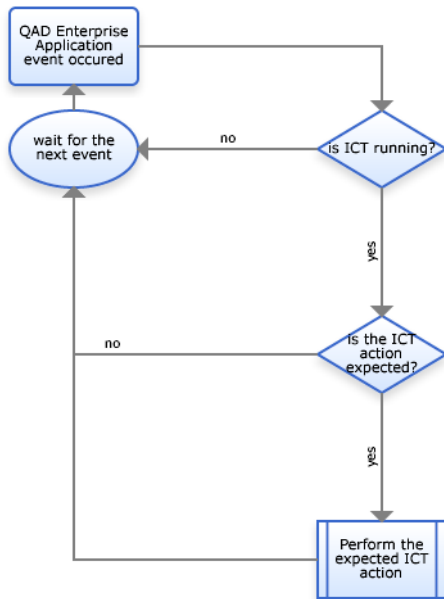
***QAD ICT*** 2

## Introduction

This chapter provides an overview of QAD ICT and describes how QAD ICT complements QAD Enterprise Applications.

## QAD ICT

The QAD Integrated Customization Toolkit enables you to design and develop customizations in a non-intrusive way, which means eliminating or limiting the changes in the original standard applications. The following figure is an overview of ICT processing. See *User Guide: QAD Integrated Customization Toolkit* for more information.



# Preparation for the Installation

This chapter includes information you can use when preparing to install QAD ICT.

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## Initial Considerations

QAD ICT is a service product and should be installed as any other customization you receive from QAD Services. In this installation guide, it is installed in the \$QADICT layer.

QAD recommends that QAD ICT should be first installed in the test environment and (if approved) then in the production environment.

**Note** QAD ICT uses message numbers from 39100 to 39199. It is highly recommended that you delete all custom messages in the 39100-39199 range because they will be overwritten during the ICT installation process.

## Upgrades from Earlier Versions

QAD ICT 4.0 is backward compatible with earlier versions, but it is recommended that after the installation of QAD ICT 4.0, the developers use the new features and functions in the latest version.

**Note** If you use the task utility in your current version of ICT, you should close all WIP tasks before the upgrade process. Otherwise, they will automatically be closed by ICT.

The following list summarizes the upgrade from each earlier version. Perform the installation as described in this guide. All additional changes required to upgrade from an earlier version of QAD ICT are marked as **UPGRADE NOTE**.

- **QAD ICT 1.x.** The only required step, after installing QAD ICT 4.0 in a QAD ICT 1.0 environment, is to execute a utility program that deletes the old menu structure of QAD ICT 1.0.
- **QAD ICT 2.x.** The only required step, after installing QAD ICT 4.0 in a QAD ICT 2.0 (SP1) environment, is to execute a utility program that reorders some QAD ICT data.
- **QAD ICT 3.x.** The only required step, after installing QAD ICT 4.0 in a QAD ICT 3.0 environment, is to execute (one time) the utility programs that complete new data required by the upgraded functionality of ICT tasks and Frame & Field properties.

# Installation

This chapter describes QAD ICT installation tasks, including the changes to be made in the startup programs of the Standard and Enterprise Edition releases of QAD Enterprise Applications. It is assumed that QAD Development Services has already done this or the changes will be made locally.

**Important** If this has not been supplied to you (in addition to the QAD ICT software), please consult QAD Services. QAD ICT cannot be activated without these changes.

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## Standard Edition

This section describes installation tasks for Standard Edition.

### Transfer Software Package on the Software Server (UNIX only)

Use an FTP client (binary transfer) to copy the software package (tar format) on the UNIX or Linux Server.

### Extract Software Package

Extract the software in the `$QADICTINSTALL` directory and make sure that all resources are stored as follows:

- xrc contents in `$QADICT/xrc`
- src contents in `$QADICT/src` (optional)
- utcompil.wrk in `$QADICT`
- Data contents in `$QADICT/data`

### Update the Standard Edition Startup Programs

This paragraph describes the changes to be made in the startup programs of the Standard Edition releases of QAD Enterprise Applications. Please modify the follow programs as instructed.

**Note** If these programs have been modified and are stored in directories before the `$QADICT` layer in the Propath (for example, PATCH, CUST), the described changes should be made in the modified programs, not in standard ones.

Make the following change in the custom or standard version of `mfl.p` of the QAD Enterprise Applications release the customer is using. Add the QAD ICT include just before the call to `mfla.p`.

```
/* QAD ICT - Integrated Customization Toolkit */
{icmf.i}

/* NOW CALL THE TRANSLATABLE PORTION OF THE (OLD) MF1.P */
{gprun1.i "mfla.p" }

PROCEDURE registerReasonMessage:
```

Make the following change in the custom or standard version of `mfwb01a.p` of the QAD Enterprise Applications release the customer is using. Please add the QAD ICT include just before `run set-session-formats`.

```
/* QAD ICT - Integrated Customization Toolkit */
{icmf.i}

run set-session-formats in sess-context-hdl
(input global_userid).

/*Check license usage*/
{gprunp.i
"lvgenpl" "p"
"validateUserCountExceeded_HTML"
"(input 'MFG/PRO', output licenseMsgNum, output licenseMsgDesc)" }
```

For QAD SE 2010+ .NET UI 2.9.1+ versions:

```
/* QAD ICT - Integrated Customization Toolkit */
{icmf.i}
run set-session-formats in mfwb02handle()
  (input global_userid).

/*Check license usage*/
{gprunp.i}
"lvgenpl" "p"
"validateUserCountExceeded_HTML"
"(input 'MFG/PRO', output licenseMsgNum, output licenseMsgDesc)" }
```

## Update Additional Startup Programs

As needed, modify the startup programs for additional QAD Enterprise Applications as shown.

### QXtend

Make the following change in the custom or standard version of `mfwb01aa.p` of the QAD Enterprise Applications release the customer is using. Please add the QAD ICT include just before the do transaction for `lvucap.p`.

```
/* QAD ICT - Integrated Customization Toolkit */
{icmf.i}

/* Log the transaction for the pricing */
do transaction:
  {gprun.i "lvucap.p"
    "(input 'qxtend', input '')"}
end.
```

### QGen

Make the following change in the custom or standard version of `runProgramMapper.p` of the QXtend release the customer is using. The change consists of two changes; just before the on leave trigger definition and at the end of the leave trigger definition.

The optional language parameter of `icqgen.i` should be the default language that is being used for that customer (in most cases, that will be US).

```
/* Reset everything ready for a new run through. */
run newRunThrough in pHandle.

/* QAD ICT - Integrated Customization Toolkit */
{icqgen.i &LANGUAGE="us"}

/***** TRIGGERS *****/
/* On leaving a field update the data for the field */
on leave anywhere do:
  /*
  * Work out a valid focus handle. This will usually just be the
  ...
  else
    message "Invalid handle pHandle".
  end.
end.
end.

/* QAD ICT - Integrated Customization Toolkit */
{icttrglv.i}
end.
```

**Note** Make sure that the compiled object for `runProgramMapper` is saved in the proper directory and that the QGen script will first pick up this customized version.

### AIM API

Make the following changes in the include `whgptrrf.i` of the AIM release the customer is using. Add the additional code as shown below.

```
/*V8:ConvertMode=NoConvert*/

/* QAD ICT - Integrated Customization Toolkit */
{icdef.i &AIMTRIGGERS=true}

/*****/
/* GLOBAL GO TRIGGER */
/*****/
on go anywhere do:
  {icttrggo.i} /*QAD ICT*/
  run proc_ui_check no-error.
end.

/*****/
/* GLOBAL LEAVE TRIGGER */
/*****/
on leave anywhere do:
  {icttrglv.i} /*QAD ICT*/
  run proc_ui_check no-error.
end.

on entry anywhere do:
  {icttrgen.i} /*QAD ICT*/
end.

/*****/
/* ASSIGN SR_QTY */
```

**Note** Make sure that you recompile `whaimapi.p` and `whapist2.p`, as these programs use the updated `whgptrrf.i` and are called in the AIM startup programs for Character, GUI, Desktop, and .NET UI.

### RF Terminals

Make the following change in the custom or standard version of `whmf1.p` of the QAD Enterprise Applications release the customer is using. Add the QAD ICT include just before the call to `whmf1a.p`.

```
/* QAD ICT - Integrated Customization Toolkit */
{icmf.i}

{gprun1.i "whmf1a.p"}

{whgpevip.i} /*ENVIRONMENT PROCEDURES*/
```

Add the following lines at the end of the ICT `utcompil.wrk` list:

```
whmf1.p
whaimapi.p
whapist2.p
runProgramMapper.p
mfwb01aa.p
mfwb01a.p
mf1.p
```

## Enterprise Edition Earlier than 2011 EE

This section describes installation tasks for Enterprise Edition versions before 2011 EE.

### Transfer Software Package on the Software Server (UNIX only)

Use an FTP client (binary transfer) to copy the software package (tar format) on the UNIX or Linux Server.

### Extract Software Package

Extract the software in the `$QADICTINSTALL` directory and make sure that all resources are stored as follows:

- xrc contents in the `$QADICT/xrc`
- src contents in the `$QADICT/src` (optional)
- utcompil.wrk in the `$QADICT`
- Data contents in the `$QADICT/data`

Copy the following menu program file:

```
cp $QADICTINSTALL/EE_Files/icmenu.p.ee $QADICT/xrc/icmenu.p
```

### Update the Enterprise Edition Startup Programs (before 2011 EE)

This section describes the changes to be made in the startup programs of the Enterprise Edition releases of QAD Enterprise Applications. Please modify the follow programs as instructed.

**Note** If these programs have been modified and are stored in directories before the `$QADICT` layer in the Propath (for example, PATCH, CUST), the described changes should be made in the modified programs, not in standard ones.

Make the following change in the custom or standard version of `whapish.p` of the Enterprise Edition release the customer is using. Add the QAD ICT include just before the variable definitions.

```
{mfdeclre.i}

/* QAD ICT - Integrated Customization Toolkit */
{icdef.i &AIMTRIGGERS=false}

define variable LVApiGblHandle as handle no-undo.
define variable LVApiTrfHandle as handle no-undo.
```

Also in the custom or standard version of `whapist.p` of the Enterprise Edition release the customer is using, add QAD ICT at the end of the program.

```
/* Shut down AIM triggers. */
{gprun.i ""whapish.p""}
end.

/* QAD ICT - Integrated Customization Toolkit */
{icmf.i}
```

Make the following changes in the include `whgptrrf.i` of the Enterprise Edition release the customer is using. Add the additional code as shown below.

```

/*V8:ConvertMode=NoConvert*/

/* QAD ICT - Integrated Customization Toolkit */
{icdef.i &AIMTRIGGERS=true}

/*****/
/* GLOBAL GO TRIGGER */
/*****/
on go anywhere do:
    {icttrggo.i} /*QAD ICT*/
    run proc_ui_check no-error.
end.

/*****/
/* GLOBAL LEAVE TRIGGER */
/*****/
on leave anywhere do:
    {icttrglv.i} /*QAD ICT*/
    run proc_ui_check no-error.
end.

on entry anywhere do:
    {icttrgen.i} /*QAD ICT*/
end.

/*****/
/* ASSIGN SR_QTY */

```

**Note** Make sure that you recompile `whgblmgr.p`, as this program uses the updated `whgptrrf.i`.

### Update Additional Startup Programs

As needed, modify the startup programs for additional QAD Enterprise Applications as shown.

#### QXtend

Make the following change in the custom or standard version of `mfwb01aa.p` of the QAD Enterprise Applications release the customer is using. Add the QAD ICT include just before the do transaction for `lvucap.p`.

```

/* QAD ICT - Integrated Customization Toolkit */
{icmf.i}

/* Log the transaction for the pricing */
do transaction:
    {gprun.i "lvucap.p"
        "(input "'qxextend'", input "'')"}
end.

```

#### QGen

Make the following change in the custom or standard version of `runProgramMapper.p` of the QXtend release the customer is using.

**Note** When using QGen, the Ctrl+O key will show the QGen menu and not the QAD ICT developers menu.

The change consists of two changes; just before the on leave trigger definition and at the end of the leave trigger definition.

The optional language parameter of `icqgen.i` should be the default language that is being used for that customer (in most cases, that will be US).

```

/* Reset everything ready for a new run through. */
run newRunThrough in pHandle.

/* QAD ICT - Integrated Customization Toolkit */
{icqgen.i &LANGUAGE="us"}

/***** TRIGGERS *****/
/* On leaving a field update the data for the field */
on leave anywhere do:
  /*
   * Work out a valid focus handle. This will usually just be the
   ...
           else
               message "Invalid handle pHandle".
           end.
       end.
   end.
end.
/* QAD ICT - Integrated Customization Toolkit */
{icttrglv.i}
end.

```

**Note** Make sure that the object for `runProgramMapper` is saved in the base directory and that the QGen script will first pick up this customized version.

Add the following lines at the end of the ICT `utcompil.wrk` list:

```

whgblmgr.p
whapish.p
whapist.p
runProgramMapper.p

```

## Enterprise Edition 2011 EE and Higher

This section describes installation tasks for Enterprise Edition version 2011 EE and higher.

### Transfer Software Package on the Software Server (UNIX only)

Use an FTP client (binary transfer) to copy the software package (tar format) on the UNIX or Linux Server.

### Extract Software Package

Extract the software in the `$QADICTINSTALL` directory and make sure that all resources are stored as follows:

- xrc contents in the `$QADICT/xrc`
- src contents in the `$QADICT/src` (optional)
- `utcompil.wrk` in the `$QADICT`
- Data contents in the `$QADICT/data`

Copy the following menu program file:

```
cp $QADICTINSTALL/EE_Files/icmenu.p.ee $QADICT/xrc/icmenu.p
```

Copy the `gprun.i` from ICT directory to `/us/bbi` directory:

```
mkdir $QADICT/xrc/us
mkdir $QADICT/xrc/us/bbi
```

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```
cp $QADICT/xrc/gprun.i $QADICT/xrc/us/bbi
```

Because the directory structure was changed in this version, some of the standard include files are not located in the area where the ICT package expects them. To avoid compilation issues, these standard include files should be copied into directory where ICT includes are located.

The following includes should be copied from the EE xrc directory to \$QADICT/xrc directory (for example, ./ict/xrc):

```
QADEA=/dr01/qadapps/gea
QADICT=/dr01/qadapps/ict

cp $QADEA/xrc/us/cs/csscrad1.i $QADICT/xrc
cp $QADEA/xrc/us/gp/gpdirpre.i $QADICT/xrc
cp $QADEA/xrc/us/gp/gpselout.i $QADICT/xrc
cp $QADEA/xrc/us/gp/gpwait.i $QADICT/xrc
cp $QADEA/xrc/us/mf/mfdtitle.i $QADICT/xrc
cp $QADEA/xrc/us/bbi/mfdeclre.i $QADICT/xrc
cp $QADEA/xrc/us/mf/mfnp06.i $QADICT/xrc
cp $QADEA/xrc/us/mf/mfnp09.i $QADICT/xrc
cp $QADEA/xrc/us/mf/mfquoter.i $QADICT/xrc
cp $QADEA/xrc/us/mf/mfrpchk.i $QADICT/xrc
cp $QADEA/xrc/us/mf/mftrail.i $QADICT/xrc
cp $QADEA/xrc/us/px/pxpgmmgr.i $QADICT/xrc
cp $QADEA/xrc/us/sw/swselect.i $QADICT/xrc
cp $QADEA/xrc/us/wb/wbrp01.i $QADICT/xrc
cp $QADEA/xrc/us/wi/windowx.i $QADICT/xrc
```

Keep in mind that these include files are now duplicated in the ICT source directory.

**Note** Special care must be taken when installing patches or making modification to these files, in order to keep both copies in sync.

### Update the Enterprise Edition Startup Programs (2011 EE and higher)

This section describes the changes to be made in the startup programs of the Enterprise Edition releases of QAD Enterprise Applications. Please modify the follow programs as instructed.

**Note** If these programs have been modified and are stored in directories before the \$QADICT layer in the Propath (for example, PATCH, CUST), the described changes should be made in the modified programs, not in standard ones.

Make the following change in the custom or standard version of whapish.p of the Enterprise Edition release the customer is using. Add the QAD ICT include just before the variable definitions.

```
{us/bbi/mfdeclre.i}

/* QAD ICT - Integrated Customization Toolkit */
{icdef.i &AIMTRIGGERS=false}

define variable LVApiGblHandle as handle no-undo.
define variable LVApiTrfHandle as handle no-undo.
```

Also in the custom or standard version of whapist.p of the Enterprise Edition release the customer is using, add the QAD ICT at the end of the program.

```
/* Shut down AIM triggers. */
{us/bbi/gprun.i ""whapish.p""}
end.

/* QAD ICT - Integrated Customization Toolkit */
{icmf.i}
```

Make the following changes in the include `whgptrrf.i` of the Enterprise Edition release the customer is using. Add the additional code as shown below.

```
/* QAD ICT - Integrated Customization Toolkit */
{icdef.i &AIMTRIGGERS=true}
```

```
/* ***** */
/* GLOBAL GO TRIGGER */
/* ***** */
on go anywhere do:
  {icttrggo.i} /*QAD ICT*/
  run proc_ui_check no-error.
end.
```

```
/* ***** */
/* GLOBAL LEAVE TRIGGER */
/* ***** */
on leave anywhere do:
  {icttrglv.i} /*QAD ICT*/
  run proc_ui_check no-error.
end.
```

```
on entry anywhere do:
  {icttrgen.i} /*QAD ICT*/
end.
```

```
/* ***** */
/* ASSIGN SR_QTY */
```

**Note** Make sure that you recompile `whgblmgr.p`, as this program uses the updated `whgptrrf.i`. The include file `whgptrrf.i` must be stored in the `xrc/us/wh/` directory.

## Update Additional Startup Programs

As needed, modify the startup programs for additional QAD Enterprise Applications as shown.

### QGen

Make the following change in the custom or standard version of `runProgramMapper.p` of the QXtend release the customer is using.

**Note** When using QGen, the Ctrl+O key will show the QGen menu and not the QAD ICT developers menu.

The change consists of two changes; just before the on leave trigger definition and at the end of the leave trigger definition.

The optional language parameter of `icqgen.i` should be the default language which is being used for that customer (in most cases, that will be US).

```
/* Reset everything ready for a new run through. */
run newRunThrough in pHandle.

/* QAD ICT - Integrated Customization Toolkit */
{icqgen.i &LANGUAGE="us"}

/* ***** TRIGGERS ***** */
/* On leaving a field update the data for the field */
on leave anywhere do:
  /*
   * Work out a valid focus handle. This will usually just be the
   ...
   else
     message "Invalid handle pHandle".
   end.
end.
```

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```
end.  
/* QAD ICT - Integrated Customization Toolkit */  
{icttrglv.i}  
end.
```

**Note** Make sure that the object for `runProgramMapper` is saved in the base directory and that the QGen script will first pick up this customized version.

### Copy Changed Programs to a Proper Directory

Create the `$QADICT xrc/us/wh` subdirectory for modified EE startup programs:

```
mkdir $QADICT/xrc/us (if necessary)  
mkdir $QADICT/xrc/us/wh
```

Make sure all modified `wh*` programs are in `$QADICT/xrc/us/wh`.

Add the following lines at the end of the ICT `utcompil.wrk` list:

```
runProgramMapper.p  
us/wh/whapish.p  
us/wh/whapist.p  
us/wh/whgblmgr.p
```

# Compiling and Completing the Installation

This chapter describes the compilation process, which is a part of the correct installation of QAD ICT software, as well as the tasks required to complete the QAD ICT installation.

**Note** All changes required due to upgrade from an earlier version of QAD ICT are marked as **UPGRADE NOTE**.

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## Compilation Considerations

Based on the supplied `utcompil.wrk`, the software must be compiled using an appropriate compiler such as QDT/QDT BatchCompiler or MFGUTIL. If you have any compilation errors, please review and resolve them.

Add the startup programs just modified for ICT to the `$QADICT/utcompil.wrk` list. If they are considered to be compiled in the `$QADICT` layer (neither custom nor patch layer) add them to the `$QADICT/utcompil.wrk` list.

## Non-domained Versions

If you install QAD ICT on a non-domained version of QAD Enterprise Applications, read this section first, then perform the compilation described in the appropriate paragraph for the customer's version of QAD Enterprise Applications.

QAD ICT has been developed for eB2.1+ (domain version), but can also be installed on non-domain releases. If this is the case, set QAD ICT to non-domain, review the browse definition, and regenerate these.

**Note** It is assumed that QAD Services will supply the correct `icdomain.i` and dump file before installing.

### Setup File

As QAD ICT by default is set up for domained versions of QAD Enterprise Applications, you must change a setup file before you compile the software.

Open the readable version of `icdomain.i` and change the YES into a NO. After you have saved the readable version, encrypt it and move it into the xrc layer (thus overwriting the default).

### Browse Definitions

Open the dump file of QAD ICT and go to the section `brw_mstr`. Remove for each `brw_mstr` definition the “`and qad_domain = 'QADICT'`” part as shown in the sample below:

```
.
brw_mstr
"ic051" "ICT_TRIGGER_LINKS" "ICTVIEW" "" "qad_key1 = 'QadIctTriggerLink' and qad
_domain = 'QADICT'" "pzz" 05/17/07 "" "" "" "1" yes yes 0 no "" "" "" 0
...
```

**Note** After the removal, regenerate and compile the (power and lookup) browses and move them into the `<$QADICT>` layer.

## Standard Edition

Launch the main `mfgutil` utility script/shortcut from the `$QADEA` directory. Alternatively, to avoid modifications to the main MFG/UTIL, copy `mfgutil` and `mfgutil.ini` to the `$QADICT` folder and adjust the `mfgutil` script/shortcut to run it in the `$QADICT` working directory, then launch this utility from `$QADICT`.

Copy the existing compilation database set used to compile European Accounting or base programs or any other layer, that connects to all required databases (for example, CompileUS-EA or CompileUS, or Compile) and create the CompileUS-ICT database set.

Select a Database Set

Set Name	Set Description	Active	Start Parameters
CompileUS-EA	CompileUS-EA Databas	NO	-rereadnolock -c 30 -d mdy -yy
>CompileUS-ICT	CompileUS-EA Databas	NO	-rereadnolock -c 30 -d mdy -yy

<Edit Set > < New Set > <Copy Set > < Help > < Cancel > < OK >

Selected Set Overview

Physical	Description	Host	Service	Path
>mfempty	Empty Q&D ERP Databa			/ul/qad/ea2010se/db
hlpempty	Empty Q&D ERP Help D			/ul/qad/ea2010se/db
admempty	Empty Q&D ERP Admin			/ul/qad/ea2010se/db
audempty	Empty Q&D ERP Audit			/ul/qad/ea2010se/db

< Edit DB > < New DB > <Delete DB>

Add corresponding database sets for each required language (for example, CompilePL-ICT) based on existing databases sets connecting to the language-specific compilation databases.

Compile ICT for US language using the just-created database set and the \$QADICT/utcompil.wrk compilation list. Make sure that the Propath is set properly to point to the \$QADICT folder on the first position: ICT,(QXTEND),(MSW/PSW),(WMS),CORE (all core layers, including BBI, FIN, QRA, PROXY).

Compiler Options		R-code Destination	
<input checked="" type="checkbox"/> Verbose	<input type="checkbox"/> Generate Compile List File	<input checked="" type="checkbox"/> Staggered Q&D ERP Default	
<input type="checkbox"/> Silent	<input checked="" type="checkbox"/> Use Existing Compile List	<input type="checkbox"/> Flat Destination	
		<input type="checkbox"/> Destination Same as Source	
Compile List File: /ul/qad/ea2010se/ict/utcompil.wrk		<Browse>	
Compile Propath: /ul/qad/ea2010se/ict/xrc,/ul/qad/ea2010se/qxtend /xrc,/ul/qad/ea2010se/euroacc/xrc,/ul/qad/ea2010		< Edit >	
Language Code: us [V]		Database Set: CompileUS-ICT [V]	
Destination Directory: /ul/qad/ea2010se/ict		<Browse>	
<Compile >		< Help >	
< Close >			

```

/ul/qad/ea2010se/ict/xrc
> /ul/qad/ea2010se/ict/xrc
/ul/qad/ea2010se/qxtend/xrc
/ul/qad/ea2010se/euroacc/xrc
/ul/qad/ea2010se/xrc

```

```

03/31/12 @ 18:47:22 - Compiling /ul/qad/ea2010se/ict/xrc/mfwb01a.p
03/31/12 @ 18:47:23 - Compiling /ul/qad/ea2010se/ict/xrc/mfwb01aa.p
03/31/12 @ 18:47:23 - Compile Contained 0 Errors.
03/31/12 @ 18:47:23 - Compile Contained 0 Warnings.
03/31/12 @ 18:47:23 - Resetting PROPATH and Disconnecting from Databases.
03/31/12 @ 18:47:23 - End Compile.

```

Press CLOSE to continue.

< Close >

```

                                Program Compile Status
Files Processed: 112 of 112          Now Compiling: mfwb01aa.p
Errors Found: 0                      Percentage Complete: 100%

```

**Note** R-code of AIM programs (wh\* programs) should not be stored in the standard language directory (*/language/wh*). It should be compiled directly to the \$QADICT directory.

Do this by adding the following QAD Warehousing (AIM) related programs to the \$QADEA/toplevel.lst file:

```

cpdchk.r
cpdmf.r
cpdmf1.r
cpdst2.r
cpdstart.r
cpdstop.r
cpdtrig.r
whaimapi.r
whapist2.r
whmf1.r
whtrtxfr.r

```

This will ensure that these QAD Warehousing top-level programs will be compiled to the proper directory during all subsequent compilations done with MFG/UTIL.

## Enterprise Edition Below 2011 EE

Compile ICT and EE modified programs using the QDT batch compiler.

Create the `$QADICT/compileICT.ksh` script.

Make sure the `Propath` and other parameters are properly set for an EE environment. Detailed information about how to run the QDT Batch Compiler is available in the existing batch compiler script—for example, `$QADQDT/envs/$QADENV/scripts/01batchCompile.ksh`—or in the `01batchCompile.log` files from the `$QADQDT/logs` directory.

The example below assumes you are installing ICT into `/dr01/qadapps/ict` to an existing 2010 EE installation found in `/dr01/qadapps/qea` with QDT in `/dr01/qadapps/qdt`.

```
#!/bin/ksh
DLC=/dr01/progress/dlc; export DLC
PATH=$PATH:$DLC/bin; export PATH
QADEA=/dr01/qadapps/qea
QADICT=/dr01/qadapps/ict
QADQDT=/dr01/qadapps/qdt
QADENV=live
PROPATH=$QADQDT/xmfgusrc:$QADQDT:$QADQDT/resources; export PROPATH

cd $QADQDT
$DLC/bin/_progres -pf $QADQDT/envs/$QADENV/scripts/batchCompile.pf -param
"rcodeDestFormat=1,compileListFilename=$QADICT/utcompil.wrk,destinationDirectory=
$QADICT,compilePropath=$QADICT/xrc:$QADEA/xrc:$QADEA/xrc/proxy" >>
$QADICT/compileICT.log 2>&1
```

Run the above script and check the log file.

```
04/20/12 @ 10:04:54 [root] - Compiling /dr01/qadapps/ict/xrc/icuatxrp.p
04/20/12 @ 10:04:54 [root] - Compiling /dr01/qadapps/ict/xrc/icuipers.p
04/20/12 @ 10:04:54 [root] - Compiling /dr01/qadapps/ict/xrc/icuitmt.p
04/20/12 @ 10:04:54 [root] - Compiling /dr01/qadapps/ict/xrc/icvltm.p
04/20/12 @ 10:04:54 [root] - Compiling /dr01/qadapps/ict/xrc/runProgramMapper.p
04/20/12 @ 10:04:54 [root] - Compiling /dr01/qadapps/ict/xrc/whapist.p
04/20/12 @ 10:04:55 [root] - Compiling /dr01/qadapps/ict/xrc/whapish.p
04/20/12 @ 10:04:55 [root] - Compiling /dr01/qadapps/qea/xrc/whgblmgr.p
04/20/12 @ 10:04:56 [root] - Compile contained 3 errors.
04/20/12 @ 10:04:56 [root] - Compile contained 0 warnings.
```

Make sure that the `Propath` is set properly to point to the `$QADICT` folder in the first position:

ICT,(NETUI),(QXTEND),(MSW/PSW),(WMS),CORE (all core layers, including BBI, FIN, QRA, PROXY)

Both the compilation and runtime `Propath` should be adjusted to the following order:

- 1 (CUST/PATCH/LOCAL)
- 2 ICT
- 3 (NETUI)
- 4 (QXTEND)
- 5 (MSW/PSW)
- 6 (WMS)
- 7 CORE (all core layers, including BBI, FIN, QRA, PROXY)

## Enterprise Edition 2011 EE and Higher

Compile ICT and EE modified programs using the QDT batch compiler solution.

Create the `$QADICT/compileICT.ksh` script.

Make sure that the `Propath` and other parameters are properly set for an EE environment. Detailed information about how to run the QDT Batch Compiler is available in the existing batch compiler script—for example, `$QADQDT/envs/$QADENV/scripts/01batchCompile.ksh`—or in the `01batchCompile.log` files from the `$QADQDT/logs` directory.

The example below assumes you are installing ICT into `/dr01/qadapps/ict` to an existing 2012 EE installation found in `/dr01/qadapps/qea` with QDT in `/dr01/qadapps/qdt`.

```
DLC=/progress/dlc102b; export DLC
PATH=$PATH:$DLC/bin; export PATH
QADEA=/dr01/qadapps/qea
QADICT=/dr01/qadapps/ict
QADQDT=/dr01/qadapps/qdt
QADENV=live
PROPATH=$QADQDT/xmfgusrc:$QADQDT:$QADQDT/resources; export PROPATH

if [ ! -d $QADICT/us ]; then
    mkdir $QADICT/us
fi
if [ ! -d $QADICT/us/ic ]; then
    mkdir $QADICT/us/ic
fi
if [ ! -d $QADICT/us/wh ]; then
    mkdir $QADICT/us/wh
fi

cd $QADQDT
$DLC/bin/_progres -pf $QADQDT/envs/$QADENV/scripts/batchCompile.pf -param
"rcodeDestFormat=1,compileListFilename=$QADICT/utcompil.wrk,destinationDirectory=
$QADICT,topLevelList=none,noCompileList=nocompile.lst,progOnlyList=
ProgressOnly.lst,oraOnlyList=OracleOnly.lst,srcCodeFormat=twoletter,compilePropath=
$QADICT/xrc:$QADEA/xrc:$QADEA/xrc/us/bbi:$QADEA/xrc/proxy" >> $QADICT/compileICT.log
2>&1

cd $QADICT
mv ic*.r us/ic
```

Run the above script and check the log file.

```
03/31/12 @ 13:25:49 [root] - Compiling /dr01/qadapps/ict/xrc/icvlmt.p to
/dr01/qadapps/ict
03/31/12 @ 13:25:49 [root] - Compiling /dr01/qadapps/qea/xrc/us/wh/whgblmgr.p to
/dr01/qadapps/ict/us/wh
03/31/12 @ 13:25:51 [root] - Compiling /dr01/qadapps/ict/xrc/whapist.p to
/dr01/qadapps/ict
03/31/12 @ 13:25:51 [root] - Compiling /dr01/qadapps/ict/xrc/whapish.p to
/dr01/qadapps/ict
03/31/12 @ 13:25:51 [root] - Compile contained 0 errors.
03/31/12 @ 13:25:51 [root] - Compile contained 0 warnings.
```

Make sure that the `Propath` is set properly to point to the `$QADICT` folder in the first position:

ICT,(NETUI),(QXTEND),(MSW/PSW),(WMS),CORE (all core layers, including BBI, FIN, QRA, PROXY)

Both the compilation and runtime `Propath` should be adjusted to the following order:

- 1 (CUST/PATCH/LOCAL)
- 2 ICT
- 3 (NETUI)

- 4 (QXTEND)
- 5 (MSW/PSW)
- 6 (WMS)
- 7 CORE (all core layers, including BBI, FIN, QRA, PROXY)

## Additional Tasks for All Versions

After compilation, perform the tasks described in this section for all versions of QAD Enterprise Applications.

### Update Runtime Scripts and Properties Files

Add `$QADICT` to the `Propath` for all QAD Enterprise Applications processes, including character client, connection manager, telnet, appserver, webspeed.

The `$QADICT` directory should be added just after the `PATCH` or `CUST` layer, before other QAD products folders, to follow the order: (`CUST/PATCH/LOCAL`), `ICT`, (`NETUI`), (`QXTEND`), (`MSW/PSW`), (`WMS`), `CORE` (all core layers, including `BBI`, `FIN`, `QRA`, `PROXY`).

Update the QGen client to run `$QADICT/us/ru/runProgramMapper.r` or `$QADICT/runProgramMapper.r` for EE2011+.

### Start QAD Enterprise Applications

If no compilation errors occurred, log on to the environment for which you installed QAD ICT. At this point, QAD ICT is not active yet. QAD ICT data (such as message numbers and menus) must be loaded and QAD ICT must be activated.

**Note** If menu 90 has already been used, you can manually update the `qadict.dmp`. For any other change, please contact QAD Services.

**Note** The `qadict.dmp` is provided for the `iso8859-1` and compatible codepages setup. If you run an incompatible codepage setup (for example, `1250`), the `qadict.dmp` must be adjusted accordingly:

```
[Session]
Numeric-format=AMERICAN
Date-Format=mdy
cpstream=1250
cpinternal=1250
```

**UPGRADE NOTE** QAD ICT 1.0 has a different menu structure. Because of this, if you upgrade ICT 1.0 to ICT4.0 or higher, the existing ICT menu must be deleted before you start loading data. To delete the whole QAD ICT menu, run the `icmenrm.p` program.

```
+-----+
|Warning!!Procedure will delete the existing Q&D ICT menu. ||Start deleting: yes|
+-----+
```

After logon, start the QAD ICT Data Loader program `icdatmt.p` from the menu. For an Enterprise Edition release, go to the editor (via `mgeditor`) and execute the 4GL command: `run us/ic/icdatmt.p` (as the menu permissions have not been set yet).

In the loader program, fill in the QAD ICT dump file name `qadict.dmp`. (The `qadict.dmp` supports both Standard Edition and Enterprise Edition.)

```

icdatmt ict4                               .0 Main Menu                               03/31/12
-----Load Procedure for Customisation-----
Dump File: /ul/qad/ea2010se/ict/data/qadict.dmp
Active Trigg.: No          Preview processed data data?: No
                                UNDO/delete data on DMP: No

QAD ICT params: Yes
Menu Selection: Yes
  Window Help: Yes
Generalized codes: No
  Messages: Yes
  Language: Yes
  Browsers: Yes
Web-enabled programs: Yes
Print Customer Address: No
    
```

```

WARNING: Message # 9123: . yes

F1=Go 2=Help 3=Ins 4=End 6=Menu 7=Rcl 8=Clr 11=Paste
    
```

After confirmation, QAD ICT loader will load the data and summarize what has been loaded (details can be found as well in the log file). The number of records can differ depending on which QAD ICT release you are installing.

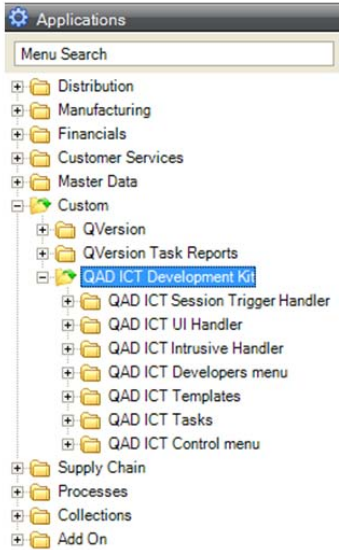
```

----- Information -----
Total number of records: 1515
      Added:             1492
      Overwritten:       23

(see logfile for more detailed infomation: load01.log )
-----
                        <OK>
    
```

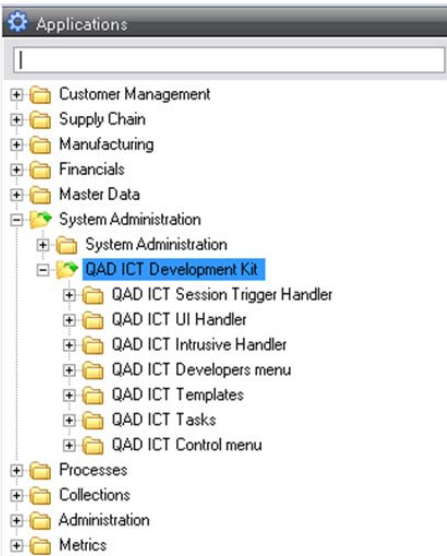
When installing in a Standard Edition release, you should have the QAD ICT menu available as option 90 in the main system menu (if it was not changed manually in the `qadictd.dmp` file).

In .NET UI, you will see the ICT menu in the Custom menu, QAD ICT Development Kit.



When installing in an Enterprise Edition release, perform a System Sync with the Resource option selected via System Synchronize. Do a log-off/on and run Role Permissions Maintain (for SuperUser) and update where needed. See the QAD Enterprise Edition *Security and Controls User Guide* for information about setting up security roles.

In .NET UI, after log-off/on, you will see QAD ICT in the System Administration Menu, QAD ICT Development Kit.



### Define QAD ICT Licensing

When ICT is installed, the following message will be displayed on each process startup, until the correct ICT license code is entered.

```
ERROR: No control table record found for QADICT. Please re-enter.
```

There should be a “runtime” or “development” license issued and provided with the installation package. If not, please directly contact [msa@qad.com](mailto:msa@qad.com). The license distribution process is performed by GCA.

The QAD ICT license code must be entered in QAD ICT License Registration (90.24.23). After entering the QAD ICT license code, you will see directly the License Number, Type, Number of users (only for Toolkit) and Expire date (if applicable). If this information is not correct, contact the QAD ICT Product Management Team (via [msa@qad.com](mailto:msa@qad.com)).

If you installed the Toolkit, you need to enter the QAD Enterprise Applications user IDs of the developers who will be working with the Toolkit. User IDs that are not defined in this function can only execute the run-time version.

```
ictlicmt.p ict4 a          90.24.23 QAD ICT License Registration          03/31/12
```

```
License Code: SJXLKU 5FRXB8 UUAIFM I23E9A

License Nbr: 9999
License type: toolkit
Users Nbr: 01
Expired Date: 000000
```

```
User ID  User Name
-----
us       English User
```

To make sure that QAD ICT will be loaded during startup, run Super Program Maintenance (90.24.13) and check for three records. The most important one is `icprcs.p`.

```
icspmt.p ict4 a          90.24.13 Super Program Maintenance          03/31/12
```

```
Super Program: icprcs.p
```

```
Active: Yes
Primary: Yes

Comment:
```

If the Active and Primary fields are not set to Yes, QAD ICT might not work correctly as the QAD ICT package must be loaded (during startup) as the first (super) package.

Besides `icprcs.p`, also make sure that `icrctrg.p` (for Active change Triggers) is defined as a super procedure and that Active is set to Yes and Primary to No.

**Note** `icrctrg.p` is not required when installing the run-time version.

If a previous ICT version is upgraded, Super Program Maintenance will likely contain `icacc.p` (for the Character Developers Menu menu accelerator key, Ctrl+O by default) also. This super procedure will be deleted during the conversion process described below.

## Set Up QAD ICT Control Table

QAD ICT Control Table (90.24.24) defines where the ICT Developer Menu is installed. If during the initial load of QAD ICT data the menu numbers were changed, enter here the changed menu number in this program.

Task base directory is used to indicate where task subdirectories are created. Task directory is obtained by concatenating the base directory and the task ID. The new or modified custom procedures are kept in the task directory and compiled there as long as the task is open. Once the task is closed, all such files are moved automatically to the central directory (r-codes to `global_user_lang_dir + first two letters subdirectory`, source code files to the first source subdirectory) and thus become visible to all users.

Central directory is used to indicate the directory where the customer customizations are stored (subscriber, UI triggered, validation, other non ICT-related procedures). This directory is usually the first one on the Propath.

Source sub-dir defines a comma-separated list of source subdirectories used to extend the Propath. The first subdirectory is the target subdirectory for customized source files in the central directory.

```

icctpm.p ict4 a          90.24.24 ICT Control Table          06/26/12
+-----+
Active Change triggers: Yes
                    ICT Menu: 90.12
ICT Menu Accelerator CTRL-: 0
Trigger link file prefix: ic trgXX
Audit for ICT qad_wkfl: Yes

Task base directory: /qad/custom/92b/qict92b11/work/
Central directory:  /qad/custom/92b/qict92b11/work/
Source sub-dir.:  src,xrc

Reload QAD ICT: No          ICT VERSION: 00003
+-----+
    
```

QAD ICT is reloaded if 'Reload QAD ICT' flag is set to Yes and F1(go) was pressed. Optionally, you can log off and log on again to QAD Enterprise Applications. The ICT processing is restarted ONLY for the current user. For .NET UI/Desktop users, restart the Connection Manager.

**UPGRADE NOTE** When you upgrade your QAD ICT installation, it is necessary to run two procedures that automatically adjust your existing customizations to ICT 4.0 requirements. It is very important to run them after ICT Control Table configuration. Remember to close all WIP ICT tasks; otherwise, ICT closes them automatically. Run the program `icctcnv35.p` to update the existing Frame & Fields settings. Run the utility `icctcnv34.p` (it is best to run the compiled version, `us/ic/icctcnv34.r`) to convert existing ICT tasks to conform to the new version of ICT.

**UPGRADE NOTE** When you upgrade your QAD ICT installation, it is important to authorize all developed customizations. To do this, you need to run the authorization tool program `icauthmt.p`. Execute `icauthmt.p` and reload QADICT.

## Validate that QAD ICT Is Working

```

ictstrp.p ict4 a 90.24.10 Reporting
Page: 1 MFG/PRO Training DB - eB2.1

Temp ICT records
-----
Key 1 Key 2 Key 3 Key 4
-----
QadIctPersistentProg icentron.p 1163
QadIctPersistentProg icuipers.p 1162

QadIctSuperProcedure icacc.p 1160
QadIctSuperProcedure icprcs.p 1158
QadIctSuperProcedure icrcrtrg.p 1161

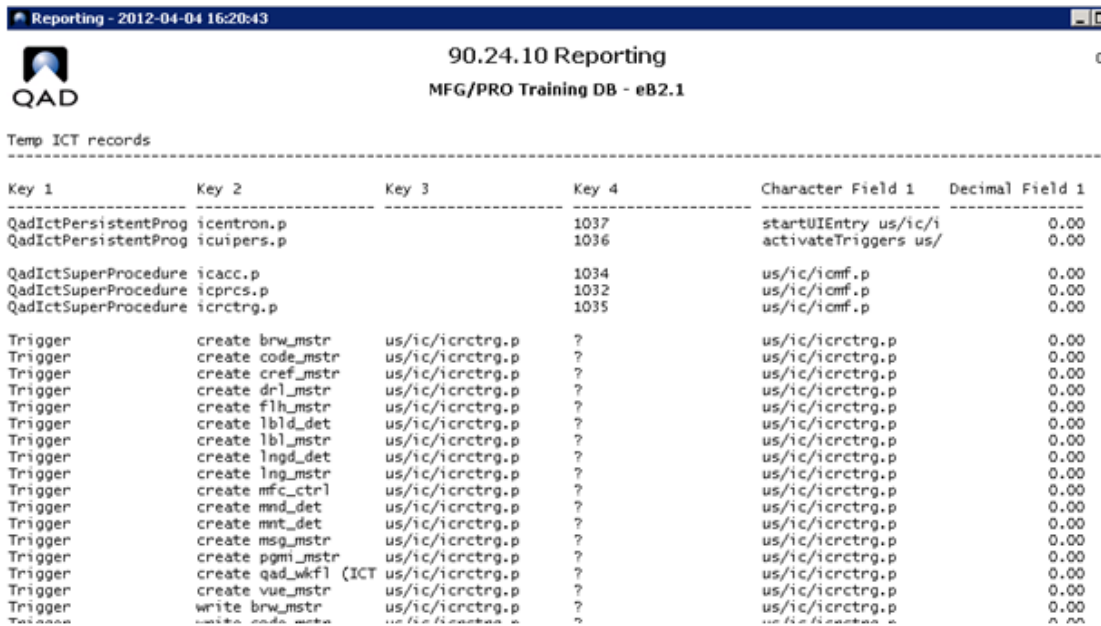
Trigger create brw_mstr us/ic/icrcrtrg.p ?
Trigger create code_mstr us/ic/icrcrtrg.p ?
Trigger create cref_mstr us/ic/icrcrtrg.p ?
Trigger create drl_mstr us/ic/icrcrtrg.p ?

Browse or type search string and press [RETURN]:
Use cursor and page keys to navigate, F4 to exit. [Line 1]
    
```

If you do not get this screen (search for Key 1 data QadIctSuperProcedure) or you get run-time error messages (for example, \*\*\* “getTempTable” was not found. (293)), QAD ICT is not loaded (via the restart or log off/on).

If this happens, make sure that the Propath is set up correctly and is first pointing to the customized QAD ICT mf1.p. If you cannot resolve the issue, contact QAD Services.

Run the same validation in .NET UI



Key 1	Key 2	Key 3	Key 4	Character Field 1	Decimal Field 1
QadIctPersistentProg	icentron.p		1037	startUIEntry us/ic/i	0.00
QadIctPersistentProg	icuipers.p		1036	activateTriggers us/	0.00
QadIctSuperProcedure	icacc.p		1034	us/ic/icmf.p	0.00
QadIctSuperProcedure	icprcs.p		1032	us/ic/icmf.p	0.00
QadIctSuperProcedure	icrcrtrg.p		1035	us/ic/icmf.p	0.00
Trigger	create brw_mstr	us/ic/icrcrtrg.p	?	us/ic/icrcrtrg.p	0.00
Trigger	create code_mstr	us/ic/icrcrtrg.p	?	us/ic/icrcrtrg.p	0.00
Trigger	create cref_mstr	us/ic/icrcrtrg.p	?	us/ic/icrcrtrg.p	0.00
Trigger	create drl_mstr	us/ic/icrcrtrg.p	?	us/ic/icrcrtrg.p	0.00
Trigger	create flh_mstr	us/ic/icrcrtrg.p	?	us/ic/icrcrtrg.p	0.00
Trigger	create lbl_det	us/ic/icrcrtrg.p	?	us/ic/icrcrtrg.p	0.00
Trigger	create lbl_mstr	us/ic/icrcrtrg.p	?	us/ic/icrcrtrg.p	0.00
Trigger	create lngd_det	us/ic/icrcrtrg.p	?	us/ic/icrcrtrg.p	0.00
Trigger	create lng_mstr	us/ic/icrcrtrg.p	?	us/ic/icrcrtrg.p	0.00
Trigger	create mfc_ctrl	us/ic/icrcrtrg.p	?	us/ic/icrcrtrg.p	0.00
Trigger	create mnd_det	us/ic/icrcrtrg.p	?	us/ic/icrcrtrg.p	0.00
Trigger	create mnt_det	us/ic/icrcrtrg.p	?	us/ic/icrcrtrg.p	0.00
Trigger	create msg_mstr	us/ic/icrcrtrg.p	?	us/ic/icrcrtrg.p	0.00
Trigger	create pgmi_mstr	us/ic/icrcrtrg.p	?	us/ic/icrcrtrg.p	0.00
Trigger	create qad_wkfl (ICT	us/ic/icrcrtrg.p	?	us/ic/icrcrtrg.p	0.00
Trigger	create vue_mstr	us/ic/icrcrtrg.p	?	us/ic/icrcrtrg.p	0.00
Trigger	write brw_mstr	us/ic/icrcrtrg.p	?	us/ic/icrcrtrg.p	0.00
Trigger	write code_mstr	us/ic/icrcrtrg.p	?	us/ic/icrcrtrg.p	0.00

If QXtend Inbound is installed:

- 1 Run the 90.24.10 report in a QGen session. This should result in the following information:

```
ictstrp.p ict4 a 90.24.10 Reporting
Page: 1 MFG/PRO Training DB - eB2.1
```

Temp ICT records

---

Key 1	Key 2	Key 3	Key 4
QadIctPersistentProg	icentron.p		1013
QadIctSuperProcedure	icacc.p		1011
QadIctSuperProcedure	icprcs.p		1009
QadIctSuperProcedure	icrcrtrg.p		1012
Trigger	create brw_mstr	us/ic/icrcrtrg.p	?
Trigger	create code_mstr	us/ic/icrcrtrg.p	?
Trigger	create cref_mstr	us/ic/icrcrtrg.p	?
Trigger	create drl_mstr	us/ic/icrcrtrg.p	?
Trigger	create flh_mstr	us/ic/icrcrtrg.p	?

Browse or type search string and press [RETURN]:  
Use cursor and page keys to navigate, F4 to exit. [Line 1]

- 2 Run the QXtend UI adapter script. (The exact name and path of this script can be found in the QXtend UI Adapter connection pool configuration settings; for example, /u1/qad/ea2010se/qxtend/client.qxtend.)

Enter or paste the following connection string in the empty field displayed by the UI adapter script (it requires that the “mfg” user in the application has no password defined):

app=ictstrp.p;id=qps;ip=127.0.0.1;term=vt320;xenguser=mfg;

and run the report with Output to “terminal” instead of “page.”

ict4 ict4 a

Session ICT settings:	No
Defined ICT settings:	No
Temp ICT records:	Yes
Output:	terminal
Batch ID:	

```
ict4 a Date: 03/31/12 qad.int
Page: 1 Time: 21:48:17
```

Temp ICT records

---

Key 1	Key 2	Key 3	Key 4	Character Field 1	Decimal Field 1
QadIctPersistentProg	icentron.p	1045	startUIEntry	us/ic/i	0.00
QadIctPersistentProg	icuipevs.p	1044	activateTriggers	us/	0.00
QadIctSuperProcedure	icacc.p	1042		us/ic/icmf.p	0.00
QadIctSuperProcedure	icprcs.p	1040		us/ic/icmf.p	0.00
QadIctSuperProcedure	icrcrtrg.p	1043		us/ic/icmf.p	0.00

Procedure icacc.p in the above screenshots was used before ICT 4.0. Since ICT 4.0, it has been replaced by icaccX.p (where X is the shortcut key) or is not present at all (if the shortcut key is not defined in ICT Control Table, 90.24.24).

