TURNOVER® FOR ISERIES V100

Developer's Guide

UNICOM SYSTEMS, INC.

Publication number

TIAD-1000-00 (July 2010)

Information in this publication is subject to change. Changes will be published in new editions or technical newsletters.

Documentation set

The documentation relating to this product includes:

- Getting Started with TURNOVER® for iSeries v100 Client
- Getting Started with TURNOVER® for iSeries v100
- TURNOVER® for iSeries v100 User Guide
- TURNOVER® for iSeries v100 Developer’s Guide
- Application Planning Guide
- Managing IFS Objects with TURNOVER® for iSeries v100
- TURNOVER® for iSeries v100 PWM Quick Reference
- Synchronizer User Guide

Copyright notice

TURNOVER® for iSeries v100

Trademark acknowledgements

The following are trademarks or registered trademarks of IBM Corporation: APPC, APPN, iSeries, System i, OfficeVision, OS/400, and SNA.

Product and company names mentioned herein may be the trademarks or registered trademarks of their respective owners.

UNICOM SYSTEMS, INC.

A Division of the UNICOM Group of Companies

A Division of the UNICOM Group of Companies

TABLE OF CONTENTS

PREFACE

This section describes the new features and enhancements for TURNOVER® for iSeries v100, as well as describes the audience and purpose of this guide.

About this guide

This guide is intended to provide the ***Software Developer*** with the essential information needed to work with TURNOVER® for iSeries v100 and benefit from the efficiency to be gained from this product. It also serves as the primary reference for the ***Programmer Worklist Manager*** (**PWM**) system. For questions about installation, setup, security, and change management administration; or for a more detailed explanation about other TURNOVER® for iSeries v100 features, see the ***Getting Started with TURNOVER® for iSeries v100 for the iSeries*** guide, the ***TURNOVER® for iSeries v100 Application Planning Guide***, the ***TURNOVER® for iSeries v100 User Guide***, and the ***Synchronizer Guide***.

UNICOM Systems, Inc. Recommends

If you are a Developer, be sure you receive the ***TURNOVER® for iSeries v100 PWM Quick Reference***. This provides a quick reference to all of the functions described in this publication.

What's New in TURNOVER® for iSeries v100?

This is a brief summary of the changes that are included in TURNOVER® for iSeries v100.

New Eclipse-based TURNOVER® for iSeries Client. (January 2006) With the introduction of this product TURNOVER® for iSeries completes its transition to the Eclipse Rich Client Platform. The TURNOVER® for iSeries v100 Client completely replaces TURNOVER® for iSeries Client/Server, which remains available for the duration of TURNOVER® for iSeries v100 so you can transition at your convenience.

Projects-related enhancements. These consist of:

- Relational dependencies between user-defined fields. This enhancement is available in all TURNOVER® for iSeries v100 interfaces that handle projects and tasks.
- A new exit point pertaining to blackout times for escalation processing.
- Two new exits for task authorization and validation.

Enhanced form filtering in the Work with Forms 5250 interface. A new function key (**F17**) on the ***Work with Forms*** panel provides access to sorting and filtering functions that make working with forms on that panel MUCH easier.

New CHGPWLPGMR and TARAFORM commands. The **CHGPWLPGMR** command (**Change Programmer Worklist Programmer**) is useful when you need to reassign the programmer associated with a given worklist. Depending on the parameters you pass, the changes made might include: Worklist programmer, Worklist item programmer for all lines on the worklist, and checkout records.

The **TARAFORM** command (**TurnOver Add Related Application Form**) is useful when you need to create related application forms once the base form has been created.

The TURNOVER® for iSeries v100 Information Library

Other sources of information about TURNOVER® for iSeries v100 include:

- The TURNOVER® for iSeries v100 iSeries information library, consisting of (in addition to this ***TURNOVER® for iSeries User Guide)*** a getting started guide and a tutorial:
    - The ***Getting Started with TURNOVER® for iSeries v100*** guide provides instructions for installing TURNOVER® for iSeries v100 on your iSeries computer (for the first time), upgrading to a new TURNOVER® for iSeries v100 release, and applying changes to an existing TURNOVER® for iSeries release.
    - The ***TURNOVER® for iSeries v100 Tutorial*** presents an example of a TURNOVER® for iSeries v100 application, and walks you through the steps you would typically perform in your actual working environments.
    - The ***TURNOVER® for iSeries v100 Developer's Guide*** contains topics of specific interest to software developers. It also serves as an effective introduction to TURNOVER® for iSeries v100.
    - The ***Synchronizer User Guide*** describes all of the features of the Synchronizer system, including the source compare and merge programs.
- The ***TURNOVER® for iSeries v100 Application Planning Guide*** provides information to help you understand TURNOVER® for iSeries v100 and TURNOVER® for iSeries v100 application definitions. (This information is user interface independent.)
- The TURNOVER® for iSeries v100 Supplements and Technical Bulletins are articles on specialized or advanced topics.
- The TURNOVER® for iSeries v100 Interface Guides describe how to use TURNOVER® for iSeries v100 to manage objects created by other products.[1]
- The TURNOVER® for iSeries v100 Client/Server information library remains available on the CD for customers who have not transitioned to the new TURNOVER® for iSeries v100 Client.

---

[1] For a complete list of products with which TURNOVER® for iSeries v100 interfaces, visit our Web site or contact your UNICOM Systems, Inc. Sales Representative.

- The ***Getting Started with the TURNOVER® for iSeries v100 Client*** guide provides installation and configuration instructions for using the Eclipse-based TURNOVER® for iSeries v100 plug-ins, either in the standalone TURNOVER® for iSeries v100 Client or within your WebSphere IDE.

- ***TURNOVER® for iSeries v100 Supplement #66: Implementing TURNOVER® for SVN v100*** provides complete information for installing and configuring the TURNOVER® for SVN v100 version control product for your Web/PC/Java development projects. This product integrates seamlessly with the Eclipse-based TURNOVER® for iSeries v100 plug-ins running either in the TURNOVER® for iSeries v100 Client or another Eclipse-based IDE such as IBM's Rational Application Developer (RAD) or WebSphere Development Studio Client (WDSC) products.

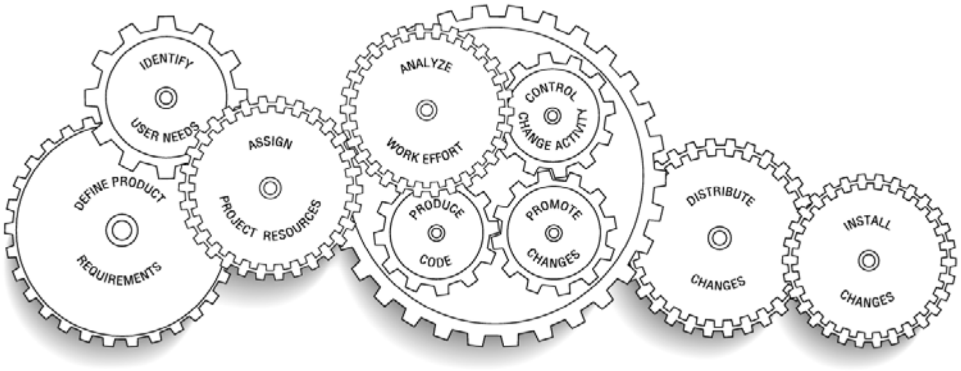
In addition, Help text (both field sensitive and extended help) is available for every display. Position the cursor to any field, or to the panel title, and press the F1/Help key.

All TURNOVER® for iSeries v100 documentation is available as Adobe™ Acrobat® PDF files on your TURNOVER® for iSeries v100 product CD. Using the Acrobat® Reader with Search (also provided), you can search, view, and print TURNOVER® for iSeries v100 information.

OVERVIEW OF TURNOVER® FOR ISERIES V100

Project-Driven Change Management

With the capabilities such as Wisedesk, TURNOVER® for iSeries v100 Projects, audit reporting, Synchronizer, and Programmer Worklist Manager (PWM), to name just a few, the TURNOVER® for iSeries v100 system has redefined change management to be a framework for software development – and redevelopment, the activity most of us do most of the time.



TURNOVER® for iSeries v100 has many component parts. In fact, an advantage of the TURNOVER® for iSeries v100 system is that all of these are integrated into one system, under one license and with one affordable license fee. TURNOVER® for iSeries v100 includes:

- ⇒ Helpdesk and on-line user-entry of change requests
- ⇒ Project management system
- ⇒ Source control management
- ⇒ Analysis tools such as a built-in cross-referencing and version control facilities
- ⇒ Programmer Worklist Manager facility (a PDM-like facility combining PDM and Change management functions on one panel)
- ⇒ Promotion management
- ⇒ Object and source archives
- ⇒ Distribution and remote installation management
- ⇒ Project time and cost reporting
- ⇒ Audit and history reporting
- ⇒ Vendor software synchronization package, including source compare and merge
- ⇒ CASE & other development tool interfaces

Whether you use all or some of these facilities, it is nice to know that they are available. In fact, it is our policy to continue to include new functions in one tightly integrated product.

In the broadest sense of the word, change management defines the primary role of most information systems organizations. The TURNOVER® for iSeries v100 change management system is ***your*** departmental application. As a Developer, your role can best be described as a Change Agent. After all, how many of us have the luxury of developing a system from scratch? I think we all can identify with the joke; "It only took God six days because he started from scratch!" Invariably, implementing something new means defining a migration path from what is to what needs to be. That is what we mean by the term concurrent software redevelopment. It describes the reality with which we all must contend. We are continually redeveloping software as it is being used. How could you hope to do that well without a system?

This section – and this entire ***TURNOVER® for iSeries v100 Developer's Guide*** – introduces you, the ***Developer***, to change management and how the TURNOVER® for iSeries v100 system helps you be a more effective change agent. It assumes that someone else has set up your application environment and has done all of the work necessary for you to start to use TURNOVER® for iSeries v100. For the sake of convenience, we refer to that person as the TURNOVER® for iSeries v100 Administrator. In fact, s/he may be a manager, technical support programmer, operations manager, database administrator or a combination of people.

While the TURNOVER® for iSeries v100 Administrator is responsible for setting up your environment, it is still necessary for you to understand some of the basics of setup, so that you can visualize what is going on at various stages throughout the process.

Recommended Reading

In addition to reading this Overview and for a complete introduction to TURNOVER® for iSeries v100, we recommend that you also read the ***TURNOVER® for iSeries v100 Application Planning Guide*** and the ***Overview*** sections in ***Chapters 1***, ***5***, ***6***, ***9***, and ***11*** in the ***TURNOVER® for iSeries v100 User Guide***. These sections introduce you to the topics of defining your applications, checking out objects and source, the promotion request (TURNOVER® for iSeries v100 form), TURNOVER® for iSeries v100 Projects, and distribution, respectively.

The heart of any change management system is the way in which it enables you to specify defaults and rules for managing your applications. The application schematic is a convenient way of visualizing what is going on – once this mental image is clear, the rest is easy. Below is a sample schematic and the one we refer to throughout this ***TURNOVER® for iSeries v100 Developer's Guide***. This particular diagram is not the only choice you have – in fact TURNOVER® for iSeries v100's greatest strength is that it lets you manage applications in many different ways. You should consult your TURNOVER® for iSeries v100 Administrator to see how your company is managing its applications.

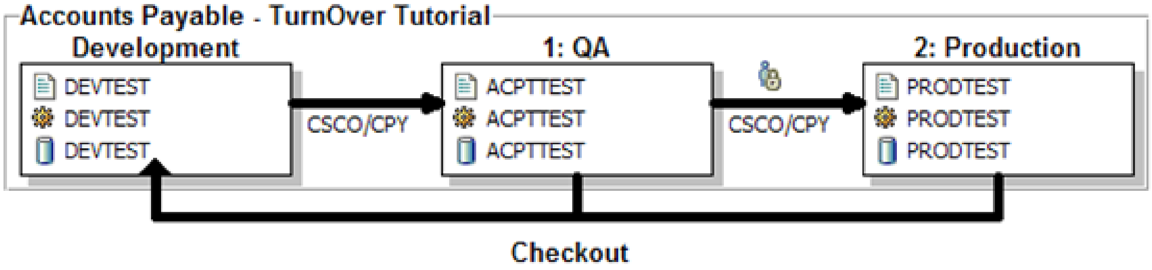


Figure 1: Sample Application Schematic

Each box represents a set of libraries. The production libraries are on the right, development on the left. You can have any number of intermediate libraries (ACPTTEST stands for Acceptance), depending on your company's requirements. You can also define vendor libraries (not shown) from which source is checked out and multiple data libraries ("Explode data libraries", not shown) into which data objects can be duplicated. Checkout occurs from right to left; promotions proceed from left to right. The development library(s) can be a common development library as is implied by our diagram, or individual programmer libraries. Alternatively, you can have project libraries (libraries used for development for the duration of a project), if you want.

In the preceding diagram, each pair of "from" and "to" libraries is defined in an *application definition* and is referred to as a *level* of the application. In our schematic example, DEVTEST to ACPTTEST is application AP level 1; ACPTTEST to PRODTEST is application AP level 2. Checkout rules, promotion rules, and defaults are all specified in an *application definition*. These can be different for each *level*.

The application definition contains rules[*] such as:

- Do you want to retain (archive) the old object when it is replaced by a new object?
- How many copies of source should be retained in the source archive at each level?
- Do you want to enforce naming standard rules for the application?
- What method should be employed when promoting source and objects? (**CSCO**, which stands for **Copy Source**, **Compile Object**, is the most common method. However, **CSMO** (**Copy Source**, **Move Object**; **MO**, **Move Object**; **CD**, **Create Duplicate**, and **CS Copy Source** (only) all have their uses).
- Do you want to distribute objects, object and source, or only source to one or more other computers at the time objects are promoted?
- Does anyone need to approve changes (on line) before they are run?
- What profile will own objects created by TURNOVER® for iSeries v100?
- What object types are valid for this application?

This is just a sampling of rules contained in the TURNOVER® for iSeries v100 application definition.

Some of the answers may differ depending upon which level is being defined. For example, you may archive a minimal number of source generations when you promote to acceptance (level 1); but several generations when you promote to production (level 2). Certainly, the list of people who need to approve a change may differ at each level. And, it is more likely that you will distribute changes when they are promoted to production than to acceptance test.

Even if you do not have authority to define applications, you can view them by selecting option **1** on the Main Menu or by typing **TURNOVER 1** on a command line. If you have difficulty accessing these options, see your Administrator. We suggest that you do so to familiarize yourself with some of the defaults and rules. Context-sensitive help is available for each field.

---

[*] For a complete discussion of application definitions, see ***Chapter 2: Planning Your Application Definitions*** in the ***TURNOVER® for iSeries v100 Application Planning Guide*** and ***Chapter 1: Working with Application Definitions*** in the ***TURNOVER® for iSeries v100 User Guide***.

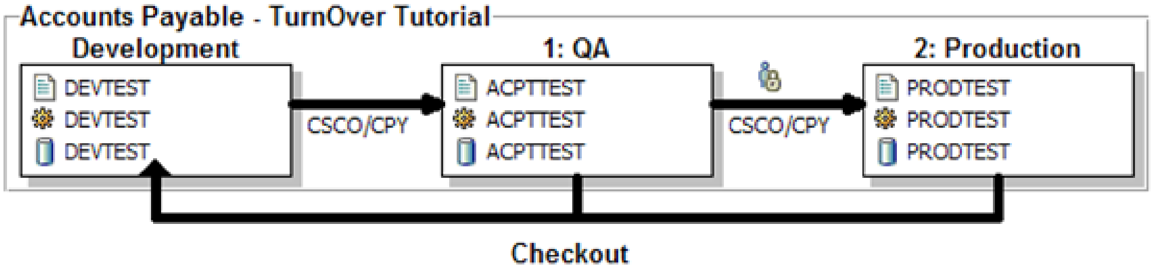


Figure 2: Sample Application Schematic

Once you have been assigned a task and have determined what objects you need to change or create (more on how TURNOVER® for iSeries v100 supports these activities later), you will do the following (refer to the sample AP application schematic):

1. **Check out objects and source from production**. TURNOVER® for iSeries v100 copies the source from your production source library to your development library. Depending upon how your application is set up, TURNOVER® for iSeries v100 does not allow others to check out the same objects. (For emergency changes, see page 80, in the ***Advanced Topics*** section.) Non-source objects are recorded as checked out and duplicated.

2. **Develop objects in Test**. You develop new objects, change existing ones and test objects, in a common development library or in your own development library.

3. **Check Cross-reference**. You will want to check the TURNOVER® for iSeries v100 cross-reference files to see if there are any related objects that need to be changed, either in the application in which you are working or in other applications.

4. **Create a TURNOVER® for iSeries v100 Form**. When you are ready to promote source and objects, you build a TURNOVER® for iSeries v100 form. A *form* contains all of the information TURNOVER® for iSeries v100 needs to promote to a particular level. It can also contain comments, lock checks, create command overrides, and commands such as **OVRDBF** to be run when objects are promoted.

5. **Pre-run Error-check Form**. Before your form is run, you can error-check it to minimize the likelihood of problems later, when your form actually runs.

6. **Obtain Form approval**. Depending on whether or not your management requires on-line approval, you will notify all of the people on the approval list by pressing a command key. Each user signs on, and reviews and approves your form. You can also print a hard copy of the form and affix signatures to that, if you want.

7. **Run TURNOVER® for iSeries v100 Form**. Your Administrator or you submit the form to run. Forms can be scheduled to run at a date and time you specify.

8. **The Form Runs**. When it runs, source is copied to the target library and objects are compiled into the appropriate target object library(s). Non-source objects can be duplicated or moved. Source that you do not want compiled, such as RPG /COPY code or S/36 OCL, is copied. Old source is archived; old objects are archived.[2] Source and objects in the From library are deleted (optionally). If errors occur, your changes can be rolled back automatically.

9. **Check out from Acceptance (or any intermediate level)**: If errors are detected during acceptance testing, then you will check those objects out *from acceptance test*, revise them, and then promote them for acceptance testing again. This may happen several times (except for *your* code, of course).

10. **Copy Form**: Once acceptance testing is complete you can then promote objects into production. This is done by copying your original form to create a new form and then running that new form. All library references and similar defaults are translated when a form is copied. Usually, a TURNOVER® for iSeries v100 Administrator performs this and the following steps.

11. **Run Production Form**: Again, the form is submitted to run. You can schedule it to run at any time. When it does run, it is rolled back if errors are detected.

12. **Back out Form**: If, after a form runs successfully, you are not satisfied with the result, it can be rolled back. Any subset of objects can be rolled back, if necessary.

13. **Distribute Form**: If you are running a network of iSeries, TURNOVER® for iSeries v100 can distribute a form after it runs successfully on the development computer. This can happen immediately, or at some later date and time. When a form is distributed, the objects are duplicated into a distribution library and, together with TURNOVER® for iSeries v100 control information, written to tape or sent via your network.

14. **Receive and Run Form**: Forms are received and run on your remote production computer(s) just as they were run on the development computer. If you distribute *from* AP level 2, you need a definition for AP level 2 on the remote computer. That application definition controls how the objects are managed on *that* computer. Usually only objects are distributed; therefore the method at the remote computer is **MO** (**Move Object**); but you can send source only, or source and objects, and compile objects on the target computer, if necessary.

15. **Update Form Status**: Once objects have been distributed and installed on each remote computer, TURNOVER® for iSeries v100 updates the status on the development computer to confirm and notify people responsible for the change.

In this ***TURNOVER® for iSeries v100 Developer's Guide***, each of the steps that you, the ***Developer***, perform is illustrated in greater detail than in the ***TURNOVER® for iSeries v100 User Guide***. You will also be introduced to Helpdesk and project functions that TURNOVER® for iSeries v100 supports. For consistency's sake, the schematic of the AP application is referenced throughout.

---

[2] Archiving of source or objects is optional and the number of generations retained can vary depending on how you design your archive process.

For more ideas about how TURNOVER® for iSeries v100 can help you be more productive, we suggest that you browse the following section, ***Examples of Change Management Productivity***.

EXAMPLES OF CHANGE MANAGEMENT PRODUCTIVITY

Each of the following examples is designed to illustrate one or more features of TURNOVER® for iSeries v100 and to provide you with a quick synopsis of how to approach a particular problem or perform a particular task. As you become more familiar with TURNOVER® for iSeries v100 – or if you already are – and have a particular method you have developed, please share it with us. We would like to include it here.

Ask yourself how much time you would save each year by taking advantage of the features illustrated. When you do, do not forget to add in all of the time saved because you avoided making an error, or because you had access to change history that you did not have before.

For example, suppose you want to **add a field to a PF** and recompile all of the logicals and programs that refer to it.

Without TURNOVER® for iSeries v100, you would have to:

1. research all of the program and logical file source for references to the PF
2. write a list of these objects
3. copy the source from production to a development library
4. change the source using SEU
5. recompile the PF in development
6. move the old PF to another library
7. copy the old PF source to another source file (archive)
8. copy the new PF source to the production library
9. delete all of the related LFs
10. create the new PF
11. recreate all the related LFs
12. recompile all of the programs that refer to the PF or LFs
13. copy the data from the old file to the new file
14. set object ownership and grant object authority appropriately.

... all without making a mistake.

With TURNOVER® for iSeries v100, you would:

1. check out the PF source
2. change the source in SEU
3. compile to new PF in development
4. build a promotion request form and add the related LFs and Programs automatically
5. submit the form

TURNOVER® for iSeries v100 takes care of the rest – without making an error.

You want to undo your changes after they are installed?

Without TURNOVER® for iSeries v100, you would have to reverse all of the former steps...

With TURNOVER® for iSeries v100, you simply build a Recovery form and run it. The rest is automatic.

For example, suppose you want to **change a set of objects** that were changed months ago.

Without TURNOVER® for iSeries v100, you would have to:
1. find a written list of the objects that were changed (if very lucky ...) or
2. display object description to a file
3. query the file to find one of the objects that was changed on or about the date in question
4. find all of the other objects changed on the same date
5. hope none had been changed since that date
6. copy the source from production to development for each related object
7. change the objects in development using SEU
8. compile and test the changes
9. copy the source in production to a backup (archive) file
10. copy the source from development to production
11. back up the production programs and related objects
12. call all of the users to get them off of the system or report to work at 3 am
13. recompile the programs and related objects
14. set object ownership and grant object authority appropriately
15. remember to delete the source in development (cleanup)
16. hope you have not missed anything or made an error

With TURNOVER® for iSeries v100, you would:
1. look up the original change request
2. view a list of objects changed to respond to that request
3. in a single step, check out all of the related objects on the list
4. change the source in development using SEU
5. compile the objects in development and test them
6. in a single step, build a new promotion request form
7. submit the TURNOVER® for iSeries v100 form to run at 3 am

And rest assured that you have not forgotten anything.

For example, suppose you want to **build a list of objects to change** and then check out everything on that list.

Without TURNOVER® for iSeries v100, you would have to:

1. research the programs affected
2. write down each program and related object
3. check each related object to determine whether they need to be changed, recompiled, or left unchanged.
4. copy the source for each object to be changed from production libraries to development
5. notify everybody else about the pending changes (and hope no one forgets)

With TURNOVER® for iSeries v100, you would:

1. using a PDM-like facility called Programmer Worklist Manager (PWM), select the objects you want to change from a list of related objects
2. in a single step, check out all of the objects you want to change

For example, suppose you want to check out and **change an iSeries menu**.

Without TURNOVER® for iSeries v100, you would have to:

1. copy the menu display file source to your development library
2. copy the menu message file to your development library
3. modify the menu using SDA
4. copy the production menu DDS source to backup (archive) library
5. copy the menu DDS source from your development library to a production source file
6. copy the production menu message file to a backup (archive) library
7. copy the menu message file from development to a production source file
8. copy the menu command source to production source file
9. run the create menu command to create the menu in your production library
10. set object ownership and grant object authority appropriately.

With TURNOVER® for iSeries v100, you would:

1. check out a ***MENU** object type using a PDM-like command option
2. modify the menu using SDA
3. include the menu entry on a promotion request form (all menu components are handled automatically)
4. submit the TURNOVER® for iSeries v100 form

TURNOVER® for iSeries v100 handles the details you might have overlooked.

For example, suppose you want to recompile program CEM0032 every time /COPY **copy book code** CEMABC is modified, and always want to compile program CEM0032 as User profile ***OWNER**? (It is critical that this be done consistently every time, no matter who is assigned the task.)

Without TURNOVER® for iSeries v100, you would have to:

1. maintain a list of programs that contain reference to copy code
2. maintain a list of programs that must be compiled with User profile ***OWNER** (as well as list of other create command default exceptions)
3. notify the entire staff of the existence of these exception lists
4. hope that everyone remembers to refer to them and updates them, whenever necessary.
5. change the source member using SEU
6. compile and test programs referring to the changed copy book code
7. recompile the program in production specifying the User profile ***OWNER** parameter.

With TURNOVER® for iSeries v100, you would:

1. check out the copy book code using a PDM-like option
2. change the source member using SEU
3. compile and test the programs referring to the copy code
4. include the copy book code on a promotion request form (the rest is automatic)

TURNOVER® for iSeries v100 includes all of the related objects on the form and, referring to create overrides entered the first time the object was created, creates program CEM0032 with User Profile ***OWNER**.

For example, suppose you promoted several programs and related objects and received a call from a now irate VP of Marketing insisting that you **roll out the changes** immediately!

Without TURNOVER® for iSeries v100, you would have to:

1. write down all of the objects you just promoted
2. find the previous source (or load it from a back up)
3. copy all of the source now in production into a development library (you do not want to lose your changes!)
4. copy all of the old source into production source files
5. compile the objects from the production source
6. is data involved? Hope you have been journaling or have a recent backup.
7. set object ownership and grant object authority appropriately.
8. hope you did not miss anything.

With TURNOVER® for iSeries v100, you would:

1. create a recover form and submit it

(Data objects require special consideration *with* TURNOVER® for iSeries v100, also)

All of the objects are backed out, the previous source and objects restored, and the modified source returned to the Developer's library, automatically.

For example, suppose you need to **change a printer file**, and want to make sure that all of the create parameters are preserved when the file is recreated in production.

Without TURNOVER® for iSeries v100, you would have to:
1. copy the printer file source to a development library
3. change the printer file using RLU (or SEU)
4. compile the printer file
5. compile the program(s) in development from production source and test them
6. copy to production source to a backup (archive) source file
7. copy the production object to a backup library
8. copy the source from your develop library to production
9. set the create parameters just as they are on the existing printer file
10. compile the printer file in production
11. compile or recompile all of the programs that refer to the printer file
12. set object ownership and grant object authority appropriately.

With TURNOVER® for iSeries v100, you would:
1. check out the printer file using a PDM-like command option
2. view and check out (if appropriate) related programs from a list presented to you by TURNOVER® for iSeries v100
3. change the printer file using RLU (or SEU)
4. compile the printer file
5. compile the program(s) in development from production source and test them
6. build and run a promotion request form

Let TURNOVER® for iSeries v100 handle the details (including those printer file gotchas!)

And a few more...

For example, suppose you need to **check for an object lock** on the entry operator file before installing changes, every time one of several objects changed.

With TURNOVER® for iSeries v100, you can be sure you do not pull the rug out from under active users.

For example, suppose you need to change **a PF with 8 members**, all with live data.

With TURNOVER® for iSeries v100, your physical files members are preserved whenever you make a change to a file.

For example, suppose you want to **change the same database file format twenty times** in twenty different company libraries?

With TURNOVER® for iSeries v100, your change can ripple through a list of **database** libraries, effortlessly.

For example, suppose you need to identify **what objects were changed when a problem was fixed** in January of 1992.

With TURNOVER® for iSeries v100, you can easily retrieve a list of objects related to any historical task.

For example, suppose you want to **verify all of the source and objects** before turning them over?

With TURNOVER® for iSeries v100, you can run an option to pre-check your changes, before submitting the TURNOVER® for iSeries v100 job.

For example, suppose you want to **promote 200 programs** and related objects at 3 am, but wants to get a **good night sleep**!

With TURNOVER® for iSeries v100's many verification checks and automatic rollback, your likelihood of success is greater; but with TURNOVER® for iSeries v100, if an error occurs rollback is automatic.

Do you want to spend your time copying source, compiling objects, setting object authority, and fixing installation errors ... or doing development?

With TURNOVER® for iSeries v100, your role ends when you build the promotion request form...a change administrator can take over from there, freeing you to go on to more development.

BEFORE YOU BEGIN TO USE TURNOVER® FOR ISERIES V100

Obtain and study your application schematics

An important first step is to know how *your* applications are managed. Before working with TURNOVER® for iSeries v100, it is essential that you obtain schematic diagrams from your TURNOVER® for iSeries v100 Administrator. These provide a graphic view of how your application is managed, as well as the names of libraries at each level. **Figure 3** is an example of an application schematic.

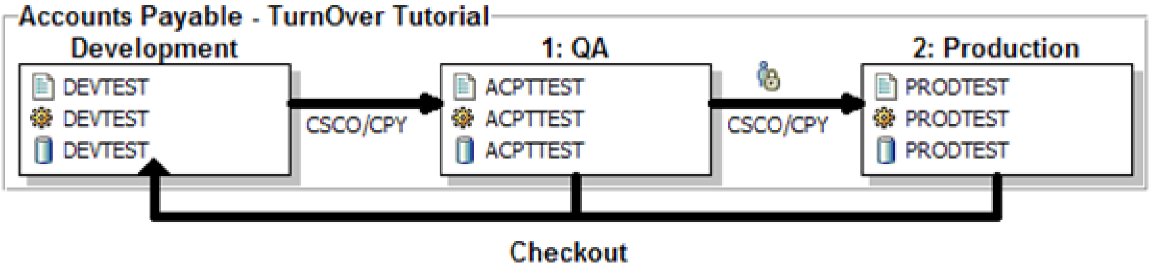


Figure 3: Sample Application Schematic

We recommend that you establish schematics like this one for each application to ensure that everyone knows how you are managing them. UNICOM Systems, Inc. can help you develop your schematics. Call us.

Are you enrolled in TURNOVER® for iSeries v100 ?

Each TURNOVER® for iSeries v100 user must be enrolled and authorized to perform functions within TURNOVER® for iSeries v100. See your TURNOVER® for iSeries v100 Administrator to find out what you are authorized to do and upon which applications you are authorized to work. If you are a Developer, then you will also have a programmer profile that identifies your personal library.

Are you authorized to use TURNOVER® for iSeries v100 Projects?

If your company uses TURNOVER® for iSeries v100 Projects, each TURNOVER® for iSeries v100 Projects user must be authorized to work with the Project system, and must also be authorized to one or more projects. With **Project** authority, you can view, add, change, and/or delete tasks within a designated project. See your TURNOVER® for iSeries v100 Administrator to see which projects you are authorized to use. The examples in this guide assume that you are using TURNOVER® for iSeries v100 Projects.

Essential TURNOVER® for iSeries v100 commands

To get started, you can use these commands to access TURNOVER® for iSeries v100. The **TURNOVER** command brings you to the TURNOVER® for iSeries v100 Main Menu. **STRPWM** takes you directly to the Programmer Worklist. Other useful commands are listed on page 83.

The PWM Quick Reference card

We suggest that you refer to the ***PWM Quick Reference*** card while reading this ***TURNOVER® for iSeries v100 Developer's Guide***. It provides a summary of the development cycle as well as essential and helpful information about TURNOVER® for iSeries v100. Keep it handy. If you do not have one, just ask us. These are provided free.

A TYPICAL CHANGE WORKFLOW

This ***TURNOVER® for iSeries v100 Developer's Guide*** is organized chronologically around the activities normally performed by you, the ***Developer***. In TURNOVER® for iSeries v100, you can manage those activities using a system we call ***TURNOVER® for iSeries Projects***. **Figure 4** shows some of the things you can do using TURNOVER® for iSeries Projects.

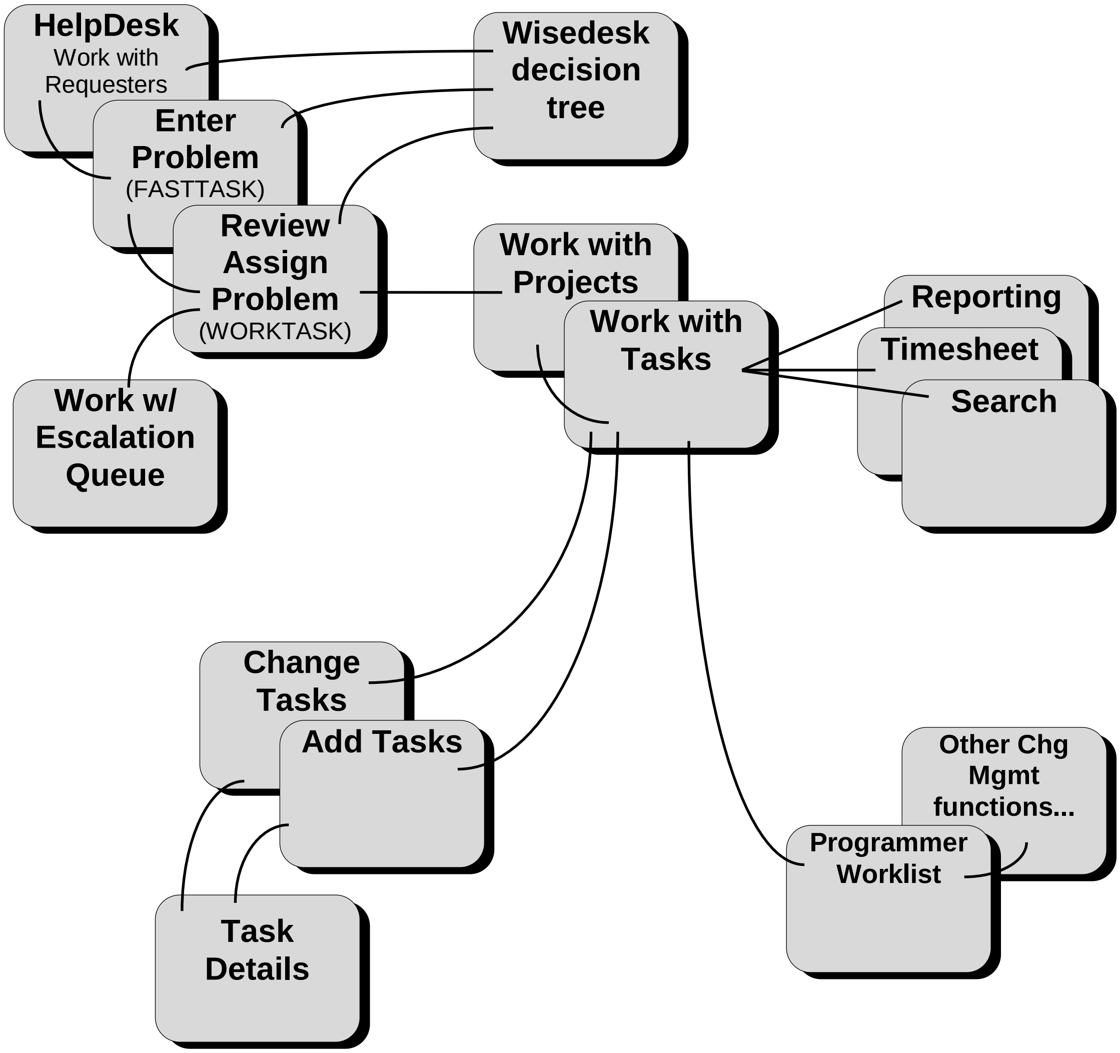


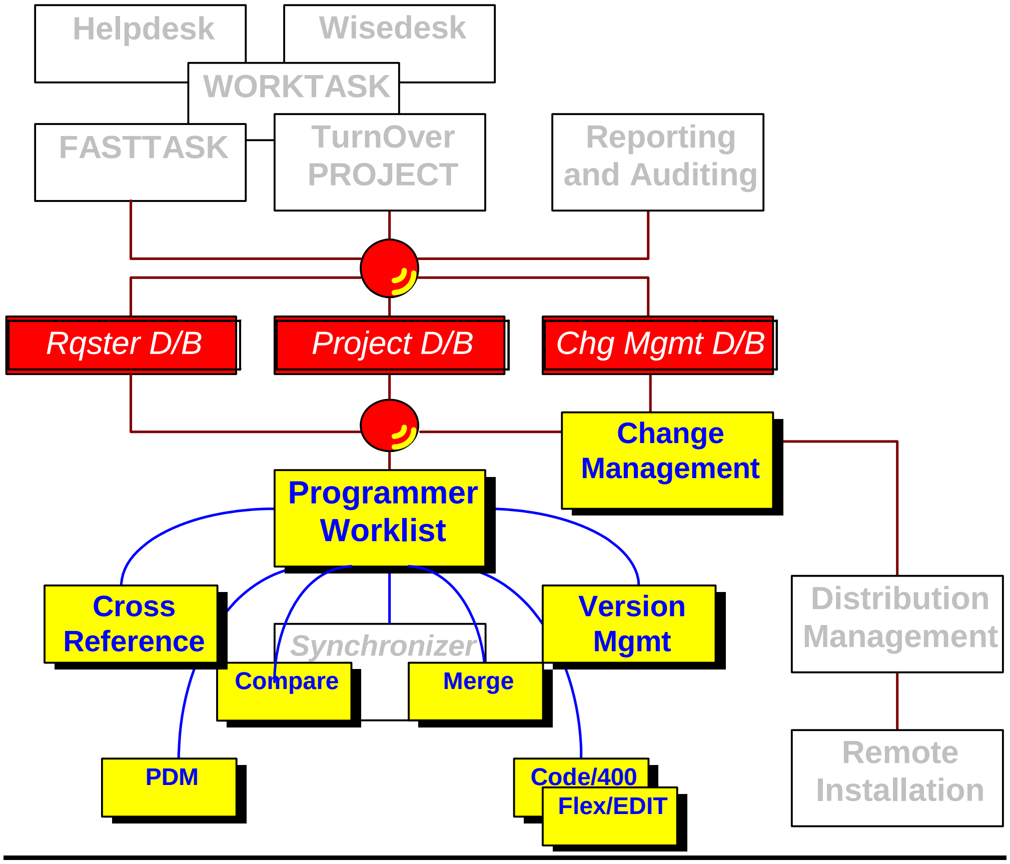
Figure 4: **TURNOVER® for iSeries v100 Projects Map**

Note: In the descriptions that follow, the tasks marked with a ❍ are steps you would be hard-pressed to avoid.

Other tasks, such as entering a change request, are included to provide you with the overall context for change management and to illustrate how these tasks are done using TURNOVER® for iSeries v100. The degree to which you or your company employs these features is up to your management. For example, TURNOVER® for iSeries v100 comes with a Helpdesk facility; you can choose to use it, or not. Entering a problem or change request is usually performed by a user, a Helpdesk person, a manager in your department or, yes, even by you. We discuss these steps here because, as with any good story, we want to start from the beginning.[3]

There are three methods of working with TURNOVER® for iSeries v100. If you think of development as a network of tasks, think of each of the three methods as different paths through that network, each leading to your goal. You can 1) work through TURNOVER® for iSeries v100's menus; 2) enter TURNOVER® for iSeries v100 commands while working in Programmer Development Manager (PDM); or 3) use TURNOVER® for iSeries v100's own PDM-like facility, the ***Programmer Worklist Manager*** (PWM).

PWM (often referred to as the "worklist") is illustrated by the gray blocks in the diagram. The worklist integrates all of the processes you need to perform into one powerful panel. In this guide, we use PWM to illustrate specific tasks. It provides the most efficient development path using TURNOVER® for iSeries v100.



---

[3] For an in-depth explanation of the Helpdesk and Project systems, see ***Chapter 9: Working with Projects and Tasks*** in the *TURNOVER® for iSeries* v100 ***User Guide***.

Throughout this section, we will use a project task example to demonstrate ways you can efficiently manage work using TURNOVER® for iSeries v100 Projects and PWM. The example is based on the application definition described in the introduction and represented by this schematic:

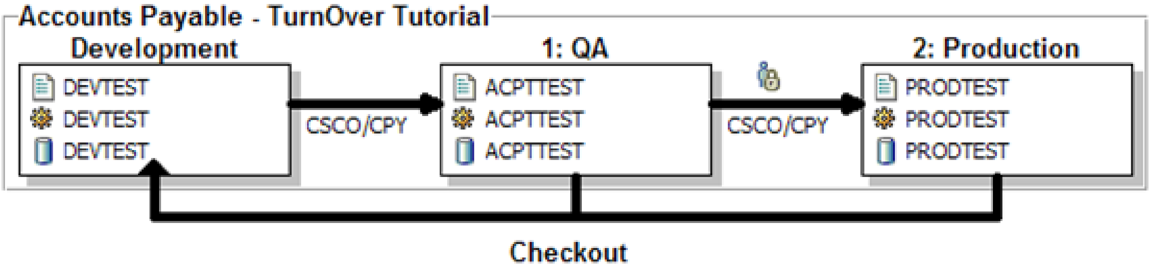


Figure 5: Sample Application Schematic

For an explanation or review of this diagram, see ***Overview of TURNOVER® for iSeries v100*** earlier in this guide.

Enter Problem Report/Change Request

If your company has elected to use TURNOVER® for iSeries v100 Projects, then end users and/or Helpdesk personnel (or any other authorized user) may enter a change request or problem report directly into TURNOVER® for iSeries v100's project system. At the same time, you can limit your users to only those capabilities and projects you want them to see. Messaging features ensure that a project Coordinator is informed of high priority problems as soon as they are entered. Text masks that you define help you collect descriptive details you need to respond to requests and problems.

You can define a generic project like *Problems* or *Requests* (referred to in the ***TURNOVER® for iSeries v100 User Guide*** as a *Helpdesk project*) to let your users enter a problem or a request and text details. Type **SOFTTURNE[*]/FASTTASK** on a command line (or include this command on your menu) to access ***Work with Problems and Requests***. The panels available in **FASTTASK** include the following:

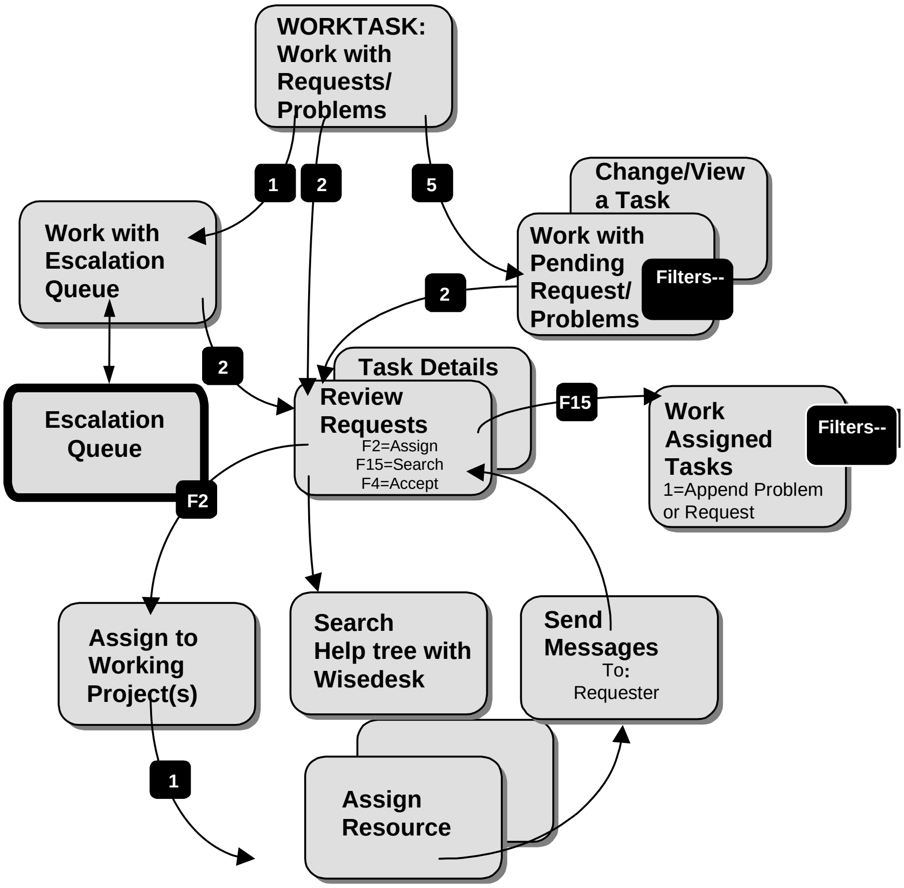
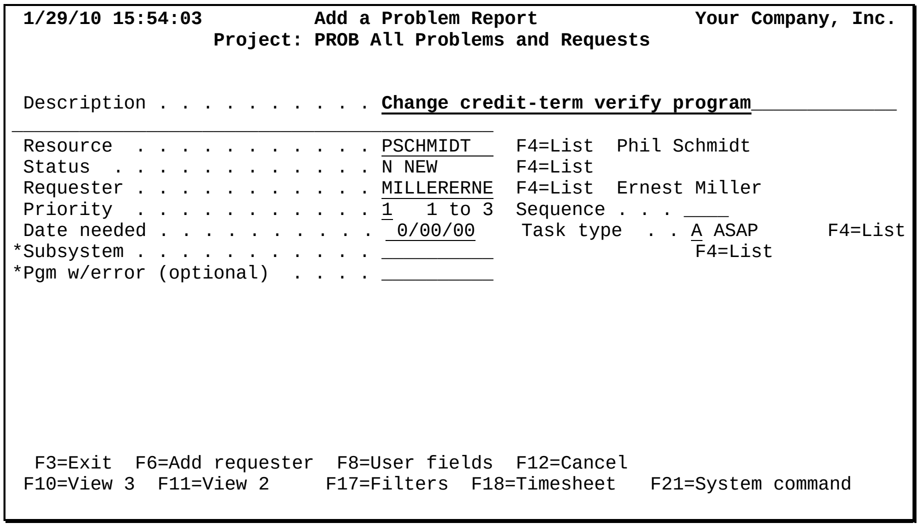

WORKTASK: Work with Requests/ Problems
1
2
5
Change/View a Task
Work with Escalation Queue
Work with Pending Request/ Problems
Filters--
2
Escalation Queue
2
Task Details
Review Requests
F2=Assign
F15=Search
F4=Accept
F15
Work Assigned Tasks
Filters--
1=Append Problem or Request
F2
Assign to Working Project(s)
Search Help tree with Wisedesk
Send Messages
To:
Requester
1
Assign Resource

Figure 6: FASTTASK Request/Problem Entry Management

---

[*] SOFTTURNE is the default product command library as shipped, but it may be different on your system.

When a Helpdesk person, a user or *you* enter a request, you see a panel like this one:



```
 1/29/10 15:54:03         Add a Problem Report            Your Company, Inc.
                  Project: PROB All Problems and Requests


 Description . . . . . . . . . . Change credit-term verify program_____________
___________________________________________
 Resource  . . . . . . . . . . . PSCHMIDT    F4=List  Phil Schmidt
 Status  . . . . . . . . . . . . N NEW       F4=List
 Requester . . . . . . . . . . . MILLERERNE  F4=List  Ernest Miller
 Priority  . . . . . . . . . . . 1   1 to 3  Sequence . . . ____
 Date needed . . . . . . . . . .  0/00/00     Task type  . . A ASAP      F4=List
*Subsystem . . . . . . . . . . . __________                 F4=List
*Pgm w/error (optional)  . . . . __________








  F3=Exit  F6=Add requester  F8=User fields  F12=Cancel
 F10=View 3  F11=View 2     F17=Filters  F18=Timesheet   F21=System command
```

* Up to 10 user-defined fields may be defined. "Subsystem" and "Pgm …" are just examples.

When you enter a problem or request, you may be prompted to include a more detailed description. More than one text mask may have been defined for any project. For example, if you set up a Helpdesk project for hardware problems, you might set up different text masks for Printer Problems, PC Problems, Communications Problems, and so on. If this is the case, you will select the one that is appropriate and then key the details requested. If a user is keying his/her own request, the masks may contain suggestions to help the user resolve a problem independently.

For more information about TURNOVER® for iSeries v100's Helpdesk and Project systems, see ***Chapter 9: Working with Projects and Tasks*** in the ***TURNOVER® for iSeries v100 User Guide***.

Review and Assign a Problem or Request

When a problem report or change request is entered, you or someone (referred to here as the ***Coordinator***) responsible for reviewing these work requests would review and evaluate each one. This can be done easily by typing **SOFTTURNE/WORKTASK** on your command line. (If you are not authorized to review pending requests and think you should be, see your TURNOVER® for iSeries v100 Administrator.)

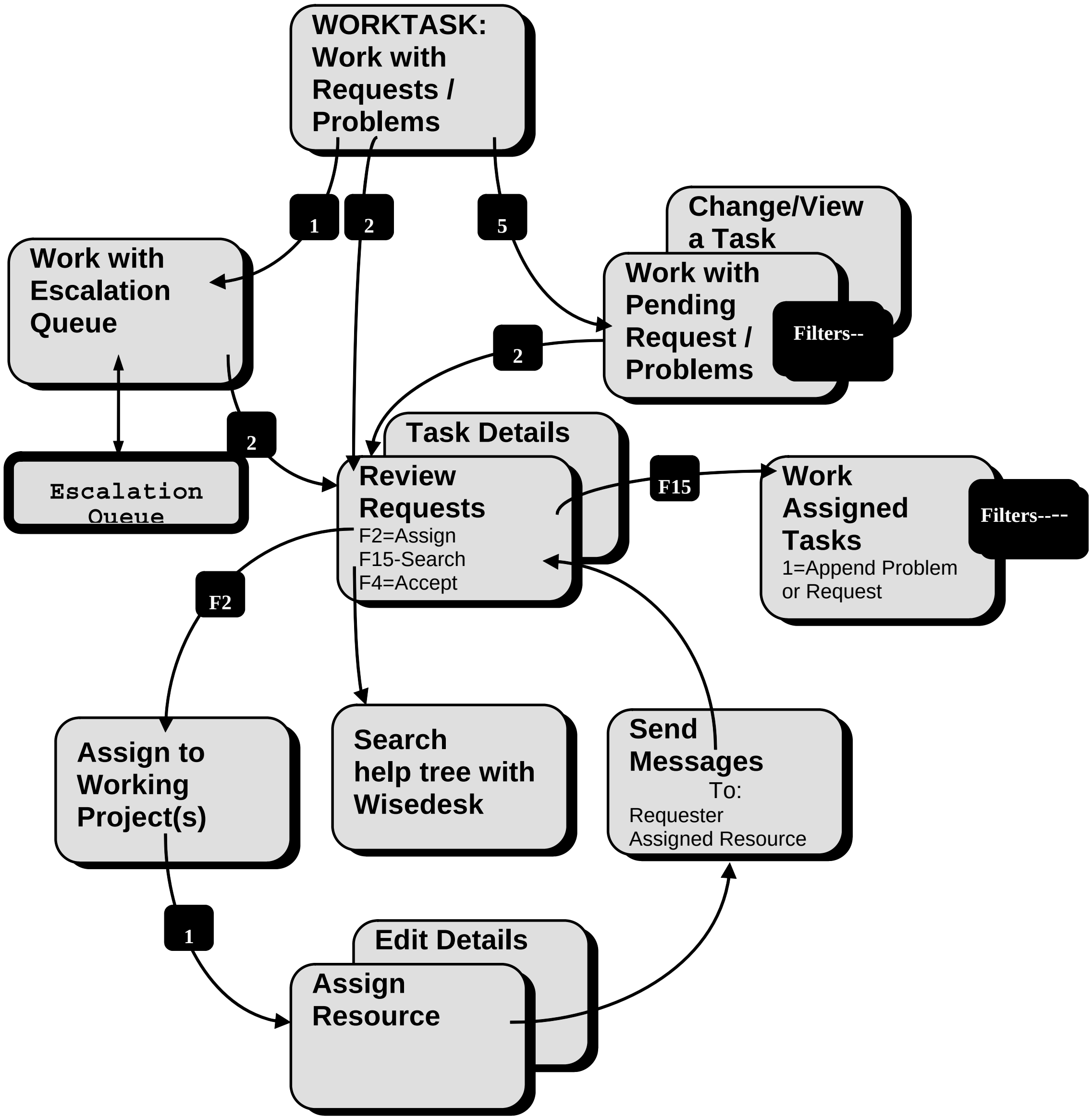
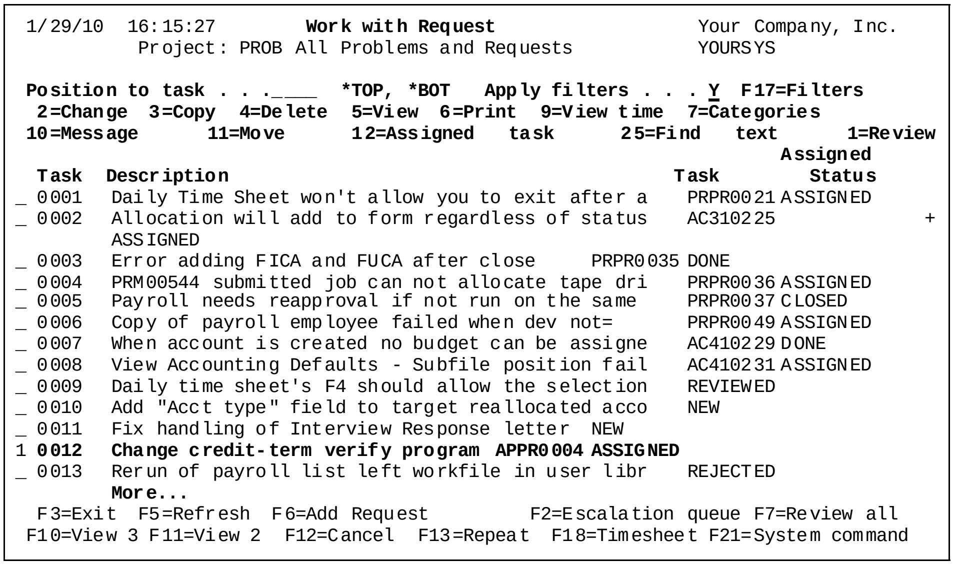


Figure 7: WORKTASK: A project ***Coordinator*** reviews pending tasks (recently entered problem, request or project entries) and assigns each one to a Working project and Resource.

As a project leader or problem ***Coordinator***, you may review pending requests daily or whenever a message arrives telling you that someone has entered a high-priority problem or change request.



```
1/29/10  16:15:27        Work with Request                Your Company, Inc.
         Project: PROB All Problems and Requests          YOURSYS

Position to task . . .____  *TOP, *BOT   Apply filters . . . Y  F17=Filters
 2=Change  3=Copy  4=Delete  5=View  6=Print  9=View time  7=Categories
10=Message      11=Move      12=Assigned   task      25=Find   text      1=Review
                                                                   Assigned
 Task  Description                                    Task         Status
_ 0001  Daily Time Sheet won't allow you to exit after a   PRPR0021 ASSIGNED
_ 0002  Allocation will add to form regardless of status   AC310225                +
        ASSIGNED
_ 0003  Error adding FICA and FUCA after close     PRPR0035 DONE
_ 0004  PRM00544 submitted job can not allocate tape dri   PRPR0036 ASSIGNED
_ 0005  Payroll needs reapproval if not run on the same    PRPR0037 CLOSED
_ 0006  Copy of payroll employee failed when dev not=      PRPR0049 ASSIGNED
_ 0007  When account is created no budget can be assigne   AC410229 DONE
_ 0008  View Accounting Defaults - Subfile position fail   AC410231 ASSIGNED
_ 0009  Daily time sheet's F4 should allow the selection   REVIEWED
_ 0010  Add "Acct type" field to target reallocated acco   NEW
_ 0011  Fix handling of Interview Response letter  NEW
1 0012  Change credit-term verify program  APPR0004 ASSIGNED
_ 0013  Rerun of payroll list left workfile in user libr   REJECTED
        More...
 F3=Exit  F5=Refresh  F6=Add Request         F2=Escalation queue F7=Review all
F10=View 3 F11=View 2  F12=Cancel  F13=Repeat  F18=Timesheet F21=System command
```

WORKTASK enables you, the Helpdesk Coordinator, to review all pending tasks that have not yet been reviewed, or to review them selectively, using this work panel. In either case, you can review the details and then act on each new request by assigning it, rejecting it or requesting more information from the person who originated the request.

When a task is accepted and assigned, it is actually copied to a ***Working*** project and assigned to a ***Resource***. This original ***Helpdesk*** request is updated to indicate the new project/task identifier. In this example, you can see several request that have been assigned, some that have been marked done, and some that are new which have not be reviewed yet. Your user or Helpdesk person can see the progress by viewing that original request and by reviewing the assigned task. If a task has been assigned, the status displayed is the status of the ***Working*** task. For example, your problem reports may be entered into a ***Helpdesk*** project called **Problems**. Your user does not need to know how your ***Working*** projects and personnel are organized. S/he may not know enough about the problem to know to which particular application it relates, nor should s/he. As the ***Coordinator*** reviews each problem, it is assigned to specific ***Working*** projects such as Accounts Payable, Order Entry, or Inventory. (How your projects are organized depends very much on how your company has chosen to set up TURNOVER® for iSeries v100 Projects.)

Once a request has been assigned, *you* can get to work ...

❍ Analyze a Task

TURNOVER® for iSeries v100 helps you during analysis by enabling you to quickly build a list of objects you want to change or create. As you will see, this is done by using the ***Programmer Worklist Manager*** panel and by using user-defined options you can invoke from within PDM, or from within tools like Hawkeye's Pathfinder™, ASC's Abstract/Probe+™, and TURNOVER® for iSeries v100's own cross-reference system.

Assume that you have been handed a task assignment or project task report describing your assigned task. If this is a report,[*] you can view and work with the task details by entering the command **TURNOVER** and selecting option **9** or by keying **TURNOVER 9** on a command line. (If you do ***not*** use TURNOVER® for iSeries v100 Projects, you can still use the Worklist Manager by typing **SOFTTURNE/STRPWM** on a command line to create a worklist. Rather than using TURNOVER® for iSeries v100's Project/task code as a key, you will have to make up a key such as your own a task identifier. See your TURNOVER® for iSeries v100 Administrator for instructions.)

Here are the steps you would commonly perform:

1. Find your assigned task in project task list
2. Read the task details and description
3. Create a Programmer worklist
4. Add objects to your worklist (when viewing PDM or some other tool)
5. Check for related object is TURNOVER® for iSeries v100's cross-reference (Add items, if appropriate)
6. Add new object names (objects you will create) to the worklist
7. Check out source for production objects (and reserve new object names)
8. Edit, compile and test the objects
9. Create a TURNOVER® for iSeries v100 promotion form
10. Submit the promotion form to run.

This remainder of this chapter leads you through each of these steps.

---

[*] To obtain a copy of the TURNOVER® for iSeries v100 Projects report, select Main Menu option **9**, select your working project with option **12**, and then select your task with option **6**.

Use this panel map to maintain your bearings.

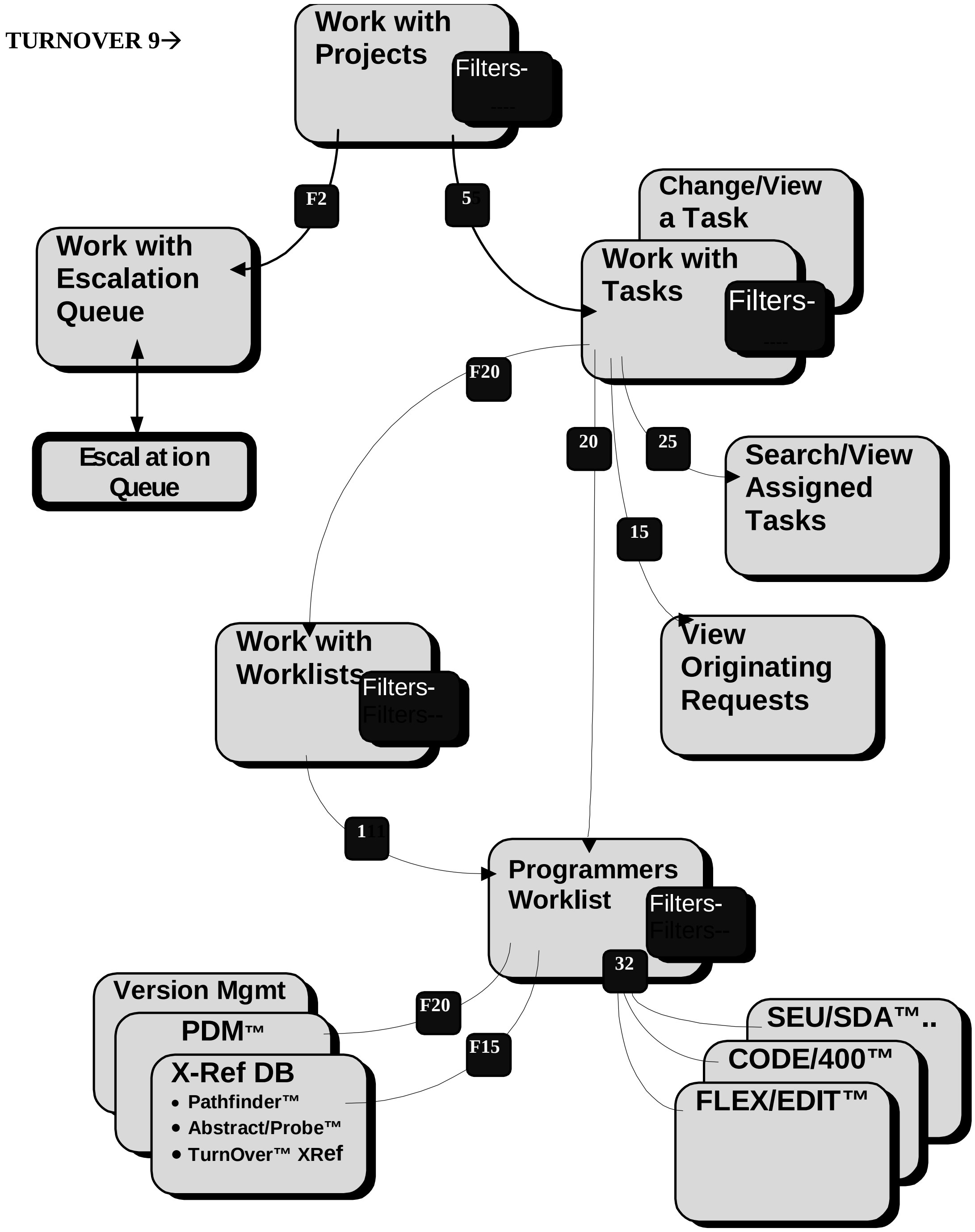
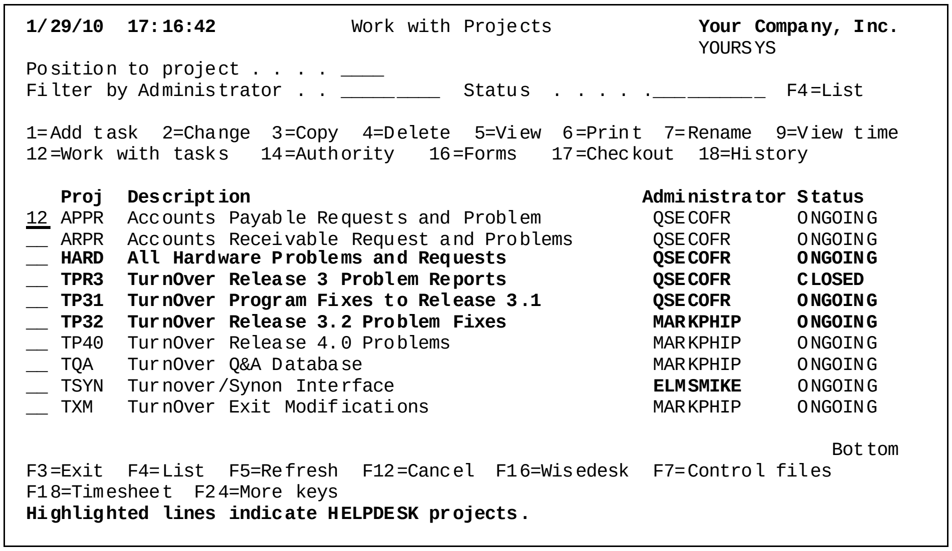


Figure 8: TURNOVER® for iSeries v100 Projects and PWM Panel Map

On the TURNOVER® for iSeries v100 Main Menu, select option **9** to view the ***Work with Projects*** panel:



```
1/29/10  17:16:42           Work with Projects           Your Company, Inc.
                                                         YOURSYS
Position to project . . . . ____
Filter by Administrator . . ________  Status  . . . . .__________  F4=List

1=Add task  2=Change  3=Copy  4=Delete  5=View  6=Print  7=Rename  9=View time
12=Work with tasks   14=Authority   16=Forms   17=Checkout  18=History

   Proj  Description                                Administrator Status
12 APPR  Accounts Payable Requests and Problem       QSECOFR      ONGOING
__ ARPR  Accounts Receivable Request and Problems    QSECOFR      ONGOING
__ HARD  All Hardware Problems and Requests          QSECOFR      ONGOING
__ TPR3  TurnOver Release 3 Problem Reports          QSECOFR      CLOSED
__ TP31  TurnOver Program Fixes to Release 3.1       QSECOFR      ONGOING
__ TP32  TurnOver Release 3.2 Problem Fixes          MARKPHIP     ONGOING
__ TP40  TurnOver Release 4.0 Problems               MARKPHIP     ONGOING
__ TQA   TurnOver Q&A Database                       MARKPHIP     ONGOING
__ TSYN  Turnover/Synon Interface                    ELMSMIKE     ONGOING
__ TXM   TurnOver Exit Modifications                 MARKPHIP     ONGOING

                                                                     Bottom
F3=Exit  F4=List  F5=Refresh  F12=Cancel  F16=Wisedesk  F7=Control files
F18=Timesheet  F24=More keys
Highlighted lines indicate HELPDESK projects.
```

You will only see those projects with which you are authorized to work. Notice that some projects are highlighted. These are **HELPDESK** projects used to enter requests and problems. The rest of the projects are referred to as **WORKING** projects. These are the projects you will use when you are assigned a task.

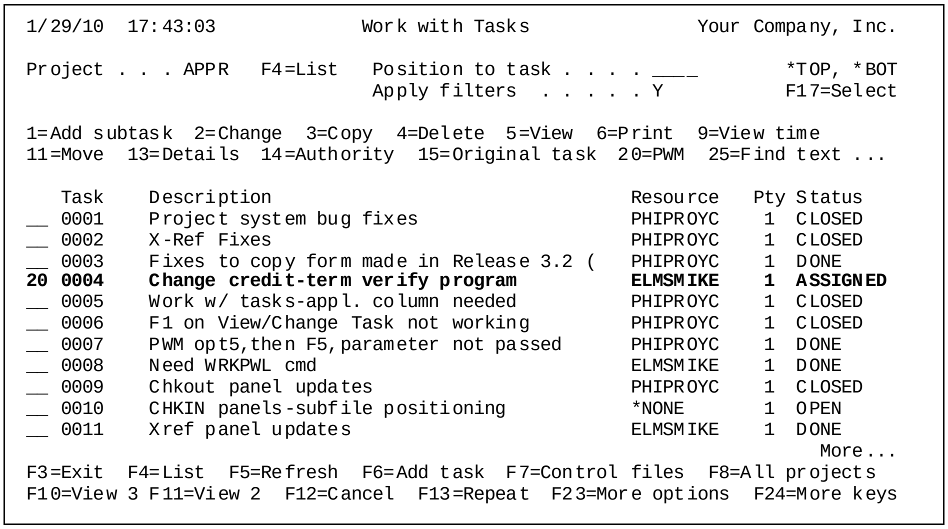
Type **12** next to the project with which you want to work.

Project Escalation

The project system can be set up to alert you or a project Coordinator when a request or problem is entered. Task escalation is controlled by an ***Escalation Table***. The ***Escalation Table***, keyed by status and priority, determines how tasks are to be processed, if they are not processed quickly enough. For example, there might be an entry for Priority 3 (High), Status **N** (New). Your policy might be that 3 **N** tasks must be reviewed within 2 hrs and, if they have not been reviewed within 8 hrs, they should be escalated to priority 4.

If you use ***Escalation tables***, then you will be able to view tasks that are subject to escalation in an ***Escalation Queue***.

For more information about escalation processing, see the section entitled ***Escalation Processing*** in ***Chapter 9: Working with Projects and Tasks*** of the ***TURNOVER® for iSeries v100 User Guide***.

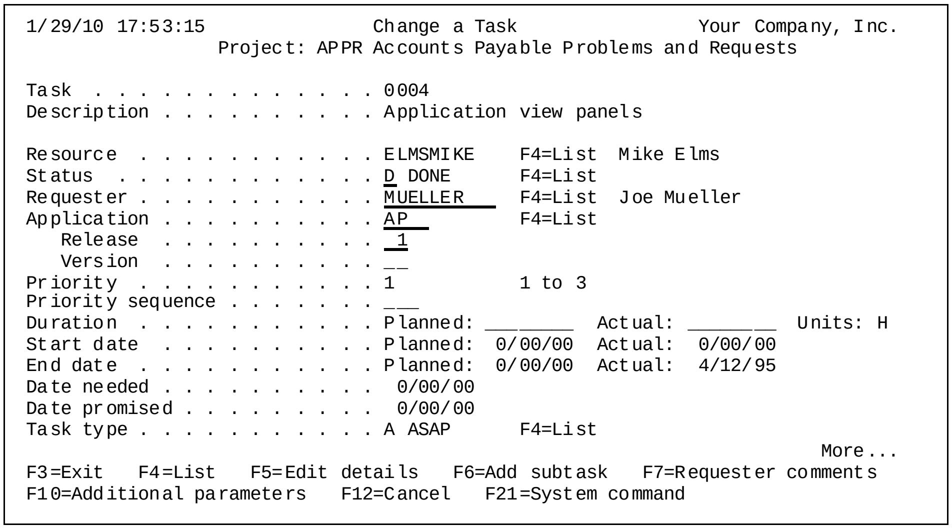


```
1/29/10  17:43:03            Work with Tasks              Your Company, Inc.

Project . . . APPR   F4=List   Position to task . . . . ____       *TOP, *BOT
                               Apply filters  . . . . . Y          F17=Select

1=Add subtask  2=Change  3=Copy  4=Delete  5=View  6=Print  9=View time
11=Move  13=Details  14=Authority  15=Original task  20=PWM  25=Find text ...

   Task    Description                               Resource   Pty Status
__ 0001    Project system bug fixes                  PHIPROYC    1  CLOSED
__ 0002    X-Ref Fixes                               PHIPROYC    1  CLOSED
__ 0003    Fixes to copy form made in Release 3.2 (  PHIPROYC    1  DONE
20 0004    Change credit-term verify program         ELMSMIKE    1  ASSIGNED
__ 0005    Work w/ tasks-appl. column needed         PHIPROYC    1  CLOSED
__ 0006    F1 on View/Change Task not working        PHIPROYC    1  CLOSED
__ 0007    PWM opt5,then F5,parameter not passed     PHIPROYC    1  DONE
__ 0008    Need WRKPWL cmd                           ELMSMIKE    1  DONE
__ 0009    Chkout panel updates                      PHIPROYC    1  CLOSED
__ 0010    CHKIN panels-subfile positioning          *NONE       1  OPEN
__ 0011    Xref panel updates                        ELMSMIKE    1  DONE
                                                                     More...
F3=Exit  F4=List  F5=Refresh  F6=Add task  F7=Control files  F8=All projects
F10=View 3 F11=View 2  F12=Cancel  F13=Repeat  F23=More options  F24=More keys
```

In TURNOVER® for iSeries v100, your project task key is made up of a four-character project code, a four-character task identifier and, optionally, a two-character subtask identifier (10-character composite key). The task and subtask key can be a sequentially generated number or the person entering the task can assign it. For this illustration, we will work with task APPR0004. You can position to your task and view the details by selecting option **5**; and you can view the text description by selecting option **13**. To enter a new task, position to the appropriate project entry and press **F6**. See the Help text for more details. To change task details, select option **2**; to change a task narrative description, use **F5** on the ***Change a Task*** panel. These panels are illustrated on the next page.

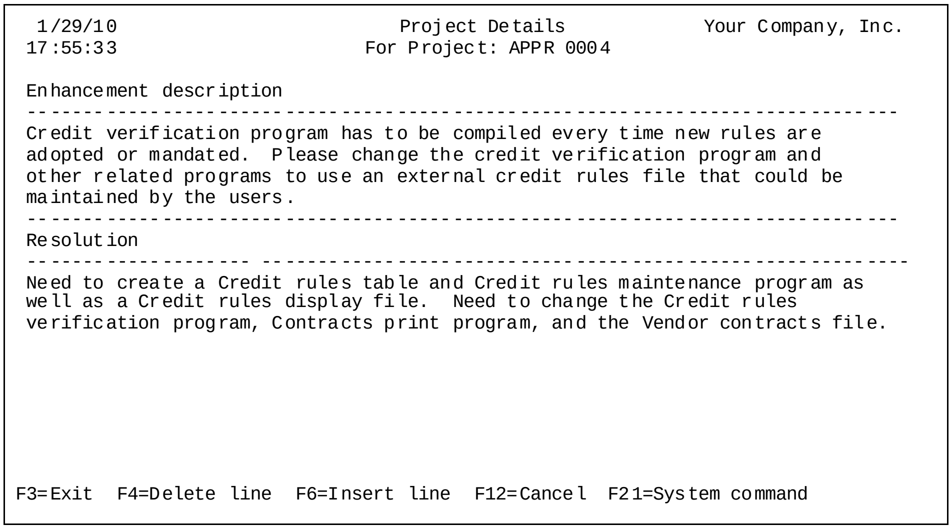
Note: You must be authorized to ***Work with Projects*** and to the project(s) with which you need to work. If you are not authorized, see your TURNOVER® for iSeries v100 Administrator.

To view a task, select option **5**, or use option **2** to change a task (illustrated below).



```
1/29/10 17:53:15               Change a Task               Your Company, Inc.
                 Project: APPR Accounts Payable Problems and Requests

Task  . . . . . . . . . . . . . 0004
Description . . . . . . . . . . Application view panels

Resource  . . . . . . . . . . . ELMSMIKE    F4=List  Mike Elms
Status  . . . . . . . . . . . . D DONE      F4=List
Requester . . . . . . . . . . . MUELLER     F4=List  Joe Mueller
Application . . . . . . . . . . AP          F4=List
   Release  . . . . . . . . . .  1
   Version  . . . . . . . . . . __
Priority  . . . . . . . . . . . 1           1 to 3
Priority sequence . . . . . . . ___
Duration  . . . . . . . . . . . Planned: ________  Actual: _______  Units: H
Start date  . . . . . . . . . . Planned:  0/00/00  Actual:  0/00/00
End date  . . . . . . . . . . . Planned:  0/00/00  Actual:  4/12/95
Date needed . . . . . . . . . .  0/00/00
Date promised . . . . . . . . .  0/00/00
Task type . . . . . . . . . . . A ASAP      F4=List
                                                                    More...
F3=Exit   F4=List   F5=Edit details   F6=Add subtask   F7=Requester comments
F10=Additional parameters   F12=Cancel   F21=System command
```

`View or Edit task description (options` **`13`**`,` **`15`**`, or` **`F5`**`).`

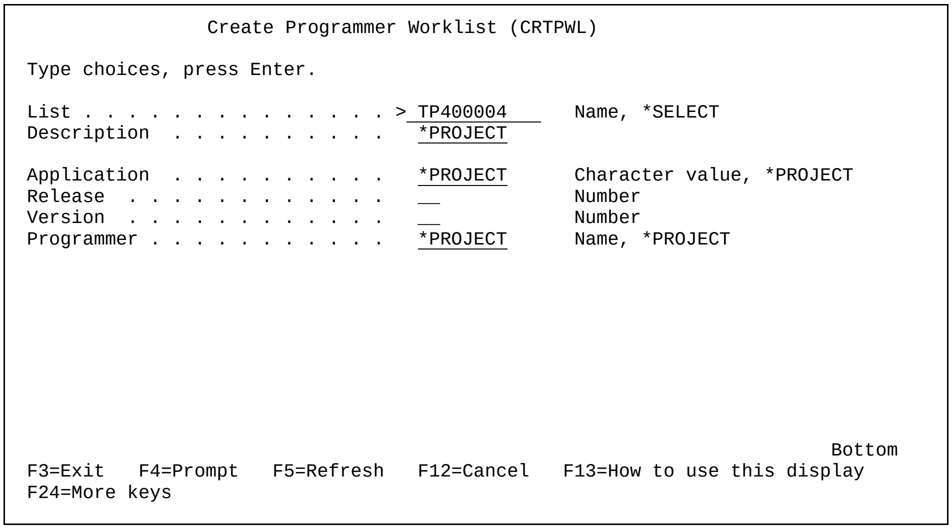


```
 1/29/10                         Project Details           Your Company, Inc.
17:55:33                      For Project: APPR 0004

Enhancement description
------------------------------------------------------------------------------
Credit verification program has to be compiled every time new rules are
adopted or mandated.  Please change the credit verification program and
other related programs to use an external credit rules file that could be
maintained by the users.
------------------------------------------------------------------------------
Resolution
-------------------- ----------------------------------------------------------
Need to create a Credit rules table and Credit rules maintenance program as
well as a Credit rules display file.  Need to change the Credit rules
verification program, Contracts print program, and the Vendor contracts file.







F3=Exit  F4=Delete line  F6=Insert line  F12=Cancel  F21=System command
```

After familiarizing yourself with the details of the request, you can return to the ***Work with Tasks*** panel and select the task with option **20** to create a ***Programmer Worklist***.

For more information about projects and tasks, press **F1/Help** or see ***Chapter 9: Working with Projects and Tasks*** in the ***TURNOVER® for iSeries v100 User Guide***.

Press **F3** to return to working with projects and then select your task with option **20**.



```
                 Create Programmer Worklist (CRTPWL)

Type choices, press Enter.

List . . . . . . . . . . . . . . > TP400004      Name, *SELECT
Description  . . . . . . . . . .   *PROJECT

Application  . . . . . . . . . .   *PROJECT      Character value, *PROJECT
Release  . . . . . . . . . . . .   __            Number
Version  . . . . . . . . . . . .   __            Number
Programmer . . . . . . . . . . .   *PROJECT      Name, *PROJECT










                                                                        Bottom
F3=Exit   F4=Prompt   F5=Refresh   F12=Cancel   F13=How to use this display
F24=More keys
```

If you are building the worklist from a task, you can take the defaults and press **Enter**.

Whether or not you use TURNOVER® for iSeries v100 Projects, you need to decide exactly what to do to fulfill the request or fix the problem. You need to determine which objects to change, which to recompile, what new objects you will need and, of course, the specific code changes you will need to make. There are many design details you need to work out with your user(s) and others within your department.

In addition to determining what objects need to be changed, you need to gauge the impact of your changes on related objects. TURNOVER® for iSeries v100 provides integrated cross-reference, version management, and object history panels to help you do this.

During the analysis process, you may find that some of the objects you need are checked out to someone else and you may have to coordinate your changes with another Developer or wait until s/he is done. If you are using the multiple checkout feature of TURNOVER® for iSeries v100, you may be able to check out an object while someone else is working on it;* but you will still need to coordinate with that other person to decide who will merge your changes.

---

* For more information, see ***TURNOVER® for iSeries v100 allows*** you to define one or more application definitions as an emergency change application. These allow you to check out TURNOVER® for iSeries v100 source that may be checked out to someone else. This method enables you to make changes and test them in a separate development library prior to returning them to production.

To define an application as an emergency change application, change the ***Emergency*** flag to **Y** on the ***Work with Application Definition*** panel. For more information, see ***Chapter 1: Working with Application Definitions*** in the ***TURNOVER® for iSeries v100 User Guide***.

An application that is defined as an emergency change application is the same as a 'normal' application, with one exception. When you need to make an emergency change using an emergency change application, you are allowed to check out source that has already been checked out to another programmer. In all other respects, works as any other application normally works. With TURNOVER® for iSeries v100's source-compare utility, TURNOVER® for iSeries v100 submits a compare job to compare the original production source with the changed source in the development library. TURNOVER® for iSeries v100 sends special messages to the programmer who currently has source checked out, to the application administrator (of the emergency change application), and to **QSECOFR**.

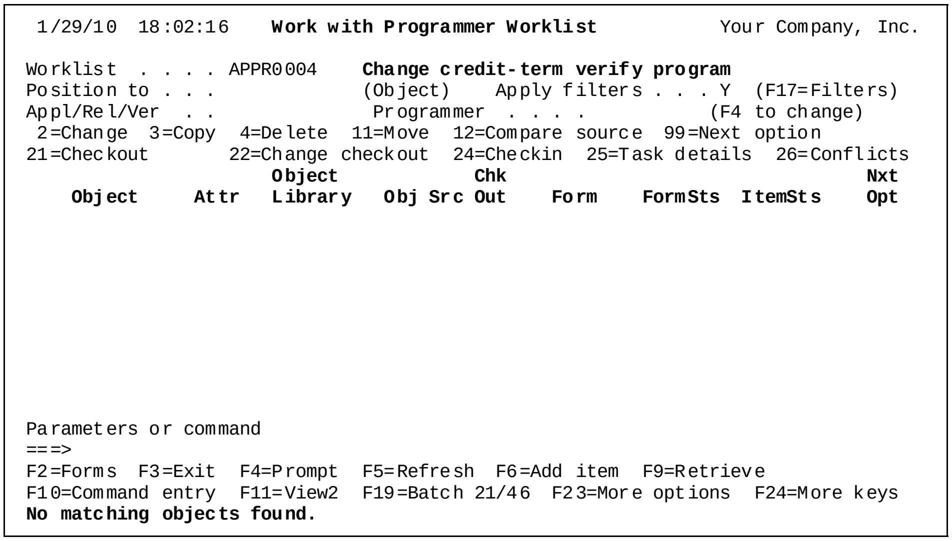
When you view checked out source, you see a record of source checked out under both the emergency change application and the regular application. The **Emergency change** entry is highlighted to alert you that emergency changes are being processed.

Our recommendations follow.

SoftLanding Recommends

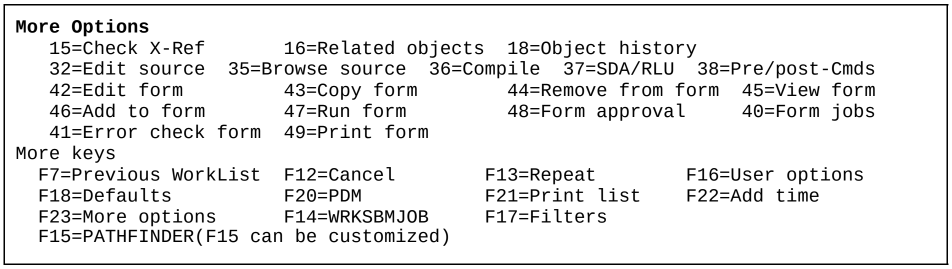
❍ Populate Your Worklist

Once you create your worklist, you then see a display that looks like this:



```
 1/29/10  18:02:16    Work with Programmer Worklist          Your Company, Inc.

Worklist  . . . . APPR0004    Change credit-term verify program
Position to . . .             (Object)    Apply filters . . . Y  (F17=Filters)
Appl/Rel/Ver  . .              Programmer  . . . .          (F4 to change)
 2=Change  3=Copy  4=Delete  11=Move  12=Compare source  99=Next option
21=Checkout       22=Change checkout  24=Checkin  25=Task details  26=Conflicts
                      Object            Chk                                Nxt
    Object     Attr   Library   Obj Src Out    Form    FormSts  ItemSts    Opt










Parameters or command
===>
F2=Forms  F3=Exit  F4=Prompt  F5=Refresh  F6=Add item  F9=Retrieve
F10=Command entry  F11=View2  F19=Batch 21/46  F23=More options  F24=More keys
No matching objects found.
```

(When you first create a new worklist, the subfile is **blank**.)



```
More Options
   15=Check X-Ref       16=Related objects  18=Object history
   32=Edit source  35=Browse source  36=Compile  37=SDA/RLU  38=Pre/post-Cmds
   42=Edit form         43=Copy form        44=Remove from form  45=View form
   46=Add to form       47=Run form         48=Form approval     40=Form jobs
   41=Error check form  49=Print form
More keys
  F7=Previous WorkList  F12=Cancel        F13=Repeat        F16=User options
  F18=Defaults          F20=PDM           F21=Print list    F22=Add time
  F23=More options      F14=WRKSBMJOB     F17=Filters
  F15=PATHFINDER(F15 can be customized)
```

The first thing you need to do is populate the worklist. You do this in one of the following ways:

---

1. We recommend that you create one single-level emergency application definition to correspond with each of your applications. (If all of your applications target the same production library, then you can get by with just one emergency application definition to manage all of your emergency changes.)
2. Set up a special emergency change development library, with the appropriate source files, which are used exclusively to manage emergency changes. This eliminates the risk of overlaying any source that is already checked out.
3. Be sure to set up the source compare defaults (option **11** on the Utility Menu) if you are using a source compare utility other than the one supplied by TURNOVER® for iSeries v100. TURNOVER® for iSeries v100 generates source compare output when the form runs.

Using the Multiple Checkout Feature on page 80.

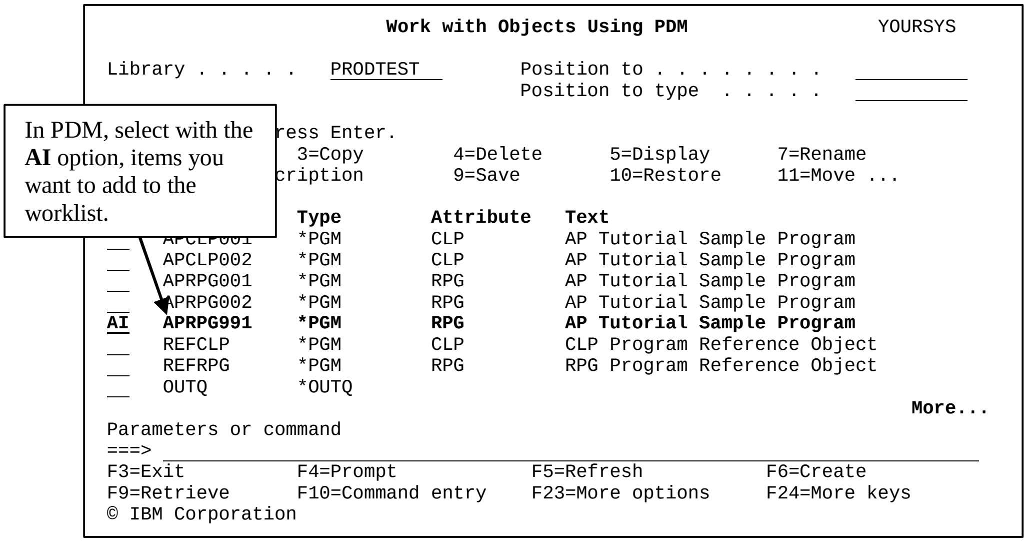
- Press **F6** to add an item.
- Press **F20** to go do PDM and select the items you need.
- Press **F15**[*] to go to Pathfinder or Abstract/Probe to find items you need.

If you use TURNOVER® for iSeries v100's cross-reference and you know one of the items you need, you can press **F6** to add the item. Then you can select that item with option **15=Check X-Ref** and review related items you may need. We will illustrate this feature later in this section.

---

[*] Assuming that you are using one of these products.

Frequently, you will start by pressing **F20** to start **PDM**. Select option **2** to work with objects.



```
                          Work with Objects Using PDM              YOURSYS

Library . . . . .   PRODTEST        Position to . . . . . . . .   __________
                                    Position to type  . . . . .   __________

                     ress Enter.
                      3=Copy        4=Delete      5=Display      7=Rename
                     cription       9=Save        10=Restore     11=Move ...

                      Type        Attribute   Text
__   APCLP001        *PGM        CLP         AP Tutorial Sample Program
__   APCLP002        *PGM        CLP         AP Tutorial Sample Program
__   APRPG001        *PGM        RPG         AP Tutorial Sample Program
__   APRPG002        *PGM        RPG         AP Tutorial Sample Program
AI   APRPG991        *PGM        RPG         AP Tutorial Sample Program
__   REFCLP          *PGM        CLP         CLP Program Reference Object
__   REFRPG          *PGM        RPG         RPG Program Reference Object
__   OUTQ            *OUTQ
                                                                    More...
Parameters or command
===> _________________________________________________________________________
F3=Exit          F4=Prompt           F5=Refresh          F6=Create
F9=Retrieve      F10=Command entry   F23=More options    F24=More keys
© IBM Corporation
```

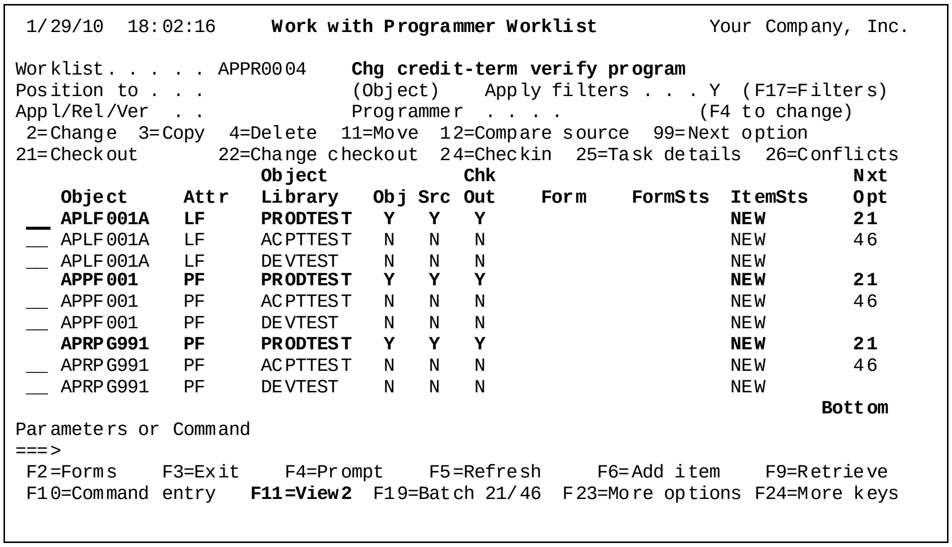
In PDM, select with the **AI** option, items you want to add to the worklist.

In PDM, you can use option **AI** (**Add Item**) to add items to your list. As you browse objects and source files, you can continue to add items to the list by selecting them with the **AI** PDM option. You can do the same thing within Pathfinder and Abstract/Probe. For more information about these products, see the TURNOVER® for iSeries v100 Supplement entitled ***Using Hawkeye's Pathfinder for Cross Referencing*** (**#1**) or ***Using Abstract/Probe for Cross Referencing*** (**#2**).

When you exit from PDM to return to your worklist, each of the items you selected will appear on your list. You can further refine the list by including new objects (objects you intend to create) or by removing some items after you analyze them further.

For example, you may have included all items that refer to the Vendor file. Then, after analyzing the programs, you may have removed from the list those that did not refer to the vendor payment terms field.

Once you have added items to the list, it looks like this:

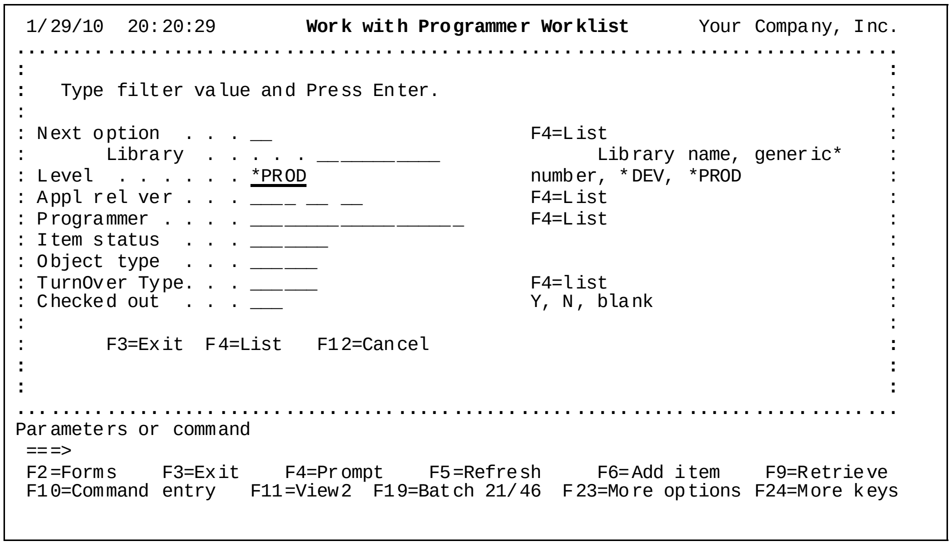


```
 1/29/10  18:02:16     Work with Programmer Worklist         Your Company, Inc.

Worklist . . . . . APPR0004    Chg credit-term verify program
Position to . . .             (Object)    Apply filters . . . Y  (F17=Filters)
Appl/Rel/Ver  . .             Programmer  . . . .           (F4 to change)
 2=Change  3=Copy  4=Delete  11=Move  12=Compare source  99=Next option
21=Checkout       22=Change checkout  24=Checkin  25=Task details  26=Conflicts
                      Object           Chk                               Nxt
    Object     Attr   Library   Obj  Src  Out    Form    FormSts  ItemSts   Opt
 __ APLF001A   LF     PRODTEST   Y    Y    Y                      NEW        21
 __ APLF001A   LF     ACPTTEST   N    N    N                      NEW        46
 __ APLF001A   LF     DEVTEST    N    N    N                      NEW
    APPF001    PF     PRODTEST   Y    Y    Y                      NEW        21
 __ APPF001    PF     ACPTTEST   N    N    N                      NEW        46
 __ APPF001    PF     DEVTEST    N    N    N                      NEW
    APRPG991   PF     PRODTEST   Y    Y    Y                      NEW        21
 __ APRPG991   PF     ACPTTEST   N    N    N                      NEW        46
 __ APRPG991   PF     DEVTEST    N    N    N                      NEW
                                                                       Bottom
Parameters or Command
===>
 F2=Forms    F3=Exit    F4=Prompt    F5=Refresh     F6=Add item    F9=Retrieve
 F10=Command entry   F11=View2  F19=Batch 21/46  F23=More options F24=More keys
```

Incidentally, notice that the worklist panel tells you if the object and source actually exist in any of the libraries associated with the application with which you are working. In our example, the objects and source exist in the production (**PRODTEST**) library, but not in development (**DEVTEST**) or test (**ACPTTEST**). Notice that none of the objects are checked out. If one had been checked out, you could press **F11=View 2** to see the profile of the person working on it now.

More About Your Worklist

The key to using the ***Programmer Worklist*** panel effectively is to use the filter fields, available when you press **F17**.



```
 1/29/10  20:20:29        Work with Programmer Worklist      Your Company, Inc.
...............................................................................
:                                                                             :
:   Type filter value and Press Enter.                                        :
:                                                                             :
: Next option  . . . __                          F4=List                      :
:       Library  . . . . . __________                 Library name, generic*  :
: Level  . . . . . . *PROD                       number, *DEV, *PROD          :
: Appl rel ver . . . ____ __ __                  F4=List                      :
: Programmer . . . . ___________________         F4=List                      :
: Item status  . . . _______                                                  :
: Object type  . . . ______                                                   :
: TurnOver Type. . . ______                      F4=list                      :
: Checked out  . . . ___                         Y, N, blank                  :
:                                                                             :
:       F3=Exit  F4=List   F12=Cancel                                         :
:                                                                             :
:                                                                             :
...............................................................................
Parameters or command
 ===>
 F2=Forms    F3=Exit    F4=Prompt    F5=Refresh     F6=Add item     F9=Retrieve
 F10=Command entry   F11=View2  F19=Batch 21/46  F23=More options F24=More keys
```

You can filter by all of these fields. You will use the ***Next option***, ***Level*** (the target application level code), and ***Item status*** filters the most. For example, we have set ***Level*** to ***PROD** so that we will only see the objects in the production level the next time you view your worklist. If you are viewing the worklist on line, experiment by adding items to the list and setting the filter fields.

Press **F1/Help** for more information. (You will not be able to do anything that you are not authorized to do on your system.)

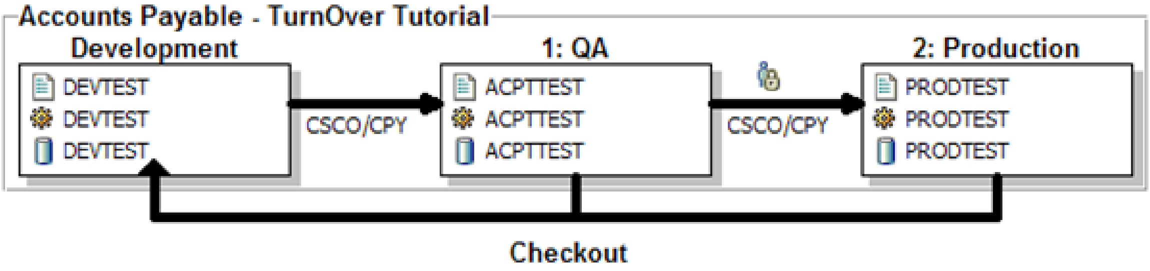
Keep in mind that a worklist is a ***list of objects*** upon which you intend to work or on which work is in process. Unlike viewing the contents of a library or file, a worklist does not necessarily represent actual objects – some lines may represent objects you intend to create. Only the highlighted lines represent source and/or objects that exist in the associated library. As the object progresses from level to level, it is highlighted; and the ***Obj*** and ***Src*** fields are set to **Y**.

Why show objects that do not exist?

By showing all levels, you can see the progress of your work from development through to production. You can tell exactly where your objects are, no matter how many levels you use for your application. Filters let you focus your attention on one level, but you will appreciate being able to see the big picture.

As you can see from the sample, the PWM panel enables you to position to, filter by and perform all of your development and change management functions.

As you study the PWM panel, refer to the schematic of the application we are illustrating:



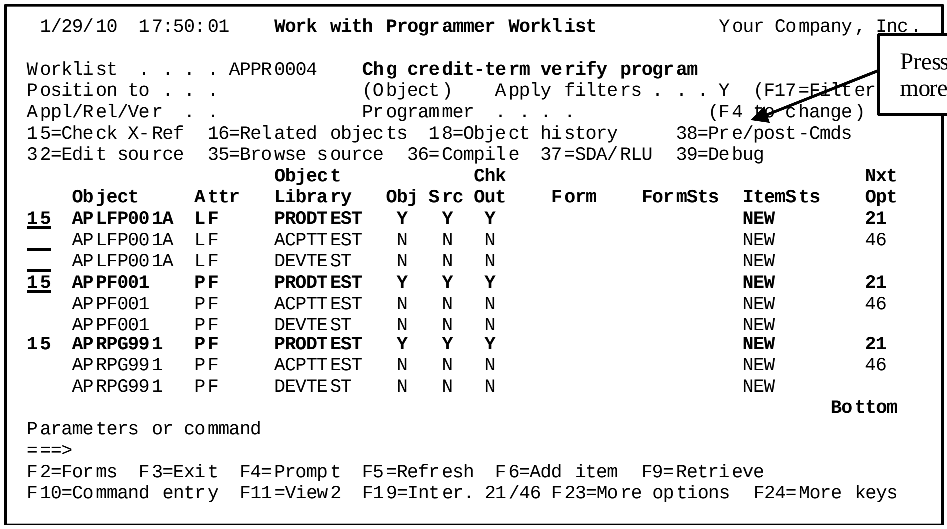
We will refer to other capabilities of the PWM display later on.

Did you know ...

If a set of objects had been promoted in the past by TURNOVER® for iSeries v100, you can build a worklist by referring to the old form. Look up the old form number, create a worklist, and press **F6=Add item** to add an item to the list. Type ***FORM** in the ***Form number*** parameter and ***ALL** in the ***Attribute*** parameter. TURNOVER® for iSeries v100 adds all of the items to your list. Now you are ready to make your changes.

❍ Check Cross-Reference

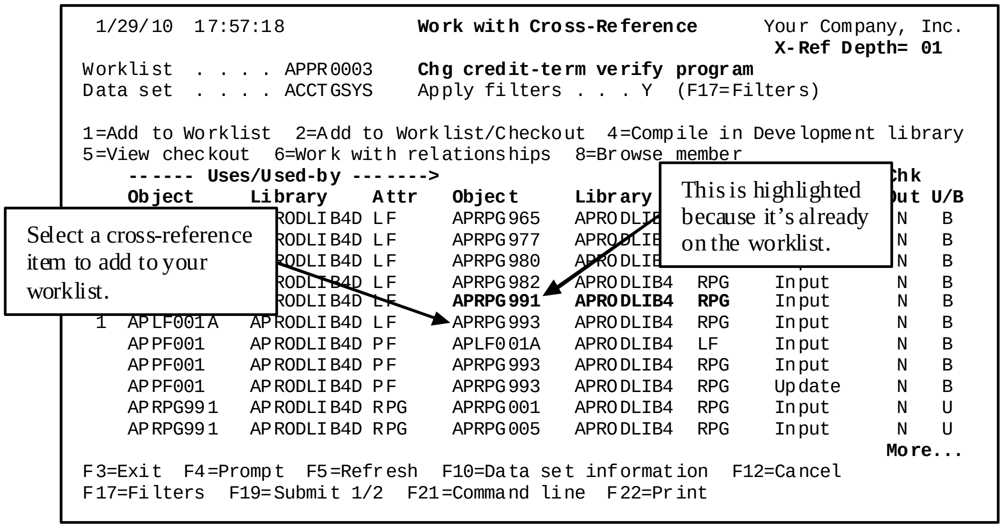
Returning to the worklist, notice that our example started by adding a logical, a physical, and a program to the list. If this were the starting point of our analysis, we would probably want to check the cross-reference file for related items we might need to change. If you are using TURNOVER® for iSeries v100's cross-reference, you can type **15** (**Check Xref**) next to each production level item. (You might want to press **F17** and filter by ***Level*** ***PROD** so you see only the production level.)



```
 1/29/10  17:50:01    Work with Programmer Worklist          Your Company, Inc.

 Worklist  . . . . APPR0004    Chg credit-term verify program
 Position to . . .             (Object)    Apply filters . . . Y  (F17=Filter
 Appl/Rel/Ver  . .             Programmer  . . . .          (F4 to change)
 15=Check X-Ref  16=Related objects  18=Object history     38=Pre/post-Cmds
 32=Edit source  35=Browse source  36=Compile  37=SDA/RLU  39=Debug
                     Object           Chk                                   Nxt
     Object     Attr Library    Obj Src Out    Form     FormSts  ItemSts    Opt
 15  APLFP001A  LF   PRODTEST    Y   Y   Y                       NEW        21
 __  APLFP001A  LF   ACPTTEST    N   N   N                       NEW        46
 __  APLFP001A  LF   DEVTEST     N   N   N                       NEW
 15  APPF001    PF   PRODTEST    Y   Y   Y                       NEW        21
     APPF001    PF   ACPTTEST    N   N   N                       NEW        46
     APPF001    PF   DEVTEST     N   N   N                       NEW
 15  APRPG991   PF   PRODTEST    Y   Y   Y                       NEW        21
     APRPG991   PF   ACPTTEST    N   N   N                       NEW        46
     APRPG991   PF   DEVTEST     N   N   N                       NEW
                                                                       Bottom
 Parameters or command
 ===>
 F2=Forms  F3=Exit  F4=Prompt  F5=Refresh  F6=Add item  F9=Retrieve
 F10=Command entry  F11=View2  F19=Inter. 21/46 F23=More options  F24=More keys
```

Press **F23** to see more options.

You then see the cross-reference file:



```
 1/29/10  17:57:18            Work with Cross-Reference      Your Company, Inc.
                                                              X-Ref Depth= 01
 Worklist  . . . . APPR0003    Chg credit-term verify program
 Data set  . . . . ACCTGSYS    Apply filters . . . Y  (F17=Filters)

 1=Add to Worklist  2=Add to Worklist/Checkout  4=Compile in Development library
 5=View checkout  6=Work with relationships  8=Browse member
     ------ Uses/Used-by ------->                                          hk
     Object     Library    Attr   Object     Library                       ut U/B
                RODLIB4D   LF     APRPG965   APRODLI                       N   B
                RODLIB4D   LF     APRPG977   APRODLIE                      N   B
                RODLIB4D   LF     APRPG980   APRODLIE                      N   B
                RODLIB4D   LF     APRPG982   APRODLIB4  RPG    Input       N   B
                RODLIB4D   LF     APRPG991   APRODLIB4  RPG    Input       N   B
  1  APLF001A   APRODLIB4D LF     APRPG993   APRODLIB4  RPG    Input       N   B
     APPF001    APRODLIB4D PF     APLF001A   APRODLIB4  LF     Input       N   B
     APPF001    APRODLIB4D PF     APRPG993   APRODLIB4  RPG    Input       N   B
     APPF001    APRODLIB4D PF     APRPG993   APRODLIB4  RPG    Update      N   B
     APRPG991   APRODLIB4D RPG    APRPG001   APRODLIB4  RPG    Input       N   U
     APRPG991   APRODLIB4D RPG    APRPG005   APRODLIB4  RPG    Input       N   U
                                                                        More...
 F3=Exit  F4=Prompt  F5=Refresh  F10=Data set information  F12=Cancel
 F17=Filters  F19=Submit 1/2  F21=Command line  F22=Print
```

Select a cross-reference item to add to your worklist.

This is highlighted because it's already on the worklist.

In the example on the previous page, we selected a logical file, a physical file and a program on the worklist.

1. The logical file is used by six programs.
2. The physical file is used by the logical file and two programs.
3. The program calls three programs (not all shown on the illustrated panel).

We have selected one program, APRPG993, to add to the worklist. (Note that if an item on the cross-reference panel is already on your worklist, it is highlighted, as is the case with APRPG991 the previous page.)

The U/B column indicates whether the related object (in the center column) uses or is used by the reference object (in the first column). If you want to know what other objects might be related to a related object, type **6** next to that item. The X-ref depth field in the upper right tracks how far you have drilled down into the cross-reference database.

You can press **F17=Filters** to display a panel (not illustrated here) on which to set filters for these conditions:

- ***Type attribute*** code of related item
- items that "use" or items "used by" the reference items
- Cross-reference method code
- Library checked out.

If you want to add objects to your worklist, type **1** next to each one and press **Enter** or use option **2** to both add them to the worklist and check them out.

If you want to compile related objects – objects you do not need to change but need to test – into your development library, select them with option **4**. The object(s) are created in the development library identified for that application's first level, or if you specify ***PGMR**, into your own development library.

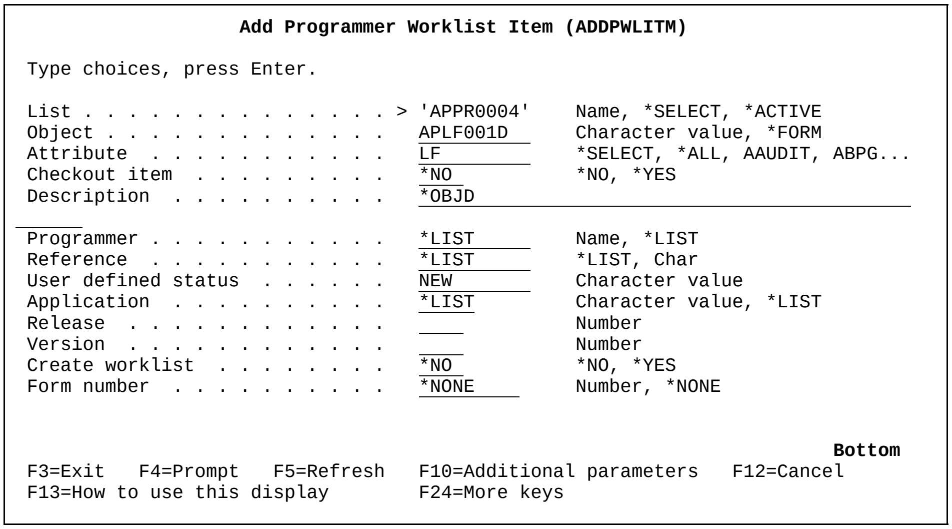
Options **1** and **2** can be submitted to batch by pressing **F19**. Option **4** is always submitted. You can prompt options **1**, **2**, and **4** by pressing **F4**.

What if you forget to check the cross-reference database?

If you forget to check the cross-reference database and try to create a TURNOVER® for iSeries v100 form, TURNOVER® for iSeries v100 warns you that you forgot to check for related items. If you know you do not need to check (the change will not impact other items), you can update the worklist by typing **2** next to the items on the list and **XREFCHK(Y)** on the command line. If you do not want TURNOVER® for iSeries v100 to perform this check for you, press **F18**, page down and set ***Require X-Ref Check*** to **N**. However, we recommend you let TURNOVER® for iSeries v100 back you up, just in case.

❍ Add a New Item to Your Worklist

When you decide to create a new object, you can add it to your worklist and then create the source and object. To do so, press **F6=Add item**. When you do, you see the ***Add Programmer Worklist Item*** panel.



```
                     Add Programmer Worklist Item (ADDPWLITM)

 Type choices, press Enter.

 List . . . . . . . . . . . . . . . > 'APPR0004'    Name, *SELECT, *ACTIVE
 Object . . . . . . . . . . . . . .   APLF001D      Character value, *FORM
 Attribute  . . . . . . . . . . . .   LF            *SELECT, *ALL, AAUDIT, ABPG...
 Checkout item  . . . . . . . . . .   *NO           *NO, *YES
 Description  . . . . . . . . . . .   *OBJD

 Programmer . . . . . . . . . . . .   *LIST         Name, *LIST
 Reference  . . . . . . . . . . . .   *LIST         *LIST, Char
 User defined status  . . . . . . .   NEW           Character value
 Application  . . . . . . . . . . .   *LIST         Character value, *LIST
 Release  . . . . . . . . . . . . .   ____          Number
 Version  . . . . . . . . . . . . .   ____          Number
 Create worklist  . . . . . . . . .   *NO           *NO, *YES
 Form number  . . . . . . . . . . .   *NONE         Number, *NONE


                                                                         Bottom
 F3=Exit   F4=Prompt   F5=Refresh   F10=Additional parameters   F12=Cancel
 F13=How to use this display        F24=More keys
```

Type of the name and attribute code of the new object you want to add to your worklist. Usually, you can accept the defaults for the rest of the parameters. However, you may want to change the ***User defined status*** parameter. You can use this parameter in any way you see fit.

If you set the ***Checkout item*** field to ***YES**, TURNOVER® for iSeries v100 displays an additional field, ***Source copy option***, beneath the other fields. This field lets you specify how you want TURNOVER® for iSeries v100 to handle the source you are checking out. (For descriptions of the available parameters, see the online Help.)

When you check out the objects on your list, TURNOVER® for iSeries v100 checks to see if the name is a valid name for your application.

UNICOM Systems, Inc. Recommends

You will find it useful to use the ***User defined status*** field as you work on the objects to keep tabs on your progress – especially if you are working on a long list of objects. For example, if you are interrupted while changing a program, you can set the status to "more work" or whatever designation you prefer. You might change the status to "done" as you complete programming an item. The ***User defined status*** field can be used to mean whatever you want it to mean. When you do assign a status value, note that you can filter by this field. To change the field, type **2=Change** next to the item you want to change and type **STS(*xxx*)**, (where ***xxx*** is the new status value) on the command line.

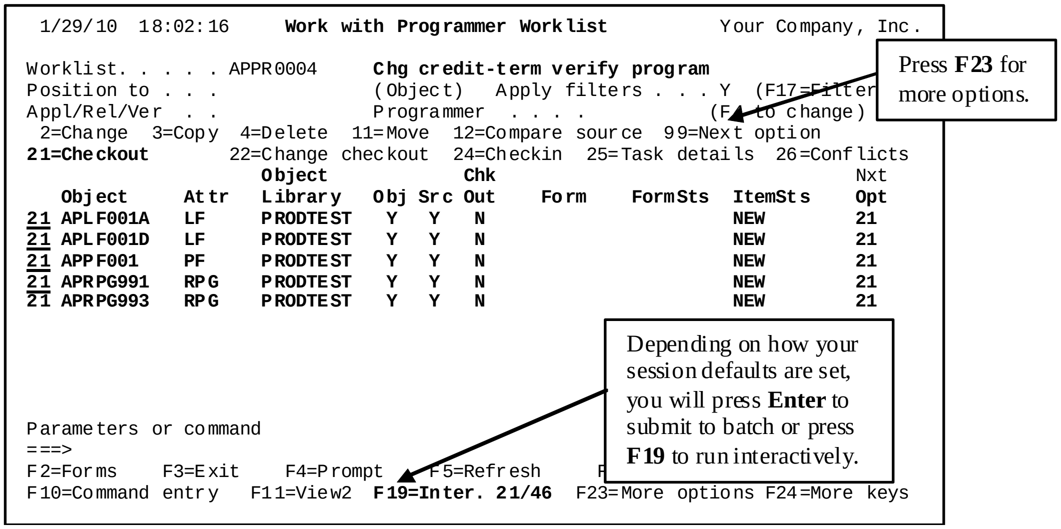
❍ Check Out Objects and Source

Once you are satisfied that your worklist is complete (see previous topic), and you are ready to start work on your objects, you need to check them out. This is true even if you are creating new objects. You can select and check out objects one-by-one, interactively; or you can submit the entire list to run to check out all of the objects at once in batch. Unless you have just a few objects, we recommend that you check out in batch. TURNOVER® for iSeries v100 produces a log report during the checkout processing.

To check out all of the objects on the list:

1. Press **F17** and set the ***Filter by Level*** to ***PROD**.

   (Alternatively, you can set ***Filter by next option*** to **21**.)
2. Select the first object with option **21=Checkout**.
3. Press **F13=Repeat**, to replicate option **21** throughout the entire list.
4. Check your session defaults to ensure that **F19** is set to ***BATCH**.
5. Press **F19=Batch** checkout.



```
 1/29/10  18:02:16     Work with Programmer Worklist         Your Company, Inc.

Worklist. . . . . APPR0004     Chg credit-term verify program
Position to . . .              (Object)  Apply filters . . . Y  (F17=Filter
Appl/Rel/Ver  . .              Programmer  . . . .            (F  to change)
 2=Change  3=Copy  4=Delete  11=Move  12=Compare source  99=Next option
21=Checkout       22=Change checkout  24=Checkin  25=Task details  26=Conflicts
                        Object           Chk                                Nxt
   Object     Attr     Library   Obj Src Out    Form    FormSts  ItemSts    Opt
21 APLF001A   LF       PRODTEST   Y   Y   N                      NEW        21
21 APLF001D   LF       PRODTEST   Y   Y   N                      NEW        21
21 APPF001    PF       PRODTEST   Y   Y   N                      NEW        21
21 APRPG991   RPG      PRODTEST   Y   Y   N                      NEW        21
21 APRPG993   RPG      PRODTEST   Y   Y   N                      NEW        21




Parameters or command
===>
F2=Forms    F3=Exit    F4=Prompt    F5=Refresh     F
F10=Command entry   F11=View2  F19=Inter. 21/46  F23=More options F24=More keys
```

Press **F23** for more options.

Depending on how your session defaults are set, you will press **Enter** to submit to batch or press **F19** to run interactively.

TURNOVER® for iSeries v100 submits a job to check out all of the objects and source members. When the job is done, the source you need is in your development library.

If you clear the filters (change **Apply filters** to **N**) and press **F5=Refresh**, you will see the **Src** and **Chk Out** columns change to **Y** and the **Nxt Opt** column change to blank. If any problems were encountered during checkout, TURNOVER® for iSeries v100 prints a checkout error report that is placed in your output queue and it sends a message to your message queue. (Type **WRKSPLF** to see the report.)

You can edit source (option **32=Edit**) as soon as it is available. If you are checking out non-source objects, you will see the **Obj** field change from **N** to **Y**. If you are checking out message IDs and a message file does not exist in your development library, TURNOVER® for iSeries v100 creates the message file and then copies the individual messages to your worklist.

Suppose that last year you made a change similar to one you are about to make. Here is one feature of TURNOVER® for iSeries v100 you might find useful. View the TURNOVER® for iSeries v100 form used last year. From the view panel, you can add all of the objects to your worklist and check out all of the objects at the same time! How do you view an old form? Here are some suggestions:

- Find last year's task in the project file and view the related form, or
- Use the ***Work with Object History*** panel (option **18** on the worklist or command **TURNOVER 4**) to find one object changed last year and display the form, or
- Find the form on ***Work with TURNOVER® for iSeries forms*** (command **TURNOVER 6**) and display it.
- Press **F6** on your ***Worklist*** panel, enter ***FORM** in the ***Form number*** field, type the form number, and type ***ALL** in the ***Attribute*** field.

  (Change history information may not be available if it has been purged from TURNOVER® for iSeries v100's files. We recommend that you keep change history on line as long as you can afford to do so.)

What Happens During Checkout?

As a Developer, you will find it helpful to know how TURNOVER® for iSeries v100 performs checkout processing and how it handles special conditions. Referring to our AP application model, assume you are checking out source for an object:

1. You identify an object along with its type (or attribute) and application code. (These all were done when the item was added to your worklist.)
2. TURNOVER® for iSeries v100 looks at the application definition for the library name.
3. Then it locates the object.
4. TURNOVER® for iSeries v100 locates the source from the application definition.
5. If the source is not where the application says it is, TURNOVER® for iSeries v100 looks at the object description.
6. TURNOVER® for iSeries v100 verifies that the source and object match (it issues a warning[*] if they do not).
7. TURNOVER® for iSeries v100 copies the source to your development library.

How does it know which library to use for checkout? It looks at the highest unlocked level for your application definition – level 2 in our AP application.

How does it know where to copy the source? TURNOVER® for iSeries v100 refers to the ***Source From library*** field of the lowest level of your Application definition. If this is set to ***PGMR**, then TURNOVER® for iSeries v100 looks at your Programmer enrollment record (Main Menu option **2**). If ***Source From library*** is coded ***PROJECT**, it looks at your project record to determine the library name.

If the source is checked out already, it does not allow you to check it out again except as an emergency change (see ***Emergency Changes in TURNOVER® for iSeries v100*** and ***Using the Multiple Checkout Feature*** in ***Advanced Topics***, beginning on page 80).

If you are checking out source interactively and a source member exists in the development library with the same name, you will be prompted whether or not to overlay it. If you are checking out in batch, TURNOVER® for iSeries v100 will not overlay a source member; a message is printed on the Checkout Report and the object is recorded as having been checked out.

If the object is checked out from production and exists in an intermediate level (ACPTTEST in our AP example), TURNOVER® for iSeries v100 prompts you to check it out of that library. If you are checking out in batch, TURNOVER® for iSeries v100 checks out the object from the intermediate level.

TURNOVER® for iSeries v100 verifies that the source and object match by examining its internal database (for information about when the object was created and when its source last changed). It examines the object description and member description. If the object does not match the internal record, you will get a warning message. This warning indicates that there is a possible discrepancy you should verify to be sure you have the correct source.

---

[*] If the global parameter ***Level checking on checkout*** is **Y**, then you won't be able to check out the object until the discrepancy is resolved. See Main Menu option **8**, then option **5**.

If you are checking out a non-source object, TURNOVER® for iSeries v100 writes a record in the checkout file and duplicates the object to your development library. If you are changing it, you can recreate it in test to reflect your change. When you promote it, it is moved or duplicated back into production.

If you are checking out a source-only object, such as /COPY code or S/36 OCL, TURNOVER® for iSeries v100 recognizes that condition and copies the source to your development library.

If you are checking out an object that does not exist, then TURNOVER® for iSeries v100 reserves that name for you. See ***Reserving New Object Names*** on the next page.

If you check out in batch, you should always review the checkout report for any discrepancies. TURNOVER® for iSeries v100 sends you a message if it encounters significant discrepancies.

Note: When your Administrator defines your applications, s/he can run a job that verifies, among other things, that source and objects match. Several reports are produced. Discrepancies should be resolved at that time. If you see a discrepancy, see your TURNOVER® for iSeries v100 Administrator. Make sure you have the correct source before you begin to work.

Checking out or reserving Message IDs? iSeries menus? S/36 Menus? DFUs, queries, or other types? See ***Message IDs, Message Files, Menus, and Other Object Types*** on page 93**.** Also see the ***TURNOVER® for iSeries v100 User Guide*** and the TURNOVER® for iSeries v100 Supplements.

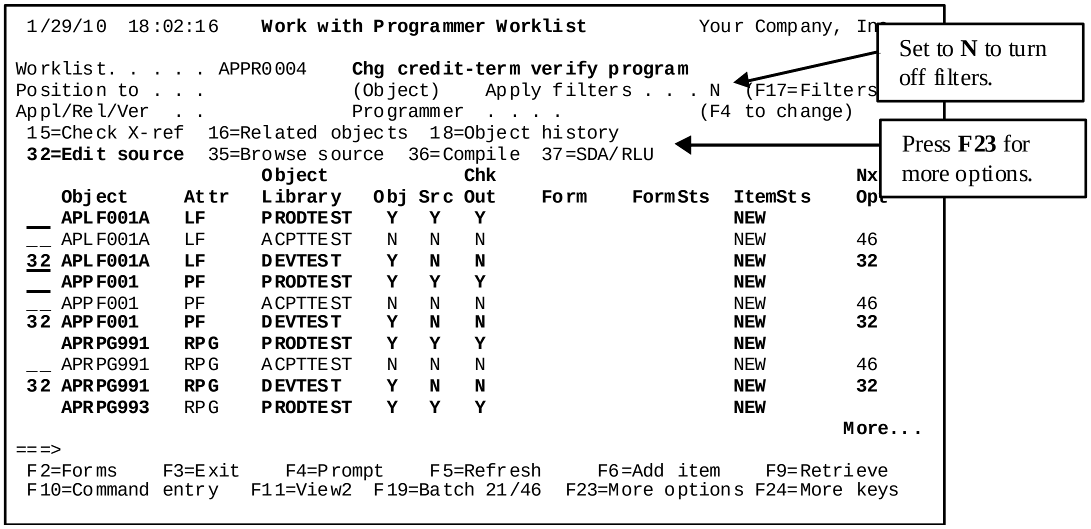
Reserving New Object Names

When you add a new object name to your worklist (as described on page 40), you need to identify (reserve) that name to TURNOVER® for iSeries v100. To reserve it, select the object name with option **21=Checkout**. If the name does not exist in your production library or it has not already been reserved, TURNOVER® for iSeries v100 reserves that name to you. The name must conform to naming standards set up for your application (see your TURNOVER® for iSeries v100 Administrator to determine if this applies to your applications). Reserving an object name is similar to checking it out, except that no source is copied from your production library.

❍ Code and Test Changes

You can continue working on the PWM panel to (re)develop the objects on your list. If you are familiar to PDM, you will find that many of the functions are similar. However, with PWM you see just the objects on which you need to work to complete your task. You can perform all of the operations you need to do on the ***Worklist Panel***.

Set ***Apply filters*** to **N** (as illustrated below) or press **F17=Filters** and set the ***Filter by Level*** to ***DEV** to filter only the development level objects.



```
 1/29/10  18:02:16    Work with Programmer Worklist         Your Company, In

Worklist. . . . . APPR0004    Chg credit-term verify program
Position to . . .             (Object)    Apply filters . . . N  (F17=Filters
Appl/Rel/Ver  . .             Programmer  . . . .           (F4 to change)
 15=Check X-ref  16=Related objects  18=Object history
 32=Edit source  35=Browse source  36=Compile  37=SDA/RLU
                     Object           Chk                                  Nx
    Object     Attr  Library  Obj Src Out    Form    FormSts  ItemSts    Opt
 __ APLF001A   LF    PRODTEST  Y   Y   Y                      NEW
 __ APLF001A   LF    ACPTTEST  N   N   N                      NEW        46
 32 APLF001A   LF    DEVTEST   Y   N   N                      NEW        32
 __ APPF001    PF    PRODTEST  Y   Y   Y                      NEW
 __ APPF001    PF    ACPTTEST  N   N   N                      NEW        46
 32 APPF001    PF    DEVTEST   Y   N   N                      NEW        32
    APRPG991   RPG   PRODTEST  Y   Y   Y                      NEW
 __ APRPG991   RPG   ACPTTEST  N   N   N                      NEW        46
 32 APRPG991   RPG   DEVTEST   Y   N   N                      NEW        32
    APRPG993   RPG   PRODTEST  Y   Y   Y                      NEW
                                                                    More...
===>
 F2=Forms    F3=Exit    F4=Prompt    F5=Refresh     F6=Add item    F9=Retrieve
 F10=Command entry   F11=View2  F19=Batch 21/46  F23=More options F24=More keys
```

Set to **N** to turn off filters.

Press **F23** for more options.

You can do all of your development work on your ***Worklist Panel***. Notice that the ***Nxt Opt*** column (Next Option) for the items in the development library is set to **32**. To edit source of the objects listed, type **32=Edit source** next to the object. For display or printer files, type **37=SDA/RLU**.

Press **F17** and then **F1/Help** to read the help for the ***Filter by*** fields. Remember that you can filter the level code by ***DEV** and ***PROD**. We suggest that you filter by ***DEV** during this phase.

Refer to the next three pages for a list of options and functions you can perform.

Worklist options (with most commonly used options **highlighted**; many options can be prompted to change defaults).

- **2=Change:** change information in the worklist entry.
- 3=Copy: copy this item to another worklist.
- 4=Delete: delete an item from worklist.
- 11=Move: move an item from one worklist to another.
- **12=Compare source:** compare the source of the item you select with any other version of source available.
- **15=Check X-Ref:** check for related entries in the cross-reference database.
- 16=Related objects: check for related objects in related applications.
- **18=Object history:** view history for an object. (You will see the ***Work with Object History*** panel.)
- **21=Checkout**: check out the object from production or an intermediate level.
- 22=Change checkout: change the checkout record. For example, you can reassign the checkout to another person or change the attribute code.
- **24=Check-in**: if it is checked out in error or your requirements change and you no longer need to work on the item on your worklist.
- 25=Task details: change information in or view task details for the current task.
- 26=Conflicts: to view and resolve object version conflicts. See the TURNOVER® for iSeries v100 Supplement entitled ***Managing Multiple Versions*** (**#63**).
- **32=Edit source**: edit a source member using SEU.
- 35=Browse source: browse a source member in SEU.
- **36=Compile**: compile using command defined in TURNOVER® for iSeries v100 for the object type selected.
- **37=SDA/RLU**: run SDA or RLU. TURNOVER® for iSeries v100 runs whichever is appropriate.
- **38=Pre/post-Cmds**: to enter commands to be linked to the object and run before or after the object is created. Commands that are linked are carried forward as the object is promoted.
- 40=Form jobs: see all of the jobs related to promoting objects.
- 41=Error check: error check form to see if it is complete.
- **42=Edit form**: view and edit an existing form.
- **43=Copy form**: create a new form from an existing form.
- **44=Remove from form:** take an item off a form if it was added in error or is no longer needed.
- **45=View form:** look at the form for a worklist entry.

- **46=Add to form:** add this item to a TURNOVER® for iSeries v100 form.
- **47=Run form:** submit a form for processing (**READY** status only).
- **48=Approve form:** approve a form, or review the approval list. Form status is **APL-PN**.
- **49=Print form**: print a hard copy of a TURNOVER® for iSeries v100 form.

Also, you can define your own user options by pressing **F16=User options**.

Worklist Function keys

F2=Forms: view all forms associated with your worklist.

F3=Exit: exit from worklist.

F4=Prompt: list valid values when cursor is positioned on a field, or to prompt a selection or command.

F5=Refresh: redisplay panel to view changes.

F6=Add item: add a item to the list.

F7=Previous worklist: switch quickly to the last worklist you worked on.

F9=Retrieve last command keyed on this display.

F10=Command entry: switch to the iSeries command entry panel.

F11=View 2: view additional information in the subfile.

F12=Cancel (equivalent to exit).

F13=Repeat: copy an option code to the remaining items on the list when an option is entered next to an item.

F14=**WRKSBMJOB**: to execute the work submitted jobs command.

F15=Customized Fkey: your Administrator can customize this fkey for your company or for individual users (using the **CUSTFKEY** command). This is frequently set to provide easy access to Pathfinder or Abstract/Probe, if you have one of these products.

F16=User options: enter or change your user options.

F17=Filters: work with the window to set ***Worklist Panel*** filters values.

F18=Defaults: to view and change session defaults.

F19=Inter. 21/46: select object on list with option **21**, then press **Enter** to submit the checkout to batch or press **F19** to run it interactively. Works similarly for option **46**. (Press **F18** for a session default to control how the **F19** key works.)

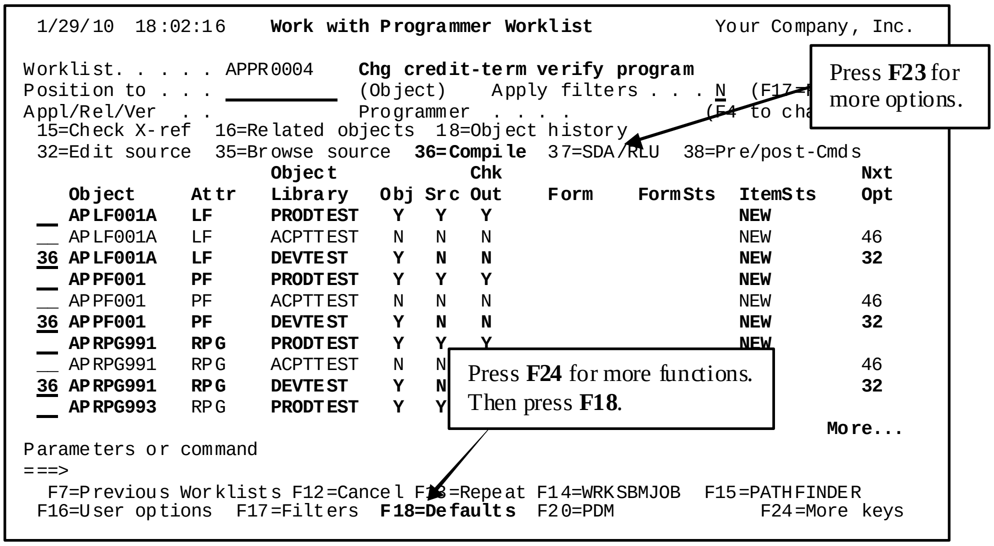
F20=PDM: run the start PDM (**STRPDM**) command.

F21=Print list: print a list of the items on the worklist.

F22=Add time: add time to your time sheet for the project task associated with your worklist.

❍ Compile Your Objects

Once you have edited your source, you can select and compile these into your development library by typing **36=Compile** next to each item in your development library.



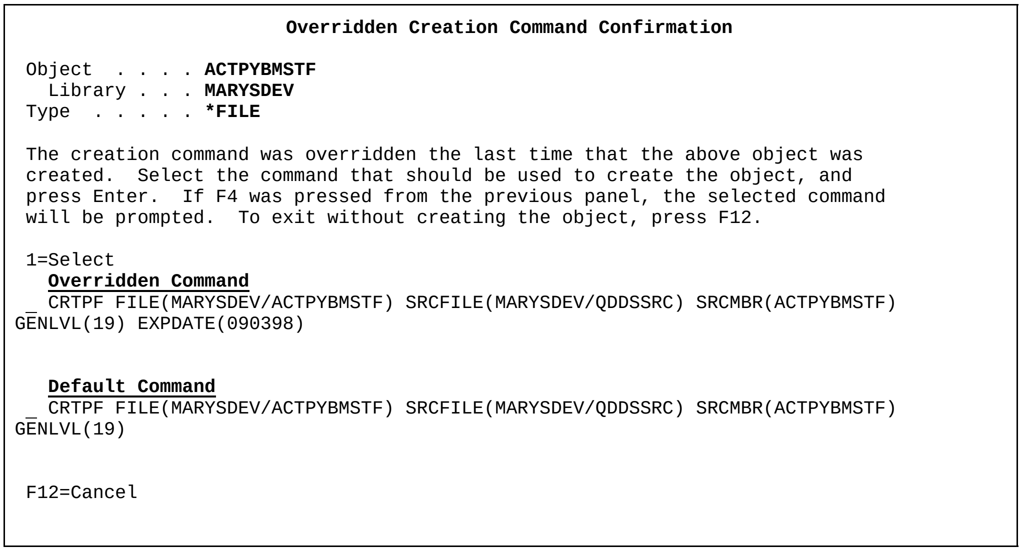
```
 1/29/10  18:02:16    Work with Programmer Worklist          Your Company, Inc.

Worklist. . . . . APPR0004    Chg credit-term verify program
Position to . . . __________  (Object)    Apply filters . . . N  (F17=
Appl/Rel/Ver  . .             Programmer  . . . .              (F4 to cha
 15=Check X-ref  16=Related objects  18=Object history
 32=Edit source  35=Browse source  36=Compile  37=SDA/RLU  38=Pre/post-Cmds
                  Object          Chk                                Nxt
    Object     Attr    Library   Obj Src Out     Form    FormSts  ItemSts    Opt
 __ APLF001A   LF      PRODTEST   Y   Y   Y                       NEW
 __ APLF001A   LF      ACPTTEST   N   N   N                       NEW        46
 36 APLF001A   LF      DEVTEST    Y   N   N                       NEW        32
 __ APPF001    PF      PRODTEST   Y   Y   Y                       NEW
 __ APPF001    PF      ACPTTEST   N   N   N                       NEW        46
 36 APPF001    PF      DEVTEST    Y   N   N                       NEW        32
 __ APRPG991   RPG     PRODTEST   Y   Y   Y                       NEW
 __ APRPG991   RPG     ACPTTEST   N   N                                      46
 36 APRPG991   RPG     DEVTEST    Y   N                                      32
 __ APRPG993   RPG     PRODTEST   Y   Y
                                                                       More...
Parameters or command
===>
  F7=Previous Worklists F12=Cancel F13=Repeat F14=WRKSBMJOB  F15=PATHFINDER
 F16=User options  F17=Filters  F18=Defaults  F20=PDM             F24=More keys
```

Press **F23** for more options.

Press **F24** for more functions. Then press **F18**.

Using create command overrides

If you override the create command for an object by prompting option **36=Compile** and changing a command parameter, TURNOVER® for iSeries v100 remembers the override and asks if you want to use it whenever you subsequently compile the object. You see the following panel.

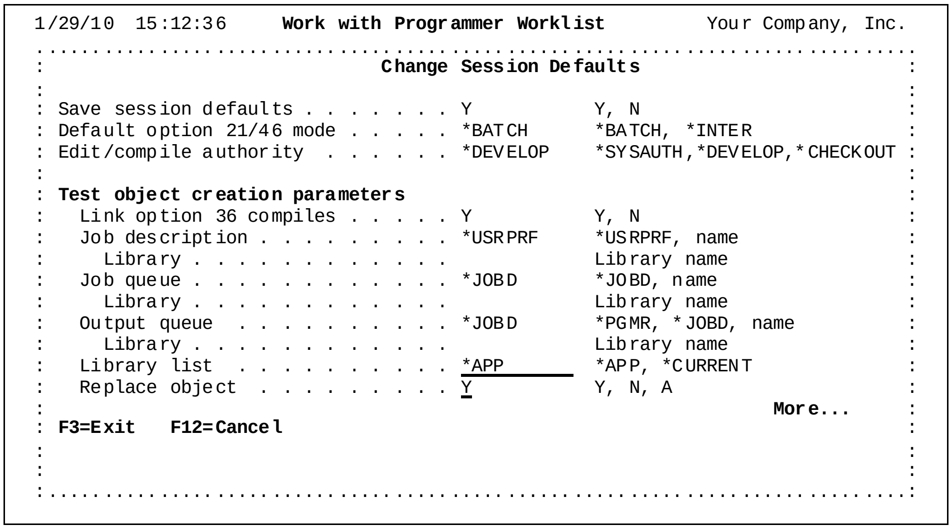


```
                      Overridden Creation Command Confirmation

 Object  . . . . ACTPYBMSTF
   Library . . . MARYSDEV
 Type  . . . . . *FILE

 The creation command was overridden the last time that the above object was
 created.  Select the command that should be used to create the object, and
 press Enter.  If F4 was pressed from the previous panel, the selected command
 will be prompted.  To exit without creating the object, press F12.

 1=Select
   Overridden Command
 _ CRTPF FILE(MARYSDEV/ACTPYBMSTF) SRCFILE(MARYSDEV/QDDSSRC) SRCMBR(ACTPYBMSTF)
GENLVL(19) EXPDATE(090398)


   Default Command
 _ CRTPF FILE(MARYSDEV/ACTPYBMSTF) SRCFILE(MARYSDEV/QDDSSRC) SRCMBR(ACTPYBMSTF)
GENLVL(19)


 F12=Cancel
```

Working with worklist session defaults

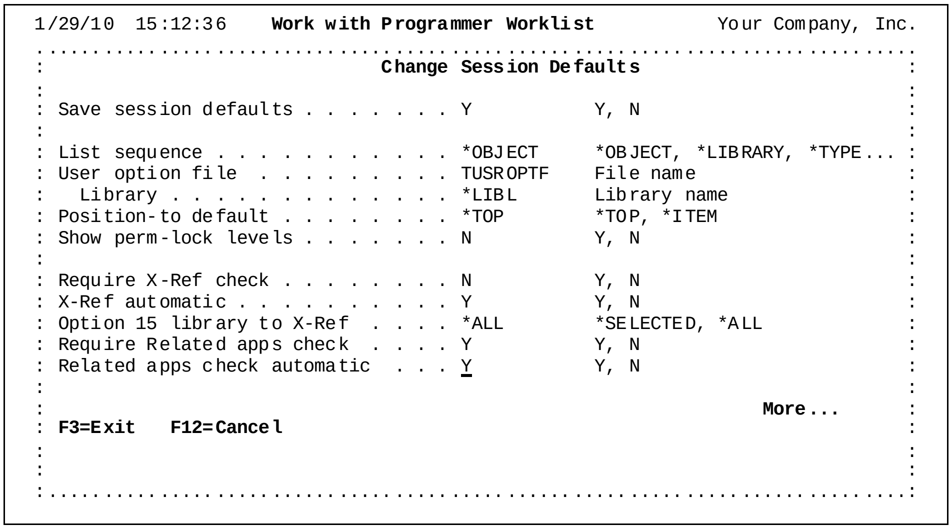
What controls how your objects are created? Press **F18=Defaults** to see the ***Session Defaults*** window. Session defaults let you set your Programmer Worklist options the way that you prefer.

Not only can you control how TURNOVER® for iSeries v100 creates objects in your development library, but you can set many other important session features. These defaults are saved by user profile.



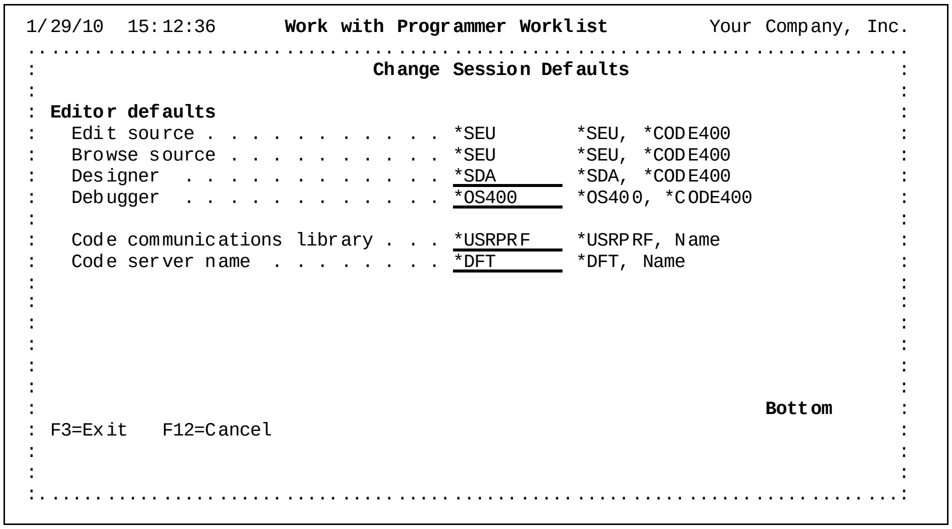
```
1/29/10  15:12:36     Work with Programmer Worklist        Your Company, Inc.
..............................................................................
:                            Change Session Defaults                         :
:                                                                            :
: Save session defaults . . . . . . . Y           Y, N                       :
: Default option 21/46 mode . . . . . *BATCH      *BATCH, *INTER             :
: Edit/compile authority  . . . . . . *DEVELOP    *SYSAUTH,*DEVELOP,*CHECKOUT :
:                                                                            :
: Test object creation parameters                                            :
:   Link option 36 compiles . . . . . Y           Y, N                       :
:   Job description . . . . . . . . . *USRPRF     *USRPRF, name              :
:     Library . . . . . . . . . . . .             Library name               :
:   Job queue . . . . . . . . . . . . *JOBD       *JOBD, name                :
:     Library . . . . . . . . . . . .             Library name               :
:   Output queue  . . . . . . . . . . *JOBD       *PGMR, *JOBD, name         :
:     Library . . . . . . . . . . . .             Library name               :
:   Library list  . . . . . . . . . . *APP        *APP, *CURRENT             :
:   Replace object  . . . . . . . . . Y           Y, N, A                    :
:                                                            More...         :
: F3=Exit   F12=Cancel                                                       :
:                                                                            :
:                                                                            :
:............................................................................:
```

Page down…



```
1/29/10  15:12:36    Work with Programmer Worklist          Your Company, Inc.
..............................................................................
:                            Change Session Defaults                         :
:                                                                            :
: Save session defaults . . . . . . . Y           Y, N                       :
:                                                                            :
: List sequence . . . . . . . . . . . *OBJECT     *OBJECT, *LIBRARY, *TYPE... :
: User option file  . . . . . . . . . TUSROPTF    File name                  :
:   Library . . . . . . . . . . . . . *LIBL       Library name               :
: Position-to default . . . . . . . . *TOP        *TOP, *ITEM                :
: Show perm-lock levels . . . . . . . N           Y, N                       :
:                                                                            :
: Require X-Ref check . . . . . . . . N           Y, N                       :
: X-Ref automatic . . . . . . . . . . Y           Y, N                       :
: Option 15 library to X-Ref  . . . . *ALL        *SELECTED, *ALL            :
: Require Related apps check  . . . . Y           Y, N                       :
: Related apps check automatic  . . . Y           Y, N                       :
:                                                                            :
:                                                           More...          :
: F3=Exit   F12=Cancel                                                       :
:                                                                            :
:                                                                            :
:............................................................................:
```

Page down…



```
1/29/10  15:12:36      Work with Programmer Worklist        Your Company, Inc.
...........................................................................
:                              Change Session Defaults                     :
:                                                                          :
: Editor defaults                                                          :
:   Edit source . . . . . . . . . . . . *SEU       *SEU, *CODE400          :
:   Browse source . . . . . . . . . . . *SEU       *SEU, *CODE400          :
:   Designer  . . . . . . . . . . . . . *SDA       *SDA, *CODE400          :
:   Debugger  . . . . . . . . . . . . . *OS400     *OS400, *CODE400        :
:                                                                          :
:   Code communications library . . . . *USRPRF    *USRPRF, Name           :
:   Code server name  . . . . . . . . . *DFT       *DFT, Name              :
:                                                                          :
:                                                                          :
:                                                                          :
:                                                                          :
:                                                                          :
:                                                                          :
:                                                             Bottom       :
: F3=Exit   F12=Cancel                                                     :
:                                                                          :
:                                                                          :
:..........................................................................:
```

Take a few minutes to review the description of each of the defaults below (and on the pages that follow).

Defaults that appear on the first panel are:

Save session defaults

Set this parameter to Y if you want TURNOVER® for iSeries v100 to save your current session defaults when you exit from the Programmer Worklist. Set this parameter to **N** if you want to override defaults for your current session but do not want TURNOVER® for iSeries v100 to save the settings when you exit from the Programmer Worklist.

Default option 21/46 mode (*BATCH recommended)

This toggles the way the **F19** key works on the worklist. If you set this parameter to ***BATCH**, the **Enter** key runs options **21** or **46** in batch. If you set this parameter to ***INTER**, the **Enter** key runs options **21** or **46** interactively. When you press the **F19** key, the opposite action occurs.

Edit/compile authority (*DEVELOP recommended)

If you set this parameter to ***SYSAUTH**, your access to objects and your ability to delete, change, or create objects is controlled entirely by your iSeries system authority.

If you set this parameter to ***DEVELOP**, you will only be able to create or work with objects in your development library. This prevents you from deleting, creating, or changing objects in libraries other than development, even if you have authority to those libraries and objects.

If you set this parameter to ***CHECKOUT**, you will only be able to edit and compile an object if you have the lowest checkout record for that object. Also, you will only be able to edit and compile the object in your development library.

This parameter relates to options **32=Edit source**, **36=Compile**, and **37=SDA/RLU**. This parameter does not relate to what you can do on the command line.

Test object creation parameters

Use ***Job description***, ***Job queue***, and ***Output queue*** to control how your items are created. These parameters apply to option **36=Compile** and are used as overrides when submitting compiles.

Link option 36 compiles

This parameter tells TURNOVER® for iSeries v100 whether a series of objects you select with option **36=Compile** should be linked. Linking the compiles means that compiling one of any of the objects selected depends on the successful completion of the processing attempt for the previous object in the series.

Choose one of the following:

Y	Link the compiles.
N	Do not link the compiles.

If you leave this field blank, TURNOVER® for iSeries v100 defaults to **Y**.

Objects can have pre- or post-run commands associated with them. Under these circumstances, TURNOVER® for iSeries v100 conditions its attempt to continue processing on the Error recovery parameter specified for the command, as shown here:

<u>When compiles are linked:</u>

Error condition	Recovery	Result
Preform cmd fails	G=Go	Go on to remaining pre cmds
Preform cmd fails	C=Cancel	End the job
PreLine cmd fails	G=Go	Go on to remaining pre cmds
PreLine cmd fails	C=Cancel	End the job
Compile fails	n/a	End the job
PostLine cmd fails	G=Go	Go on to remaining post cmds
PostLine cmd fails	C=Cancel	End the job
PostForm cmd fails	G=Go	Go on to remaining post cmds
PostForm cmd fails	C=Cancel	End the job

<u>When compiles are not linked:</u>

Error condition	Recovery	Result
Preform cmd fails	G=Go	Go on to remaining pre cmds
Preform cmd fails	C=Cancel	End the job
PreLine cmd fails	G=Go	Go on to remaining pre cmds
PreLine cmd fails	C=Cancel	Stop processing this object; begin processing next object
Compile fails	n/a	Stop processing this object; begin processing next object
PostLine cmd fails	G=Go	Go on to remaining post cmds
PostLine cmd fails	C=Cancel	Stop processing this object; begin processing next object
PostForm cmd fails	G=Go	Go on to remaining post cmds
PostForm cmd fails	C=Cancel	End the job

Note: If an object's preline or postline command fails and the Error recovery parameter is **C** (**Cancel**), or if the compile fails for an object and the object is not one of a linked series, the postform commands for the object are not attempted.

Library list (*APP recommended)

If you set this parameter to ***CURRENT**, then TURNOVER® for iSeries v100 uses your current library list when you select option **36=Compile** to submit a job to compile objects. You are responsible for setting up your interactive library list appropriately.

If you set this parameter to ***APP**, then TURNOVER® for iSeries v100 constructs a library list consisting of your development library(s), followed by the library list defined at the first (lowest) level of your application definition.

Replace object (Y or A recommended)

If you select option **36=Compile** and the object already exists in your development library, TURNOVER® for iSeries v100 displays a confirmation panel with the ***Replace*** parameter set to **Y** or **N**, depending on the value you set for this parameter.

Set this parameter to **A** to bypass the confirmation panel and automatically replace existing objects.

Defaults that appear on the second panel are:

List sequence (*OBJECT recommended)

You can control the sequence of your worklist using this parameter. ***CRTSEQ** sequences the items on the worklist in order of their logical create sequence, such that physical files precede logical files that precede programs, and so on. ***OBJECT** sequences the items on the list in order by object name. ***LIBRARY** sequences the items by object name within library name. ***TYPE** sequences the list by TURNOVER® for iSeries v100 type attribute code, object name and library.

User option file

You can create and maintain your own set of user options, available when you press **F16** on your worklist. To create your own option file, copy the file **TUSROPTF** in library **SOFTTURND** into your own library and change this ***User option file*** parameter to point to your own copy of this file.

Position-to default

Set this parameter to ***TOP** if you want TURNOVER® for iSeries v100 to reposition the worklist subfile to the top when you change filters.

Set this parameter to ***ITEM** if you want the worklist subfile to maintain its position when you change filters.

Show perm-lock levels

If you are maintaining your own modifications of a vendor-supplied application, your company has probably defined additional application definition levels to define your vendor's unchanged objects and source. If you want to see these on your ***Worklist Panel***, set this parameter to **Y**; otherwise set it to **N**.

Require X-Ref check (Y recommended)

This parameter helps you remember to check the cross-reference file for items on the worklist. TURNOVER® for iSeries v100 prevents you from creating or running a TURNOVER® for iSeries v100 form until you have performed a cross-reference check (as described on page 38). If you know you do not have to check the cross-reference, then you can change the worklist item field **XREFCHK** to **Y**. Set this parameter to **N** if you do not want TURNOVER® for iSeries v100 to remind you to check the cross-reference file.

X-Ref automatic (Y recommended)

Set this parameter to **Y** if you want TURNOVER® for iSeries v100 to search the cross-reference and add any items not already on the worklist to the TURNOVER® for iSeries v100 form to be recompiled in the target library. Set this parameter to **N** if you want to view and add items yourself when you build the TURNOVER® for iSeries v100 form.

Option 15 library to X-Ref

This parameter tells TURNOVER® for iSeries v100 what library to look in when checking the cross reference for objects that use, or are used by, an object you select with option **15**.

***SELECTED**	TURNOVER® for iSeries v100 shows only references from the object library associated with the object you selected.
***ALL**	TURNOVER® for iSeries v100 shows references from all libraries in the cross-reference file.

Require Related apps check

This parameter helps you remember to check for related application objects (see ***Chapter 1: Working with Application Definitions*** in the ***TURNOVER® for iSeries v100 User Guide*** for more information). TURNOVER® for iSeries v100 prevents you from creating or running a TURNOVER® for iSeries v100 form until you have checked for objects in related applications first. If you know you do not have to check for related objects, then you can change the worklist item field **RELAPPCHK** to **Y**. Set this parameter to **N** if you do not want TURNOVER® for iSeries v100 to remind you to check for related objects.

Related apps check automatic

Set this parameter to **Y** if you want TURNOVER® for iSeries v100 to search for related application objects and create TURNOVER® for iSeries v100 forms for related applications, and add these items to your related forms if they are not already on those forms. Set this parameter to **N** if you want to view and add items yourself, when you build the TURNOVER® for iSeries v100 form.

Defaults that appear on the third panel are:

Editor defaults

These parameters let you specify the editor you want to use to edit and browse source, and to design screens and debug programs. These parameters relate to option **32=Edit source**, option **35=Browse source**, option **37=SDA/RLU**, and option **39=Debug**.

Edit source

Specify the editor you want to use to edit source (option **32**). Set this parameter to ***SEU** if you want to edit source using SEU. Set this parameter to ***CODE400** if you want to edit source using Code/400.

Browse source

Specify the editor you want to use to browse source (option **35**). Set this parameter to ***SEU** if you want to browse source using SEU. Set this parameter to ***CODE400** if you want to browse source using Code/400.

Designer

Specify the editor you want to use to design screens (option **37**). Set this parameter to ***SDA** if you want to design screens using SDA. Set this parameter to ***CODE400** if you want to design screens using Code/400.

Debugger

Specify the editor you want to use to debug programs (option **39**). Set this parameter to ***OS400** if you want to debug programs using the OS/400 debugger. Set this parameter to ***CODE400** if you want to debug programs using Code/400.

Code communications library

If you specified ***CODE400** as the default for the ***Edit source***, ***Browse source***, ***Designer***, or ***Debugger*** parameters, then specify the Code/400 communications library, or specify ***USRPRF** to use the current library for your user profile.

Code server name

If you specified ***CODE400** as the default for the ***Edit source***, ***Browse source***, ***Designer***, or ***Debugger*** parameters, then specify the name of the Code/400 server name.

❍ Create a TURNOVER® for iSeries v100 form

Once you have completed programming and testing your changes, you can create a TURNOVER® for iSeries v100 form to promote your objects. What is a TURNOVER® for iSeries v100 form? In TURNOVER® for iSeries v100, we use *form* to mean ***promotion request***.

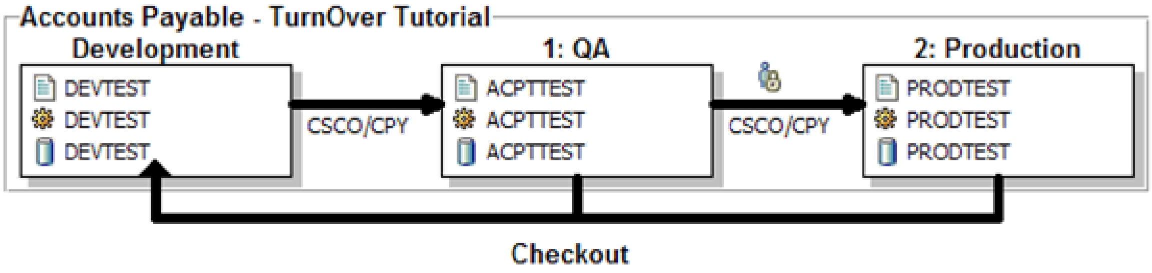


Figure 9: Sample Application Schematic

When you visualize the application schematic, think of a form as all the information TURNOVER® for iSeries v100 needs to promote objects and source from left to right. Checkout occurs right to left and is done when you start a programming task. TURNOVER® for iSeries v100 promotions occur when you are done programming and are ready to have your work certified and put back into production.

A TURNOVER® for iSeries v100 form consists of:

1. **Job control information** (the form header).
2. **Object information** (the lines on the form).

A form can also contain:

3. **Commands** (pre-run or post-run). Commands like override database (OVRDBF) file necessary for creating some objects can be included. Commands can be associated with particular objects on the form. When you do this, TURNOVER® for iSeries v100 remembers the association the next time you or someone else changes the object.
4. **Create command overrides**. You can override the default create command TURNOVER® for iSeries v100 uses to create this object. This override is associated with the object on the form. When you do this, TURNOVER® for iSeries v100 remembers the command override the next time you or someone else changes that object.
5. **Comments** (form and/or line). These provide additional documentation about the form. Sometimes comments are used for instructions to the Administrator or to operations.
6. **Lock checks** (objects that are checked for locks before the form starts). When you include objects to be checked, TURNOVER® for iSeries v100 checks locks and allocates the object, if you want it to. You can check locks on any object(s) – not necessarily those you are changing now. You can use the ***Automatic form lock checking*** global default to have TURNOVER® for iSeries v100 automatically check for locks on files only or on all data objects before it replaces such objects during a form run. (For more information, see ***Setting Global TURNOVER® for***

iSeries v100 Defaults in ***Chapter 8: Utility Menu*** of the ***TURNOVER® for iSeries v100 User Guide***.)

7. **Completion messages** (messages to be sent when a form completes). Messages can be set up to be sent if the form runs successfully, fails or in either case. Default messages can be set up for your application definition. Completion messages are *always* sent to the Developer and designated Administrator, without having to be specified explicitly on the TURNOVER® for iSeries v100 form.

Here are a few important things you should know about TURNOVER® for iSeries v100 forms:

- Each form is numbered with a unique seven-digit number, similar in concept to a job number. A form number is made up of a two-digit form prefix and a five-digit sequence number assigned by TURNOVER® for iSeries v100.

- **Note:** In previous releases of TURNOVER® for iSeries, the first three digits of the form number referred to the system on which the form was created. This release, TURNOVER® for iSeries v100, stores system information in the form header. You no longer have to set a form rollover threshold or change your form number prefix when your form sequence number approaches 9999; TURNOVER® for iSeries v100 now handles this situation automatically. While the size of the field remains the same, the number of forms possible on your system is now 99,999.

- Each form contains a reference to your project task (subject to how your environment is set up). This field is called ***Reference*** or ***Project task reference*** , where space allows.

- Each form is run once. If a form needs to be rerun, it is copied to create a new form, and the new form is run. In this way a complete audit trail is maintained by TURNOVER® for iSeries v100.

- The objects on a form are sequenced such that objects are created in the correct logical order (PF first, then LF, then DSPF, and so on.)

- If a form is large, it is possible to approach or exceed the maximum number of lines allowed on a form. To reserve space for objects added during the cross-reference check, you can set an overflow threshold in the XREFOVRFLW data area. This threshold controls the number of lines that TURNOVER® for iSeries v100 can add to a form before it begins adding cross-reference items to the form. The default number of lines that TURNOVER® for iSeries v100 can add to a form before cross-referencing is 900.

- Logical files are added to the form automatically for physical files in a target library. You only need to identify explicitly those logical files that you have changed.

- Forms can be purged (removed) from TURNOVER® for iSeries v100 by your TURNOVER® for iSeries v100 Administrator. Caution should be exercised so that you do not remove valuable change history.

- Form status determines whether a form can be run. Only forms that are **READY** or **RECVD**[*] status can be run.
- If form status is **APL-PN** (**Approval Pending**), the form must be approved before being run.
- When distributed to another system, a form retains its original form number.
- Forms can be scheduled to run at any time in the future.
- Forms can be grouped together and run as a group or run independently. They can also be linked such that one form must complete successfully before another form can start.

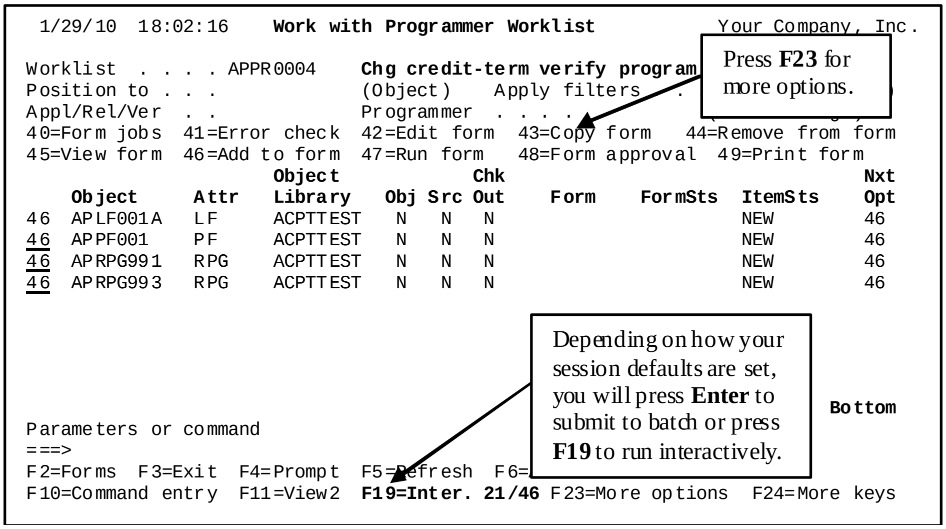
---

[*] Valid only on remote production systems where TURNOVER® for iSeries v100 changes have been "received."

Did you know ...

If you use field reference files, you can identify them on a TURNOVER® for iSeries v100 form as type **PFREF**. TURNOVER® for iSeries v100 then makes sure that they are created first. When you check out the file, prompt the checkout option and change the ***Override attribute*** field to **PFREF**; or type the **DSPCHKOUT** command and change the ***New type code*** field to **PFREF**.

Once you are ready to promote source and objects to production or to some intermediate test level, you need to create a TURNOVER® for iSeries v100 form. Press **F17** to set the ***Filter by level*** to **1** (the acceptance test level in our AP application) or the ***Filter by next option*** parameter to **46**. Then, on the ***Programmer Worklist Manager*** panel, do the following:



```
 1/29/10  18:02:16    Work with Programmer Worklist          Your Company, Inc.

Worklist  . . . . APPR0004    Chg credit-term verify program
Position to . . .             (Object)    Apply filters  .
Appl/Rel/Ver  . .             Programmer  . . . .
40=Form jobs  41=Error check  42=Edit form  43=Copy form   44=Remove from form
45=View form  46=Add to form  47=Run form   48=Form approval  49=Print form
                    Object             Chk                                  Nxt
    Object     Attr   Library    Obj Src Out    Form    FormSts  ItemSts    Opt
46  APLF001A   LF     ACPTTEST    N   N   N                      NEW        46
46  APPF001    PF     ACPTTEST    N   N   N                      NEW        46
46  APRPG991   RPG    ACPTTEST    N   N   N                      NEW        46
46  APRPG993   RPG    ACPTTEST    N   N   N                      NEW        46





                                                                         Bottom
Parameters or command
===>
F2=Forms  F3=Exit  F4=Prompt  F5=Refresh  F6=
F10=Command entry  F11=View2  F19=Inter. 21/46 F23=More options  F24=More keys
```

Press **F23** for more options.

Depending on how your session defaults are set, you will press **Enter** to submit to batch or press **F19** to run interactively.

1. Type option **46** next to the first object. (The ***Nxt Opt*** field should be **46=Add to Form**.)
2. Press **F13=Repeat** to repeat option **46** throughout your list.
3. Press **Enter** to submit the form build to batch.[*]

TURNOVER® for iSeries v100 builds a form and adds each of the items you selected to that form.

If you press **F5**, you will see the ***Form number***, ***Form Sts***, and ***Nxt Opt*** columns change.

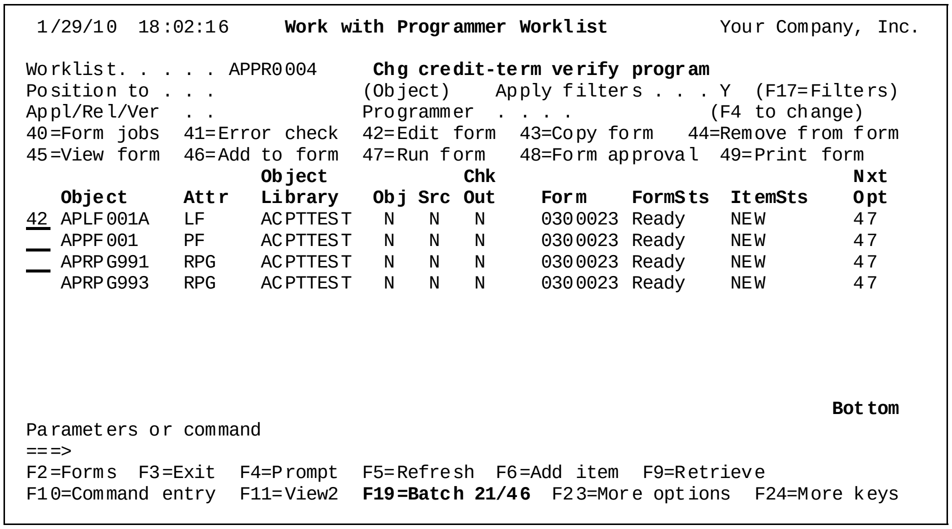
Ordinarily, this is all you have to do to prepare your promotion job to run. However, occasionally you will want to edit the form. After the form has been created, select the first object on your list with option **42** to view and check your form.

---

[*] The default action of the **Enter** key and **F19** can be reversed. Press **F18=defaults** for Session defaults.

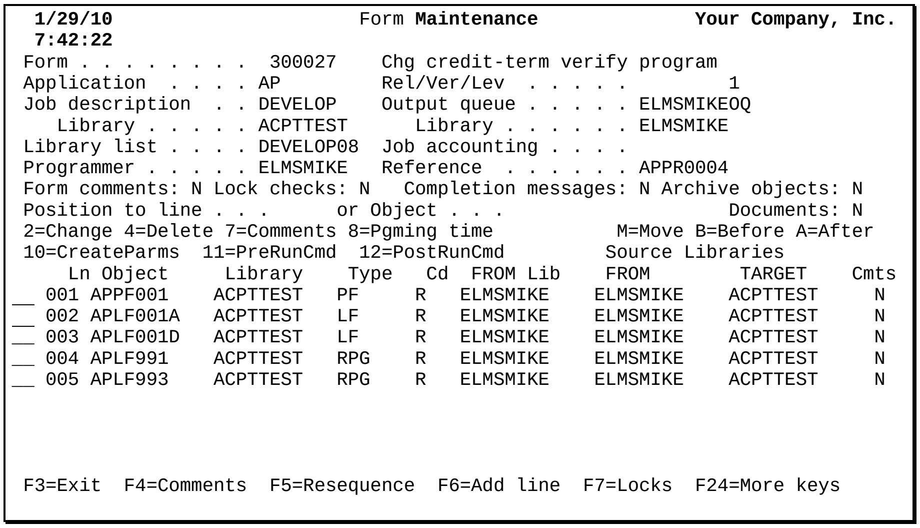
View or Edit a Form

Select any object with option **42=Edit form** or **45=View form**.

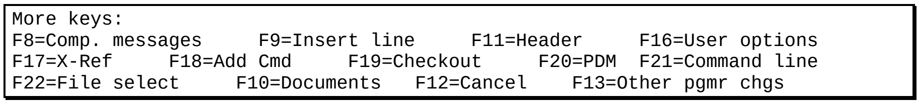


```
 1/29/10  18:02:16     Work with Programmer Worklist         Your Company, Inc.

Worklist. . . . . APPR0004     Chg credit-term verify program
Position to . . .             (Object)    Apply filters . . . Y  (F17=Filters)
Appl/Rel/Ver  . .             Programmer  . . . .           (F4 to change)
40=Form jobs  41=Error check  42=Edit form  43=Copy form   44=Remove from form
45=View form  46=Add to form  47=Run form   48=Form approval  49=Print form
                     Object             Chk                                 Nxt
   Object     Attr   Library    Obj Src Out     Form     FormSts  ItemSts    Opt
42 APLF001A   LF     ACPTTEST    N   N   N     0300023 Ready    NEW        47
__ APPF001    PF     ACPTTEST    N   N   N     0300023 Ready    NEW        47
__ APRPG991   RPG    ACPTTEST    N   N   N     0300023 Ready    NEW        47
   APRPG993   RPG    ACPTTEST    N   N   N     0300023 Ready    NEW        47







                                                                      Bottom
Parameters or command
===>
F2=Forms  F3=Exit  F4=Prompt  F5=Refresh  F6=Add item  F9=Retrieve
F10=Command entry  F11=View2  F19=Batch 21/46  F23=More options  F24=More keys
```

You may want to edit the form to include pre- or post-run commands, comments, lock checks, or special completion messages. (As the programmer, you will always receive a message after the form runs.)



```
  1/29/10                      Form Maintenance             Your Company, Inc.
  7:42:22
 Form . . . . . . . .  300027    Chg credit-term verify program
 Application  . . . . AP         Rel/Ver/Lev  . . . . .         1
 Job description  . . DEVELOP    Output queue . . . . . ELMSMIKEOQ
    Library . . . . . ACPTTEST      Library . . . . . . ELMSMIKE
 Library list . . . . DEVELOP08  Job accounting . . . .
 Programmer . . . . . ELMSMIKE   Reference  . . . . . . APPR0004
 Form comments: N Lock checks: N   Completion messages: N Archive objects: N
 Position to line . . .      or Object . . .                Documents: N
 2=Change 4=Delete 7=Comments 8=Pgming time           M=Move B=Before A=After
 10=CreateParms  11=PreRunCmd  12=PostRunCmd         Source Libraries
     Ln Object     Library    Type   Cd  FROM Lib    FROM        TARGET    Cmts
__ 001 APPF001     ACPTTEST   PF     R   ELMSMIKE    ELMSMIKE    ACPTTEST     N
__ 002 APLF001A    ACPTTEST   LF     R   ELMSMIKE    ELMSMIKE    ACPTTEST     N
__ 003 APLF001D    ACPTTEST   LF     R   ELMSMIKE    ELMSMIKE    ACPTTEST     N
__ 004 APLF991     ACPTTEST   RPG    R   ELMSMIKE    ELMSMIKE    ACPTTEST     N
__ 005 APLF993     ACPTTEST   RPG    R   ELMSMIKE    ELMSMIKE    ACPTTEST     N




 F3=Exit  F4=Comments  F5=Resequence  F6=Add line  F7=Locks  F24=More keys
```



```
More keys:
F8=Comp. messages     F9=Insert line     F11=Header     F16=User options
F17=X-Ref     F18=Add Cmd     F19=Checkout     F20=PDM  F21=Command line
F22=File select     F10=Documents   F12=Cancel    F13=Other pgmr chgs
```

Options you can perform on the panel (in edit mode):

2=Change: view or edit the form line.

4=Delete: delete the form line.

7=Comment: enter or edit comments about the form line.

10=CreateParms: override the default creation parameters for the item on this line.

11=Pre-run commands: commands associated with an object, to be run during form processing before objects are created. For example, **OVRDBF**, where program uses temporary file.

12=Post-run commands: commands associated with an object, to be run after an object is created or during the finalization phase. Example: call to your file conversion program; where the default **CPYF** command is inappropriate.

Functions you can perform on the TURNOVER® for iSeries v100 form ***Maintenance*** panel:

F4=Comment: enter form comments.

F5=Resequence: resequence the objects on the form. Objects are added to the form in the correct logical order (PF, LF, DSPF, RPG, and so forth) for running the form.

F6=Add line: add another object to the form. (We recommend that you add the object to your worklist first, then add that object to the form using option **46**.)

F7=Lock checks: supply names of objects you want TURNOVER® for iSeries v100 to check for locks or allocate before changing objects on the form. Specify ***ALL** to have TURNOVER® for iSeries v100 check for locks on all files (specify ***FILE** for the object type parameter) or all data objects (specify ***DTAOBJ** for the object type parameter) before it replaces such objects during the form run. TURNOVER® for iSeries v100 then checks the objects for locks before starting the form run and sends a message to QSYSOPR if it finds any locks on the specified objects. The operator can clear the locks and continue the form run or cancel the form. If the operator cancels the form, it returns to a **READY** status.

F8=Comp. Message: enter completion messages. Programmer and Administrator always receive a message.

F9=Insert line: adds a line immediately following the cursor position.

F11=Header: to view or edit the form header information (the information at the top of the panel).

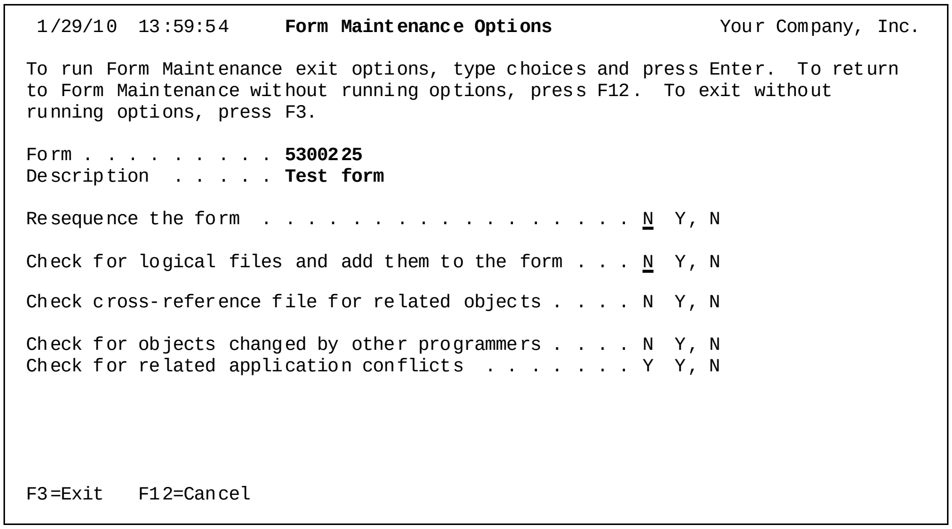
F12=Cancel: exits the form.

F16=User options: to view or change user options defined for this panel.

F18=Insert command: to insert a pre- or post-run command. Position just above first line to insert pre-run commands; at last line to insert post-run commands.

Press **F1/Help** for more information.

When you exit from a TURNOVER® for iSeries v100 form, you see this panel:



```
 1/29/10  13:59:54     Form Maintenance Options            Your Company, Inc.

To run Form Maintenance exit options, type choices and press Enter.  To return
to Form Maintenance without running options, press F12.  To exit without
running options, press F3.

Form . . . . . . . . . 5300225
Description  . . . . . Test form

Resequence the form  . . . . . . . . . . . . . . . . . N  Y, N

Check for logical files and add them to the form . . . N  Y, N

Check cross-reference file for related objects . . . . N  Y, N

Check for objects changed by other programmers . . . . N  Y, N
Check for related application conflicts  . . . . . . . Y  Y, N




F3=Exit   F12=Cancel
```

Normally you accept the defaults set by TURNOVER® for iSeries v100 and press **Enter**. If you have already performed these operations, you can avoid doing so again by typing **N** in these fields.

- **Resequence the form**. This puts the form in the correct logical order (PFREF, PF, LF, DSPF, Programs, and so forth). To view the file that contains the TURNOVER® for iSeries v100 type codes and the sequence field that controls this operation, type **TURNOVER 8** on a command line, then option **4**. Normally, the form is created in the correct logical order.
- **Check for logical files and add them to the form**. TURNOVER® for iSeries v100 checks the form for any logical files over physical files being replaced or deleted, and adds them to your form automatically.
- **Check cross-reference file for related objects**. If you are using TURNOVER® for iSeries v100's cross-reference function or Hawkeye's Pathfinder or ASC's Abstract/Probe+; you can check to see if there are related objects you need to include on the form for recompilation. You can add them to your form. This may have been done for you automatically (see page 49).
- **Check for objects changed by other programmers**. If you are using the ***Multiple Checkout*** feature, then it is possible that another Developer has changed an object on your list while you were working on it. See ***Using the Multiple Checkout Feature***, beginning on page 80, in the ***Advanced Topics*** section.
- **Check for related application conflicts**. If you are using TURNOVER® for iSeries v100's related application feature, you need to make sure there are no conflicts before you promote the objects. For more information, see the TURNOVER® for iSeries v100 Supplement entitled ***Managing Multiple Versions*** (**#63**).

After you specify your exit options, press **Enter** to run them. When TURNOVER® for iSeries v100 finishes running the options, it returns you to the ***Work with TURNOVER® for iSeries forms*** panel.

If you decide not to run any exit options at this time, you can press **F12** or **F3** as follows:

- Press **F12** to return to the TURNOVER® for iSeries v100 form ***Maintenance*** panel.

- Press **F3** to return to the ***Work with TURNOVER® for iSeries forms*** panel.

Check Form for Possible Errors

If you do not have authority to run a form or you do not want to submit the form right away, you can pre-edit the form to help you determine if it is set up correctly.

Select any object with option **41=Check form**. This operation can be done interactively or in batch. If you do it in batch, a brief report of error-conditions encountered is produced. If you do this interactively, then you can view messages of any error-conditions.

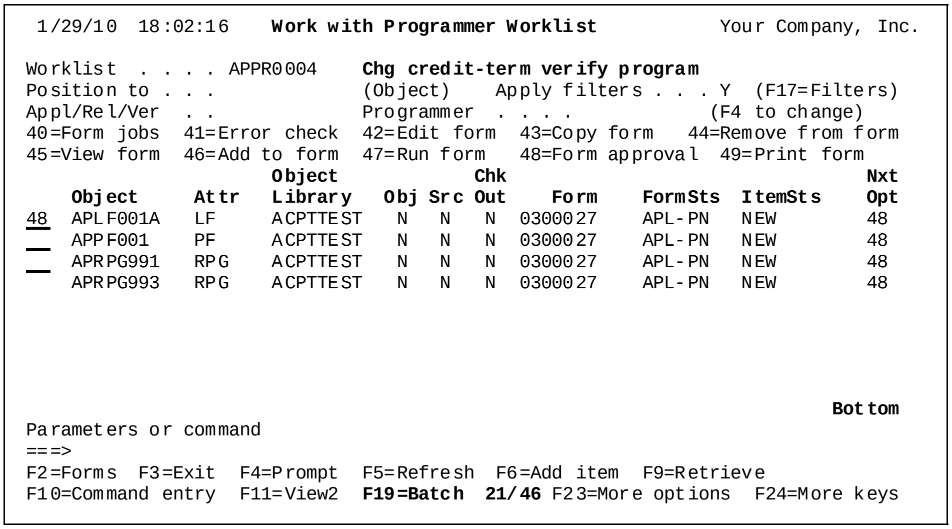
Note: If you are going to submit the form to be run; a pre-run error-check is done at that time; it is not necessary to do it beforehand.

Alternate path: On a command line, type **TURNOVER 6** or select option **6** on the TURNOVER® for iSeries v100 Main Menu to view all TURNOVER® for iSeries v100 forms. You can filter and select your form(s) with option **1** to error-check your form.

What does TURNOVER® for iSeries v100 check during the pre-run error-check? For more information, see ***Chapter 7: Submitting a Form to Run*** in the ***TURNOVER® for iSeries v100 User Guide***.

Get Your Form Approved

If the form status is **APL-PN** (**Approval Pending**), you can send messages to the people on the approval list to prompt them to approve the form. Select any item with ***Nxt Opt*** of **48** and follow the instructions on the panel. Forms with **APL-PN** status must be approved before they are run.



```
 1/29/10  18:02:16    Work with Programmer Worklist          Your Company, Inc.

Worklist  . . . . APPR0004    Chg credit-term verify program
Position to . . .             (Object)    Apply filters . . . Y  (F17=Filters)
Appl/Rel/Ver  . .             Programmer  . . . .           (F4 to change)
40=Form jobs  41=Error check  42=Edit form  43=Copy form   44=Remove from form
45=View form  46=Add to form  47=Run form   48=Form approval  49=Print form
                           Object              Chk                          Nxt
    Object     Attr    Library    Obj Src Out    Form     FormSts  ItemSts    Opt
48  APLF001A   LF      ACPTTEST    N   N   N  0300027    APL-PN   NEW        48
__  APPF001    PF      ACPTTEST    N   N   N  0300027    APL-PN   NEW        48
__  APRPG991   RPG     ACPTTEST    N   N   N  0300027    APL-PN   NEW        48
    APRPG993   RPG     ACPTTEST    N   N   N  0300027    APL-PN   NEW        48






                                                                        Bottom
Parameters or command
===>
F2=Forms  F3=Exit  F4=Prompt  F5=Refresh  F6=Add item  F9=Retrieve
F10=Command entry  F11=View2  F19=Batch  21/46 F23=More options  F24=More keys
```

Messages are sent to each of the people on the ***Approval list***. Each person must sign on, view and approve the form. Approvers must select TURNOVER® for iSeries Main Menu option **6**, press **F10** to view the forms that are awaiting their approval, and then select the form with option **10**. They are able to view the form and view the project task description before approving the form.

For more information about approving forms, see ***Chapter 6: Working with TURNOVER® for iSeries v100 forms*** in the ***TURNOVER® for iSeries v100 User Guide***.

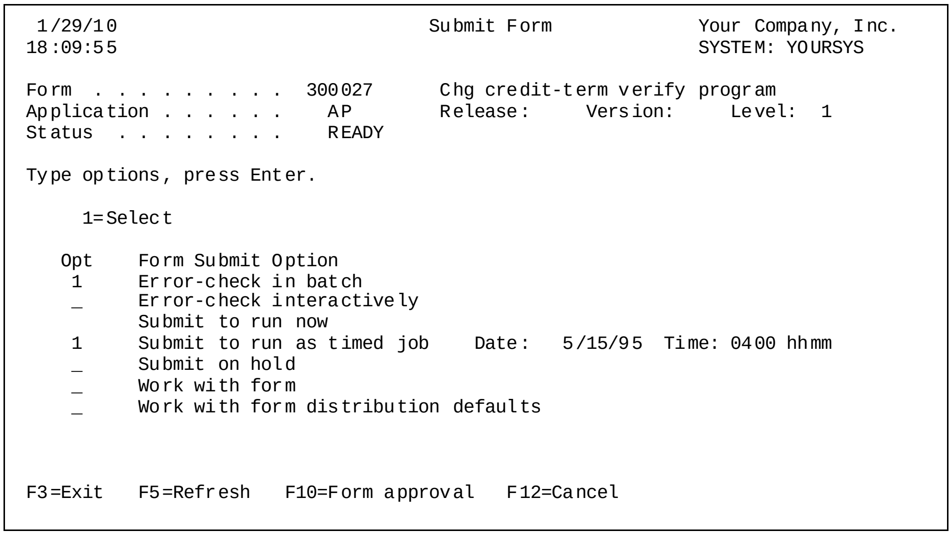
❍ Run Your TURNOVER® for iSeries v100 form

If your TURNOVER® for iSeries v100 Administrator (or someone else) is responsible for running forms, then your job is done when you create the form and notify the people on the approval list or the Administrator that the form is ready to go.

If the form is not approved or if, after it runs, programming errors are discovered during testing, then you are responsible for resolving the errors.

If you are responsible for running your own TURNOVER® for iSeries v100 forms, then you can submit the form to run by doing the following:

- Select the first item on your worklist with option **47**.[*] You then see the following panel:



```
 1/29/10                          Submit Form            Your Company, Inc.
18:09:55                                                 SYSTEM: YOURSYS

Form  . . . . . . . . .  300027      Chg credit-term verify program
Application . . . . . .    AP        Release:     Version:     Level:  1
Status  . . . . . . . .    READY

Type options, press Enter.

     1=Select

   Opt    Form Submit Option
    1     Error-check in batch
    _     Error-check interactively
          Submit to run now
    1     Submit to run as timed job    Date:   5/15/95  Time: 0400 hhmm
    _     Submit on hold
    _     Work with form
    _     Work with form distribution defaults



F3=Exit   F5=Refresh   F10=Form approval   F12=Cancel
```

Note that this panel is the same as the one you would see if you had selected option **7** on the ***Work with forms*** panel.

TURNOVER® for iSeries v100 always does a pre-run error-check before it runs your form. On the ***Form Submit*** panel, you can choose to:

Do the pre-run error-check interactively or in batch
AND
Submit the TURNOVER® for iSeries v100 job to run immediately, or
Submit the TURNOVER® for iSeries v100 job to run later.

---

[*] If you select more than one TURNOVER® for iSeries v100 form to run, you'll see another panel asking you if you want to run the forms as a group. For more about group forms, see ***Chapter 7: Submitting a*** *TURNOVER® for iSeries v100 form* ***to Run*** in the *TURNOVER® for iSeries v100* ***User Guide***.

More about running forms

Error-check ...

The Error-checking default is to do it in batch. You must do the pre-run error-check. Only an Administrator can bypass this error-check step. You can do error checking interactively if you have a short form. Any errors detected are displayed in a window on this panel. Errors and warnings are reported. If you only have warnings and they are acceptable, then you can submit the form. See ***Submitting a TURNOVER® for iSeries v100 Error-Check Job*** in ***Chapter 7*** in the ***TURNOVER® for iSeries v100 User Guide***.

Submit Form ...

Form submission can be done immediately, on hold, or as a timed-job. If you select ***... as timed job*** and press **Enter**, the date and time fields are displayed. The date defaults to today's date.

You must have authority to submit a form. If you do not have authority, you will not be able to select the submit options.

TURNOVER® for iSeries v100 submits a job called **TO*nnnnnnn*G**, where ***nnnnnnn*** = your form number. Depending on how your application is set up, the **TO*nnnnnnn*G** job remains on hold until the scheduler or an operator releases it, or it runs immediately.

If your application has been set up to submit the finalization phase, then another job is submitted towards the end of the promotion process with a job name of **TO*nnnnnnn*F**. (For more information about the promotion process, see page 68.)

Work with form

Select this to view or update the TURNOVER® for iSeries v100 form.

Check for checked-out objects not on form

TURNOVER® for iSeries v100 checks to see if you have missed any objects on the form. If you have used the ***Project task reference*** to reserve or check out objects and, subsequently, forgot to include them on the form, TURNOVER® for iSeries v100 shows them to you. You can add them to the form, if appropriate.

Work with form distribution defaults

If you have authority to maintain distribution defaults and distribution is specified in the application level definition, then you are able to select this option.

When your form runs, it produces two TURNOVER® for iSeries v100 Log Reports and an iSeries job log. A TURNOVER® for iSeries v100 log report sample is illustrated in ***Chapter 10: TURNOVER® for iSeries v100 Reports*** in the ***TURNOVER® for iSeries v100 User Guide***.

What happens when your form runs?

A TURNOVER® for iSeries v100 form runs in several phases.

Pre-run Processing: Phase I

All preliminary processing is done including pre-run exits,[*] pre-run commands, creation of working libraries, and so on.

Promotion Processing: Phase II

Source is copied, objects created or moved, folder objects promoted, data copied, logical files rebuilt (after physical file data is copied to the new file).

If more than one form is being run in a group, then all forms are processed through Phase II, prior to starting Phase III.

Post-run Processing: Phase III

All post-run processing, including file object explodes (if you use ***Explode libraries***), post-run commands, post-run exits, and so on. Once this phase is complete and before the Finalization phase begins, the form status is advanced to **FIN-OK** (**Finalization OK**). Whether finalization is done immediately or later in another job, your users can be allowed to use the objects once the form has reached **FIN-OK** status. If distribution is being done, a distribution job is submitted at this time.

If more than one form is being run in a group, then all forms are processed through Phase III, prior to starting Phase IV.

Finalization: Phase IV

All closing processes, including source archiving, cross-reference rebuilds, deletion of from-source and objects, deletion of working libraries (if ***Archive objects*** is **No**).

TURNOVER® for iSeries v100 cannot only back out your changes if a compile-error is detected during promotion processing, but also undo your changes after the fact, if you decide it is necessary. TURNOVER® for iSeries v100 can also restart a promotion job, if the power fails or if someone inadvertently cancels your promotion job outside of TURNOVER® for iSeries v100's control.

For more information about what TURNOVER® for iSeries v100 is doing during form processing, see the TURNOVER® for iSeries v100 Supplement entitled ***The TURNOVER® for iSeries v100 Change Process*** (**#14**).

---

[*] You can specify pre-run commands to be run during phase I (***PREFORM**) or just before an associated object is promoted (***PRELINE**). Similarly, you can specify post-run commands to be run immediately after the object is promoted (***POSTLINE**) or during phase III (**POSTFORM**).

Testing and Acceptance

If your company uses more than one level, as in our sample AP application, you may need to correct a problem discovered at an intermediate level such as acceptance testing (ACPTTEST in our diagram):

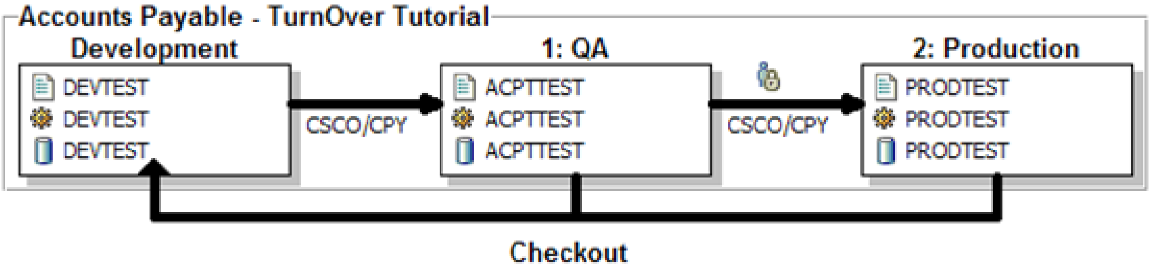


Figure 10: Sample Application Schematic

The normal procedure for this is to check out the object from that level (the level one ACPTTEST library in our sample schematic), correct the error, and then promote the test source and object back to that test level to complete your testing.

As before, you can perform checkout from your ***Worklist*** panel by selecting the object at level one with option **21=Checkout**. If there are only a few objects to fix, you can perform checkout interactively by pressing **F19**; otherwise, you can submit a checkout job to batch by pressing **Enter**.*

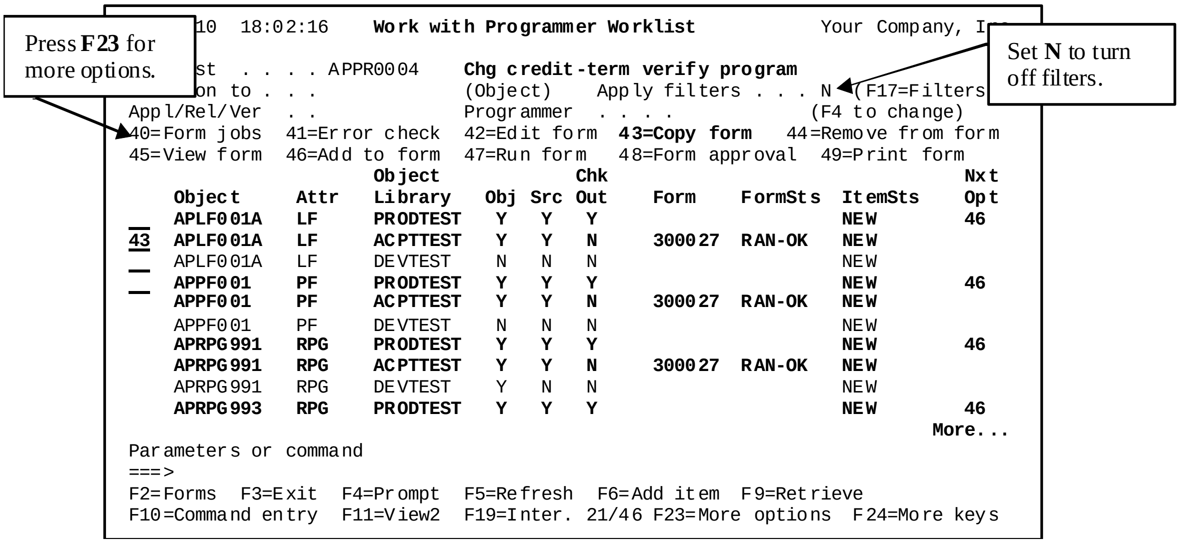
---

* The functions of the **Enter** key and **F19** can be reversed by pressing **F18** and setting a session default.

Promoting to Production Environment

In a multi-level environment, your TURNOVER® for iSeries v100 Administrator is often responsible for scheduling and promoting your changes back into production. However, at your company, you may be required to do so yourself.

To prepare a TURNOVER® for iSeries v100 form to promote to production (or any higher level), you must copy the level one form to create the level two form.

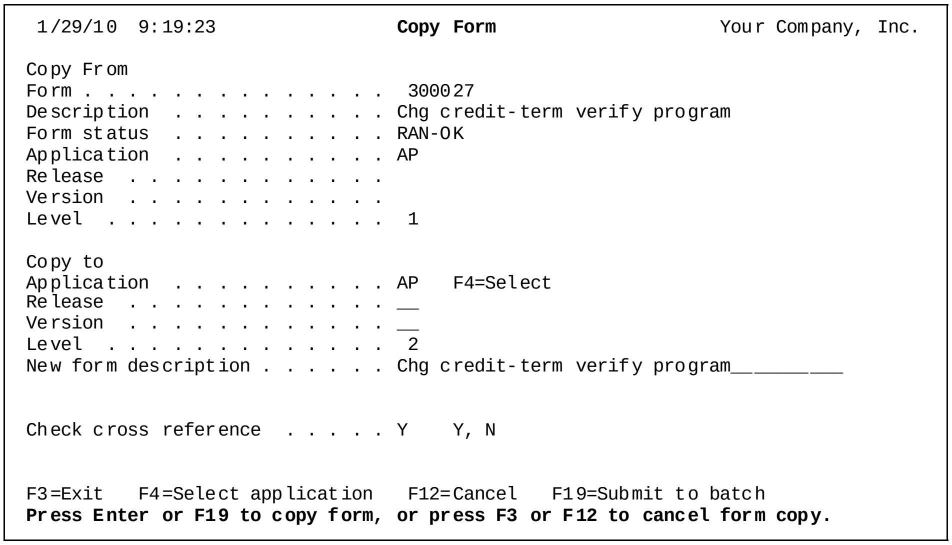


Press **F23** for more options.

Set **N** to turn off filters.

```
    10  18:02:16    Work with Programmer Worklist          Your Company, I
     st  . . . . APPR0004    Chg credit-term verify program
     on to . . .             (Object)    Apply filters . . . N (F17=Filters
Appl/Rel/Ver  . .            Programmer  . . . .          (F4 to change)
40=Form jobs  41=Error check  42=Edit form  43=Copy form  44=Remove from form
45=View form  46=Add to form  47=Run form   48=Form approval  49=Print form
                     Object                Chk                                  Nxt
    Object     Attr  Library   Obj  Src  Out    Form    FormSts   ItemSts       Opt
 _  APLF001A   LF    PRODTEST   Y    Y    Y                       NEW           46
 43 APLF001A   LF    ACPTTEST   Y    Y    N     300027  RAN-OK    NEW
 _  APLF001A   LF    DEVTEST    N    N    N                       NEW
 _  APPF001    PF    PRODTEST   Y    Y    Y                       NEW           46
 _  APPF001    PF    ACPTTEST   Y    Y    N     300027  RAN-OK    NEW
    APPF001    PF    DEVTEST    N    N    N                       NEW
    APRPG991   RPG   PRODTEST   Y    Y    Y                       NEW           46
    APRPG991   RPG   ACPTTEST   Y    Y    N     300027  RAN-OK    NEW
    APRPG991   RPG   DEVTEST    Y    N    N                       NEW
    APRPG993   RPG   PRODTEST   Y    Y    Y                       NEW           46
                                                                             More...
Parameters or command
===>
F2=Forms  F3=Exit  F4=Prompt  F5=Refresh  F6=Add item  F9=Retrieve
F10=Command entry  F11=View2  F19=Inter. 21/46 F23=More options  F24=More keys
```

On your ***Worklist*** panel, select any object with option **43=Copy form**.



```
 1/29/10  9:19:23                 Copy Form                  Your Company, Inc.

Copy From
Form . . . . . . . . . . . . . . .  300027
Description  . . . . . . . . . . . Chg credit-term verify program
Form status  . . . . . . . . . . . RAN-OK
Application  . . . . . . . . . . . AP
Release  . . . . . . . . . . . . .
Version  . . . . . . . . . . . . .
Level  . . . . . . . . . . . . . .  1

Copy to
Application  . . . . . . . . . . . AP   F4=Select
Release  . . . . . . . . . . . . . __
Version  . . . . . . . . . . . . . __
Level  . . . . . . . . . . . . . .  2
New form description . . . . . . . Chg credit-term verify program__________


Check cross reference  . . . . . . Y    Y, N


F3=Exit   F4=Select application   F12=Cancel   F19=Submit to batch
Press Enter or F19 to copy form, or press F3 or F12 to cancel form copy.
```

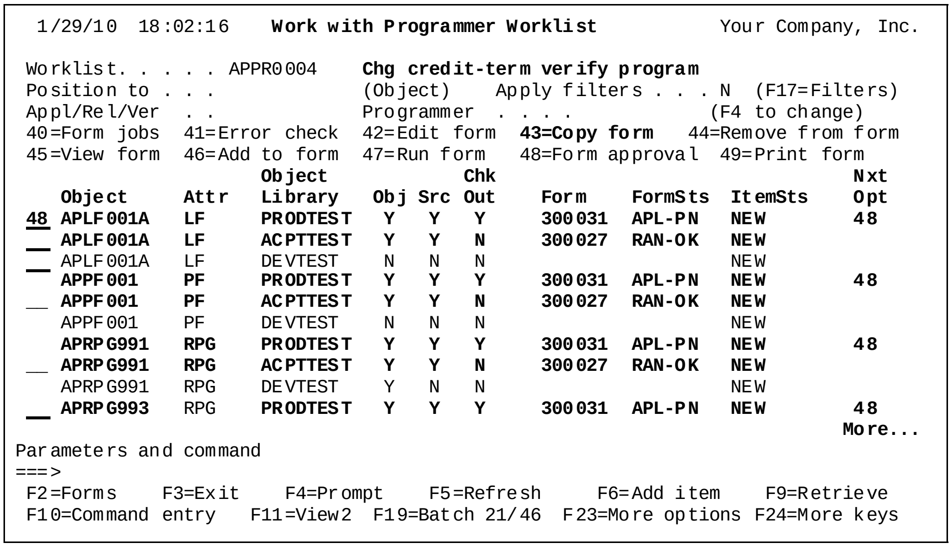
Press **Enter** or **F19=Submit to Batch**. TURNOVER® for iSeries v100 then creates a new form.

Alternate path: You can copy a form by selecting TURNOVER® for iSeries v100 Main Menu option **6**, then select your form with option **3=Copy to new form**.

Depending on the target application definition and the contents of the form you are copying, TURNOVER® for iSeries v100 includes additional parameters to control what is to be copied on the form. These include:

- **Copy commands:** any pre- or post-run commands on the (from) form are copied.
- **Copy form comments:** all comments on the (from) form are copied.
- **Check cross reference:** TURNOVER® for iSeries v100 checks the cross-reference database and adds any related objects not already on the form to it for recompile.
- **Check related applications:** TURNOVER® for iSeries v100 checks for objects on the form that exist in related applications and creates additional forms to recompile these objects.

Once you have created the next level form, ***Nxt Opt*** is either **47**, in which case the form can be submitted to run (if you are authorized) or ***Nxt Opt*** is **48**.



```
  1/29/10  18:02:16    Work with Programmer Worklist          Your Company, Inc.

 Worklist. . . . . APPR0004    Chg credit-term verify program
 Position to . . .             (Object)    Apply filters . . . N  (F17=Filters)
 Appl/Rel/Ver   . .            Programmer  . . . .             (F4 to change)
 40=Form jobs  41=Error check  42=Edit form  43=Copy form   44=Remove from form
 45=View form  46=Add to form  47=Run form   48=Form approval  49=Print form
                    Object             Chk                                Nxt
    Object     Attr  Library   Obj Src Out    Form     FormSts  ItemSts    Opt
 48 APLF001A   LF    PRODTEST   Y   Y   Y     300031   APL-PN   NEW        48
 __ APLF001A   LF    ACPTTEST   Y   Y   N     300027   RAN-OK   NEW
 __ APLF001A   LF    DEVTEST    N   N   N                       NEW
    APPF001    PF    PRODTEST   Y   Y   Y     300031   APL-PN   NEW        48
 __ APPF001    PF    ACPTTEST   Y   Y   N     300027   RAN-OK   NEW
    APPF001    PF    DEVTEST    N   N   N                       NEW
    APRPG991   RPG   PRODTEST   Y   Y   Y     300031   APL-PN   NEW        48
 __ APRPG991   RPG   ACPTTEST   Y   Y   N     300027   RAN-OK   NEW
    APRPG991   RPG   DEVTEST    Y   N   N                       NEW
 __ APRPG993   RPG   PRODTEST   Y   Y   Y     300031   APL-PN   NEW        48
                                                                         More...
Parameters and command
===>
 F2=Forms    F3=Exit    F4=Prompt    F5=Refresh     F6=Add item    F9=Retrieve
 F10=Command entry   F11=View2  F19=Batch 21/46  F23=More options F24=More keys
```

If the form status of your new form is **APL-PN** (**Approval Pending**), then you need to have the form approved first. Select any item on your worklist with ***Nxt Opt*** of **48** and follow the instructions on the ***Form Approval*** panel.

Once the form is approved, it can be submitted to run. (For more information about what happens when a form runs, see page 68.)

Distributing to Production Computers

When your form runs successfully (form status is **FIN-OK** or **RAN-OK**), then, if you are running production on more than one computer, the form is distributed automatically to your production computers. [*]

If the form does not run successfully (form status **xxx-ERR** or **RECOVER**), or if the form runs but warning messages are detected, then the form is not distributed automatically. You may be asked to check the form. Once you are satisfied that everything is OK, your Administrator can manually distribute the form.

Depending on how your application is managed, you may distribute source, objects, or both to remote locations. These can be controlled by system name, by application and by object type within application. For example, you may send source to system 020 but source and objects to system 030. You may send source for logical files, but objects for all other object types related to your application.

Distributions can occur at any application level. For example, you may want to distribute objects to a test computer prior to promoting to production.

Distributions to some remote systems may be via network connections; others by media such as tape.

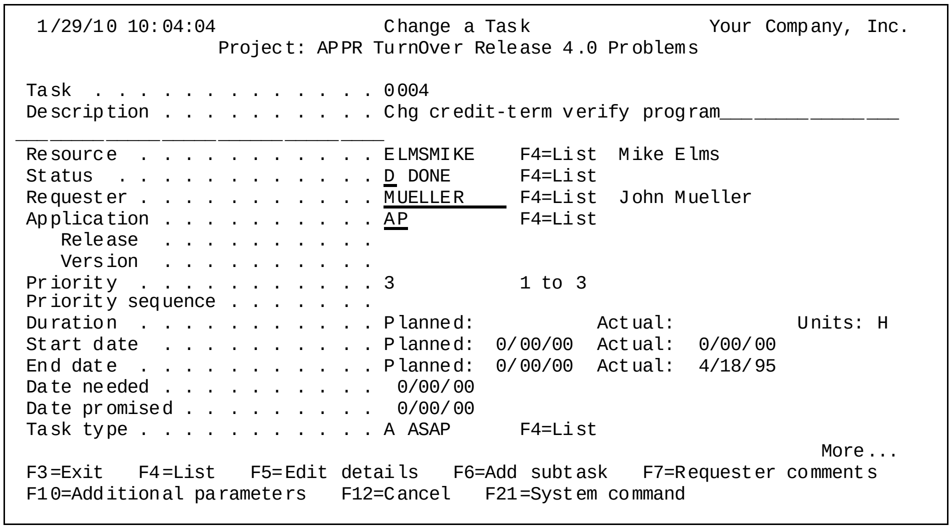
Distribution of changes to remote computers is usually the responsibility of the TURNOVER® for iSeries v100 Administrator. If you need to know more about TURNOVER® for iSeries v100's distribution facilities, see ***Chapter 11***: ***Distributing Changes to Production Computers*** in the ***TURNOVER® for iSeries v100 User Guide***.

---

[*] This depends upon distribution default settings. It may be set to require manual distribution at your company.

Update Your Project Task

If you want to update your project task details or task status, select any item in your worklist with option **25**.[*] You see the following panel:



```
 1/29/10 10:04:04                Change a Task                Your Company, Inc.
                 Project: APPR TurnOver Release 4.0 Problems

Task . . . . . . . . . . . . . . 0004
Description . . . . . . . . . . . Chg credit-term verify program_______________
___________________________________
Resource . . . . . . . . . . . . ELMSMIKE     F4=List  Mike Elms
Status  . . . . . . . . . . . . . D DONE       F4=List
Requester . . . . . . . . . . . . MUELLER      F4=List  John Mueller
Application . . . . . . . . . . . AP           F4=List
   Release  . . . . . . . . . .
   Version  . . . . . . . . . .
Priority  . . . . . . . . . . . . 3            1 to 3
Priority sequence . . . . . . .
Duration  . . . . . . . . . . . . Planned:           Actual:            Units: H
Start date  . . . . . . . . . . . Planned:  0/00/00  Actual:  0/00/00
End date  . . . . . . . . . . . . Planned:  0/00/00  Actual:  4/18/95
Date needed . . . . . . . . . . .  0/00/00
Date promised . . . . . . . . . .  0/00/00
Task type . . . . . . . . . . . . A ASAP       F4=List
                                                                      More...
F3=Exit   F4=List   F5=Edit details   F6=Add subtask   F7=Requester comments
F10=Additional parameters   F12=Cancel   F21=System command
```

Update the task details or status (**F4=List**) or press **F5** to view task details and append information, if appropriate. You can set up TURNOVER® for iSeries v100 to update the task status automatically when you check out source; when you run a TURNOVER® for iSeries v100 form; when you distribute changes and, again, when you receive confirmations from your remote computers. This capability greatly increases the integration between TURNOVER® for iSeries v100's change management and project management subsystems and reduces the need to update the task manually. If you use intermediate test levels, you can set up TURNOVER® for iSeries v100 to update task status to **IN-QA** when it promotes your changes to test, and to **REVISIONS**, if you check out of test.

For more information about how tasks status is updated automatically, see ***Project Defaults*** in ***Chapter 1: Working with Application Definitions*** and ***Chapter 9: Working with Projects and Tasks*** in the ***TURNOVER® for iSeries v100 User Guide***.

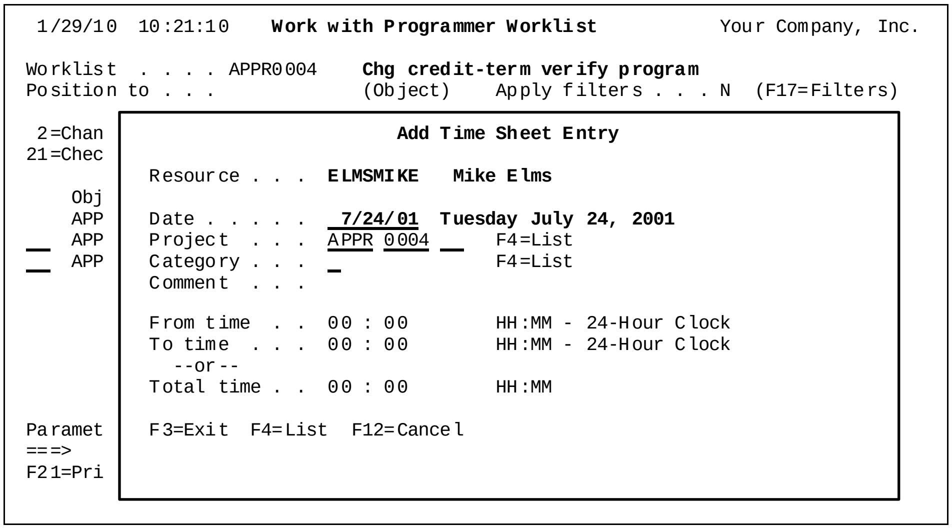
For more information about changing tasks, refer to ***Chapter 9*** in the ***TURNOVER® for iSeries v100 User Guide***.

---

[*] Or return to the ***Work with Tasks*** panel and type **2** next to your task.

Enter Task Time from Your Worklist

If you account for your time, you can record and report your time in TURNOVER® for iSeries v100 Projects. To record your time, press **F22** on your worklist. You see the following panel:



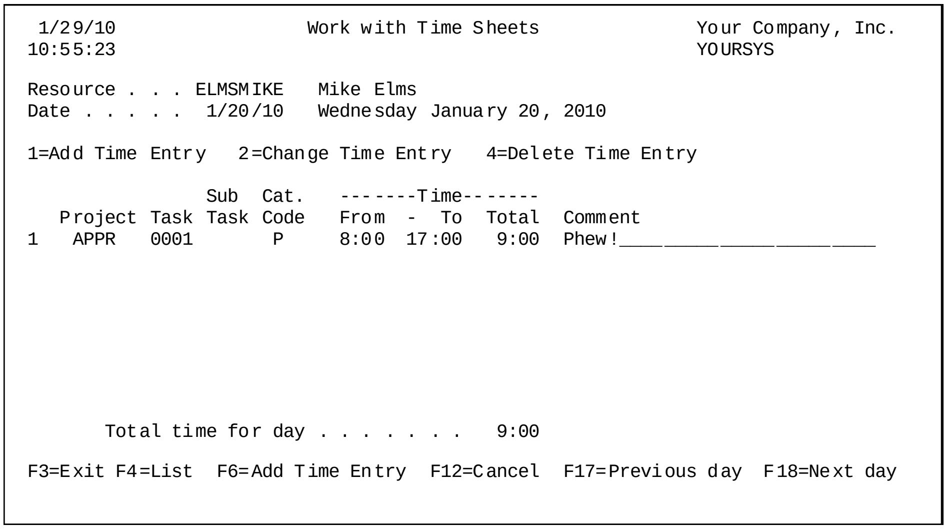
```
 1/29/10  10:21:10    Work with Programmer Worklist          Your Company, Inc.

Worklist  . . . . APPR0004    Chg credit-term verify program
Position to . . .             (Object)    Apply filters . . . N  (F17=Filters)

 2=Chan                           Add Time Sheet Entry
21=Chec
           Resource . . .  ELMSMIKE   Mike Elms
    Obj
    APP    Date . . . . .   7/24/01  Tuesday July 24, 2001
__  APP    Project  . . .  APPR 0004 __    F4=List
__  APP    Category . . .  _               F4=List
           Comment  . . .

           From time  . .  00 : 00         HH:MM - 24-Hour Clock
           To time  . . .  00 : 00         HH:MM - 24-Hour Clock
             --or--
           Total time . .  00 : 00         HH:MM

Paramet    F3=Exit  F4=List  F12=Cancel
===>
F21=Pri
```

You can position to the ***Project*** field and press **F4** to view the list of project tasks from which to select, if you want to report time for a task other than the one associated with your worklist item.

You can position to the ***Category*** field and press **F4** to view the list of valid code values**.**

Alternatively, you can access your daily timesheet by typing **SOFTTURNE/TIMESHEET** on a command line and pressing **Enter**. You then see a command prompt. Press **Enter** again.

More about entering time



```
 1/29/10                 Work with Time Sheets              Your Company, Inc.
10:55:23                                                    YOURSYS

Resource . . . ELMSMIKE   Mike Elms
Date . . . . .  1/20/10   Wednesday January 20, 2010

1=Add Time Entry   2=Change Time Entry   4=Delete Time Entry

                Sub  Cat.   -------Time-------
   Project Task Task Code   From  -  To  Total  Comment
1   APPR   0001       P     8:00  17:00   9:00  Phew!_______________________







       Total time for day . . . . . . .   9:00

F3=Exit F4=List  F6=Add Time Entry  F12=Cancel  F17=Previous day  F18=Next day
```

This provides you with a view of all of the time you have entered for a particular day. Press **F17** to see previous days, press **F18** to see later days.

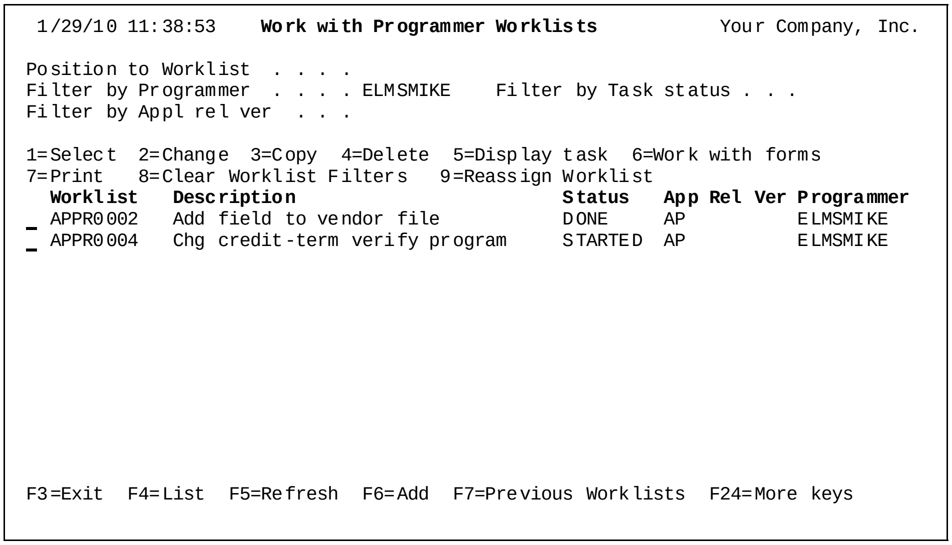
Some companies have set up administrative projects with tasks such as holidays, meetings, sick time, etc. See your TURNOVER® for iSeries v100 Administrator to see if this applies to your company.

You can view the time reported by all resources for any task or project immediately by selecting option **9=View time** on the ***Work with Projects*** panel. Several reporting options are provided on the TURNOVER® for iSeries v100 Reporting Menu (see ***Chapter 10: TURNOVER® for iSeries v100 Reports*** in the ***TURNOVER® for iSeries v100 User Guide***).

ADVANCED TOPICS

More on Programmer Worklist Manager

Frequently, you will want to see a list of Programmer Worklists with which you are working or have worked. Type **STRPWM** on a command line. You then see this panel:



```
 1/29/10 11:38:53    Work with Programmer Worklists          Your Company, Inc.

Position to Worklist  . . . .
Filter by Programmer  . . . . ELMSMIKE    Filter by Task status . . .
Filter by Appl rel ver  . . .

1=Select  2=Change  3=Copy  4=Delete  5=Display task  6=Work with forms
7=Print   8=Clear Worklist Filters   9=Reassign Worklist
  Worklist   Description                       Status   App Rel Ver Programmer
_ APPR0002   Add field to vendor file          DONE     AP          ELMSMIKE
_ APPR0004   Chg credit-term verify program    STARTED  AP          ELMSMIKE










F3=Exit  F4=List  F5=Refresh  F6=Add  F7=Previous Worklists  F24=More keys
```

As you can see, you can have several worklists active at a time; each one containing objects and source related to a different project task. As we explained earlier, you normally create a worklist by going to the ***Working with Tasks*** panel and then selecting your task with option **20**. However, you can also add a worklist from this panel by pressing **F6=Add**.

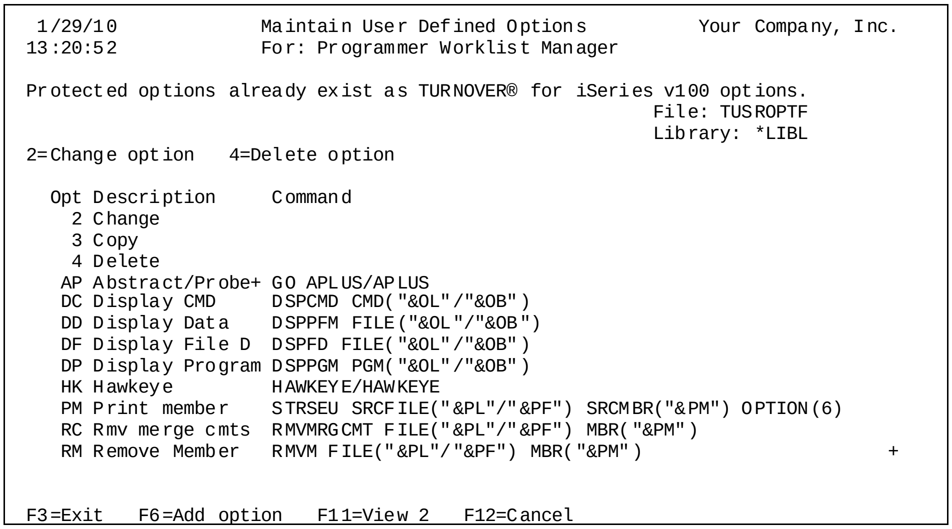
If you know the worklist with which you want to work, you can prompt the **STRPWM** command and specify the worklist name. When TURNOVER® for iSeries v100 is shipped to you, this command is option **12** on the TURNOVER® for iSeries v100 Main Menu.

If you want to work with the last one with which you worked, you can type **STRPWM *PRV**.

As you create more and more worklists, this view is a convenient way of seeing the entire list and reviewing the status of each one.

Setting user-defined PWM options

On the ***Programmer Worklist*** panel, press **F16** to view or change your user options.



```
 1/29/10            Maintain User Defined Options         Your Company, Inc.
13:20:52            For: Programmer Worklist Manager

Protected options already exist as TURNOVER® for iSeries v100 options.
                                                      File: TUSROPTF
                                                      Library: *LIBL
2=Change option   4=Delete option

  Opt Description     Command
    2 Change
    3 Copy
    4 Delete
   AP Abstract/Probe+ GO APLUS/APLUS
   DC Display CMD     DSPCMD CMD("&OL"/"&OB")
   DD Display Data    DSPPFM FILE("&OL"/"&OB")
   DF Display File D  DSPFD FILE("&OL"/"&OB")
   DP Display Program DSPPGM PGM("&OL"/"&OB")
   HK Hawkeye         HAWKEYE/HAWKEYE
   PM Print member    STRSEU SRCFILE("&PL"/"&PF") SRCMBR("&PM") OPTION(6)
   RC Rmv merge cmts  RMVMRGCMT FILE("&PL"/"&PF") MBR("&PM")
   RM Remove Member   RMVM FILE("&PL"/"&PF") MBR("&PM")                 +


F3=Exit   F6=Add option   F11=View 2   F12=Cancel
```

To customize your own set of user options, you can copy the user option file, TUSROPTF, to your own library and then change it.

To set your worklist to point to your own user-option file, press **F18** on the worklist, page down and change the user option file and library names.

You must have authority to the user option file to change the options. The numeric options **1-50** and **99** are reserved by TURNOVER® for iSeries v100. For consistency, all TURNOVER® for iSeries v100 users share this option file.

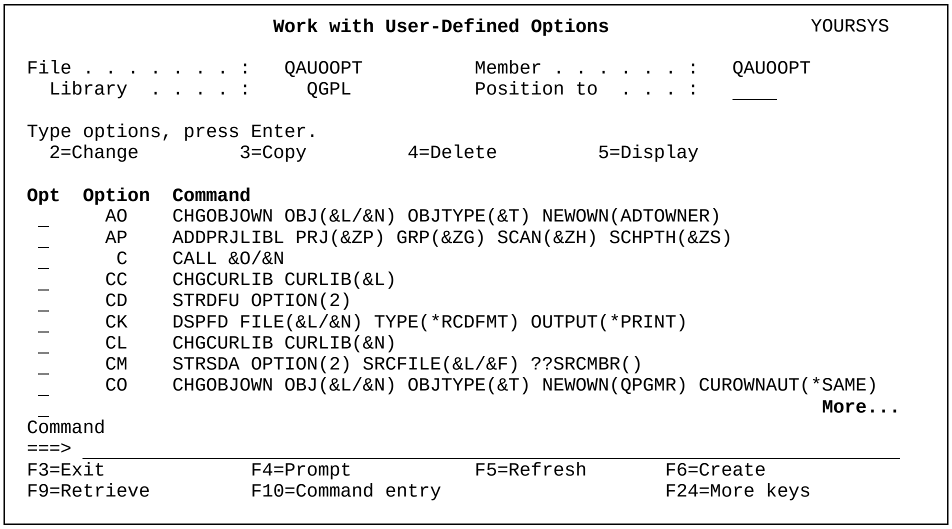
TURNOVER® for iSeries v100 is shipped with some user options you might find useful. These include:

DF	Display file description
DC	Display command
DD	Display data
RC	Remove merge comments: TURNOVER® for iSeries v100's merge command inserts comments in the merged source so you can inspect exactly what it did. After you are satisfied with the result, run the RC option to delete the comments from the source member.

Using the available substitution variables, you can define your own user options.

Setting TURNOVER® for iSeries v100 User-defined Options in PDM

On the PDM menu, select option **9** to maintain user-defined options. Select or type the file and library (as in the panel below) and press **Enter**. You see this panel:



```
                       Work with User-Defined Options                 YOURSYS

File . . . . . . . . :   QAUOOPT          Member . . . . . . . :   QAUOOPT
  Library  . . . . . :     QGPL           Position to  . . . . :   ____

Type options, press Enter.
  2=Change         3=Copy         4=Delete         5=Display

Opt  Option  Command
 _     AO    CHGOBJOWN OBJ(&L/&N) OBJTYPE(&T) NEWOWN(ADTOWNER)
 _     AP    ADDPRJLIBL PRJ(&ZP) GRP(&ZG) SCAN(&ZH) SCHPTH(&ZS)
 _      C    CALL &O/&N
 _     CC    CHGCURLIB CURLIB(&L)
 _     CD    STRDFU OPTION(2)
 _     CK    DSPFD FILE(&L/&N) TYPE(*RCDFMT) OUTPUT(*PRINT)
 _     CL    CHGCURLIB CURLIB(&N)
 _     CM    STRSDA OPTION(2) SRCFILE(&L/&F) ??SRCMBR()
 _     CO    CHGOBJOWN OBJ(&L/&N) OBJTYPE(&T) NEWOWN(QPGMR) CUROWNAUT(*SAME)
 _                                                                   More...
Command
===> _________________________________________________________________________
F3=Exit             F4=Prompt           F5=Refresh       F6=Create
F9=Retrieve         F10=Command entry                    F24=More keys
```

If you use PWM, then you will use PDM less. The option you will use most often is **AI**. All other functions can be performed better from within PWM.

TURNOVER® for iSeries v100 user-defined options that you can copy to your own PDM user option file are:

- **AI**=Add item to your worklist while working on the PDM ***Work with Members*** or ***Work with Objects*** panels. This assumes that you selected **F20=PDM** from your PWM panel.
- **TP=**TURNOVER 9 (cmd); Work with Project panel.
- **T1=**TURNOVER 1 (cmd); View or Change Application Defaults.
- **T4=**TURNOVER 4 (cmd); Work with Object History.
- **T5=**TURNOVER 5 (cmd); TURNOVER® for iSeries v100 Checkout Menu.
- **T6**=TURNOVER 6 (cmd); Work with TURNOVER® for iSeries v100 Forms.
- **VC**=DSPCHKOUT (cmd); Display or change checked out objects and source.

If you copy these to your own PDM option file, you can change the option code, if you need to.

Emergency Changes in TURNOVER® for iSeries v100

It is not necessary or desirable to go outside of TURNOVER® for iSeries v100 to make emergency changes to your programs. TURNOVER® for iSeries v100 can process and track emergency changes just as it does your normal changes.

Of the two methods for performing emergency software changes, an emergency change application is the recommended method. However, you can also use the multiple checkout feature. The difference between the two methods is:

- The emergency change application is usually a single-level application that allows you to make a change while someone else is working on an object. Those who are authorized to make emergency changes are usually restricted.

- The multiple checkout feature lets two programmers check out the same object at the same time, without defining a separate application. This might be a viable solution for your company.

Using an Emergency Change Application

TURNOVER® for iSeries v100 allows you to define one or more application definitions as an emergency change application. These allow you to check out TURNOVER® for iSeries v100 source that may be checked out to someone else. This method enables you to make changes and test them in a separate development library prior to returning them to production.

To define an application as an emergency change application, change the ***Emergency*** flag to **Y** on the ***Work with Application Definition*** panel. For more information, see ***Chapter 1: Working with Application Definitions*** in the ***TURNOVER® for iSeries v100 User Guide***.

An application that is defined as an emergency change application is the same as a 'normal' application, with one exception. When you need to make an emergency change using an emergency change application, you are allowed to check out source that has already been checked out to another programmer. In all other respects, works as any other application normally works. With TURNOVER® for iSeries v100's source-compare utility, TURNOVER® for iSeries v100 submits a compare job to compare the original production source with the changed source in the development library. TURNOVER® for iSeries v100 sends special messages to the programmer who currently has source checked out, to the application administrator (of the emergency change application), and to **QSECOFR**.

When you view checked out source, you see a record of source checked out under both the emergency change application and the regular application. The **Emergency change** entry is highlighted to alert you that emergency changes are being processed.

Our recommendations follow.

SoftLanding Recommends

1. We recommend that you create one single-level emergency application definition to correspond with each of your applications. (If all of your applications target the same production library, then you can get by with just one emergency application definition to manage all of your emergency changes.)
2. Set up a special emergency change development library, with the appropriate source files, which are used exclusively to manage emergency changes. This eliminates the risk of overlaying any source that is already checked out.
3. Be sure to set up the source compare defaults (option **11** on the Utility Menu) if you are using a source compare utility other than the one supplied by TURNOVER® for iSeries v100. TURNOVER® for iSeries v100 generates source compare output when the form runs.

Using the Multiple Checkout Feature

The *multiple checkout feature* is another way of setting up your TURNOVER® for iSeries v100 system to allow multiple users to check out the same object.

To set up this feature on your system, select option **8**, then option **5** on the TURNOVER® for iSeries v100 Main Menu. This allows you to set global defaults. On the ***Set Global TURNOVER Defaults (SETGLOBE)*** panel, set the ***Allow group checkout*** parameter to **Y**. This setting enables several changes in TURNOVER® for iSeries v100.

Once you have enabled the ***Allow group checkout*** parameter, the ***Exclusive lock*** parameter appears on the Checkout command prompts. When you check out an object, you must specify whether or not you want to lock it. By setting ***Exclusive lock*** to ***YES**, you prevent other users from checking out the same object. By setting ***Exclusive lock*** to ***NO**, you allow others to check out an object while you are working on it. On other panels, such as ***View Checked Out*** and ***Change Checkout***, you can view and change this parameter.

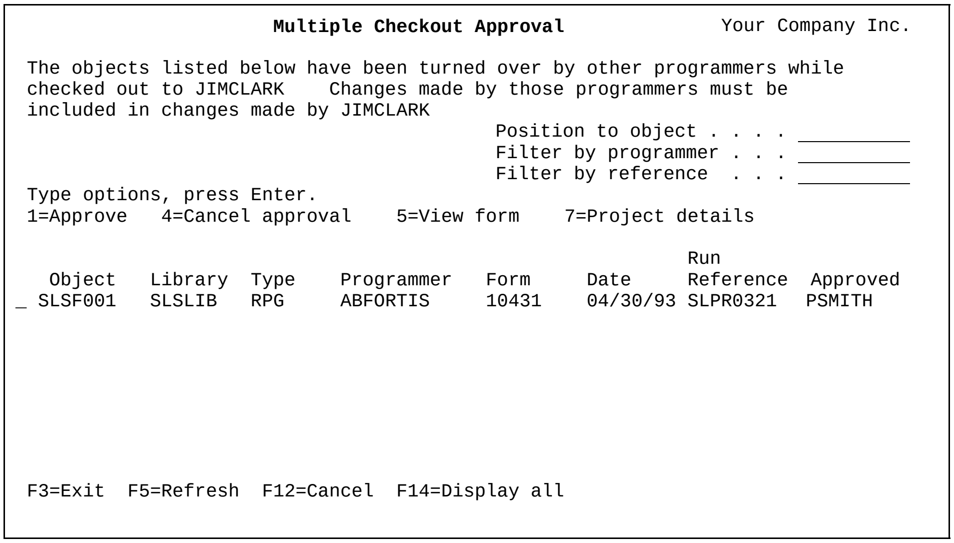
If you attempt to check out something that someone else has checked out, you have a chance to confirm that you still want to check out the object. If you do, then all programmer(s) who have it checked out receive a message informing them that you have checked it out. When you promote an object, if any other programmers have promoted the same object <u>while</u> you had it checked out, you see a panel showing you all of the objects on your form that have been changed while you were working on it, along with who changed them and when. Before you can run your form, you must indicate that you have merged any changes the other programmer(s) made into your version (see the panel on the next page).

The system retains the fact that the programmer confirmed that s/he has reconciled the changes in this way. If you want a "Higher-authority" to confirm that all changes have been made, then attach an approval list to your applications and ensure that the person(s) responsible for approving and/or running the form confirms that the changes have been made.

Resolving Concurrent Changes

If concurrent changes result from either emergency change method (emergency change application or multiple checkout feature), you can resolve them as described below.

At any time, you can run a command called **CHKCHGOBJ** (**Check Changed Objects**) to view any objects you have checked out now that were changed concurrently by another programmer. When you type **CHKCHGOBJ** on a command line and press **Enter**, you see this panel:



```
                       Multiple Checkout Approval              Your Company Inc.

 The objects listed below have been turned over by other programmers while
 checked out to JIMCLARK    Changes made by those programmers must be
 included in changes made by JIMCLARK
                                           Position to object . . . . __________
                                           Filter by programmer . . . __________
                                           Filter by reference  . . . __________
 Type options, press Enter.
 1=Approve   4=Cancel approval    5=View form    7=Project details

                                                            Run
   Object   Library  Type    Programmer   Form     Date     Reference  Approved
_ SLSF001   SLSLIB   RPG     ABFORTIS     10431    04/30/93 SLPR0321   PSMITH







 F3=Exit  F5=Refresh  F12=Cancel  F14=Display all
```

By selecting option **1=Approve**, you confirm that the changes made by the other programmer have been made to your own version of the object.

This command is run automatically from the ***Work with Programmer Worklist*** panel whenever you build a form and, if not resolved then, again when you submit the form to run.

A variant of this command is also run when you exit from editing a TURNOVER® for iSeries v100 form and again during the pre-run error-check. When you have the multiple checkout feature enabled, TURNOVER® for iSeries v100 does not run a form that contains objects you have not confirmed.

If you try to promote an object to an intermediate level while another programmer's work is in process (at the same target level), TURNOVER® for iSeries v100 prevents you from doing so. However, you can check out an object from an intermediate level. Keep in mind that the multiple checkout rules apply to any level.

SoftLanding Caution!

Whenever you are not sure whether your version of source matches another version of source, use TURNOVER® for iSeries v100's source compare command, **CMPSRCMBR** or select the ***Compare source*** option on the Programmer Worklist. Assume nothing!

TURNOVER® for iSeries v100 Commands

Commands for Developers

The list that follows contains all of the TURNOVER® for iSeries v100 commands available which you might find useful. (Some commands used internally by TURNOVER® for iSeries v100 are not documented here.) All of these commands are available as options on the Worklist or other TURNOVER® for iSeries v100 panels. See the command help for more information and for a description of specific command parameters. Note that most commands are accessible from TURNOVER® for iSeries v100 menus.

Command	Description	Command	Description
ADDPWLITM	Add Worklist Item Command	DSPCOHST	Display Checkout History
ADDTIMSHT	Add Timesheet Entry	FASTTASK	FASTTASK project entry
CHGPWL	Change Programmer Worklist Command	HELPDESK	Helpdesk: Work with Users
CHGPWLITM	Change Worklist Item	MRGSRCMBR	Merge Source Members
TADJPWLITM	Adjust Worklist Item	MOVPWLITM	Move Worklist Item
CHKCHGOBJ	Check Changed Objects	STRPWM	Start Programmer Worklist Manager
CHKINMBR	Check-in by Member command	TIMESHEET	Enter Timesheet
CHKINOBJ	Check-in objects command	TCMPMSGF	TURNOVER® for iSeries v100 compare message file
CHKOUTDFU	Checkout S/36 DFU	TDSPOBJD	TURNOVER® for iSeries v100's Display Object Description command
CHKOUTDOC	Checkout Document command	TOPACK	Archive Pack Source Member
CHKOUTMEN	Checkout S/36 Menu	TOPACKF	Archive Pack Source File
CMPSRCMBR	Compare Source Member	TOUNPACK	Archive Unpack Source Member
CPYPWL	Copy Programmer Worklist	TURNOVER	Main Menu Command
CPYPWLITM	Copy Worklist Item	VIEWDFTS	View Application Defaults Command
CPYTSTDTA	Copy Test Data as Post-Run Command	VIEWGLOBE	View Global Defaults
CRTPWL	Create Worklist Command	VIEWXREF	View Cross-reference
DISTDATA	Distribute data to remote systems	WORKTASK	Helpdesk: For reviewing incoming problems and request
DLTPWL	Delete Programmer Worklist Command	WRKHLPTREE	Wisedesk: Work with help tree (search)
DLTPWLITM	Delete Worklist Item		
DSPCHKOUT	Display Checked Out		

Command	Description	Command	Description
	Members Command		

Report Commands

All TURNOVER® for iSeries v100 Reports are initiated through commands that provide you with the ability to select exactly what information you need. See the command help text for more information and for a description of specific command parameters. You can find sample reports in ***Chapter 10: TURNOVER® for iSeries v100 Reports*** of the ***TURNOVER® for iSeries v100 User Guide***.

LISTDFTS	List System Default Values
LISTFORMS	List Forms
PRJCSTRPT	Project Cost Report
PRJDFNRPT	Project Definition Report
PRJPTYRPT	Project Report by Resource and Priority
PRJRSRTIM	Project Resource Time Report
PRJTSTRPT	Project Task Report
PRTTURFORM	Print TURNOVER® for iSeries v100 Form
REFACTRPT	Project Reference Report
RPTFORMDST	Form Distribution Report
RPTOBJDST	Object Distribution Report
RPTOBJHST	Object History Report
RPTPGMRHST	Project Programmer History Report
RPTPGMRTIM	Project Programming Time Report
RPTSRCUSE	Project Source Checkout Report
TIMERPT	Project Time-sheet Report

Setup and Administrative Commands

These commands are generally not used by Developers; however, it may be helpful to know they are available.

AUDITADJ	Audit Adjustment command
AUDITRPT	Audit Report command
CHGTODDMF	Change Distribution DDM files
CRTAPPDFN	Create Application Definition
CRTDEMOENV	Create Demo Environment
CRTFTFIL	Create Project DDM Files
CUSTFKEY	Set Custom Fkey (F15) on PWM panel
DSPRELTO	Display Current Release Level Command
DSTFOR	Distribute Forms
DUPTSTOBJ	Reset DEVTEST Command
DUPREFOBJ	Duplicate Reference Object
LISTAUTH	List Authorized Users
LISTPGMRS	List Programmer Profiles
PRGFOR	Purge command
RCVFOR	Receive Forms
RESETFOR	Reset Form Status
RGZTOFILES	Reorganize Files
RNMAPP	Rename Application Definition
RSTARCSRC	Restore Archived Source command
SAVARCO	Save Archived Objects Command
SAVARCS	Off-line Archiving Command
SAVARSBM	Submit Archived Object Save
SETGLOBE	Set Global Defaults
SETAUTCD	Set (Product) Authorization Code
TWRKCMSCH	Work with Change Management Schemes
VIEWPTFHST	View PTF History File
WORKTODATA	Work with *DATA type objects
WRKTOAPP	Work with TURNOVER® for iSeries v100 Applications
WRKDSTSYS	Work with Distribution Systems
WRKTOENV	Work with TURNOVER® for iSeries v100 Environment file
WRKTOTYP	Work with TURNOVER® for iSeries v100 Type codes

APIs, Exits, Overrides

Application Program Interfaces (APIs)

All TURNOVER® for iSeries v100 Application Program Interfaces (APIs) are in the form of commands. These can be included in programs to do a specific thing such as to create a form; add lines to a form, and so on. There are also interactive versions of some of these commands that experienced Developers find useful as shortcuts that can be run from a Worklist or PDM command line. The commands of greatest interest to the Developer are highlighted. TURNOVER® for iSeries v100 uses many of these command objects internally to perform the associated functions. Here is a list of the API commands that are available:

ADDCMD	Add a Command API
ADDCMDI	Add a Command API (Interactive)
ADDFORM	Add TURNOVER® for iSeries v100 Form API
ADDFORMI	Add TURNOVER® for iSeries v100 Form API (Interactive)
ADDLINE	Add a Line API
ADDLINEI	Add a Line API (Interactive)
ADDLINDLO	Add a DLO line to a TURNOVER® for iSeries v100 form
ADDLINDLOI	Add a DLO line to a TURNOVER® for iSeries v100 form (interactive version)
APVFORM	Approve Form Command
CHECKIN	Manual Check-in API Command
CHECKOUT	Checkout API Command
CHKOUTDLO	Checkout DLO objects
CPYFORM	Copy Form Command
CPYFORMI	Copy Form Command - Interactive
CRTRCVFRM	Create Recovery Form
CRTRCVFRMI	Create Recovery Form (Interactive)
DSTFORM	Distribute Form API
DSTFORMI	Distribute Form API (Interactive)
PRMDISFORM	Promote Distributed Form(s)
PRMFORM	Promote Form
RCVFORM	TURNOVER® for iSeries v100 Receive Form Command
RUNFORM	TURNOVER® for iSeries v100 Run Form API
SEQFORM	TURNOVER® for iSeries v100 Re-sequence Form API

Exit programs

In addition to APIs, TURNOVER® for iSeries v100 contains many program exit points. For example, you could write a program that runs just before your TURNOVER® for iSeries v100 form starts to run or during the final stages of the TURNOVER® for iSeries v100 run. For a list of TURNOVER® for iSeries v100's program exit points available, select Main Menu option **8**, then option **7**. For detailed information about the program exit points, see the exits' online help and the TURNOVER® for iSeries v100 Supplement entitled ***TURNOVER® for iSeries v100 Exits and APIs*** (**#30**).

Overrides

There are two ways to override normal processing that occurs when a TURNOVER® for iSeries v100 form promotion job runs:

1. Code a pre- or post-run command
2. Override the create commands used for any object you are promoting.

Pre- and post-run commands

Pre-run commands can be run either during TURNOVER® for iSeries v100 form initiation in Phase I or just before the object with which the command is associated is promoted.

Post-run commands can be run either immediately after the objects with which the command is associated is promoted or during the third phase of promotion processing, after all objects are promoted (but before the finalization phase).

There are two ways to enter a pre/post-run command: by using option **38** on the ***Programmer Worklist*** or by editing the form as described below.

To enter a pre-run command on the form, edit the TURNOVER® for iSeries v100 form. If you want to associate the command with a particular object on the form, select that object with option **11=PreRunCmd** or option **12=PostRunCmd**. For example, you may need to override a database file (OVRDBF) to successfully compile a program. Any time you promote that object in the future, TURNOVER® for iSeries v100 prompts you to include the same pre-run or post-run command on the form.

You can condition a pre-run command so that, if the command fails, the job stops running (**C**) or continues to run (**G**). If a post-run command fails, TURNOVER® for iSeries v100 does not roll back the form. When specified for post-run commands, C means do not run subsequent commands, G means continue with subsequent commands.

Special Note: If you use the ***Explode data library*** feature, you can substitute any library name parameter on a Post-run command with "**&ALLTGT**"; the all target library parameter. Then when the post-run command is run, TURNOVER® for iSeries v100 substitutes your ***Target Data Object library*** name(s) for the "**&ALLTGT**" parameter value and runs the post-run command repeatedly for each library in your explode data library list.

For more information about pre- and post-run commands, see ***Chapter 6: Working with TURNOVER® for iSeries v100 forms*** in the ***TURNOVER® for iSeries v100 User Guide***. For more information about explode data libraries, see ***Chapter 10: TURNOVER® for iSeries v100 Reports*** in the ***TURNOVER® for iSeries v100 User Guide***.

UNICOM Systems, Inc. Caution!

You may not be authorized to run certain commands. If you use a pre- or post-run command, see your TURNOVER® for iSeries v100 Administrator to be sure the command you plan to use will run.

Overriding Create Commands

You can override the create command TURNOVER® for iSeries v100 uses when it creates an object by viewing the TURNOVER® for iSeries form ***Maintenance*** panel and selecting that object with Option **10=CreateParms**. TURNOVER® for iSeries v100 prompts the command and you can then change whatever you need to change. For example, you may need to change the file size parameter for a new physical file.

What command is displayed? TURNOVER® for iSeries v100 maintains its own object type attribute file and create commands for each object type (where appropriate). Your Administrator can change command defaults used by TURNOVER® for iSeries v100 without affecting the OS/400 command defaults. You can view these commands and command defaults by going to TURNOVER® for iSeries v100 Main Menu option **8** and then select option **4**.

When you override a create command, TURNOVER® for iSeries v100 remembers the override and displays it the next time that object is compiled in development using worklist option **36**, or is added to a form.

Project User-defined Field Exit Programs

Within TURNOVER® for iSeries v100 Projects, you can define an unlimited number of user-defined fields. You can assign up to ten of these fields to any project. The fields appear on ***Add*** and ***Change a Task*** and ***Task filter*** panels. You can define a list of valid values for each user-defined field. You can condition the contents of a field on the contents of another field by specifying a parent/child relationship between the two fields when defining the fields and their valid values. TURNOVER® for iSeries v100 displays the list both during data entry, when you position your cursor in the field and press **F4,** and again when verifying the value entered. Alternately, you can define your own exit programs to be used to display a valid list of field values or to verify the values entered into a field.

For more information, see ***Chapter 9: Working with Projects and Tasks*** in the ***TURNOVER® for iSeries v100 User Guide***.

Cross Referencing

TURNOVER® for iSeries v100 utilizes its own internal cross-reference utility, or you can choose to use Hawkeye Information System's Pathfinder™ or ASC's Abstract/Probe+™. In fact, you can use TURNOVER® for iSeries v100 and either Pathfinder or Abstract/Probe at the same time, if you want to. See your TURNOVER® for iSeries v100 Administrator if you are not sure which one you are using.

Note: If you use Pathfinder or Abstract/Probe+, see the TURNOVER® for iSeries v100 Supplements entitled ***Using Hawkeye's Pathfinder for Cross Referencing*** (**#1**) and ***Using Abstract/Probe for Cross Referencing*** (**#2**) for complete instructions about how to set up and use TURNOVER® for iSeries v100 with these products.

Whichever one you choose to use, they all interface with TURNOVER® for iSeries v100. There are several points of interface:

- When you set up your application, you can select an option to build a cross-reference file. You only need to do this once. You also set your application defaults to indicate you are using Pathfinder, Abstract/Probe+ or TURNOVER® for iSeries v100's cross-reference utility. This can vary by application and level; that is, you could use Pathfinder for one application, TURNOVER® for iSeries v100's cross-reference for another application and Abstract/Probe+ for another.

- During analysis you can view the cross-reference information for any object or member and add them to your worklist[*] or to your TURNOVER® for iSeries v100 form. Optionally, you can check out related objects at the same time you add them to your worklist.

- When you build a TURNOVER® for iSeries v100 form to promote your objects, TURNOVER® for iSeries v100 shows you related objects that are not already on the TURNOVER® for iSeries v100 form. You can add these related objects to the TURNOVER® for iSeries v100 form so that they are recompiled. This can be done automatically, if you prefer. Even if a file is used by an object in a different application, TURNOVER® for iSeries v100 shows you the object and allows you to build a form to recreate the related object(s).

- When the TURNOVER® for iSeries v100 form runs, TURNOVER® for iSeries v100 updates its cross-reference database so you never have to rebuild it. For Pathfinder and Abstract/Probe+, you can choose to refresh your cross-reference database dynamically; or as a scheduled event, as you do now. If you use Pathfinder or Abstract/Probe+, you need to gauge the impact on system performance before you decide to do a rebuild every time a form runs.

- Synchronizer, the vendor software merge system, also uses the cross-referencing database. For more information, see the ***TURNOVER® for iSeries v100 Synchronizer User Guide***.

If you have a multi-level environment and promote a file object to test (or any intermediate level), TURNOVER® for iSeries v100 prompts you to rebuild dependent objects in test from production

---

[*] For information about how TURNOVER® for iSeries v100's cross-reference utility integrates with the Programmer Worklist, see page 37.

source available at a higher level. In this way, you can be sure you have not adversely affected related objects, even if you have not actually changed them.

In addition to the preceding points of interface, if you use Pathfinder or Abstract/Probe+, you can set up user-defined options in each of these products to allow you to add objects to your Programmer worklist or check out any objects you need to work on as you view either product's cross-reference database. Also, you can access *where used* information while viewing the ***Work with Object History*** panel.

What are the advantages and disadvantages of using TURNOVER® for iSeries v100's cross-reference instead of other products?

TURNOVER® for iSeries v100's cross-reference is tightly integrated with the Programmer worklist. Cross-reference rebuilds are done every time a TURNOVER® for iSeries v100 form runs. If you choose to have TURNOVER® for iSeries v100 maintain your cross-reference in this way, then the cross-reference database will always be up-to-date.

On the other hand, there are certain relationships that Pathfinder and Abstract/Probe+ will identify which TURNOVER® for iSeries v100 will not. For example, if you use variable names in your program calls or if you need field-level cross-referencing, you should consider these products. Both are mature products that provide a rich array of features that are well worth the investment.

Using TURNOVER® for iSeries v100's Source Compare Utility

There are several points in time during the analysis and change process when it makes sense to run a source compare program. TURNOVER® for iSeries v100 allows you to use its own utility or any other source compare program easily, by telling it the source compare command. (For more information about setup, see ***Chapter 8: Utility Menu*** in the ***TURNOVER® for iSeries v100 User Guide***.) Once it is set up, it can be used in the following ways:

1. As a user-defined option (SC) on the TURNOVER® for iSeries v100 form ***Maintenance*** panel. TURNOVER® for iSeries v100 compares the From and Target Source Member for the lines you select and prints the source compare report of differences (of what changed).
2. As a user-defined option (SC) on the ***Work with TURNOVER® for iSeries v100 forms*** panel. TURNOVER® for iSeries v100 submits a batch job to produce source compare reports for all objects on the TURNOVER® for iSeries v100 form.
3. As option **12** on the ***Work with Object History*** panel. TURNOVER® for iSeries v100 prints a source compare report for any two source members you select.
4. As option **12** on the ***Work with Programmer Worklist*** panel. TURNOVER® for iSeries v100 prints or displays the source compare report for the members you select.
5. Synchronizer also uses the source compare and source merge utility in several places.
6. The source compare utility command, **CMPSRCMBR** in library **SOFTTURNE**, can be run from any command line.

Using TURNOVER® for iSeries v100's Source Merge Utility

TURNOVER® for iSeries v100 also provides a powerful source merge utility. You can run this by typing the command **MRGSRCMBR** on a command line, press **F4** and filling in the parameter values.

For more information about the source compare and merge utilities, see the ***TURNOVER® for iSeries v100 Synchronizer User Guide***.

Managing Vendor Software Changes

The ability to manage objects and check out source in a vendor environment is especially useful if you are modifying software and want to preserve the vendor's base version(s) intact. This approach can also be used to manage the development of a new release of your own software.

TURNOVER® for iSeries v100 allows you to specify one or more application levels (three levels are defined in the diagram below) to define the base library(s) and source file names for your vendor's software.

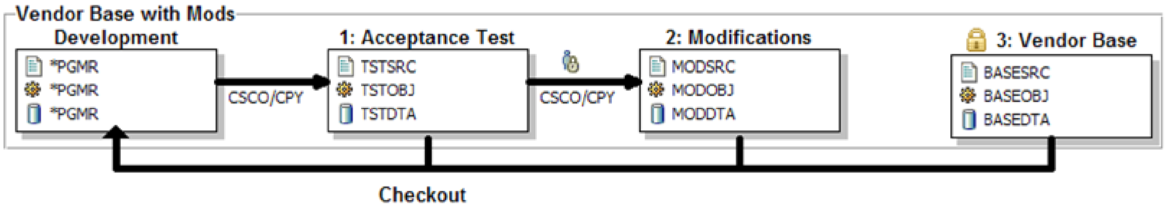


Figure 11: Sample Application for Vendor Software

In the example, this level is ***permanently locked*** (controlled by a field on the ***Application Definition*** entry). Most likely, you will never turn objects over to that level.*

When you check out source for an object, TURNOVER® for iSeries v100 looks for the object and source by referring to the highest-level application definition that is not permanently locked (**Mod Src** library in diagram below). If it does not find the source there (for example, if the base version had never been modified before), TURNOVER® for iSeries v100 checks for the source in the locked (base) level (level 3). If the source is found, it is copied to your development library. TURNOVER® for iSeries v100 creates a checkout record for the source member as if it had been found in the modification source file. Actually, it reserves the name at that level. When you create a form to promote the object, the object is added to the modification level library(s).

If you have more than one permanently locked level such as a fix library (level 3) and a base library (level 4), TURNOVER® for iSeries v100 searches the fix library and then the base library:

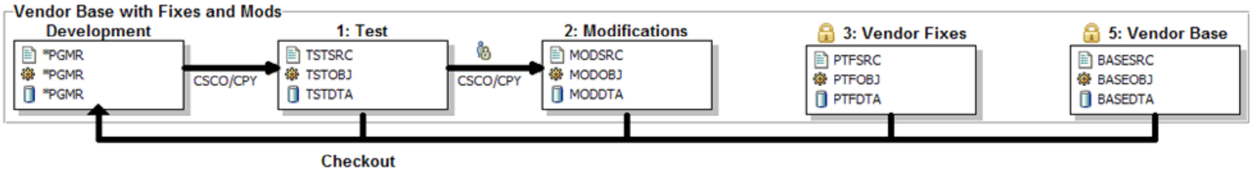


Figure 12: Sample Application for Vendor Software and Fixes

Note also that the Base level does not have to contain software from a vendor, but may be the previous release of an application you have developed. The modification level may represent work in progress for a future release. For more information about defining permanently locked levels, see

---

* Except when you update the base with a new release from the vendor; but by using a different application definition for that purpose.

Chapter 1: Working with Application Definitions in the ***TURNOVER® for iSeries v100 User Guide***.

Application Versioning

TURNOVER® for iSeries v100 provides a method of related application definitions so that you can track and maintain different versions of the same program in different version libraries. For example, you may have different versions of a program for different locations or companies that you support, or for different releases of your software, or both. For a description of this feature, see the TURNOVER® for iSeries v100 Supplement entitled ***Managing Multiple Versions*** (**#63**).

Object Versioning

TURNOVER® for iSeries v100 maintains internal version numbers for all objects it promotes. Optionally, TURNOVER® for iSeries v100 can stamp the object description with the version number and other pertinent control information. TURNOVER® for iSeries v100 provides its own **Display Object Description** (**TDSPOBJD**) command, which formats version stamping information for you. For a description of this feature, see the TURNOVER® for iSeries v100 Supplement entitled ***Managing Multiple Versions*** (**#63**).

Message IDs, Message Files, Menus, and Other Object Types

As a Developer, it is important to know how message IDs, non-source object types, menus, and source-only types are handled by TURNOVER® for iSeries v100.

Message IDs

You can add individual message IDs to your worklist and then check them out, change them, and promote them when you are through. If a message file does not exist in your development library, TURNOVER® for iSeries v100 creates one for you. If a message file does exist in development, TURNOVER® for iSeries v100 adds the message ID to the message file, but it does not overlay a message if it already exist in your development message file.

Option **32=Edit** on the worklist uses the **WRKMSGF** command rather than SEU or SDA.

For more information about checking out and promoting individual message IDs, see the TURNOVER® for iSeries v100 Supplement entitled ***Handling Message IDs in TURNOVER® for iSeries v100*** (**#61**).

Message files

When message files are promoted, they are always merged using the **MRGMSGF** command. If the message file is new, it is moved or duplicated into the target library. When you are changing or adding messages to a message file, we recommend that you check out and promote individual messages. However an alternate method is to check out the entire message file. This duplicates the message file from production into your development library. Include new or changed messages in a development message file; then promote the entire message file. When the message file is promoted, it is merged into your production file.

If you need to delete message IDs, check out your message file and duplicate the entire file into development. Change it using the **WRKMSGF** command; and delete and add the message file when you promote it so TURNOVER® for iSeries v100 replaces the entire file in production.

To compare two message files, you can use TURNOVER® for iSeries v100's ***Compare Message File*** (**TCMPMSGF**) command.

Menus

TURNOVER® for iSeries v100 enables you to manage iSeries menus easily. If you are reserving a menu name, TURNOVER® for iSeries v100 reserves names for all the necessary object types that make up a menu. If you check out a menu, TURNOVER® for iSeries v100 checks out all of the relevant menu components. For a complete discussion of how menu types are managed, see the TURNOVER® for iSeries v100 Supplement entitled ***Menus, DFUs, and Queries*** (**#58**).

Non-Source object types

Objects that are created directly by a command rather than from source, such as data areas and job queues, are always promoted using method **MO** (**Move Object**) or **CD** (**Create Duplicate**). How does TURNOVER® for iSeries v100 determine whether an object is a non-source type? You can view TURNOVER® for iSeries v100's type file by selecting Main Menu option **8** and then option **4**. Those types that have no commands associated with them, except for ***DATA** and ***SRC** types, are always moved or duplicated.

If, in the application line defaults, you (or your TURNOVER® for iSeries v100 Administrator) set ***Delete test object*** to **Y** (Yes), the method for that object defaults to **MO**. If you set ***Delete test objec****t* to **N** (No), the method for that object defaults to **CD**. However, the method determined by settings in the application type codes defaults overrides the method specified in the line-level defaults.

Source-only object types

Source members such as S/36 OCL, RPG copybook code or documentation text, are referred to as "source only" types; they are promoted but do not create an iSeries object directly. When these are promoted, TURNOVER® for iSeries v100 simply copies the source forward using method **CS** (**Copy Source**). View TURNOVER® for iSeries v100's type file by selecting Main Menu option **8** and then option **4**. Those types designated ***SRC**, such as **CPYRPG**, are considered source-only types.

*DATA object types

*DATA ("star" data) object types are designed to manage the contents of files rather than the file itself. For example, you may have an application that uses control files that manage certain programming functions. Frequently, such control files are managed like other objects you need to change, except the object is data. The data changes, not the format of the file in which the data is stored. For more information about ***DATA** objects, see the TURNOVER® for iSeries v100 Supplement entitled ***Working with *DATA Object Types*** (**#27**).

UNICOM Systems, Inc. Note

In TURNOVER® for iSeries v100, the support for managing data at the record level was significantly expanded over that provided by the ***DATA** object type. As of this release, you can use ***change management schemes*** to selectively override, for a user-defined object type, almost any change management method that you would execute for an object. You can use the sample change management schemes that came with this release as examples, or create your own schemes. For detailed information, see the TURNOVER® for iSeries v100 Supplement entitled ***Managing User-Defined Object Types*** (**#59**).

Managing ILE Programs

You can create and link (bind) Integrated Language Environment (ILE) modules into one or more programs or service programs. The advantage of this is that program calls are significantly more efficient and the bound program more secure. (You can only run a program, not a module. Therefore, you only have to secure the program.) TURNOVER® for iSeries v100 provides you with support for managing ILE modules and programs. All ILE language compilers and creation methods are supported. TURNOVER® for iSeries v100 is shipped with these TURNOVER® for iSeries v100 Type definitions to support all of the various ILE entities:

RPGMOD	RPG Module
CBLMOD	CBL Module
CMOD	C Module
CLMOD	CL Module
RPGPGM[*]	RPG ILE Program
CBLPGM	CBL ILE Program
CPGM	C ILE Program
CLPGM	CL ILE Program
RPGSRV	RPG Service Program
CBLSRV	CBL Service Program
CSRV	C Service Program
CLSRV	CL Service Program
BND	Bind (source-only type)
BNDDIR	Binding Directory (object-only type)

For more information about managing ILE programs, see the TURNOVER® for iSeries v100 Supplement #60, ***Managing ILE Programs***.

---

[*] Although we could have made just one ILE Create Program type and one Create Service Program type, we have provided one type for each language. If you mix language modules in one program, you could use any of these types.

Creating ILE modules

If you intend to create and maintain ILE ***MODULE** object types, you need to use the appropriate type code, shipped with TURNOVER® for iSeries v100, for handling these object types. Generally, you want to use this method when a module object needs to be "bound" into several programs or service programs. The TURNOVER® for iSeries v100 type code for creating modules uses the **CRT*xxx*MOD** command. We recommend creating a separate library in your application definition for storing your ***MODULE** objects, but you can also use your existing object libraries.

You can check out and promote ***MODULE** object types as you would any other standard iSeries type (such as "non-ILE" RPG and CL programs).

TURNOVER® for iSeries v100 also provides support in its cross-reference database for ***MODULE** objects. If you are changing a module object, you can view all of the programs and service programs that refer to that module, so that they can be "re-bound" after the module is recreated.

Creating ILE programs

The two different ways to create an ILE program object are:

- Using the **CRTPGM** command and specifying the modules that make up the program. You *must* use this method if your program consists of more than one module.

- Using the **CRTBND*xxx*** command (where ***xxx*** is **RPG**, **CBL**, **CL**, or **C**). This command creates a program object directly from the program's source, bypassing the module creation process. You can use this command only when your program consists of a single module. This method is provided primarily to maintain familiarity with the "old" way of creating programs in one step, as you did before ILE was available.

Both of these methods have their problems if you are not using TURNOVER® for iSeries v100, but TURNOVER® for iSeries v100 provides some utilities for enhancing each. The method you choose is entirely up to you. TURNOVER® for iSeries v100 supports both methods, even within the same application.

Using CRTPGM to create programs

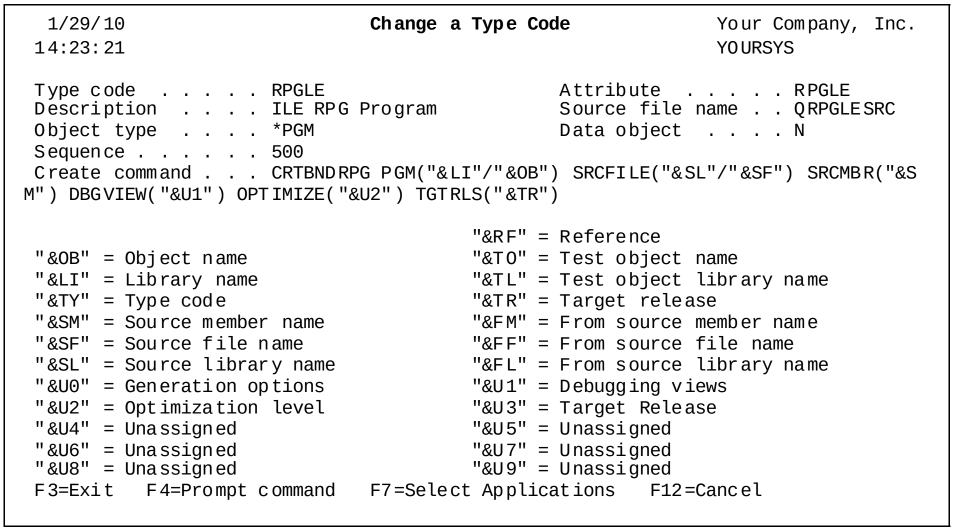
The **CRTPGM** command requires that you specify all of the modules and service programs that make up your program each time you want to recreate it, even if you have only updated a single module. To address this issue, the TURNOVER® for iSeries v100 command, **TCRTPGM**, serves as a "wrapper" for the **CRTPGM** command. The **TCRTPGM** command uses operating system APIs to automatically specify all of the modules and service programs that comprise your program. The only time you have to specify which modules to include, when you create an ILE program, is when you are adding or removing modules from the list.

Using CRTBNDxxx to create programs

Bound programs created using the **CRTBND*xxx*** command do not contain any information, in the object's description, about the source from which they were created. Because TURNOVER® for iSeries v100 relies on this information during checkout and auditing, this presented a problem in the past. In old releases, we created the **TCBP** command to address this issue. In recent releases, we enhanced the way TURNOVER® for iSeries v100 handles ILE bound programs, as is described later in this section.

Defining the underlying create command

Note: In this release, you no longer need to use the TCBP command in your create commands. You can specify the iSeries create command (**CRTBNDRPG**, **CRTBNDCBL**, and so on) as your default create command. (If you are using a version of TurnOver Release 4.2 with a date prior to November 25, 1997, you can revise your global type codes to remove the TCBP command and its parameters.) An example of the RPGLE global type code is shown below:



```
  1/29/10                      Change a Type Code           Your Company, Inc.
 14:23:21                                                   YOURSYS

 Type code  . . . . . RPGLE                        Attribute  . . . . . RPGLE
 Description  . . . . ILE RPG Program              Source file name . . QRPGLESRC
 Object type  . . . . *PGM                         Data object  . . . . N
 Sequence . . . . . . 500
 Create command . . . CRTBNDRPG PGM("&LI"/"&OB") SRCFILE("&SL"/"&SF") SRCMBR("&S
M") DBGVIEW("&U1") OPTIMIZE("&U2") TGTRLS("&TR")

                                           "&RF" = Reference
 "&OB" = Object name                       "&TO" = Test object name
 "&LI" = Library name                      "&TL" = Test object library name
 "&TY" = Type code                         "&TR" = Target release
 "&SM" = Source member name                "&FM" = From source member name
 "&SF" = Source file name                  "&FF" = From source file name
 "&SL" = Source library name               "&FL" = From source library name
 "&U0" = Generation options                "&U1" = Debugging views
 "&U2" = Optimization level                "&U3" = Target Release
 "&U4" = Unassigned                        "&U5" = Unassigned
 "&U6" = Unassigned                        "&U7" = Unassigned
 "&U8" = Unassigned                        "&U9" = Unassigned
 F3=Exit   F4=Prompt command   F7=Select Applications   F12=Cancel
```

Because we have changed our default shipping values to reflect these changes, TURNOVER® for iSeries installations dated November 25 1997 or later, automatically have this change. If you choose not to continue using the **TCBP** command, your object descriptions will no longer include information about the source they were created from. However, you can still view this information using TURNOVER® for iSeries v100's **TDSPOBJD** command, or using the **DSPPGM** command.

Continuing support of the TCBP command

If the **TCBP** command has been working well for you, or if you really need to have the source information in the object description stored as it was before, you can keep using the **TCBP** command. We are not removing the command, or the support for it, from our product. Another alternative available to you is to use the Post-Form Exit (Exit 1) to have a program update source information in the object description.

Creating service programs

Service programs are handled in the same way as the **CRTPGM** method for creating programs. We have a special command called **TCRTSRVPGM** that operates exactly the same way as **TCRTPGM**.

Like ILE programs, ILE service programs are language independent. You could use one type code for all languages. The important thing to consider when setting up a service program type code is the ***sequence number***. Because service programs are created from modules, they should have a higher sequence number than modules. However, because they are used to create programs, they must have a lower sequence number than programs. This ensures that the promotion order on a TURNOVER® for iSeries v100 form will be: modules, service programs, and then programs.

You can check out and promote service programs as you would any other object-only type. However, because there is no source, but there is a create command to execute, the default method is always **COPR** (of course, you can also use **MO** or **CD**). The same is true for programs using the **CRTPGM** method.

Binding language source (BND)

This is a source-only type that contains statements that you can use when creating service programs. These are supported by TURNOVER® for iSeries v100.

Bind Directory (BNDDIR)

This is an object-only type; that is, it is moved or duplicated from test to target libraries. You can check out a bind directory using worklist option **21**. You can work with the directory and add directory entries to a directory using the **CRTBNDDIR** and **WRKBNDDIR** commands. Once a directory is created, the **CRTPGM** command can reference it to indicate what modules or service programs should be included in the ILE program.

OTHER SOURCES OF INFORMATION

TURNOVER® for iSeries v100 PWM Quick Reference Card

This handy quick reference card is very useful to worklist users, especially when you are just starting out using the Programmer worklist.

TURNOVER® for iSeries v100 User Guide

The ***TURNOVER® for iSeries v100 User Guide*** provides a complete explanation to enable you to set up TURNOVER® for iSeries v100 and manage applications. You will be referred to the ***TURNOVER® for iSeries v100 User Guide*** frequently for more detailed information.

All displays and commands have help text associated with them. Help is in the form of UIM panel help. You can view definitions of fields and permissible values as well as information about the things you can do from that vantage point.

Synchronizer Guide

Synchronizer is vendor change synchronization utility that includes our source compare and merge utility. Synchronizer enables you to analyze and merge changes or a new release you received from your application vendor with modifications you have made.

Second level message text

Most messages provide second level help that explain more about the conditions you encounter.

Help text

All help text in TURNOVER® for iSeries v100 is cursor sensitive and extensive.

Helpline support

If you get stuck or have trouble finding what you need, please call us at +1-603-924-8818. Also, you can fax your question to +1-603-924-6348 or email it to techsupport@softlanding.com.

Training

Complete consulting and training services are available at your company or at UNICOM Systems, Inc. in Peterborough, New Hampshire, USA. Call for more information.

Training Tutorial

See the ***TURNOVER® for iSeries v100 Tutorial***, which steps you through a predefined application and enables you to quickly become familiar with the flow of the change management cycle.

INDEX