iEventMonitor
User's Guide

Version 7.00

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Kisco Systems, LLC
54 Danbury Road, #439
Ridgefield, CT 06877

Phone:	**(518) 897-5002**
E-mail:	**Sales@Kisco.com**
WWW:	**http://www.kisco.com**
Customer Support:	**http://www.kisco.com/iem/support**

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Introduction

iEventMonitor is a system monitoring tool for the IBM i series of computer systems. Using iEventMonitor, you can automatically watch your system for a variety of events and then send alert notifications to either a set of email addresses, text messages or as break messages to logged in user profiles. You can monitor for messages in any message queue, watch for specific messages in any message queue, watch for changes in disc space use and much, much more.

For the purposes of this documentation, your system will be referred to as an "**IBM i**" system. This term is used generically and applies to all systems in the IBM i family, including your **Power System**, **i5** system, **AS/400** system or your **IBM i**.

Overview

When certain events occur on your IBM i system, you need to be able to react quickly to deal with error situations or prevent problems. If you have the luxury of having a computer operator who can sit and constantly monitor your system, then you have this covered. But traditional computer operators are few and far between these days.

iEventMonitor can be used to help you stay on top of important events happening on your IBM i system. Events monitored include:

- activity in message queues such as the system operator message queue (QSYSOPR)
- optional ability to respond to error messages remotely, included with the software
- security events posted to the QSYSMSG security message queue
- unanticipated changes in the total amount of disc space in use on the system
- file events for specific files including record adds, records changes, record deletes and even record reads (within reason) or file opens
- watching for specific messages being issued in any message queue
- watch for jobs building up in a job queue, but not running
- watch for reports building up in an output queue
- watch for a job ending, or starting, or both
- watch for security audit postings to the system audit journal
- .... much more

When one of these events happens, iEventMonitor can automatically notify you by email, text or by sending a break message to specific user profiles after first checking to make sure that they are currently signed onto your system. You can also specify a combination of email addresses, text addresses and user profiles.

Quick Start

If you are familiar with the IBM i OS and most IBM i software, you can get iEventMonitor up and running successfully using the following steps. Detailed documentation on each of the iEventMonitor features and functions follows for more specific details.

Step 1: Install the software using the instructions provided with the software and documentation download.

Step 2: At the end of the install process, the IEMSET command will be prompted. Before you leave this command, make sure that you enter the following parameters:

DFTID	Enter a valid email address where you want alerts to be sent. This will be used as a default address in all of the features.
SUPTID	Enter a valid email address. For alerts, this will be the address that can be used to reply to an alert.
SUPTEXT	Enter a text description. This will show up on an email alert as the sender of the email
DFTSUBJ	Enter a text description to be used as the alert email Subject.

The other defaults can be used for now. You can use the HELP key (F1) to get a description of each of the settings here. You can always come back to these settings using option #9 on the INSTALL menu.

Step 3: To verify that the email configuration is working correctly, run option #9 on the INSTALL menu to send a test email. If you find any problems, you will find some tips about typical issues with iEventMonitor email at the following link:

http://www.kisco.com/emailconfig.htm

Step 4: Most customers want to monitor the QSYSOPR message queue for error messages that need to be dealt with. The message queue monitor feature uses the IBM i OS Watch API feature. This depends on having the QUSRWRK subsystem active. Run the following command on your system to verify that this subsystem is active:

```
WRKACTJOB SBS(QUSRWRK)
```

If the subsystem is not active, it should be started.

Step 5: Go to the MASTER menu and run option #2 to start a message queue monitor for QSYSOPR. We recommend that you start with the severity filter set to 50. When just starting out, you can use the other default values.

At this point, you can continue to explore other monitors and watches once the above are working to your satisfaction.

If you have specific questions, you may find a quick answer at the following “Frequently Asked Questions” section of our support website for iEventMonitor:

http://www.kisco.com/iem/support/iemfaq.htm

What’s New in Release 7

Release 7 is a major release for iEventMonitor. The following features and capabilities have been added to iEventMonitor with Release 7:

- A web browser user interface that we call “Bluescape” has been added to iEventMonitor for easier control of the application.
- iEventMonitor can now interface with Kisco’s new “Kisco Connect” software for more reliable texting of alerts via SMS.
- A new watch has been added to alert you when a Thread-Wait condition exists on your system.
- A new watch has been added to check for digital certificates that will expire soon.
- A similar watch has also been added to check for user profiles that will expire soon.
- The Activity Log Purge now allows you to specify a number of days to keep as an option to entering a specific purge date.
- A new security audit code (SK) has been added to the Audit Monitor feature to show secure socket connections including rejections.
- The Output Queue watch now supports watching for a lot more spool files; up to 123,327.
- Email alerts can now optionally be routed through the IBM i OS using the IBM SMTP process for customers running IBM i OS 7.3 or later. When using this option, you can format the email message text in either plain text or HTML.
- An optional automatic purge of the iEventMonitor Activity Log has been implemented.

What Was New in Release 6

The following features and capabilities were added to iEventMonitor with Release 6 which became available in February 2022:

- The user profile logon/off watch has been enhanced to let you hide the user profile being watched from system users.
- A new alert escalation option has been added to the message queue monitor feature that lets you issue reminder alerts to a wider audience than your standard alert addresses.
- The Watch Task feature has been enhanced to let you watch for specific message Ids in the System History Log.
- All monitor and watch features now allow for an alternate alert subject text that can be unique to each task when it is started.
- When printing the Activity Log, you can now specify selection criteria to only show selected dates or a date range.
- The message queue monitor has been changed to suppress duplicate alerts issued within a given period of time. Initially, this is set to 5 minutes. See the documentation for more details.
- Five additional security audit codes have been added to the Audit Monitor feature including AD (Auditing changes), AX (Row and column access control), DS (DST password reset), EV (System environment variables) and ST (Use of service tools)
- The ASP Watch for specific storage levels has been modified with a reminder option if the over limit condition is not resolved within a given period of time.
- A specific message ID for a given job can be suppressed even if it qualifies for an alert.

What Was New in Release 5

The following features and capabilities were added to iEventMonitor with Release 5 which became available in May 2020:

- Prior to Release 5, the only way for customers to respond to error messages was by accessing your system remotely and responding to the messages. With Release 5, following proper configuration for an Apache HTTP server instance, a link will now be added to message queue monitor alerts that call for a response. When the link is followed, you will be able to view the full joblog and also respond to the error message. Before using this feature, check the "Installation and Configuration" section of this manual to see the additional configuration work needed to activate this feature on your system.
- A new test function was added to the INSTALL menu to use when testing the IEM Respond feature.
- A new "Text Friendly" option has been added in the WEBSET settings to make the IEM Respond feature easier to work with when alerting via text message.
- The reminder option on the Message Queue Monitor feature has been extended to up to 240 minutes.
- A new SETALT command has been added to allow a temporary switch to the Alternate Alert address for alerts.
- A new Connection Watch feature was added to monitor for servers connecting to your IBM i server.
- An optional SIEM Feed was added for the Message Queue Monitor alerts.
- A new file monitor option was added to alert you when a file has been opened.
- A new Audit Monitor feature was added to control how the monitor starts.
- A remote support feature was added to allow you to send diagnostic information to Kisco Systems.
- From the Task Review display, you can now show the log activity for the selected function.
- A new option to the Audit Monitor for command usage allows the alert to format the attachment in CSV format.
- The Message Queue Monitor function has been completely re-engineered to improve performance and guarantee complete alert processing.
- A possible issue for customers using security auditing for *JOBBAS or *JOBDTA information has been resolved with a workaround. Details about this issue and the workaround can be found here: http://www.kisco.com/iem/support/iejobset.htm
- A new Job Watch feature lets you report when an active job is put on hold
- The Watch option can now be used to issue an alert on a specific message ID in combination with a text string in the message.
- The Output Queue Watch will now give you the option to include spool files that are on hold in your queue count.
- The Output Queue Watch also now lets you specify and alternate alert subject text
- The Job Queue Watch now lets you watch *ALL (or GENERIC*) job queues in a given library with a single watch task.

What Was New in Release 4

The following features and capabilities were added to iEventMonitor with Release 4 which became available in June 2019:

- A new audit feature has been added to let you track command line use for specific user profiles. This lets you know what power users are doing on your system using their access to the command line process.
- A new option has been added to the Job Watch function to monitor run time for the watched job.
- A new feature implemented for the Watch task (option #1 on the WATCH menu) lets you generate an alert based on a text string posted to a message queue.
- A new macro function, &SEV, was added to the Alert Subject Text field for the message queue monitor. The message severity level will be shown.

- Reminder alerts are now clearly identified in the Email subject field.
- Optional header and trailer lines added for all alert messages.
- A new macro function, &JOBNO, was added to the Alert Subject Text field for the message queue monitor. The job number will be shown.
- Optional Alert Subject Text added for Job Watches.
- Optional lock-wait ignore by job name added.
- The display activity log now defaults to start with the current day activity.
- Now allows for a non-standard SMTP Port Number to be used for email alerts.
- Gives you control over messages that are constantly repeated letting you suppress identical alerts during a defined period of time.
- Option lets you specify that iEventMonitor include the exact message time for a message queue alert.
- A new macro function, &JOBID, was added to the Alert Subject Text field for the message queue monitor. The specific Job Name, User and Job Number will be shown.
- A new option has been added to the Job Watch function letting the alert only be issued when the job has been running longer than expected.
- New Network Watch added.
- ASP % Watch enhanced to allow a separate monitor for different ASPs.
- User Watch changed to allow control over Prime Shift and Off-Shift alerts for user profile log on/off activity.

Notification Address(s)

Each monitor or watch feature in iEventMonitor includes an entry field for notification address. The following rules apply on each command.

To specify an email notification, enter the email address information that you want to use. You can stack multiple addresses in the field as long as the total length does not exceed 200 characters. Separate the addresses by a semi-colon (';') character.

To specify a user profile, precede the profile with the # character. For example, to notify QSECOFR, enter the value #QSECOFR. When an alert is processed, the software will check to see if the user profile is logged into a terminal session and then send them a break message alert.

If you have Kisco Connect installed on your system, you can enter a cell number as an all numeric string. Any alerts will be sent as SMS text messages routed through Kisco Connect.

If you use the special value of *DFTID, then the notification addresses will be taken from the defaults set in the IEMSET command (option #9 on the INSTALL menu).

Kisco Connect Integration Option

Kisco Systems recently released a new SMS texting application called **Kisco Connect**. When you install this new option on your system, you can take advantage of it from iEventMonitor. With Kisco Connect installed and activated in iEventMonitor, you can specify a cell phone number in any iEventMonitor Notification Address (EMAIL) field.

To specify a cell# using Kisco Connect, just enter the full cell number with no dashes or special characters. When the alert process in iEventMonitor sees the all numeric address, it will assume that you have entered a cell number and it will call Kisco Connect to send the SMS message.

Prior to this integration with Kisco Connect, SMS texts were sent using cell carrier's email-to-text feature. Since the initial release of iEventMonitor, most cell carriers have tightened up processing these email messages and delivery of these texts is no longer reliable. We strongly recommend adding Kisco Connect to obtain reliable SMS message delivery.

Off-Shift Default Notification Feature

iEventMonitor allows you to define two different default notification fields. The alternate can be used for off-shift alert notifications. This lets you define a different set of notifications for non-prime shift events.

As shipped from Kisco, this feature is turned off. To activate the feature, you must take the following actions:

1. Run the IEMSET command (menu option #9 on the INSTALL menu) and define a value Alternate Notification Address field (parameter DFTID2) using the same rules used for the Default Notification Address (parameter DFTID).

   Note: Specify a special value of *NONE if you do not want to activate this feature.

2. Define the start and end time for your primary shift using the "Prime Shift Start Time" and "Prime Shift End Time" fields on the IEMSET command.

3. To treat certain days of the week as off-shift all day (such as Saturday or Sunday), enter the day of the week value in the "Off-Shift Days" field provided on the IEMSET command. If you want all days considered the same, use the special value of *NON (none).

Once you have activated this feature, whenever an alert condition is detected by iEventMonitor and the *DFTID special value has been specified for that alert monitor, then the alternate alert notification value will be used during off-shift times.

Notification to the alternate address can also be manually controlled by the SETALT command. See the topic on this command in the Installation and Configuration section of this manual.

Installation and Security

Specific installation instructions are covered in the section of this manual titled "Installation". To install your product on trial, follow those instructions. iEventMonitor is installed from a download file from the Internet. The initial installation will allow iEventMonitor to run on your system for a period of at least thirty days. At the end of the trial period, the software will no longer function.

When you decide to keep iEventMonitor, you must send your payment to Kisco Systems. At that time, Kisco must know the serial number for your system and the partition number where you have iEventMonitor installed. If you are not sure of your serial number, you can display it by using option #2 on the INSTALL menu.

When Kisco receives your payment and serial/partition numbers, they will issue a password to you. This password, when applied, will certify your copy of iEventMonitor and will permanently activate the software on your system. The password and certification instructions will be provided in writing by email.

Kisco Software Support

Kisco Systems software support is available from 7am to 6pm eastern time. You can reach software support with the following methods:

Phone: 518-897-5002
Email: support@kisco.com
Mail: Kisco Systems, LLC
54 Danbury Road, #439
Ridgefield, CT 06877

We encourage you to submit all technical support requests via email to support@kisco.com. When you do, a support ticket will be generated that will allow all of our tech support staff to keep up with your support case.

Off-hours support can be provided for all registered customers with advance notification. Contact our support staff at least 24 hours in advance when you think you will need off-hours support and we will provide instructions for contacting us during that time. If you have unscheduled off-hours support needs, you should place a phone call and send an email request. Support is generally available during off-hours.

Kisco Systems provides unlimited software support during your first year of ownership. This includes the time during your free trial. Following the first year of ownership, there is a modest fee structure to maintain support for your software.

The Kisco support policy program works as follows:

1. First year support is included in the purchase price This includes unlimited telephone support, unlimited E-mail support, free release updates and free license transfers.

2. After the first year, an annual charge will apply for support and software maintenance.

3. The annual fee will be charged at the rate of 15% of the current selling price.

4. Support covered by this annual fee includes:

   a. Unlimited telephone support (518-897-5002)
   b. Unlimited E-mail support (Support@kisco.com)
   c. Defect analysis and correction
   d. Free updates to correct known defects (Kisco PTFs)
   e. Free license transfers (when you move to a different system)

5. Customers must be active on maintenance in order to get a license transfer for the software to a new serial number.

At the end of your first year of ownership, you will receive a renewal quote from us for your next year's maintenance charge. Non-payment will be taken to mean that you decline maintenance.

World Wide Web Support

You can also use the World Wide Web to reach us and to obtain software support information. Just set your web browser to our web address at:

http://www.kisco.com

Support information specifically for iEventMonitor can be found at this address:

http://www.kisco.com/iem/support

At our Website, you will find:

- Product information about all Kisco software products for the IBM i.

- Customer support information including:

  - Latest release level information for all products
  - Technical bulletins
  - Frequently asked questions and answers
  - Problem reports including iEventMonitor PTF availability
  - Descriptions for recent enhancements to products
  - E-mail contact information for getting in touch with us

- Information about consulting services available from Kisco Systems.

- Registration for automatic notification about iEventMonitor enhancements and changes.

- ..... and more

The first time you visit the Customer support section of our website for iEventMonitor, be sure to register for automatic notification. Once you are registered, we will automatically send Email notices to you about upgrades, enhancements and fixes for iEventMonitor as soon as they become available.

We invite you to visit our Website, use the contact features to let us know what you think. We're always looking for ways to better serve you, our customer.

The Master Menu

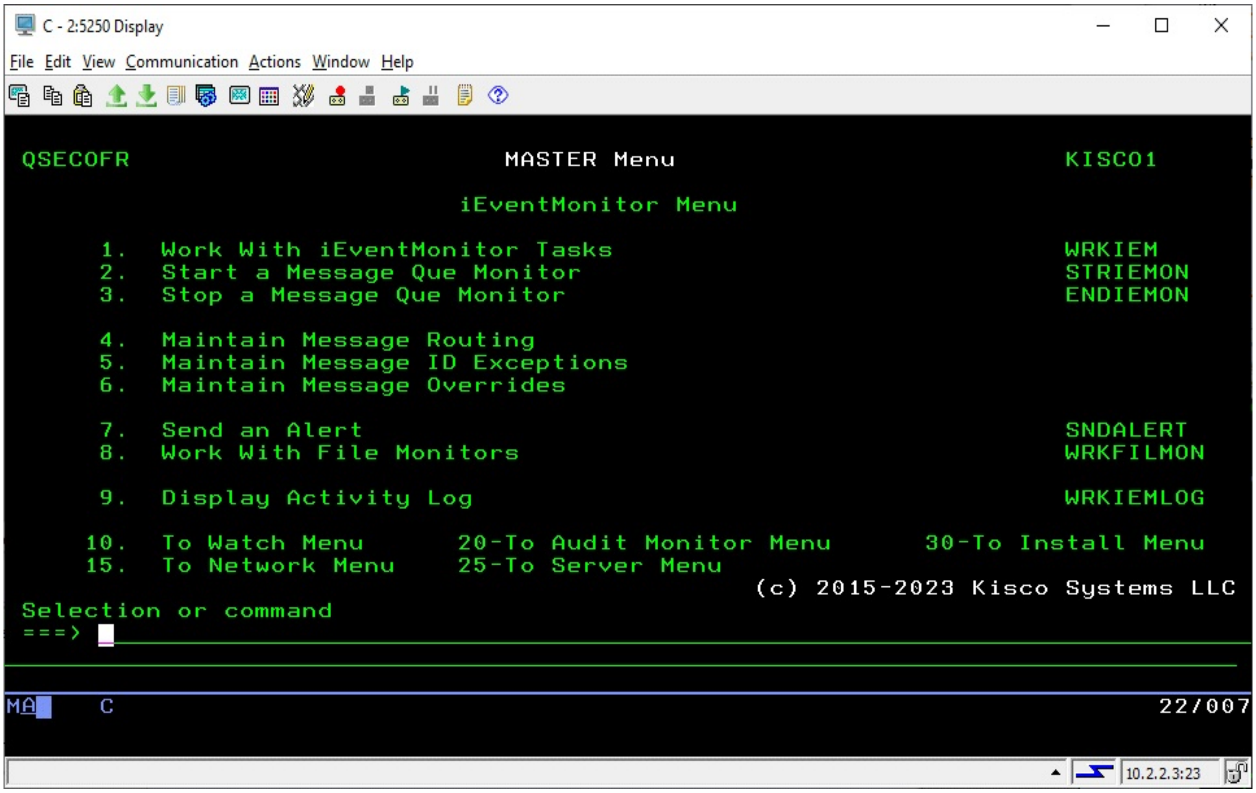
The main menu used by iEventMonitor is called MASTER and is found in the library IEMLIB. There are several ways to display the menu. You can issue the following GO command from any terminal session command line:

```
GO IEMLIB/MASTER
```

This method does not require that the library name be added to your library list. You can also add the library to your library list and display the menu with an easier format. To add the library to your library list and display the menu, enter the following two commands:

```
ADDLIBLE IEMLIB
GO MASTER
```

The main iEventMonitor menu appears as follows:



```
QSECOFR                       MASTER Menu                          KISCO1

                           iEventMonitor Menu

     1.  Work With iEventMonitor Tasks                             WRKIEM
     2.  Start a Message Que Monitor                               STRIEMON
     3.  Stop a Message Que Monitor                                ENDIEMON

     4.  Maintain Message Routing
     5.  Maintain Message ID Exceptions
     6.  Maintain Message Overrides

     7.  Send an Alert                                             SNDALERT
     8.  Work With File Monitors                                   WRKFILMON

     9.  Display Activity Log                                      WRKIEMLOG

    10.  To Watch Menu       20-To Audit Monitor Menu      30-To Install Menu
    15.  To Network Menu     25-To Server Menu
                                             (c) 2015-2023 Kisco Systems LLC
Selection or command
===>

MA     C                                                               22/007
```

Each menu option handles the following functions. The right margin of the menu display shows the command that is run by that option. All commands are located in the application library named IEMLIB. Each function is described in more detail later in this manual:

1. Work With iEventMonitor Tasks — Displays all iEventMonitor tasks that are currently configured along with current status information. Options are provided to start tasks, stop tasks and change settings.

2. Start a Message Que Monitor — Start a message queue monitor session

3.	Stop a Message Que Monitor	End an active message queue monitor
4.	Maintain Message Routing	Allows you to specify alternate alert notifications for specific messages in specific message queues.
5.	Maintain Message ID Exceptions	Update message queue ID exceptions. Lets you ignore specific messages.
6.	Maintain Message Overrides	Allows you to implement additional controls over which messages will be reported or ignored for the message queue monitor function.
7.	Send an Alert	Can be used to manually send an alert message
8.	Work With File Monitors	Set up file action monitors and then activate or deactivate them.
9.	Display Activity Log	Displays a list of alerts that have been issued by iEventMonitor starting with those issued most recently.
10.	To Watch Menu	Displays the WATCH task menu.
15.	To Network Menu	Displayed the NETWORK task menu.
20.	To Audit Monitor Menu	Displays the AUDIT monitor task menu.
25.	To Server Menu	Displays the IEMSVR menu for controlling the Apache HTTP server used by Bluescape and the IEM Respond feature.
30.	To Install Menu	Displays the INSTALL task menu.

Each of these menu options is discussed in the following sections of this user's guide.

iEventMonitor Automatic Restart Feature

Whenever you start a monitor or watch task in iEventMonitor, that function is logged on the system as active. This logging is done automatically and it captures all of the startup options that you specify, regardless of the task that you are starting.

Task records are removed from the log file whenever you run a specific ENDxxxx command to stop a monitor or watch task.

At any time, you can review what tasks are currently defined by using menu option #1 on the MASTER menu. To add a task to the list of active tasks, just start it from the appropriate menu option. To update or change the settings for a task, just end it from menu option #1 using option 3, make the changes using option 2 and then restart it using option 1.

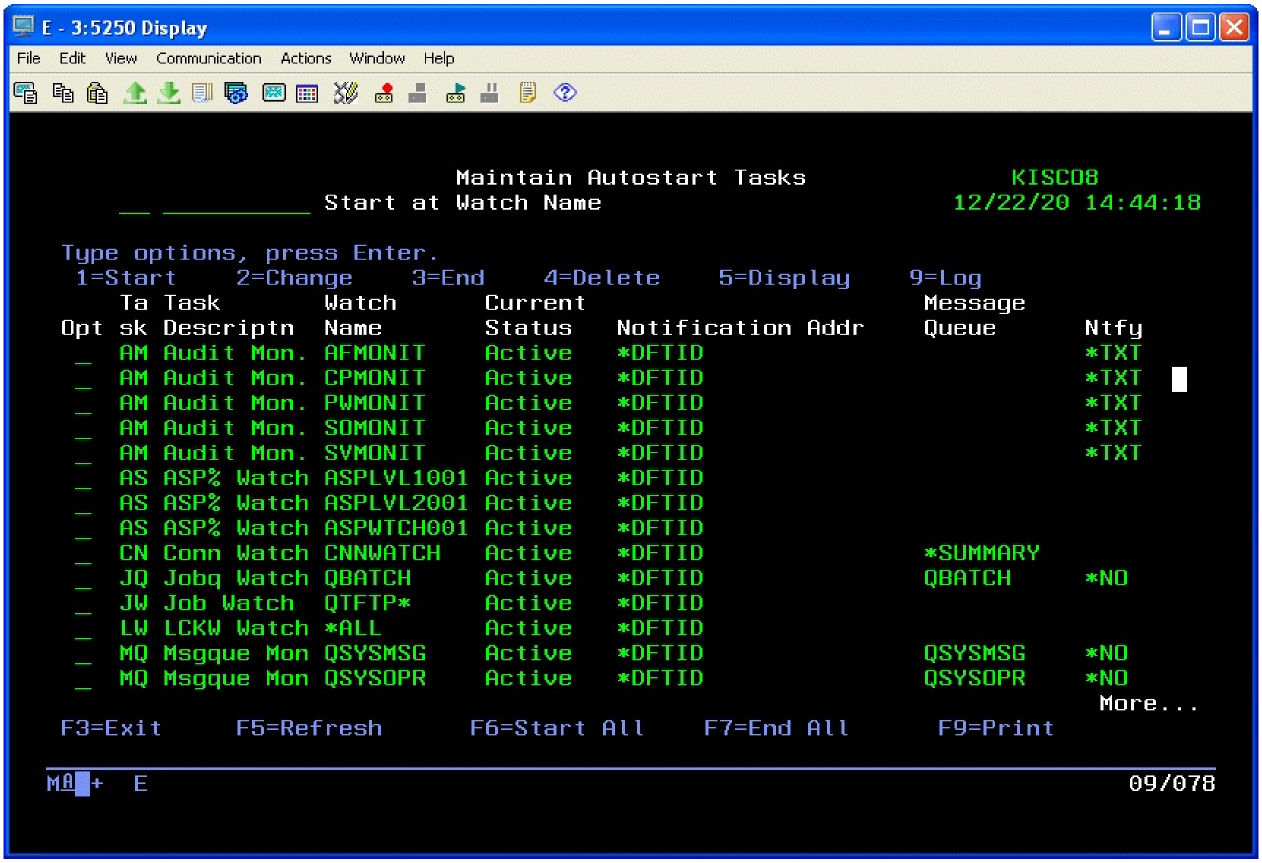
To end the active tasks without removing them from the task log, use the ENDIEM command.

If the tasks have been ended with the ENDIEM command, then you can restart them all using the

STRIEM command. Option #1 on the MASTER menu includes function keys you can use to end or start the tasks in iEventMonitor that are present in the task log.

Work With iEventMonitor Tasks

When you select option #1 from the MASTER menu, or run the WRKIEM command, the following display will be shown:



```
                              Maintain Autostart Tasks              KISC08
       __ __________ Start at Watch Name                       12/22/20 14:44:18

   Type options, press Enter.
    1=Start     2=Change     3=End     4=Delete     5=Display     9=Log
       Ta Task        Watch       Current                          Message
   Opt sk Descriptn   Name        Status    Notification Addr      Queue       Ntfy
    _  AM Audit Mon.  AFMONIT     Active    *DFTID                             *TXT
    _  AM Audit Mon.  CPMONIT     Active    *DFTID                             *TXT
    _  AM Audit Mon.  PWMONIT     Active    *DFTID                             *TXT
    _  AM Audit Mon.  SOMONIT     Active    *DFTID                             *TXT
    _  AM Audit Mon.  SVMONIT     Active    *DFTID                             *TXT
    _  AS ASP% Watch  ASPLVL1001  Active    *DFTID
    _  AS ASP% Watch  ASPLVL2001  Active    *DFTID
    _  AS ASP% Watch  ASPWTCH001  Active    *DFTID
    _  CN Conn Watch  CNNWATCH    Active    *DFTID                 *SUMMARY
    _  JQ Jobq Watch  QBATCH      Active    *DFTID                 QBATCH      *NO
    _  JW Job Watch   QTFTP*      Active    *DFTID
    _  LW LCKW Watch  *ALL        Active    *DFTID
    _  MQ Msgque Mon  QSYSMSG     Active    *DFTID                 QSYSMSG     *NO
    _  MQ Msgque Mon  QSYSOPR     Active    *DFTID                 QSYSOPR     *NO
                                                                              More...
   F3=Exit      F5=Refresh      F6=Start All     F7=End All      F9=Print

  MA  +   E                                                                  09/078
```

This display allows you to work with each listed monitor or watch as follows by placing a code in the Opt field next to the task you want to work with:

1 Start - If the task is currently showing as Inactive, you can start it using option 1.

2 Change - lets you review the settings in use for the task and make changes. Changes can only be made if the task is currently showing as Inactive.

3 End - lets you stop an active task.

4 Delete - lets you delete a task from the list. A delete can only be processed when the task is showing as Inactive.

5 Displays the settings in use. You do not need to stop the function to use this option.

9 Displays the iEventMonitor activity log entries for this function.

The following function keys can be used for control over these tasks:

F6 Will start all tasks provided that they are not currently running. This is the same as using the STRIEM command.

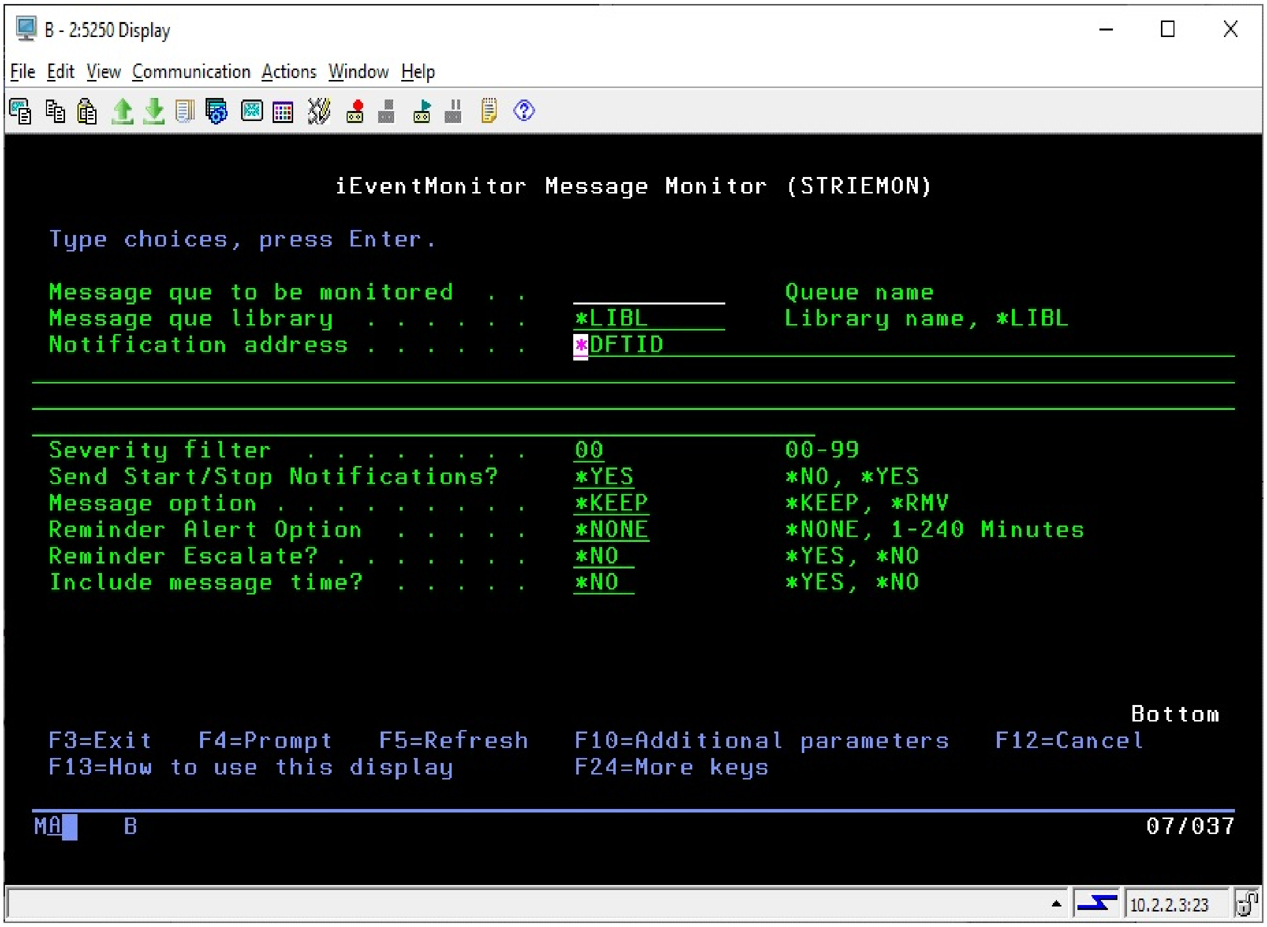
F7 Will end all tasks if they are running. When ending tasks this way, they will not be removed from the task log. This is the same as using the ENDIEM command.

F9 Will produce a listing of the active tasks log.

Note that tasks are added to this list when they are started using the individual functions on the various menu options in iEventMonitor. Once a task has been started once, you can then control it entirely using this display.

Start a Message Que Monitor

To start a message queue monitor for any message queue, run option #2 on the MASTER menu. The following prompt will be displayed:



```
                  iEventMonitor Message Monitor (STRIEMON)

 Type choices, press Enter.

 Message que to be monitored  . .   __________    Queue name
 Message que library . . . . . .   *LIBL          Library name, *LIBL
 Notification address  . . . . .   *DFTID



 Severity filter  . . . . . . . .   00            00-99
 Send Start/Stop Notifications?     *YES          *NO, *YES
 Message option . . . . . . . . .   *KEEP         *KEEP, *RMV
 Reminder Alert Option  . . . . .   *NONE         *NONE, 1-240 Minutes
 Reminder Escalate? . . . . . . .   *NO           *YES, *NO
 Include message time?  . . . . .   *NO           *YES, *NO



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

MA     B                                                           07/037
```

Fill in the parameters as follows:

Message que to be monitored	Enter the name of the message queue to be monitored.
Message que library	Enter the name of the library that contains the message queue. Most system message queues can use the *LIBL special value.
Notification address	See the Notification Address(s) section of this manual on page 5. In addition, you can use the special value of *ROUTE, then the notification addresses will be determined by entries in the Route Table (option 4 on the MASTER menu). If the specific message ID does not find a match on the Route Table, then the *DFTID will be used.

Severity filter

Lets you ignore messages below a given severity level. For QSYSOPR, we recommend setting this value to 50. If you want to see every message, use the value 00.

Send Start/Stop Notifications?

Use the *YES value to sent out an alert when the message monitor is started and ended. Change the value to *NO if you do not want these messages sent.

Message option

Leave the default value *KEEP in place if you want to keep the message on the message queue after the alert has been sent (recommended). To cause these messages to be removed from the message queue, change this value to *RMV.

Reminder Alert Option

This option tells iEventMonitor to issue reminder alerts when inquiry messages have been detected and they have not been responded to in a given period of time.

Choose one of the following values:

*NONE No reminder alerts will be issued.

1-240 A variable number of minutes between reminder alerts. iEventMonitor will wait for the number of minutes specified and then check to see if the message has been answered. If not, a reminder alert will be issued. The reminder alerts will be repeated until the message is answered or the job in question has ended.

Reminder Escalate?

When set to *YES and a reminder alert is issued, in addition to the default alert notification addresses, another set of alert addresses will also be used. Before using this, make sure that the "Escalation Notification Addrs" setting is updated in the IEMSET settings (option 9 on the INSTALL menu).

When set to *YES, any reminder alerts will be issued to the escalation addresses specified in the IEMSET parameter in addition to the default notification addresses already set.

Include message time?

Choose one of the following values:

*NO The message time from the message queue entry will not br shown in the alert.

*YES The message time from the message queue entry will be shown in the alert. This may be useful for installations monitoring multiple systems across multiple time zones.

If you press the F10 key, additional parameters are presented:

Alert Subject Text

The message queue monitor allows you to use an alternate alert subject when reporting message queue alerts. To use the standard subject, just leave the special value *DFT in place.

To use an alternate subject text, enter up to 64 characters in this field. The field also supports three optional macro fields as follows:

&MSGIDX — The message ID being alerted will be used

&SYSNAME — The system name will be used

&JOB_NAMEX — The job name that issued the message will be used

&JOBNO — The job number that issued the message will be used

&JOBID — A 28 characters value will be substituted in the following format:

nnnnnn/uuuuuuuu/jjjjjjjj

job number/user/job name

Make sure that you leave 22 positions following the &JOBID macro to allow for the values to be posted.

&SEV — The severity level of the message will be used

Note: For the macros to work, they must be coded EXACTLY as shown in all upper case characters.

User Exit Program Feature

The iEventMonitor message queue monitor includes the ability to call a user exit program when a message queue monitor is triggered. When a message is detected that meets the criteria for issuing an alert message, iEventMonitor will check to see if a user program has been specified. If there is one, then that program will be called before the alert is issued. An option is also included to suppress the alert notification from iEventMonitor if you want to stop the alert message from being sent.

When the user exit program is called, a single parameter is passed with a parameter length of 4,000 characters. The layout of the parameter is fixed as follows:

Start	End	Length	Description
1	10	10	Message Queue being monitored
11	20	10	Library name as specified in the start
21	24	4	Message key - binary value
25	31	7	Message ID
32	163	132	Message text
164	165	2	Severity level
166	245	80	Message sender - see IBM documentation for details - includes information about the job that generated the message
246	250	5	Message 2 length
251	3250	3000	Variable message text 2
3251	4000	750	Not used - reserved for future implementations

Three additional parameters are available with the STRIEMON command. When the command is prompted, use the F10 option to show the additional parameters. The three parameters are as follows:

Exit program (XPGM) Enter the name of the user exit program that you want to call. If you do not want to use an exit program, leave the default special value of *NONE in place.

Exit program library (XLIB) When specifying a user exit program, enter the name of the library where is resides here.

Send alerts (XALERT) Choose one of the following values:

*NO No alerts will be issued.

*YES Alerts will be issued as normal.

When a user exit program is specified, iEventMonitor will check to make sure it is a valid program in the library reference provided. If the program cannot be found, the monitor start will not be started. If the program is valid, it is the user's responsibility to make sure that it completes successfully. iEventMonitor will check for a CPF0000 error and attempt to continue processing if one is issued from the exit program, but other errors could cause the monitor to fail. Kisco recommends extensive testing before putting a user exit program into full production use.

Suppressing Duplicate Message Queue Alerts

An active application on your system could get into a looping condition issuing identical messages to your monitored message queue in a very high volume over a short period of time. This could, in turn, result in iEventMonitor clogging your email system or cell phone with unnecessary duplicate alerts. To avoid this situation, the message queue monitor will suppress such duplicate alerts within a given time period. When the software is initially installed, this default setting will be set to five minutes. The setting can be controlled from the IEMSET command default settings (option 9 on the INSTALL menu). Changing the setting to zero minutes will turn the suppression feature off.

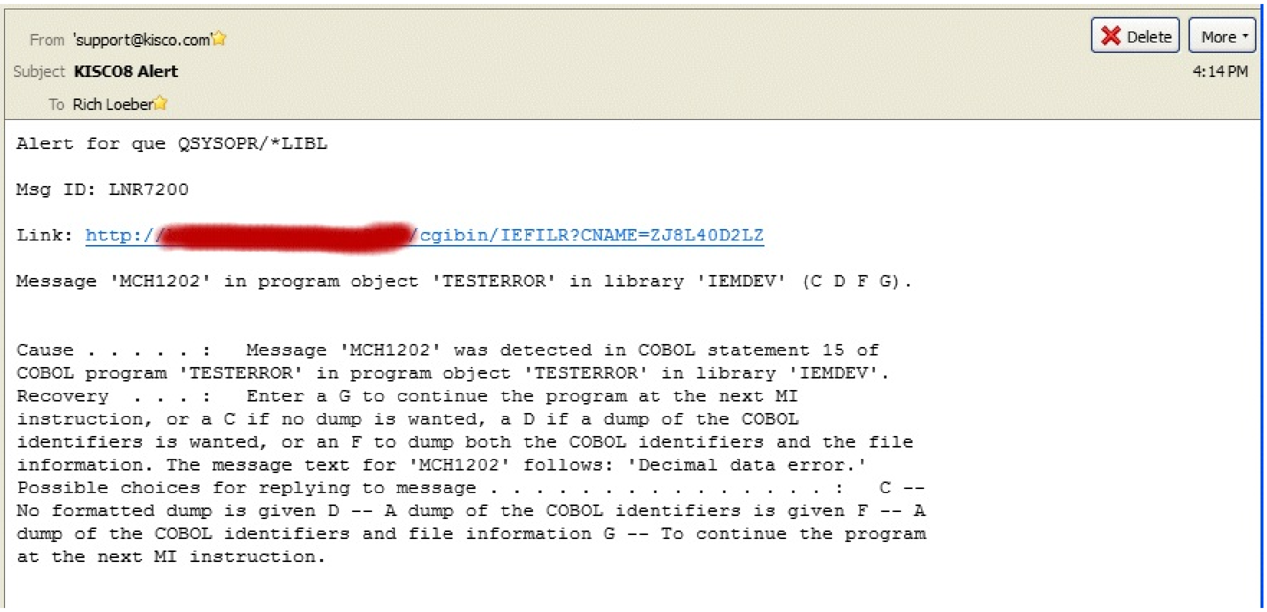
Responding To Error Messages

You can use iEventMonitor to respond to error messages remotely. Some additional installation and configuration work is required before you can use this feature. Please review the appropriate instructions in the “Installation and Configuration” section of this documentation.

When this feature is activated, an Apache HTTP server instance named IEVENTMON will be active on your system. If a message is received at a message queue that calls for a response, an HTTP link will be included in the alert issued from iEventMonitor. When you follow this link, either from an email message or a text message, a web page will be shown that will provide details about the error message.

A typical email message might look like this:

When you follow the link, a page like this will be shown to you:



From 'support@kisco.com'

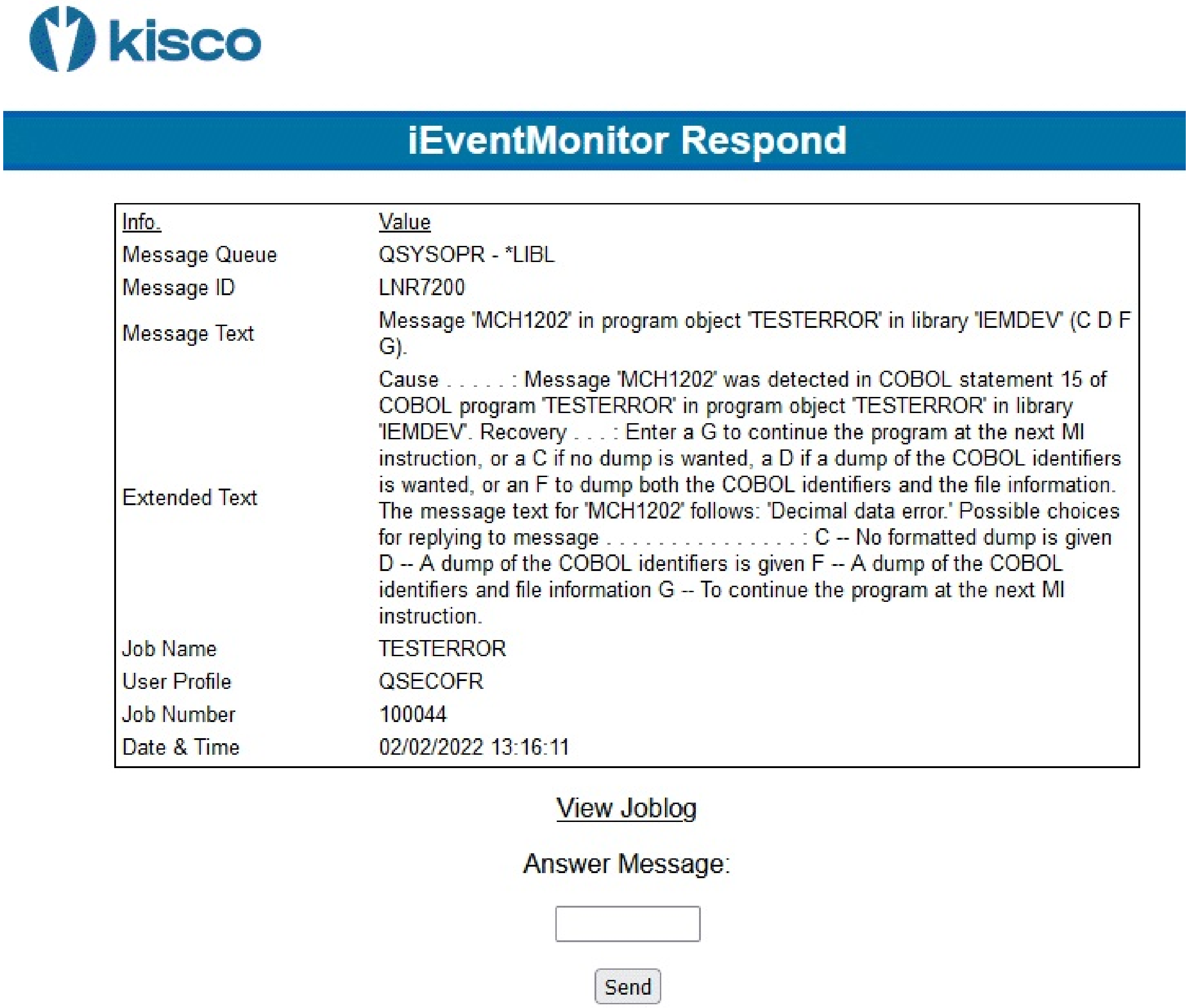
Subject **KISCO8 Alert**

To Rich Loeber

4:14 PM

```
Alert for que QSYSOPR/*LIBL

Msg ID: LNR7200

Link: http:/[redacted]/cgibin/IEFILR?CNAME=ZJ8L40D2LZ

Message 'MCH1202' in program object 'TESTERROR' in library 'IEMDEV' (C D F G).


Cause . . . . . :   Message 'MCH1202' was detected in COBOL statement 15 of
COBOL program 'TESTERROR' in program object 'TESTERROR' in library 'IEMDEV'.
Recovery  . . . :   Enter a G to continue the program at the next MI
instruction, or a C if no dump is wanted, a D if a dump of the COBOL
identifiers is wanted, or an F to dump both the COBOL identifiers and the file
information. The message text for 'MCH1202' follows: 'Decimal data error.'
Possible choices for replying to message . . . . . . . . . . . . . . . :   C --
No formatted dump is given D -- A dump of the COBOL identifiers is given F -- A
dump of the COBOL identifiers and file information G -- To continue the program
at the next MI instruction.
```

When you click on the link, the following web page will be shown:



iEventMonitor Respond

Info.	Value
Message Queue	QSYSOPR - *LIBL
Message ID	LNR7200
Message Text	Message 'MCH1202' in program object 'TESTERROR' in library 'IEMDEV' (C D F G).
Extended Text	Cause . . . . . : Message 'MCH1202' was detected in COBOL statement 15 of COBOL program 'TESTERROR' in program object 'TESTERROR' in library 'IEMDEV'. Recovery . . . : Enter a G to continue the program at the next MI instruction, or a C if no dump is wanted, a D if a dump of the COBOL identifiers is wanted, or an F to dump both the COBOL identifiers and the file information. The message text for 'MCH1202' follows: 'Decimal data error.' Possible choices for replying to message . . . . : C -- No formatted dump is given D -- A dump of the COBOL identifiers is given F -- A dump of the COBOL identifiers and file information G -- To continue the program at the next MI instruction.
Job Name	TESTERROR
User Profile	QSECOFR
Job Number	100044
Date & Time	02/02/2022 13:16:11

On this web page, you can click on the “View Joblog” link to see the detailed joblog for the error message. It may be important to view the details before you answer the message. Once you have decided what the proper response for the message is, just enter it in the box at the bottom of the page and press the Send button. The message will be answered on your system.

If a problem occurs while processing your message response, you may receive an error feedback display. Errors that can occur include:

- This link is no longer available for use - indicates that the link has already been cleared from the system. All links are cleared on your system whenever iEventMonitor is restarted using the STRIEM command.

- Blank reply not processed - the message answer was left blank.

- Reply not processed, already answered - the message was answered already by a local source on your system.

- Reply not processed, message now gone - the message is no longer available to be answered.

- Your error respond session has encountered an internal error - indicates an internal error of some kind. If this happens, contact Kisco Systems.

Note: If you want to respond to an error message based on a text message to your cell phone, this is possible with certain conditions taken into effect. Keep in mind that the amount of information included in a text is limited to a fixed number of characters for many text services. To limit the number of characters on the text, please consider the following:

- In the IEMSET settings (option #9 on the INSTALL menu), keep the text entries for the following setting as short as possible:

    - Change the "Text Friendly Alerts?" setting to *YES
    - Support Name Description
    - Default Alert Subject
    - IEM Browser Respond IP

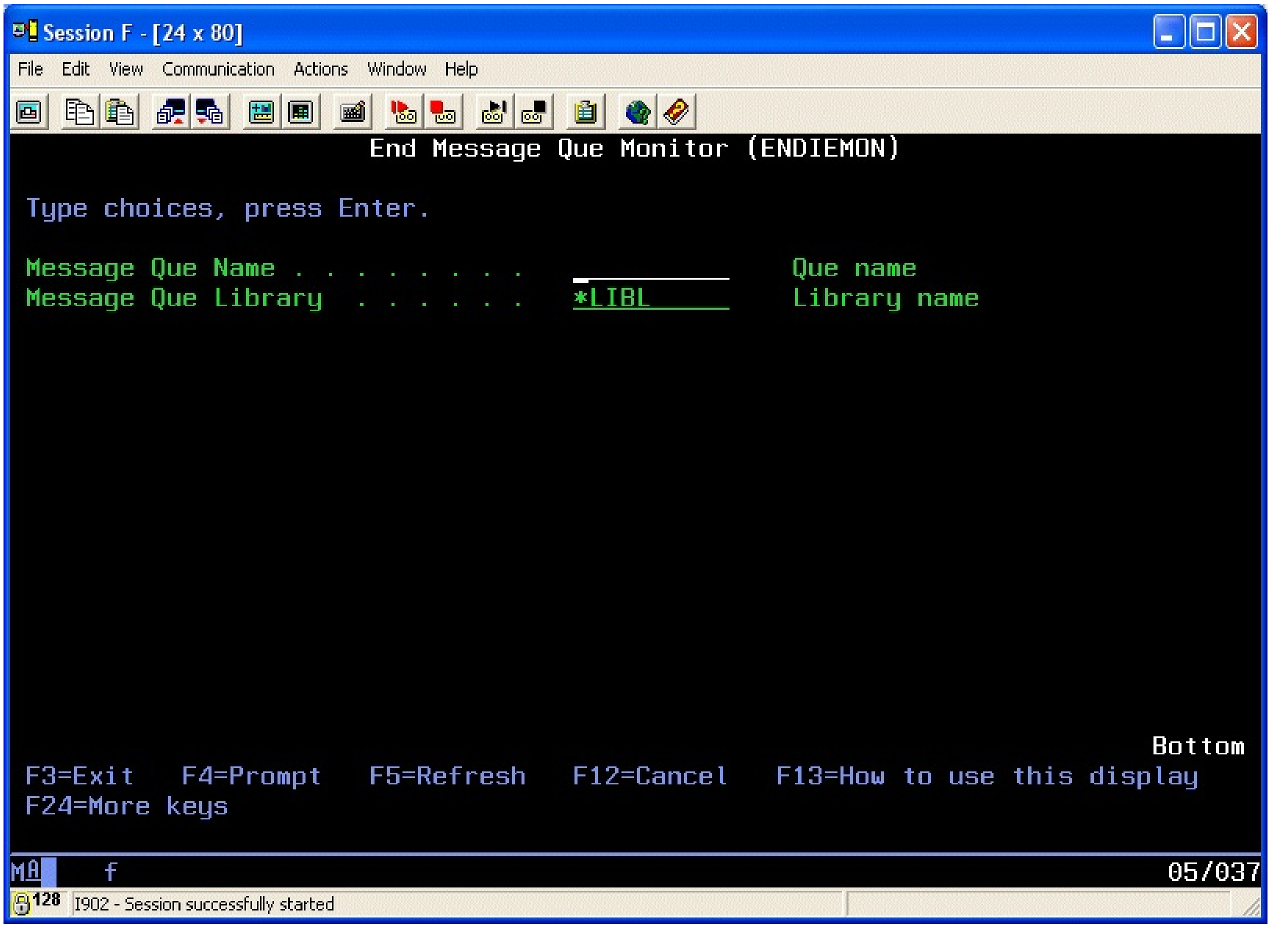
- Also in the IEMSET settings, specify *NO for Include Job Info in Alert?

- When you start the message queue monitor, specify *NO for Include message time?

These steps will result in a shorter text message and provide you with a useable link to follow. When you do follow the link, all of the information about the error, including the joblog, will be available. If you are using Kisco Connect, the character limit for SMS messages is 1,600 characters, so this is less of a consideration.

Stop a Message Que Monitor

To end a message queue monitor that was previously started, run option #3 on the MASTER menu. This will display the following prompt screen:


Session F - [24 x 80]
File Edit View Communication Actions Window Help

```
                     End Message Que Monitor (ENDIEMON)

 Type choices, press Enter.

 Message Que Name . . . . . . . .   __________    Que name
 Message Que Library  . . . . . .   *LIBL_____    Library name




                                                                        Bottom
 F3=Exit   F4=Prompt   F5=Refresh   F12=Cancel   F13=How to use this display
 F24=More keys
MA      f                                                              05/037
```

128 I902 - Session successfully started

Enter the parameters as follows:

Message Que Name — Enter the name of the message queue monitor that you want to stop.

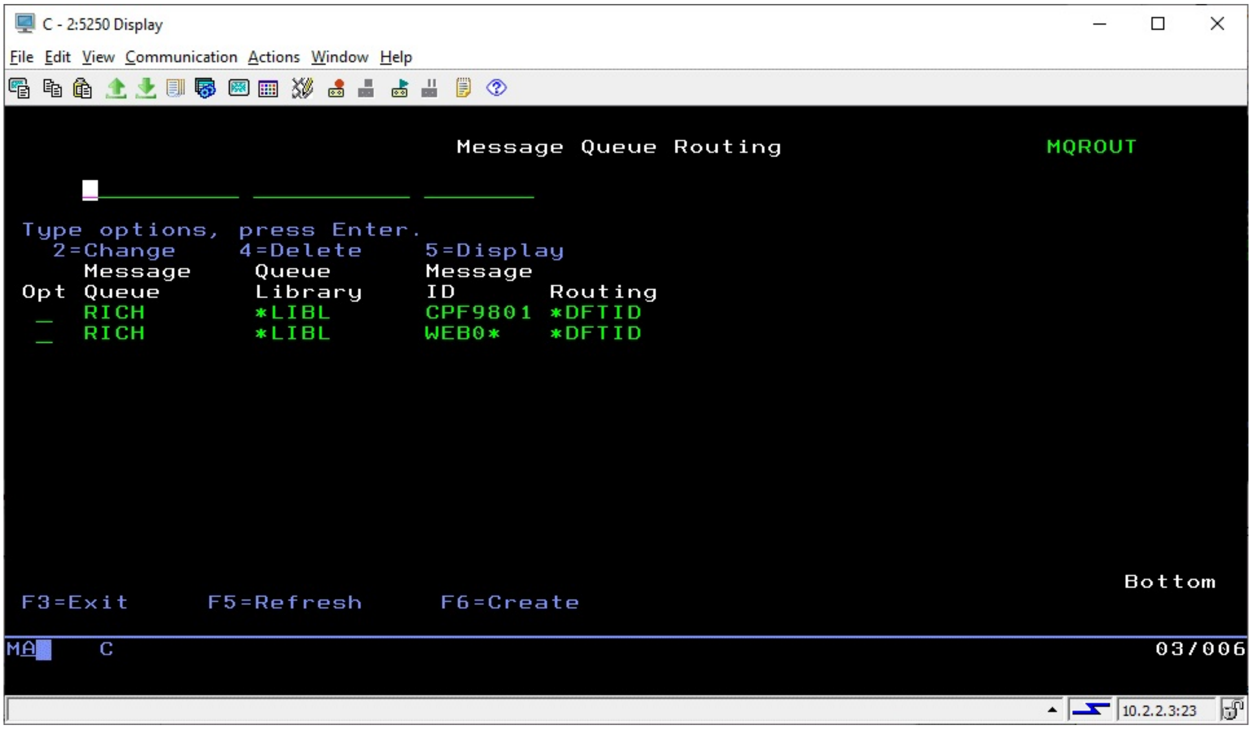
Message Que Library — Enter the name of the library where the queue is located. If you started the monitor with the *LIBL library reference, you MUST use it again here when ending the monitor.

When you press ENTER, the active monitor will be ended. When you end a message queue monitor using the menu option (ENDIEMON command), the monitor configuration is removed from consideration for automatic restart using the STRIEM command.

Maintain Message Routing

Your installation may want alerts issued to specific individuals for specific messages posted to a monitored message queue. The Message Routing process in iEventMonitor allows you to set this up. Routing instructions are message queue specific. You must provide the monitored message queue details for each routing rule created. The queue and library must be specified exactly the same way that they were started.

To create a routing or to work with any existing routings, run option #4 on the MASTER menu.



```
                          Message Queue Routing                 MQROUT

    __________ __________ _______

 Type options, press Enter.
   2=Change     4=Delete     5=Display
     Message      Queue        Message
 Opt Queue        Library      ID       Routing
  _  RICH         *LIBL        CPF9801  *DFTID
  _  RICH         *LIBL        WEB0*    *DFTID

                                                                    Bottom
 F3=Exit      F5=Refresh     F6=Create
MA     C                                                           03/006
```

From this display, you can choose the following options in the left hand “Opt” column:

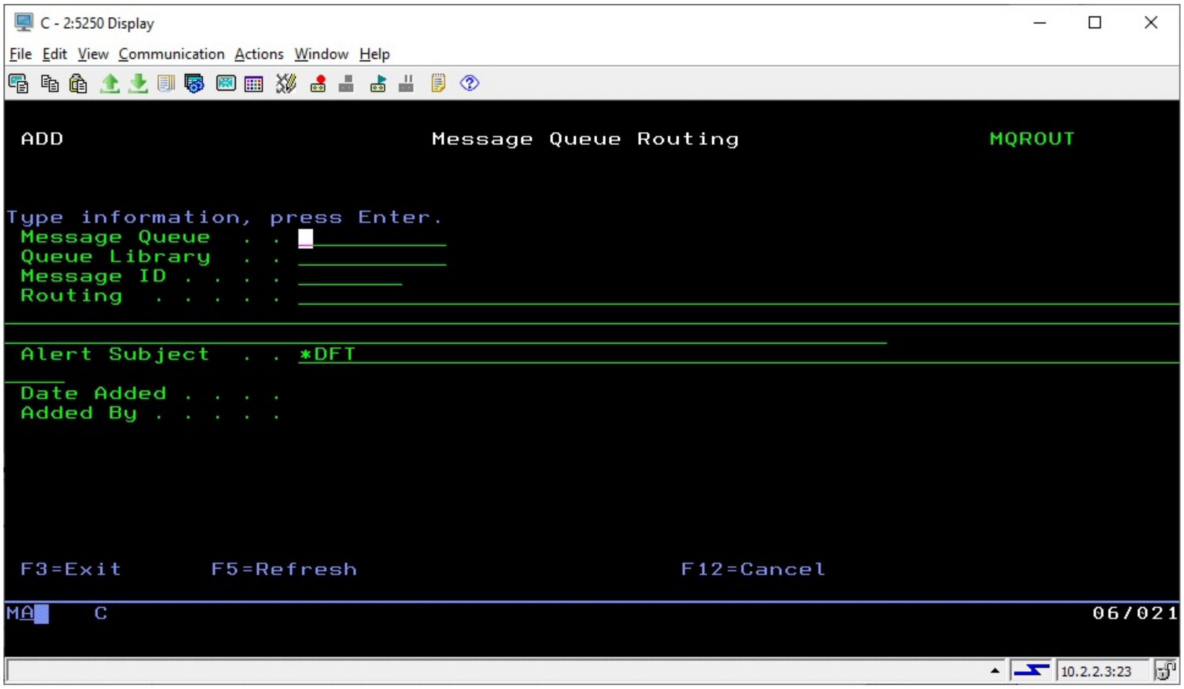
2 Gives you access to change an existing routing.

4 Deletes an existing routing.

5 Displays the details for an existing routing.

See the next page for creating or maintaining a routing.

To create a new routing, press the F6 key. The following will be displayed:



```
 ADD                         Message Queue Routing                    MQROUT

Type information, press Enter.
 Message Queue  . . _________
 Queue Library  . . _________
 Message ID . . . . _______
 Routing  . . . . . ____________________________________________

 Alert Subject  . . *DFT

 Date Added . . . .
 Added By . . . . .




 F3=Exit       F5=Refresh                        F12=Cancel
MA    C                                                                06/021
```

If you use option 2 or 5 on the initial routing display, this same display will be shown but the current settings will appear.

Complete these fields as follows:

Message Queue — Enter the message queue name where you want this override to apply.

Queue Library — Enter the library reference for the message queue. This must match the library reference used when the message queue monitor was set up.

Message ID — Enter the message ID that you want this routing to apply to. The message ID must be in standard 7 character IBM i OS message format of AAAXXXX. IEventMonitor will accept a message ID with an asterisk as a wild card character. For example, if you enter a value of ABC1*, then any message that is received that starts with ABC1 will be routed using this routing rule.

Routing — See the Notification Address(s) section of this manual on page 5.

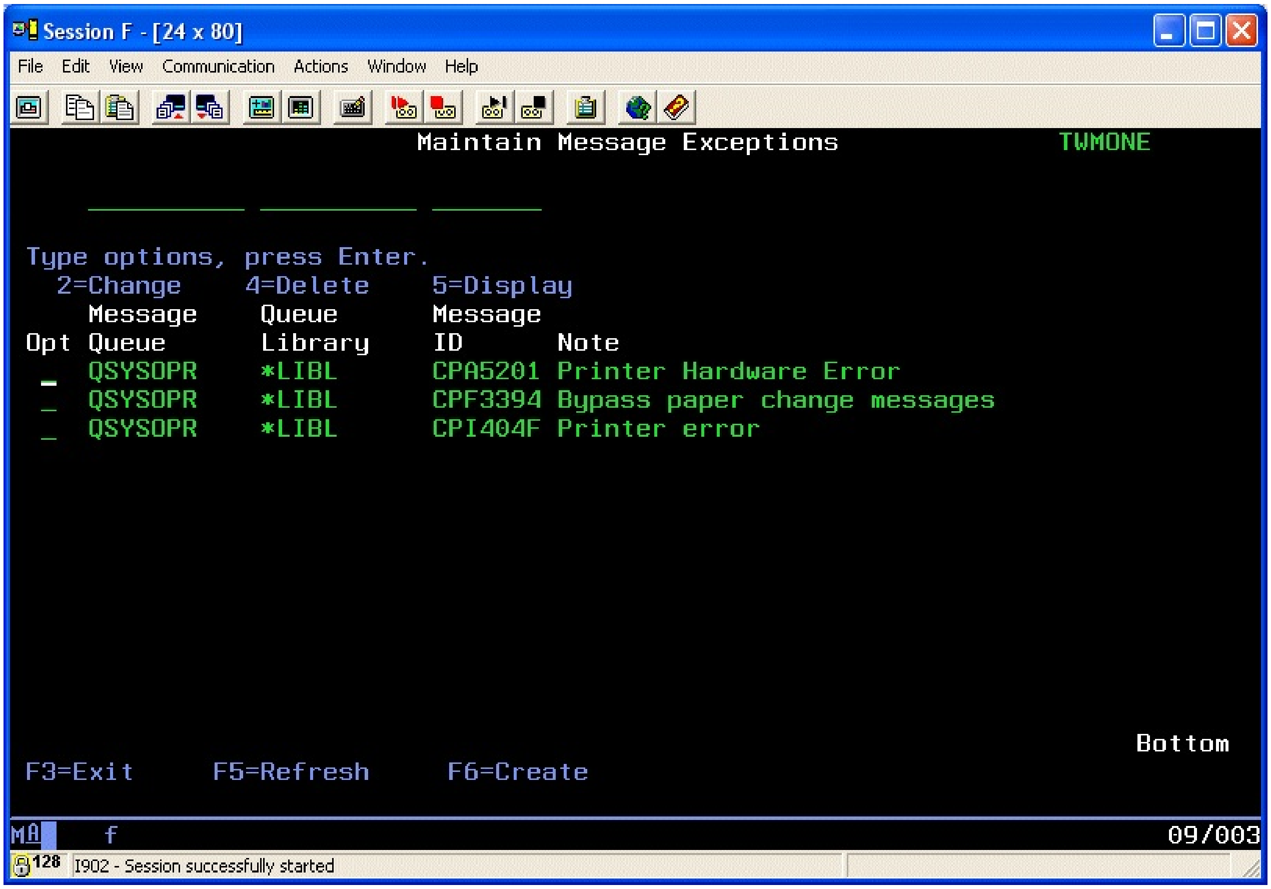
Alert Subject — Enter a specific alert subject that you want for this routing. If you want to use the standard default alert subject, use the special value *DFT.

When you press ENTER, the routing rule will be checked and then, if valid, it will be posted along with your user profile and the current date. Future references to this rule will show the profile and date information.

After a routing rule has been created, any time the monitored message arrives at the monitored message queue, regardless of message severity, it will be sent to the notification address(s) specified here with the specified alert subject text.

Maintain Message ID Exceptions

The message queue monitor allows you to ignore specific messages from processing by the monitor for a specific message queue. Using this feature, you can select to ignore messages for paper changes on printers and other hardware related situations. You can set these up using option #5 on the MASTER menu. When you select this option, a list of current message Ids will be presented:

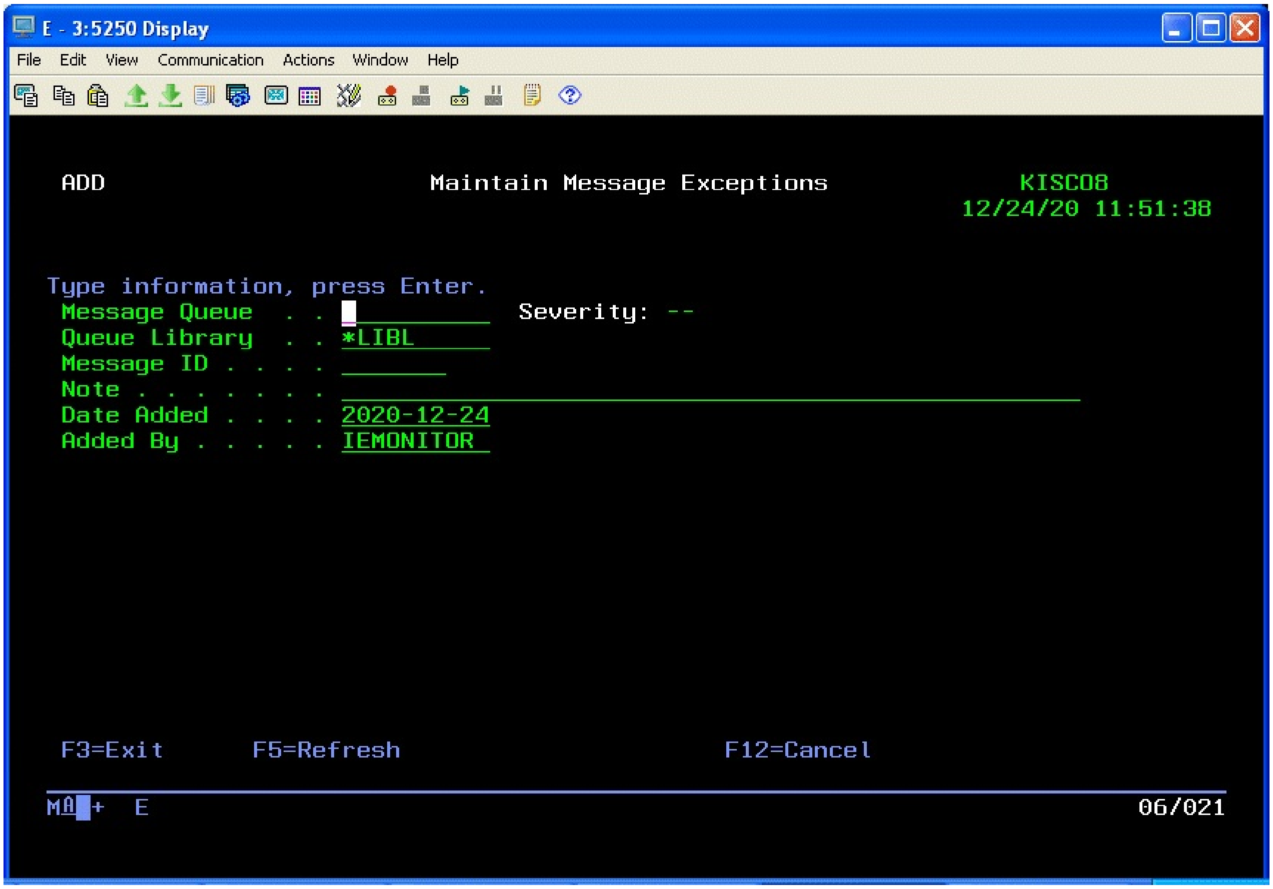

Session F - [24 x 80]
File Edit View Communication Actions Window Help

```
                          Maintain Message Exceptions                 TWMONE

    __________  __________  _______

Type options, press Enter.
  2=Change     4=Delete     5=Display
    Message      Queue        Message
Opt Queue        Library      ID       Note
 _  QSYSOPR      *LIBL        CPA5201  Printer Hardware Error
 _  QSYSOPR      *LIBL        CPF3394  Bypass paper change messages
 _  QSYSOPR      *LIBL        CPI404F  Printer error










                                                                      Bottom
F3=Exit     F5=Refresh     F6=Create

MA     f                                                              09/003
```

128 I902 - Session successfully started

When you first start this option, the list will be blank. To create a new entry, use the F6 function key.

When you start the process to create a new entry, the following display will be presented:



```
 ADD                     Maintain Message Exceptions            KISC08
                                                           12/24/20 11:51:38


Type information, press Enter.
 Message Queue  . . __________   Severity: --
 Queue Library  . . *LIBL_____
 Message ID . . . . _______
 Note . . . . . . . ________________________________________
 Date Added . . . . 2020-12-24
 Added By . . . . . IEMONITOR_







 F3=Exit      F5=Refresh                      F12=Cancel

MA + E                                                          06/021
```

Enter the fields as follows:

Message Queue Enter the name of the monitored message queue where you want this message to be ignored.

Queue Library Enter the library reference for the message queue. If you start your monitor with a *LIBL reference, you MUST also use that same reference here.

Message ID Enter the 7 character message ID that you want to ignore.

Note Enter any descriptive information for the entry that you want.

Once you press ENTER and record the new entry, messages with this message ID will be ignored for the monitored message queue.

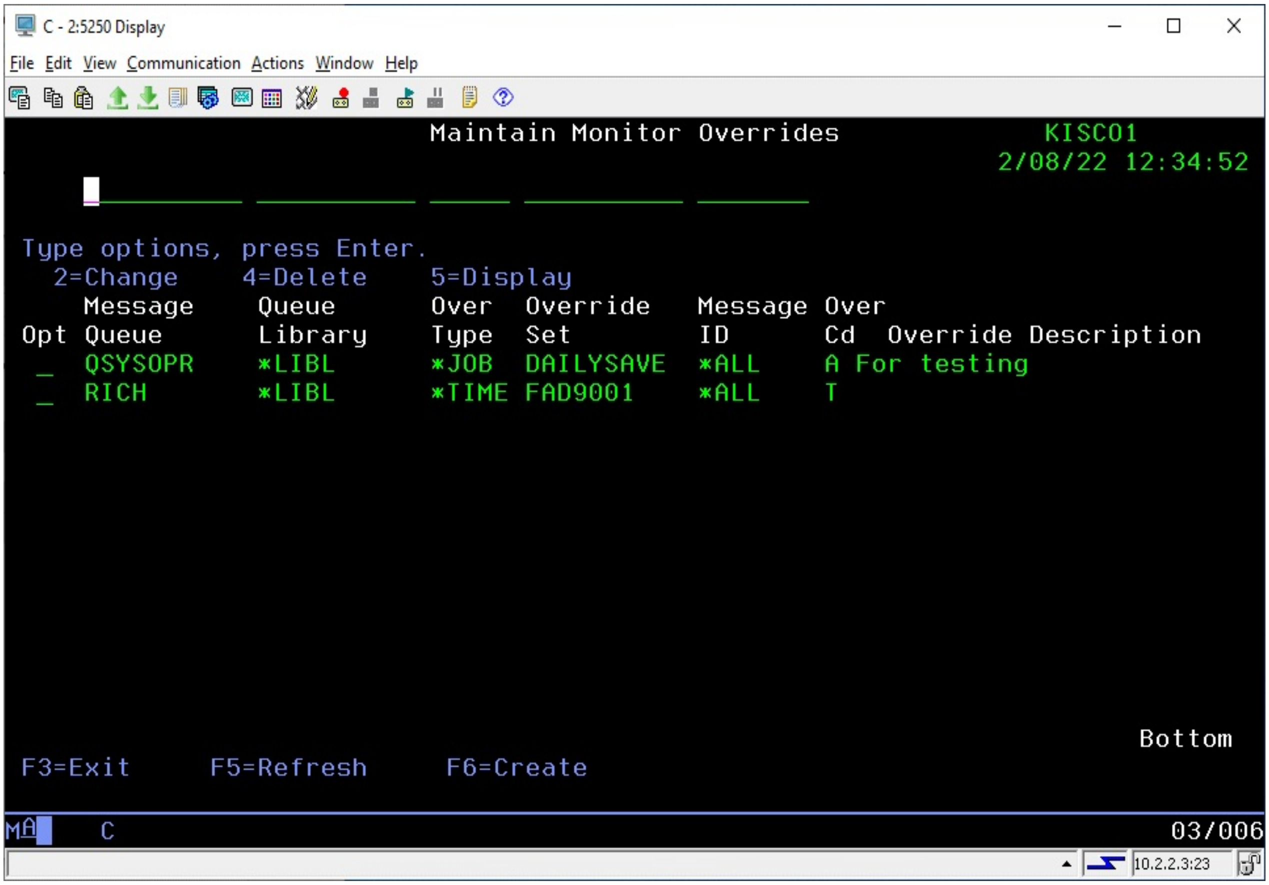
Maintain Message Overrides

iEventMonitor has additional controls added to the product to allow for flexibility to the message queue monitor function. These add controls by job name, user profile, program name and time.

With these options, you can override the control by message severity and have iEventMonitor either always alert messages that arrive at the message queue or always suppress the alert The criteria used can be the user profile that sent the message, the job name that sent the message, the name of the program that sent the message or a time override on repeating a message. In each category, you can instruct iEventMonitor to either always alert messages that match or never alert messages that match.

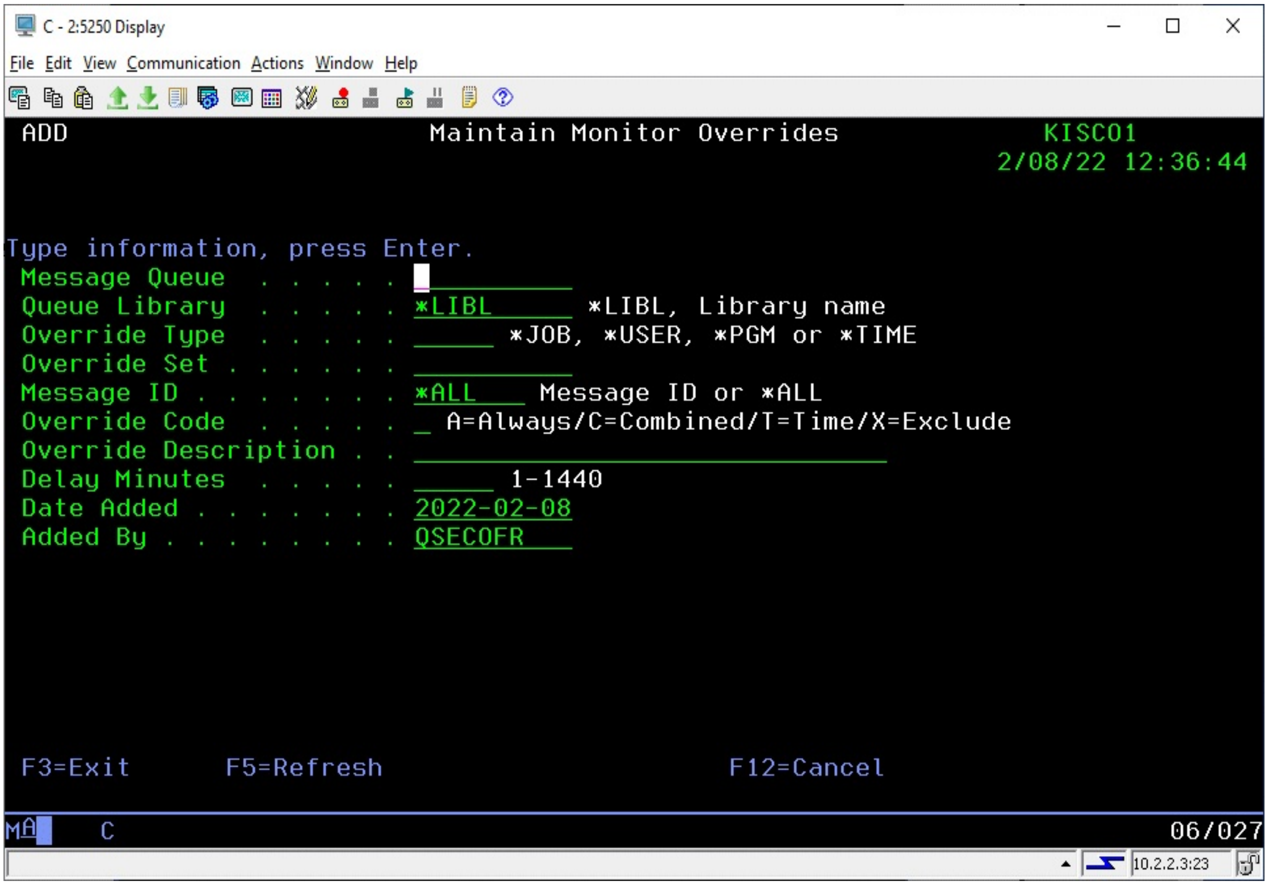
When iEventMonitor checks for these overrides, it will always check for the user profile first, then the job name and lastly the program name. If any override is found, the first one found will apply. If no overrides are found, then the logic of using the message severity code will apply and the message ID will be checked against the Message ID Control table.

To create an override, use option #6 on the MASTER menu. When you start this option, a screen like the following will be displayed:



```
                          Maintain Monitor Overrides             KISC01
                                                          2/08/22 12:34:52
    __________ __________ _____ __________ _______

 Type options, press Enter.
   2=Change    4=Delete    5=Display
     Message     Queue       Over  Override     Message Over
 Opt Queue       Library     Type  Set          ID      Cd  Override Description
  _  QSYSOPR     *LIBL       *JOB  DAILYSAVE    *ALL    A For testing
  _  RICH        *LIBL       *TIME FAD9001      *ALL    T











                                                                        Bottom
 F3=Exit      F5=Refresh     F6=Create

MA     C                                                                03/006
```

To create a new override, use the F6 function key. When you do, the following detail screen will be displayed:



```
 ADD                        Maintain Monitor Overrides                   KISC01
                                                                     2/08/22 12:36:44

Type information, press Enter.
 Message Queue  . . . . . .  __________
 Queue Library  . . . . . .  *LIBL____  *LIBL, Library name
 Override Type  . . . . . .  _____ *JOB, *USER, *PGM or *TIME
 Override Set . . . . . . .  __________
 Message ID . . . . . . . .  *ALL___ Message ID or *ALL
 Override Code  . . . . . .  _ A=Always/C=Combined/T=Time/X=Exclude
 Override Description . . .  ______________________________
 Delay Minutes  . . . . . .  _____ 1-1440
 Date Added . . . . . . . .  2022-02-08
 Added By . . . . . . . . .  QSECOFR___




 F3=Exit      F5=Refresh                        F12=Cancel

MA     C                                                                      06/027
```

An override must be associated with a specific message queue. The message queue must also be referenced exactly the same way that the monitor is started. If you start the monitor referring to the message queue library using the *LIBL library list option, then the override must also be created this way.

Fill in the fields as follows:

Message Queue	Enter the name of the message queue
Queue Library	Enter the library for the message queue
Override Type	Choose one of the values as follows: *USER: The override set is a user profile *JOB: The override set is a job name *PGM: The override set is a program name *TIME: The override set is for a time delay on repeated messages
Override Set	Enter the override set to be checked against the message received. If you entered *USER above, enter the user profile here. If *JOB, enter the job name. If *PGM, enter the program name.

Override Code Choose one of the values as follows:

A Always alert the qualifying message
X Never alert the qualifying message
C Combines Always alert (as stated above with code A) with message ID Exceptions. If the message should always be reported but there is an active ID Exception for it, it will be suppressed.
T Use this value for a time exception. See also the "Delay Minutes" setting below.

Message ID Enter the value *ALL for most entries. If you want to override a specific message ID handling for a given job (Override Type *JOB), then you can enter that message ID here. For example, if you want to suppress just a given error message from a job, you can do that here. To suppress all messages from a given job, use the *ALL value.

Override Description Enter your own description for the override condition.

Delay Minutes For a Time exception, enter the number of minutes that you want to suppress the message for. This will prevent a regularly occurring message from being alerted over and over. A value of 1 to 1440 may be entered.

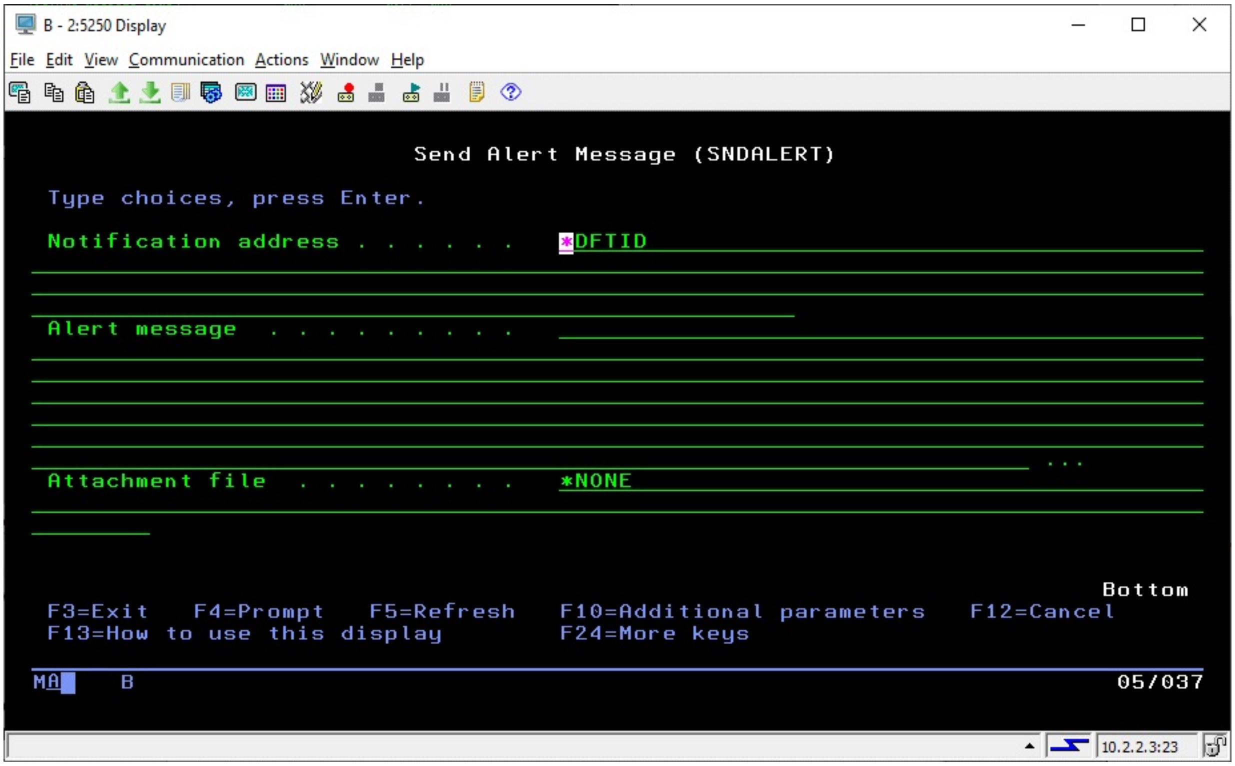
Note: Using Override Code C, you can get all messages issued for a job, user or program, but still suppress specific messages that you are not interested in seeing, like paper changes or printer alignment.

Note: An example of the *TIME override might be when your system is low on storage. When this happens, your system will issue the CPI099C message every 30 minutes until the low storage situation no longer exists. Before this change, iEventMonitor would issue a fresh alert on this message every time it was issued. After this change, you can control how often this error is repeated as an alert. You might want it to be issued as an alert every 4 hours instead of every 30 minutes.

When all fields have been entered, press ENTER to record the override in the table. Once created, messages monitored on the message queue will check this table first before checking for severity and message ID exceptions.

Send An Alert

When you select menu option #7 or prompt the SNDALERT command in library IEMLIB, the following display will be shown:



```
                     Send Alert Message (SNDALERT)

 Type choices, press Enter.

 Notification address . . . . . .   *DFTID



 Alert message  . . . . . . . . .






 Attachment file  . . . . . . . .   *NONE



                                                                  Bottom
 F3=Exit   F4=Prompt   F5=Refresh   F10=Additional parameters   F12=Cancel
 F13=How to use this display        F24=More keys
MA     B                                                          05/037
```

This can be used to manually send an alert message. Fill in the parameters as follows:

Notification address — See the Notification Address(s) section of this manual on page 5.

Alert message — Enter up to 1,024 characters that you want to send as your alert message.

Attachment File — Enter the path for an attachment file that you want to include with the alert notification. As an example, if you want to include a file named myfile.txt that is stored in the tmp folder in the IFS, then this parameter would look like this:

/tmp/myfile.txt

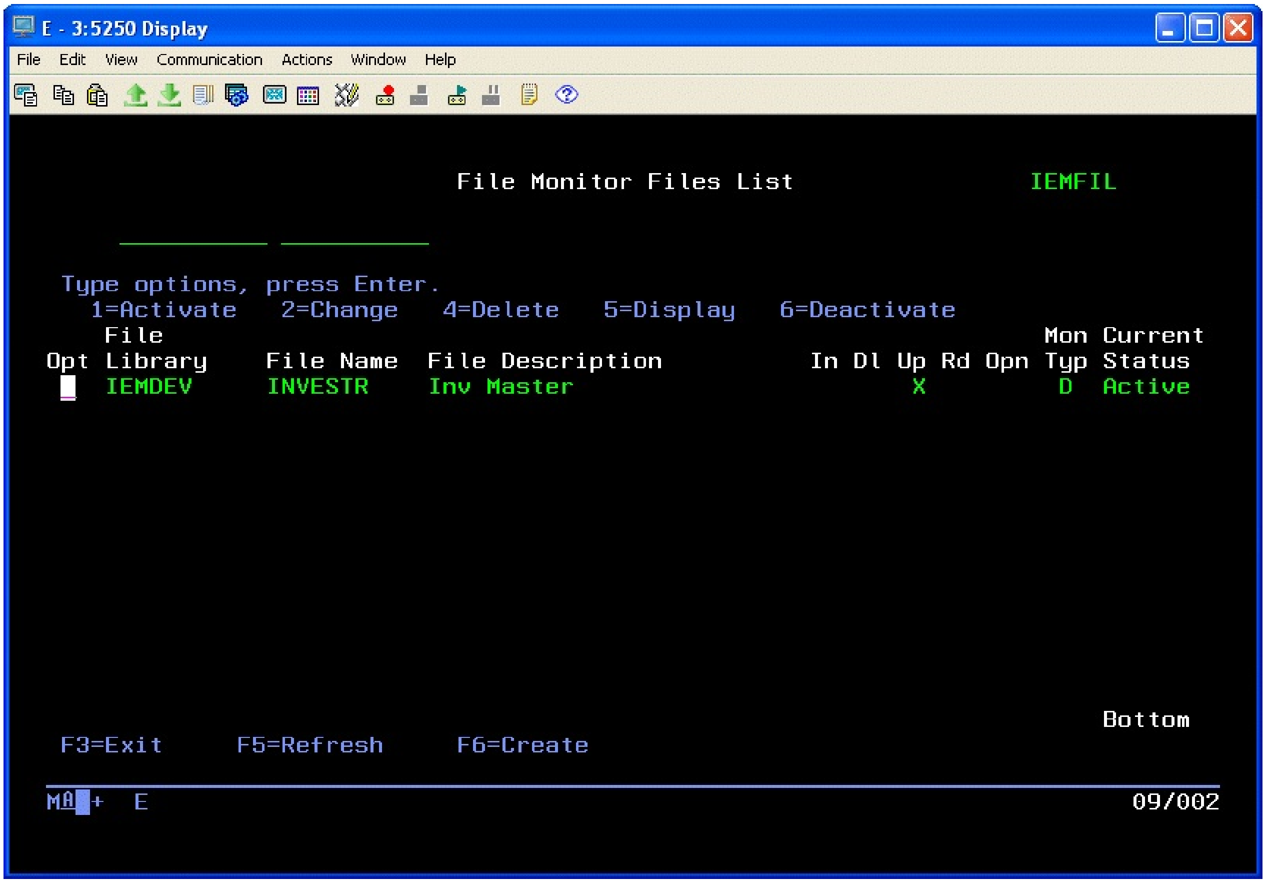
If you leave the default value *NONE, then no attachment file will be included.

You can also access a unique alert subject text field for this command by using the F10 key. If you do so, please leave the other additional parameters set the way they appear.

Note that this command can be used either from the command line or within your own CL programs. When you process the command, the alert message text will be sent to all addresses specified.

File Monitors

When you select option #8 from the MASTER menu, or run the WRKFILMON command, the following display will be shown:

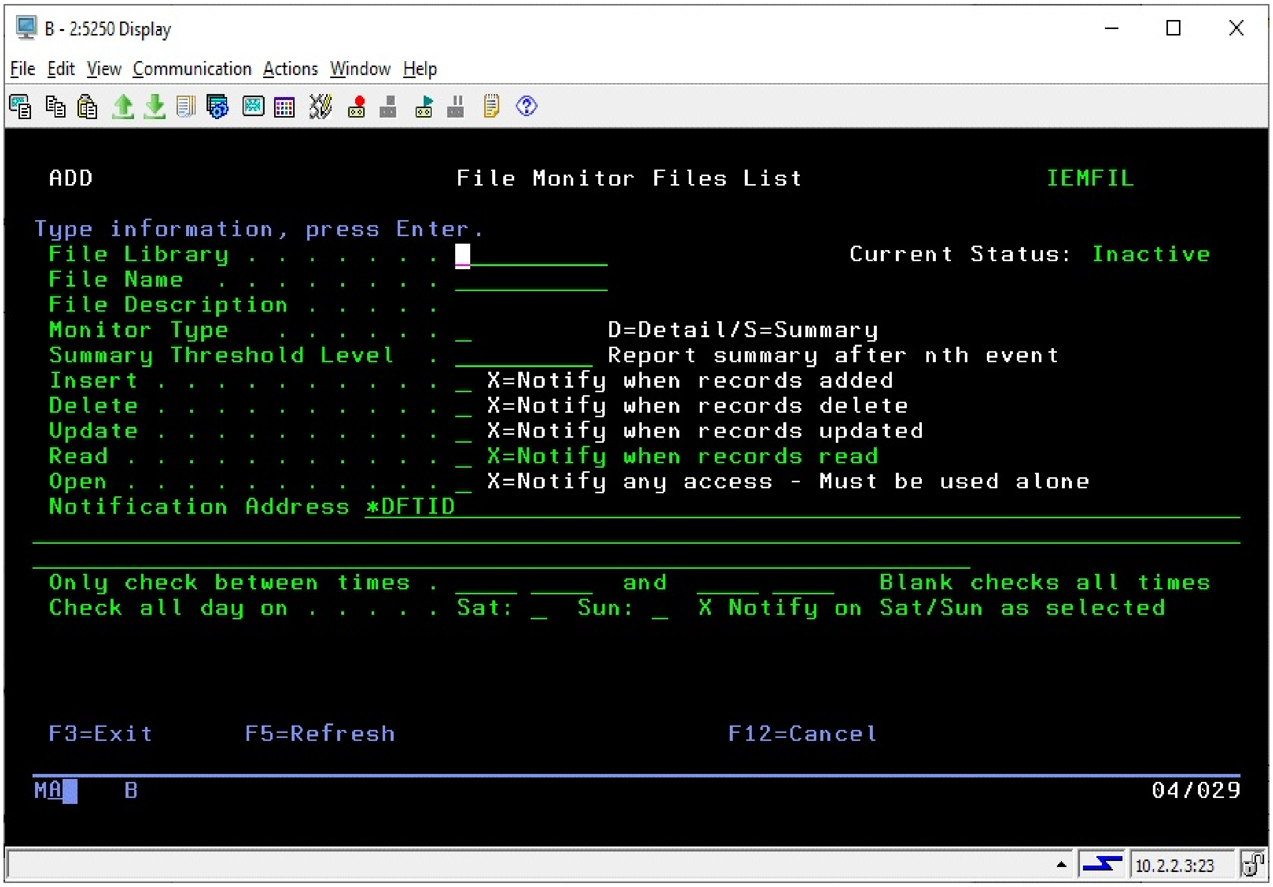


```
                         File Monitor Files List                IEMFIL

   Type options, press Enter.
     1=Activate   2=Change   4=Delete   5=Display   6=Deactivate
       File                                                    Mon Current
 Opt Library     File Name  File Description        In Dl Up Rd Opn Typ Status
     IEMDEV      INVESTR    Inv Master                    X          D   Active

                                                                         Bottom
   F3=Exit      F5=Refresh     F6=Create

 MA  +  E                                                                09/002
```

This display shows a list of files that are set up for the File Monitor feature in iEventMonitor. A File Monitor will “watch” an IBM i database file for selected types of process activity. You can configure your file monitor to look for record adds, record changes, record deletes, file opens or file record read processing. When any selected event occurs, iEventMonitor will send an alert with the details. You can specify for detailed information on each event or summary information after every *nth* event.

The above sample display shows one file monitor that is in Active status. Once a monitor has been created, you must then activate it before it will start reporting. You can always deactivate a monitor but leave the configuration in place for future use.

To create a new File Monitor, press the F6 function key and the following screen will be presented to you:



```
  ADD                      File Monitor Files List                IEMFIL

 Type information, press Enter.
  File Library . . . . . . . █________                Current Status: Inactive
  File Name  . . . . . . . . __________
  File Description . . . . .
  Monitor Type   . . . . . . _         D=Detail/S=Summary
  Summary Threshold Level  . _________ Report summary after nth event
  Insert . . . . . . . . . . _ X=Notify when records added
  Delete . . . . . . . . . . _ X=Notify when records delete
  Update . . . . . . . . . . _ X=Notify when records updated
  Read . . . . . . . . . . . _ X=Notify when records read
  Open . . . . . . . . . . . _ X=Notify any access - Must be used alone
  Notification Address *DFTID______________________________________________
 __________________________________________________________________________

  Only check between times . ____ ____   and   ____ ____   Blank checks all times
  Check all day on . . . . . Sat: _   Sun: _   X Notify on Sat/Sun as selected



  F3=Exit      F5=Refresh                        F12=Cancel

 MA█    B                                                            04/029
```

Fill in the fields as follows:

File Library — Enter the name of the library where the file resides.

File Name — Enter the name of the file to be monitored.

File Description — Leave this blank when creating the monitor. The system will pick this field up for the file description.

File Monitor Type — D: Detail level monitor. For every selected event, iEventMonitor will issue an alert.

S: Summary level monitor. iEventMonitor will issue a summarized alert each time the Summary Threshold has been reached.

Summary Threshold — For summary monitors only. Enter the number of events between alerts.

Insert — Enter X if you want to monitor for records being added to the file.

Delete — Enter X if you want to monitor for records being deleted from the file.

Update

Enter X if you want to monitor for records being updated in the file.

Read

Enter X if you want to monitor for records being read from the file.

WARNING!!

We strongly advise that you not use a Read monitor when you are running a Detail monitor. This could easily result in an excessive number of alerts being issued and possible system and/or application degradation.

Open

Enter X if you want to monitor for the file being opened. When you use this option, the following additional restrictions apply:

- It can be the only option specified. Insert, Delete, Update and Read must all be blank.
- The Monitor Type must be set to **S**
- The Summary Threshold must be set to zero

You will receive a file alert whenever a user accesses the file. The alert will not be repeated until either of the following conditions occur:

- A different user accesses the file.
- The same user accesses the file after the date has changed.

Notification
Address

See the Notification Address(s) section of this manual on page 5.

Only check between
Time

This is an optional entry. If you leave it blank, there will be no restriction on the time of day when the monitor will run. If you want to limit the time period when the monitor will be active, enter the time span when you want the monitor to run. Two fields are provided to allow you to span the time period from midnight to the next morning.

Check all day on

If you want the file monitor to be active on Saturday and Sunday, place an X in the field for those days.

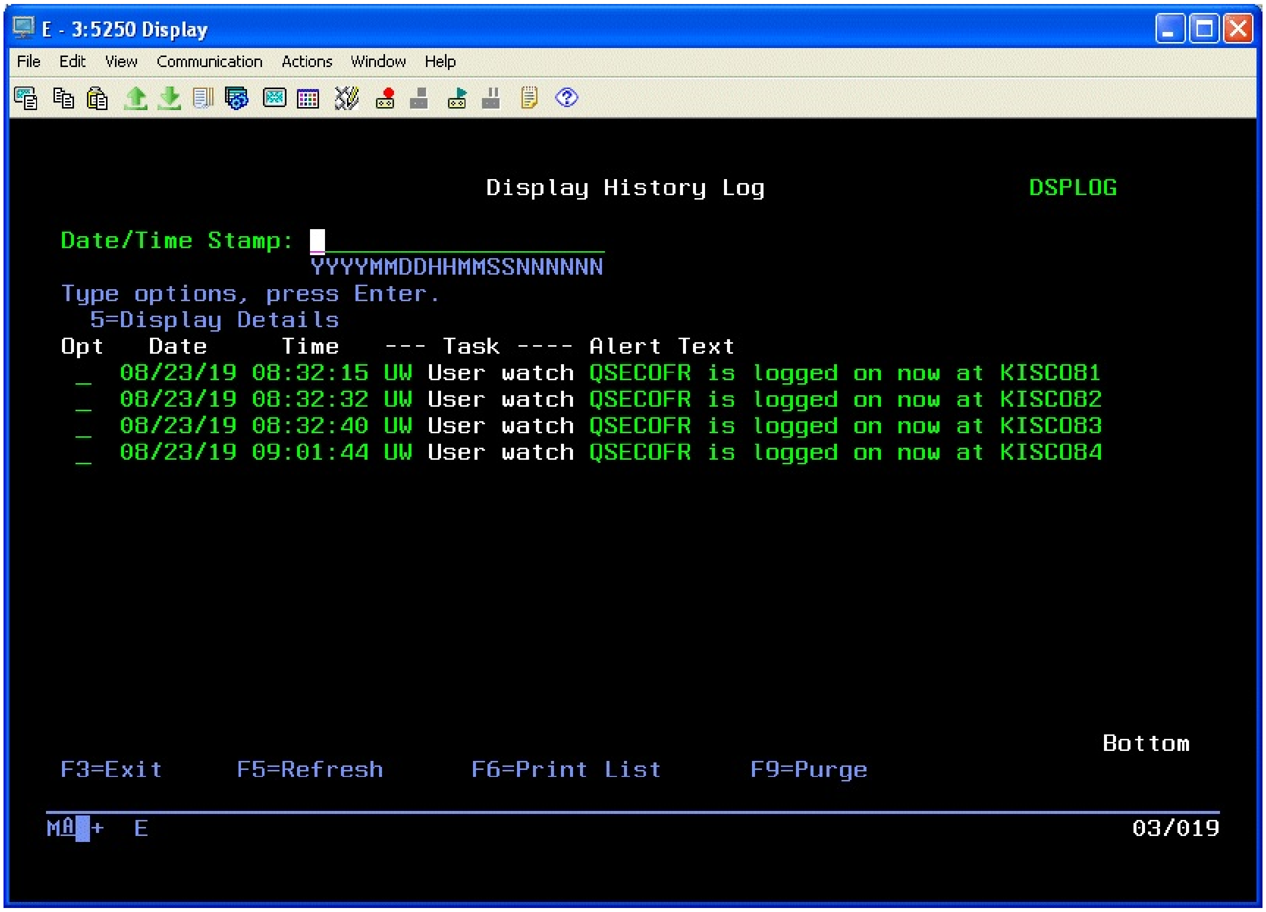
Once you have the monitor configured, press ENTER to store the configuration. The display will return to the list of monitors and the monitor will be configured in "Inactive" status. No file monitoring actions will be taken until you activate the monitor.

To activate a monitor that you have configured, locate it in the list of monitors and place a '1' next to it in the option (Opt) column and press the ENTER key. This will activate the monitor and start tracking activity immediately.

To stop a monitor that is active, find it in the list and place a '6' next to is in the option column and press the ENTER key. This will stop all file monitor activity immediately.

Display Activity Log

When you select option #9 on the MASTER menu or use the WRKIEMLOG command, a list of alerts that have been issued by iEventMonitor on this system along with administrative actions will be displayed starting with events from the current date.



```
                         Display History Log                  DSPLOG

 Date/Time Stamp: _________________
                  YYYYMMDDHHMMSSNNNNNN
 Type options, press Enter.
   5=Display Details
 Opt   Date     Time    --- Task ---- Alert Text
  _  08/23/19 08:32:15 UW User watch QSECOFR is logged on now at KISC081
  _  08/23/19 08:32:32 UW User watch QSECOFR is logged on now at KISC082
  _  08/23/19 08:32:40 UW User watch QSECOFR is logged on now at KISC083
  _  08/23/19 09:01:44 UW User watch QSECOFR is logged on now at KISC084

                                                                   Bottom
 F3=Exit     F5=Refresh      F6=Print List      F9=Purge

MA  +   E                                                          03/019
```

To view the details about a specific alert, put a 5 next to it and press ENTER.

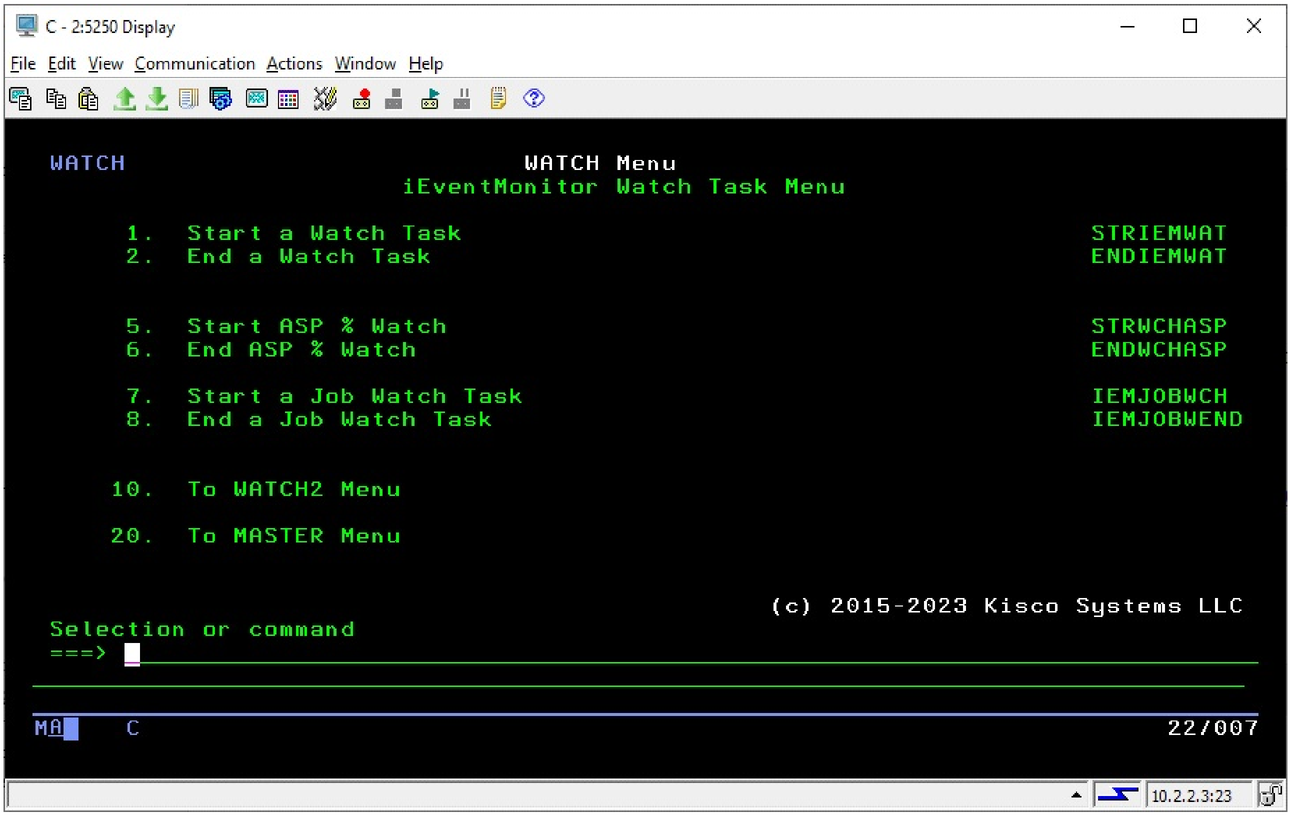
You can list the contents of the log using the F6 function key. When you use the list function, a prompt display will let you either print all entries or a selection of entries.

The F9 function key will allow you to purge the contents of the log of all entries prior to a given date. The purge process can also be performed using the DSPLOGPRG command.

The Watch Menus

iEventMonitor contains a number of watch features that will monitor for specific situations and events on your system. The Watch menus control these functions and looks like this:

WATCH Menu:

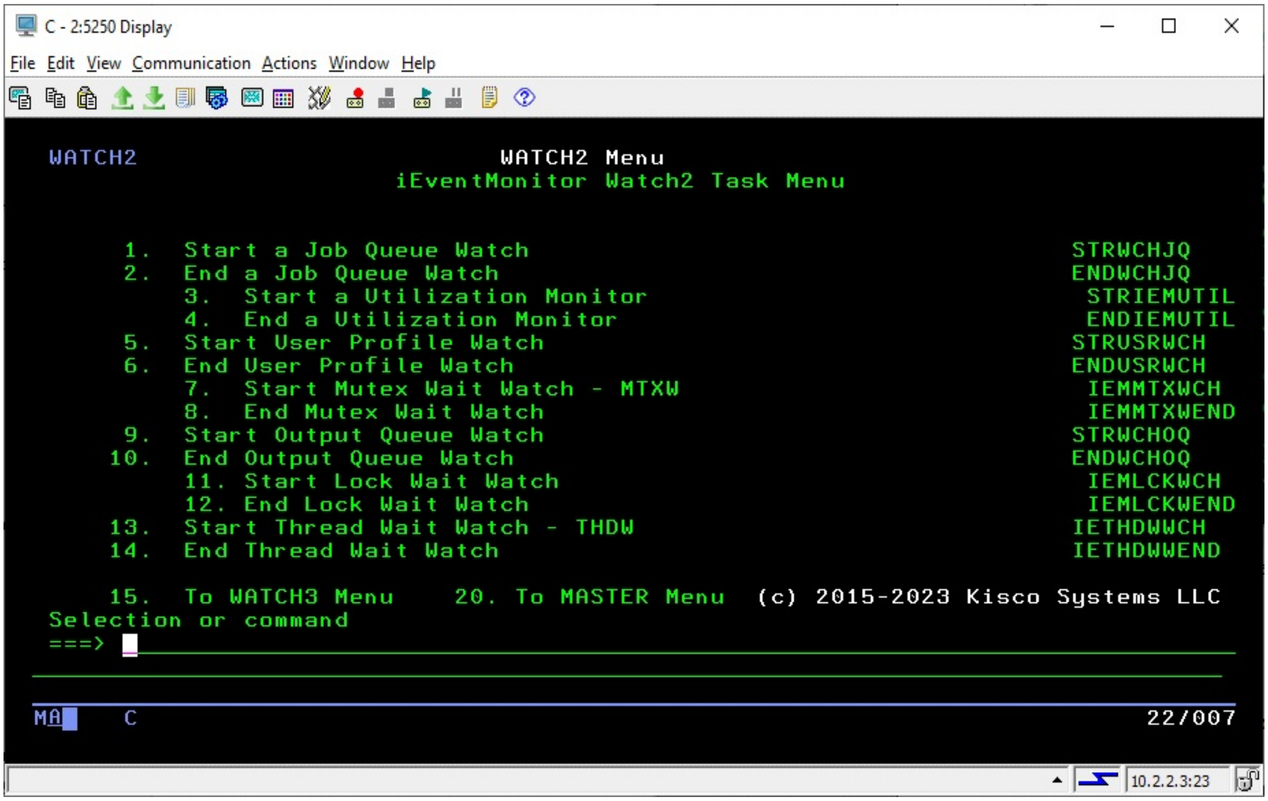


```
WATCH                              WATCH Menu
                           iEventMonitor Watch Task Menu

      1.  Start a Watch Task                                    STRIEMWAT
      2.  End a Watch Task                                      ENDIEMWAT

      5.  Start ASP % Watch                                     STRWCHASP
      6.  End ASP % Watch                                       ENDWCHASP

      7.  Start a Job Watch Task                                IEMJOBWCH
      8.  End a Job Watch Task                                  IEMJOBWEND

     10.  To WATCH2 Menu

     20.  To MASTER Menu

                                         (c) 2015-2023 Kisco Systems LLC
Selection or command
===>

MA     C                                                             22/007
```

The options on this menu are as follows:

1. Start a Watch Task	Start a watch for a specific message ID on a message queue or in the System History Log
2. End a Watch Task	End a message queue watch previously started
5. Start ASP % Watch	Start a watch for significant storage level changes
6. End ASP % Watch	End a storage level watch
7. Start a Job Watch Task	Start a watch for a specific or a generic* job name
8. End a Job Watch Task	End a job watch
10. To WATCH2 Menu	Transfer to the WATCH2 menu for additional Watch functions.
20. To MASTER Menu	Return to the MASTER menu

Additional Watch Tasks are on the WATCH2 Menu:



```
 WATCH2                      WATCH2 Menu
                    iEventMonitor Watch2 Task Menu

      1.  Start a Job Queue Watch                              STRWCHJQ
      2.  End a Job Queue Watch                                ENDWCHJQ
          3.  Start a Utilization Monitor                       STRIEMUTIL
          4.  End a Utilization Monitor                         ENDIEMUTIL
      5.  Start User Profile Watch                             STRUSRWCH
      6.  End User Profile Watch                               ENDUSRWCH
          7.  Start Mutex Wait Watch - MTXW                     IEMMTXWCH
          8.  End Mutex Wait Watch                              IEMMTXWEND
      9.  Start Output Queue Watch                             STRWCHOQ
     10.  End Output Queue Watch                               ENDWCHOQ
          11. Start Lock Wait Watch                             IEMLCKWCH
          12. End Lock Wait Watch                               IEMLCKWEND
     13.  Start Thread Wait Watch - THDW                       IETHDWWCH
     14.  End Thread Wait Watch                                IETHDWWEND

     15.  To WATCH3 Menu     20. To MASTER Menu  (c) 2015-2023 Kisco Systems LLC
 Selection or command
 ===> _

MA      C                                                              22/007
```

The options on this menu are as follows:

1. Start a Job Queue Watch — Start a task to watch a specific job queue to see if it gets backed up with jobs not starting or gets put on hold

2. End a Job Queue Watch — End a job queue watch task

3. Start a Utilization Monitor — Start a watch for a specific subsystem looking for jobs with very high CPU utilization

4. End a Utilization Monitor — End a CPU Utilization Monitor

5. Start User Profile Watch — Start a watch looking for a specific user profile logging on to your system with a terminal session.

6. End User Profile Watch — End a user profile watch

7. Start MTXW Watch — Start a watch looking for jobs entering MTXW status.

8. End MTXW Watch — End a MTXW watch.

9. Start Output Queue Watch — Start and output queue watch.

10. End Output Queue Watch — End an output queue watch.

11. Start Lock Wait Watch — Start a Lock-Wait watch (LCKW)

12. End Lock Wait Watch — End a Lock-Wait watch.

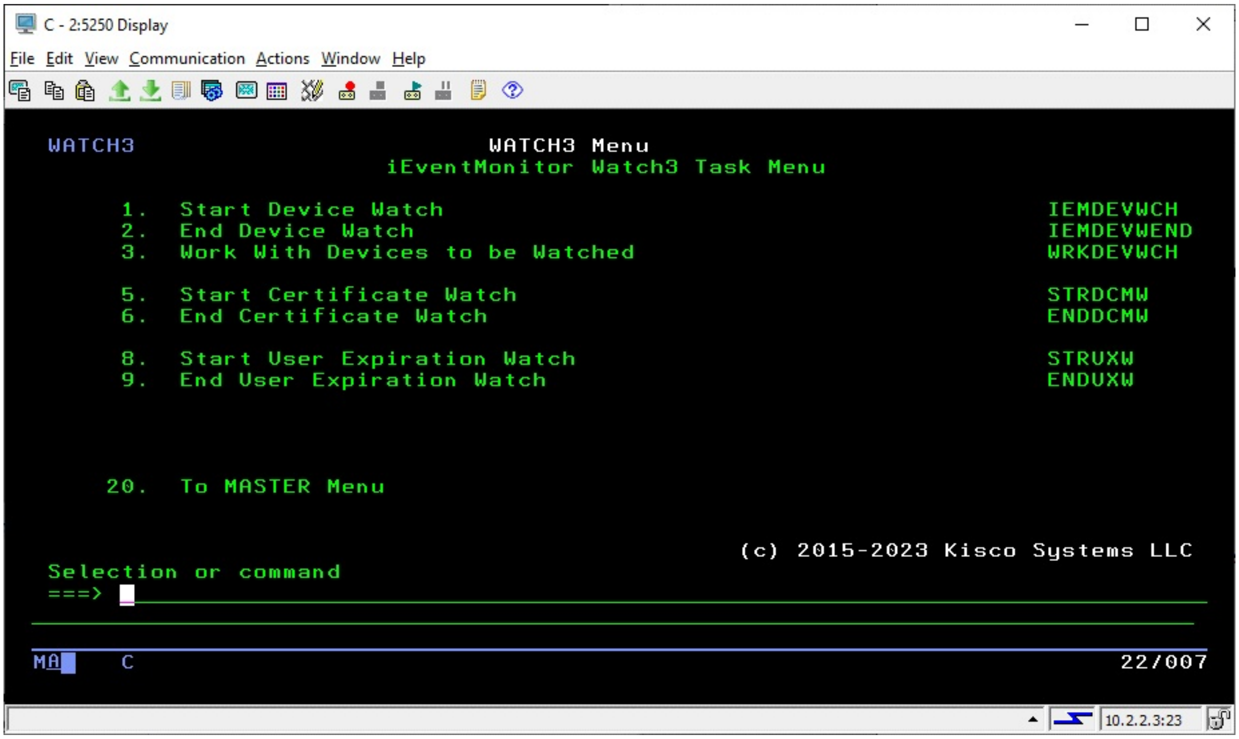
13. Start Thread Wait Watch — Start a Thread-Wait watch (THDW)

14. End Thread Wait Watch — End a Thread-Wait watch

15. To WATCH3 Menu — Displays the WATCH3 menu

20. To MASTER Menu — Return to the MASTER iEventMonitor menu

Additional Watch Tasks are on the WATCH3 Menu:



```
 WATCH3                          WATCH3 Menu
                         iEventMonitor Watch3 Task Menu

         1.  Start Device Watch                                     IEMDEVWCH
         2.  End Device Watch                                       IEMDEVWEND
         3.  Work With Devices to be Watched                        WRKDEVWCH

         5.  Start Certificate Watch                                STRDCMW
         6.  End Certificate Watch                                  ENDDCMW

         8.  Start User Expiration Watch                            STRUXW
         9.  End User Expiration Watch                              ENDUXW



        20.  To MASTER Menu


                                         (c) 2015-2023 Kisco Systems LLC
 Selection or command
 ===>

MA     C                                                           22/007
```

The options on this menu are as follows:

1. Start Device Watch — Start a watch for specific devices on the system to issue alerts when they are not available for use.

2. End Device Watch — End the device watch

3. Work With Devices to be Watched — Work with devices names to be watched

5. Start Certificate Watch — Start a daily check for digital certificates that are expiring soon.

6. End Certificate Watch — End the daily certificate watch

8. Start User Expiration Watch   Start a daily check for user profiles that will be expiring soon.

9. End User Expiration Watch   End the daily user profile expiration watch.

20. To MASTER Menu   Return to the MASTER menu

Each of these functions is described in the following sections of this documentation.

Message ID Watch Task

iEventMonitor includes a feature that will allow you to set watches for specific message IDs arriving at any message queue you want to watch or in the System History Log. This watch function is different from the message queue monitor feature in that the watch will check for a specific message ID regardless of the message severity level whereas the monitor looks at all messages that have a severity code at a selected level or higher. This is also the only way to watch for a message on the System History Log.

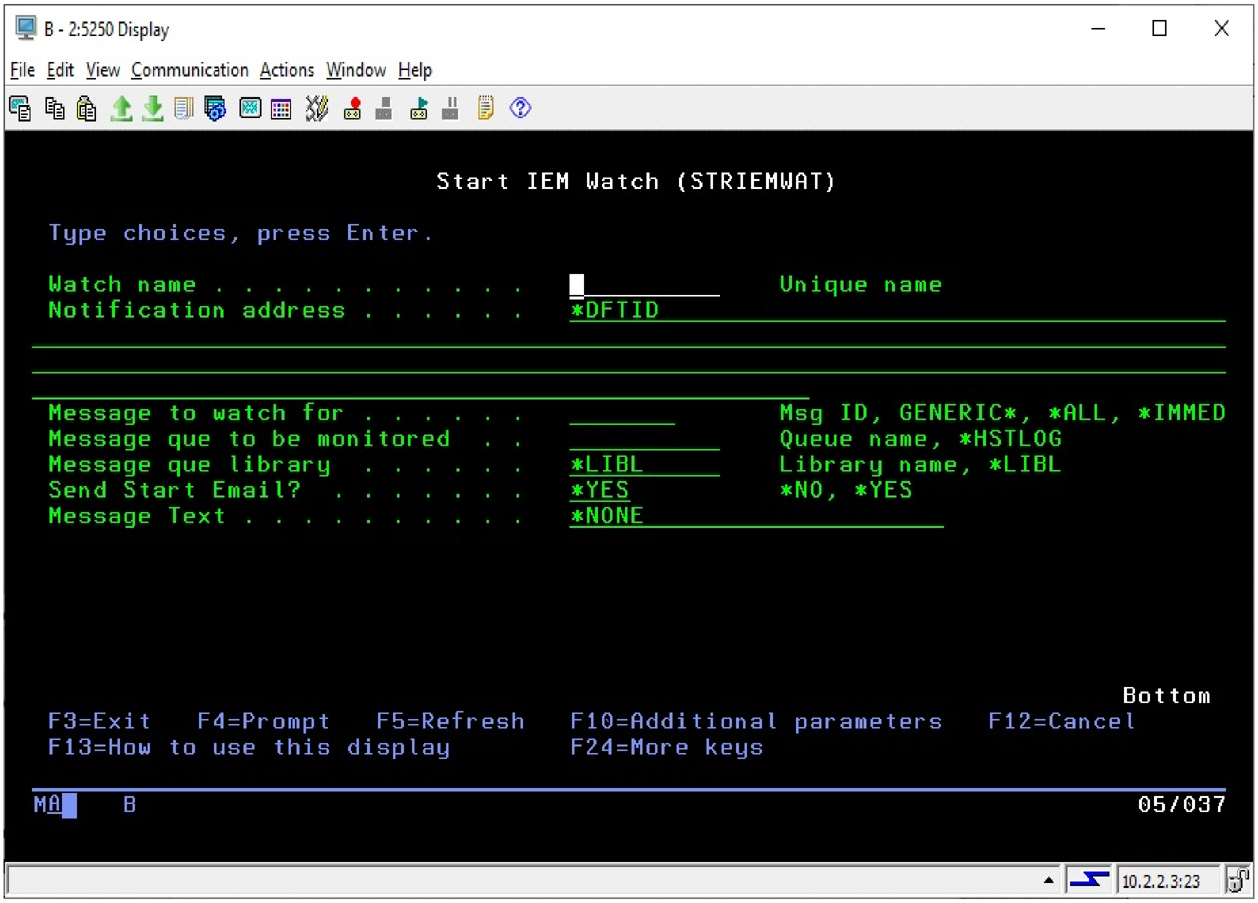
You can also set a watch to look for a specific text string appearing in a message posted to a message queue or in the history log.

You can set a single watch or multiple watches using this feature. It will let you monitor the system operator message queue at the same time that you have the iEventMonitor message queue monitor function active. You can also set watches for any other message queue in your system including user profile message queues.

From the WATCH menu, you can start a watch, end a watch.

Each watch that runs on your system must be assigned a unique 10 character name. As a watch task is started, it is logged into the iEventMonitor system. At any time, you can view the names of the active watches by running option #1 from the MASTER menu by checking the WT (Watch Task) entries. To start a new watch task, use option #1 on the WATCH menu. To end a watch task, use option #2.

To start a new Watch task, select option #1 from the WATCH menu. The following screen will be displayed:



```
                       Start IEM Watch (STRIEMWAT)

 Type choices, press Enter.

 Watch name . . . . . . . . . . .   _          Unique name
 Notification address . . . . . .   *DFTID




 Message to watch for . . . . . .   _______    Msg ID, GENERIC*, *ALL, *IMMED
 Message que to be monitored  . .   _________  Queue name, *HSTLOG
 Message que library  . . . . . .   *LIBL      Library name, *LIBL
 Send Start Email?  . . . . . . .   *YES       *NO, *YES
 Message Text . . . . . . . . . .   *NONE






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

MA      B                                                              05/037
```

The STRIEMWAT command will be prompted, you can enter the command parameters as follows:

Watch name — This must be a unique watch event name. You can set multiple watches, but each one must have a unique name. You will need to know this name when you want to end the watch event at a later time.

Notification Address — See the Notification Address(s) section of this manual on page 5.

Message to watch for — Enter the message ID that you want to monitor for with this watch task.

*ALL	Search all messages posted to the message queue
*IMMED	Search just the immediate messages that are posted to the message queue

Message que to be monitored

Enter the name of the message queue that you want to monitor. You can watch for a specific message in the System History Log by using the special value *HSTLOG. When you use this option, you must be watching for a specific message ID and you cannot specify a Message Text selection.

Message que library

Enter the name of the library where the message queue is located.

Send Start Email?

Leave the default value *YES if you want iEventMonitor to issue an alert reporting that this watch task is being activated. Change it to *NO if you do not want the alert to be issued.

Message Text

If you are not searching for a specific text string, leave this set to *NONE.

If you are searching for a text string, enter the string here. Keep in mind that the string is case sensitive and uses embedded blanks.

Using the F10 function key, additional parameters will be shown:

Alert Subject Text

iEventMonitor will issue an alert with the default subject text if you leave this set to *DFT. If you want a unique alert subject text used, enter that value here and it will be used if an alert is issued.

See below for the Exit Program options that are also shown.

To end a watch task, just use option #2 on the WATCH menu and enter the same WNAME parameter value that you used when you started the task. Keep in mind that ending the watch using option #2 on the WATCH menu will also remove the watch from automatic restart processing. If you want to end a watch task and leave it available for future use, use option #1 on the MASTER menu.

Watch Task Exit Program Option

The Watch Task includes an optional exit program interface. To access the additional parameters needed for this feature, press the F10 key and you will see the following additional options:

Exit program

If you want to call your own exit program during watch processing, enter the name of the program here. When the watch is satisfied, the exit program will be called passing a single parameter that contains information about the message issued. The amount of information is determined by the setting of the Exit Level parameter (see below). If you are not using an exit program, then the special value of *NONE should be used.

Exit program library

If you are calling your own exit program, enter the name of the libary where it is stored on your system. You can use the *LIBL value if the libary is in the system user library list.

Send alerts

This value controls whether iEventMonitor will send out an alert when you have specified an exit program.

Choose one of the following values:

*NO - No alerts will be issued.

*YES - Alerts will be issued as normal.

Exit level

Choose the level of exit data that you want passed to your exit program.

Chose one of the following values:

*STD The single parameter with a length value of 7 will be passed. It will contain the message ID value.

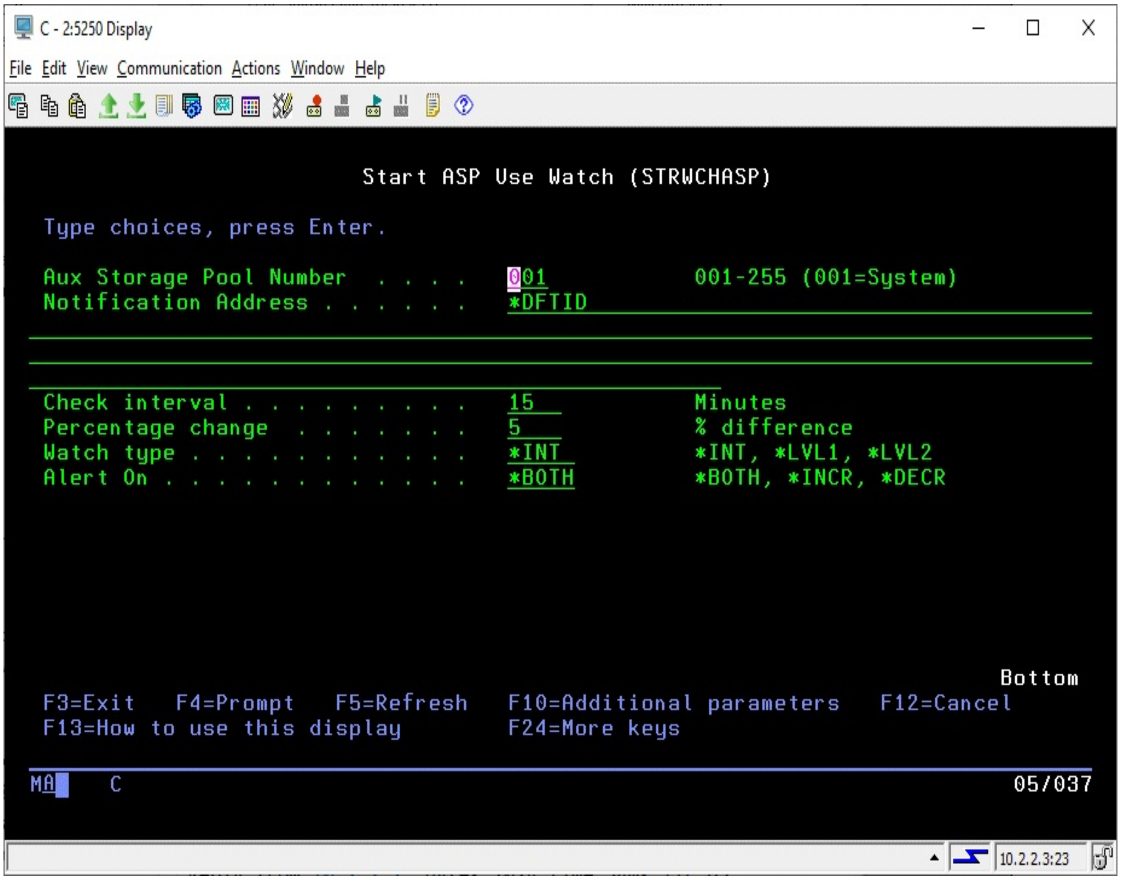
*ADV A single parameter of 1024 characters will be passed which represents the full message detail available from the message ID being watched for. This can be used for a variety of user objectives. The full message data stream is included.

ASP % Watch Function

Option #5 on the WATCH menu can be used to start up to three special watch functions that will monitor disc space utilization changes. The ASP % (Auxilliary Storage Pool) represents the amount of disc space that has been used. On the IBM i system, if this percentage reaches 100%, the system can abnormally terminate all processing, so it is critical that you know when this percentage is making unplanned changes.

The Interval ASP Watch function will start a job that will periodically check on the ASP % for your system and when it changes by a rate that you set, an alert will be issued advising you of the change and reporting the new ASP % rate for you. This will let you react well in advance of a catastrophic event on your system. Alternately you start one or two Level ASP Watch Functions that will issue alerts when the ASP% exceeds specific given levels.

To start any ASP Watch functions, select option #5 on the WATCH menu or issue the STRWCHASP command in the IEMLIB library. The following display shows the options you will need to set when starting this feature:



```
                    Start ASP Use Watch (STRWCHASP)

 Type choices, press Enter.

 Aux Storage Pool Number  . . . .   001           001-255 (001=System)
 Notification Address . . . . . .  *DFTID



 Check interval . . . . . . . . .   15            Minutes
 Percentage change  . . . . . . .   5             % difference
 Watch type . . . . . . . . . . .   *INT          *INT, *LVL1, *LVL2
 Alert On . . . . . . . . . . . .   *BOTH         *BOTH, *INCR, *DECR







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

MA    C                                                            05/037
```

Fill in the parameters as follows:

Aux Storage Pool Number	Enter the ASP number that you want to watch. ASP number 001 is the default system ASP. This value must be entered as a 3 digit number in the range of 001 - 255. If you are setting an ASP Watch, we recommend that you always include ASP #001 which is the system ASP. ASP numbers greater than 032 are iASP's

(Independent ASPs).

Notification Address
See the Notification Address(s) section of this manual on page 5.

Check interval
Enter the interval in minutes. This tells iEventMonitor how frequently you want the system to check the current status of the ASP (disc) utilization.

Percentage change
For an Interval Watch, enter the percentage change that you want to be notified about. The default value is 5%. Using this value, when the utilization on the ASP increases or decreases by 5%, a notice will be issued. If you need to react to a problem on your system, this should provide you with some advance warning.

For a Level Watch, set the specific ASP% level you want an alert issued for. For example, if you want an alert when the ASP% reaches 70% and another when it reaches 85%, set the *LVL1 (see below) to 70 and the *LVL2 to 85.

Watch type
Select one the the following. Only one watch of each type can be started:

*INT An Interval Watch will be started.

*LVL1 The first Level Watch will be started.

*LVL2 The second Level Watch will be started.

Alert On
This option controls how the *INT watch type works.

Choose one of the following values:

*INCR Whenever the disc utilization increases by the given percentage, an alert will be issued.

*DECR Whenever the disc utilization decreases by the given percentage, an alert will be issued.

*BOTH Whenever the disc utilization either increases or decreases

Using the F10 function key will display an additional parameters as follows:

Level Reminder
When using the *LVL1 or *LVL2 Watch Type, you can ask iEventMonitor to send a reminder alert if the over level condition is not corrected after a period of time. If you do not want a reminder, leave this set to zero. Otherwise, enter the number of minutes before you want a reminder alert issued if the over limit situation has not been resolved. When using this option, keep in mind that the INTERVAL setting will still control how often the level is checked. So, if you have the INTERVAL set to 15 minutes and the LREMIND set to 25 minutes, the watch will check every 15 minutes.

Alert Subject Text iEventMonitor will issue an alert with the default subject text if you leave this set to *DFT. If you want a unique alert subject text used, enter that value here and it will be used if an alert is issued.

When you start an ASP Watch function, it will set a flag within the software indicating that the function is active. Once this flag is set, it is available for automatic restart after an IPL or an ENDIEM command.

Job Watch Function

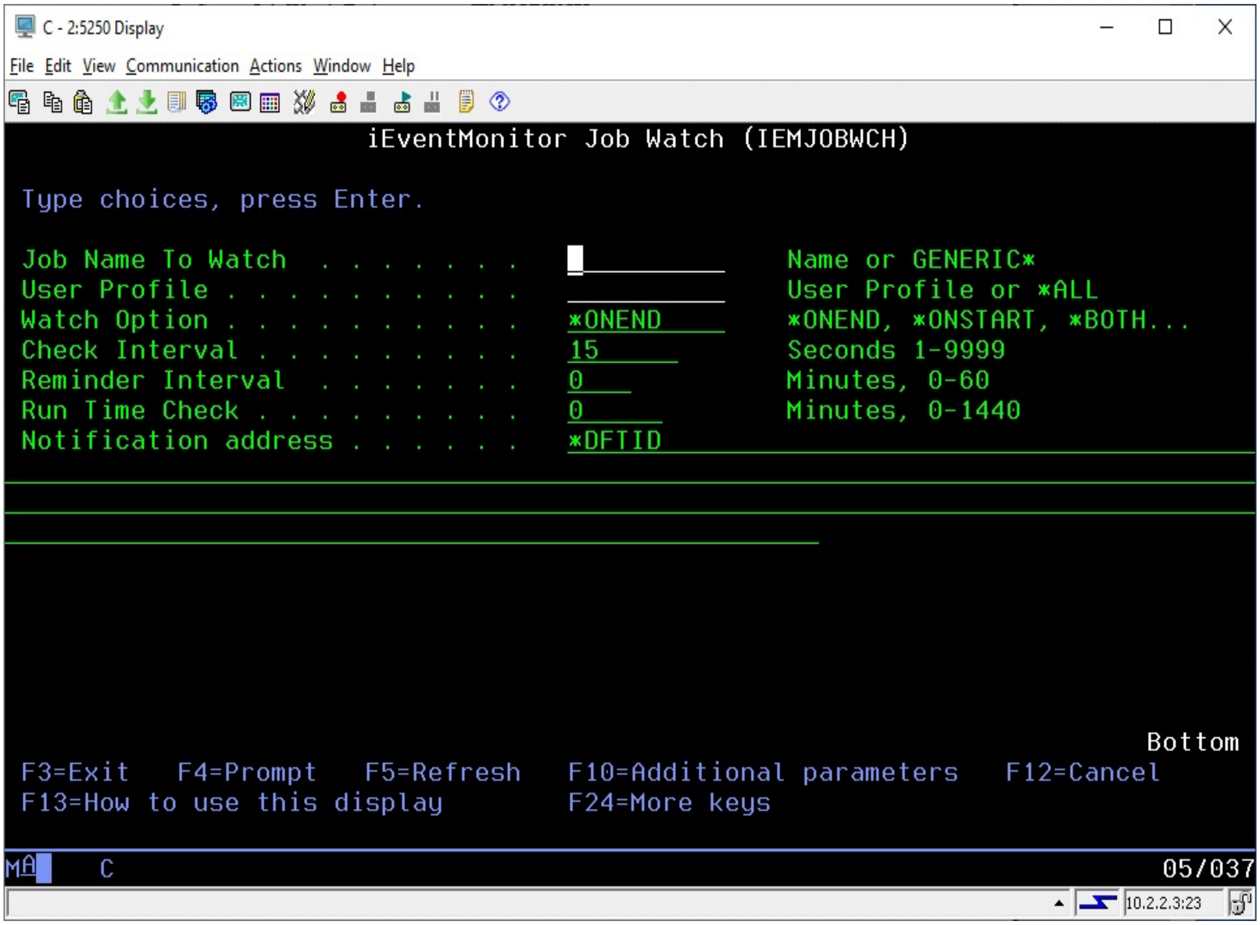
iEventMonitor includes options for you to watch specific jobs on your system. The option lets you be notified when a job starts on your system, when a job ends or both. You can watch a specific job name started by a specific user profile or you can watch for a job name that you specify using a GENERIC* reference. For example, if you want to make sure that the FTP server stays active on your system, you can set a watch for the job name QTFTP* ending and, if the FTP server stops running for any reason, you will receive an alert from iEventMonitor.

The functions are included on the WATCH menu in library IEMLIB. The following menu options control the feature:

7. Start a Job Watch Task	IEMJOBWCH
8. End a Job Watch Task	IEMJOBWEND

Option 7 (command IEMJOBWCH) will start a job watch task and option 8 (command IEMJOBWEND) will cause an active watch to stop.

To start a job watch, select option 7 from the WATCH menu or use the command named IEMJOBWCH in library IEMLIB. You will be prompted with the following:



```
                      iEventMonitor Job Watch (IEMJOBWCH)

 Type choices, press Enter.

 Job Name To Watch  . . . . . . .   __________     Name or GENERIC*
 User Profile . . . . . . . . . .   __________     User Profile or *ALL
 Watch Option . . . . . . . . . .   *ONEND         *ONEND, *ONSTART, *BOTH...
 Check Interval . . . . . . . . .   15             Seconds 1-9999
 Reminder Interval  . . . . . . .   0              Minutes, 0-60
 Run Time Check . . . . . . . . .   0              Minutes, 0-1440
 Notification address . . . . . .   *DFTID

                                                                        Bottom
 F3=Exit   F4=Prompt   F5=Refresh   F10=Additional parameters   F12=Cancel
 F13=How to use this display        F24=More keys
MA    C                                                                05/037
```

Enter the parameters as follows:

Job Name To Watch Enter the specific job name that you want to watch or enter a

Generic* job name ending with an asterisk characters ('*'). The watch task will as look for job names that qualify based on this name.

Note: If you start a GENERIC* job watch, be aware that the notification email will only be sent when there are no longer any jobs running that match the GENERIC* job name used. If you have several jobs running under a similar name and one ends but not all, you will not be notified.

User Profile

Enter the specific user profile that started the job you want to watch or use the special value of *ALL to check for the job running under any user profile.

Watch Option

Choose one of the five options offered:

*ONEND Use this option to send an alert when the specified job has ended. This assumes that the task is currently running. When an alert is issued, this watch will then terminate. (Not recommended)

*ONSTART Use this option when you want an alert sent with the specified job starts. This assumes that the task is not currently running. When an alert is issued, this watch will then terminate. (Not recommended)

*BOTH Use this option to send an alert when the specified job starts and then again when it ends. This assumes that the job is not currently running. Once both conditions have been met, the watch will terminate. (Not recommended)

*STRSTP Recommended.

When you use this option, the job watch will check to see if the specified job (or jobs) is running. If it is currently running, then it will issue an alert when it ends. If it is currently not running, then an alert will be issued when it starts. In either case, the job watch will then stay active to report again if the job ends or starts. The only way to end this job watch is by using the ENDIEM command, issuing a stop from option #1 on the MASTER menu or with the IEMJOBWEND command.

Note: When you use the *STRSTP option, an additional parameter will be prompted. See “Alert if on Hold?” below.

*LRUN The job watch will note when a job starts and then only issue an alert when the Run Time Check minutes have been exceeded. At that point, an alert will be issued indicating that the job is running longer than expected. If you specify *LRUN, then the Run Time Check value cannot be set to zero.

Check Interval Enter how frequently you want to check for the job starting or ending, in seconds.

Reminder Interval This setting is only valid on a Job Watch where the *STRSTP option is being used.

Enter the number of minutes that you want to lapse before a reminder alert is sent when the job being watched has stopped but not restarted yet. If you enter the value of zero, then no reminder alerts will be issued.

Notification address See the Notification Address(s) section of this manual on page 5.

Run Time Check This setting is only valid on a Job Watch where the *STRSTP or *LRUN option is being used along with a specific job name and a specific user profile.

Enter the number of minutes that you want to lapse before a reminder alert is sent if the job in question starts and then does not end. This value should be your expected run time. The alert will advise you that the job is running longer than expected.

A value of zero means that no alert will be issued.

If you specify the *STRSTP option, the following additional parameter will be prompted:

Alert if on Hold? This option lets iEventMonitor issue an alert when the watched job is put on hold. This option is only available when the *STRSTP Watch Option is used and the job name being watched is not GENERIC*.

Enter one of the following options:

*NO No alerts will be issued when the watched job is put on hold.

*YES If the watched job is held, an alert will be issued. If it is subsequently released and then held again, a new alert will be issued.

Using the F10 function key will open one additional optional field for your use as follows:

Alert Subject Text — The job watch allows you to use an alternate alert subject when reporting alerts. To use the standard subject, just leave the special value *DFT in place.

To use an alternate subject text, enter up to 64 characters in this field. The field also supports three optional macro fields as follows:

&SYSNAME — The system name will be used

&JOB_NAMEX — The job name that issued the message will be used

&JOBNO — The job number that issued the message will be used if available.

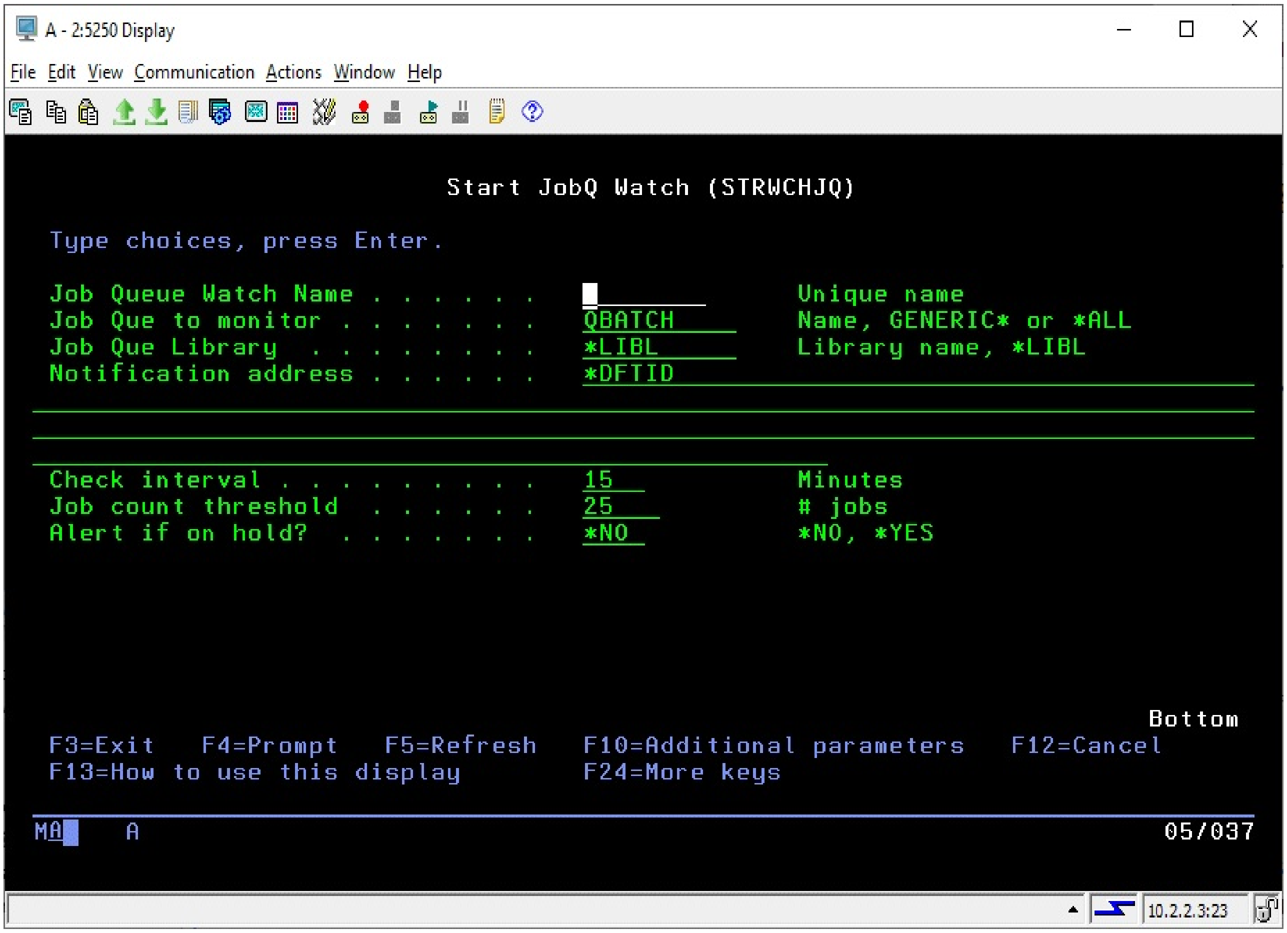
Note: For the macros to work, they must be coded EXACTLY as shown in all upper case characters.

The job watch will end whenever the ENDIEM command is run. It can also be ended from the list of active tasks when you run option #1 on the MASTER menu. To end an active job watch and remove it from the list of tasks, use option 8 on the WATCH menu or prompt the IEMJOBWEND command. Enter the job name, user and watch option exactly the way you did when the watch was started. This will cause the job watch task to end immediately without sending any alert notification.

Job Queue Watch

For some customers, it is important that the job queues not get backed up with batch jobs that are not getting run. iEventMonitor allows you to set a watch on any job queue in the system. Once set, if the watched job queue exceeds the threshold of jobs waiting to run that you specify, an alert will be sent advising you of a potential issue. You can also be alerted when the job queue is placed on hold.

To start a job queue watch, select option #1 on the WATCH2 menu or use the STRWCHJQ command. The following will be displayed:



```
                        Start JobQ Watch (STRWCHJQ)

 Type choices, press Enter.

 Job Queue Watch Name . . . . . .   _________      Unique name
 Job Que to monitor . . . . . . .   QBATCH____     Name, GENERIC* or *ALL
 Job Que Library  . . . . . . . .   *LIBL_____     Library name, *LIBL
 Notification address . . . . . .   *DFTID________________________________
________________________________________________________________________________
________________________________________________________________________________
____________________________________________________
 Check interval . . . . . . . . .   15__           Minutes
 Job count threshold  . . . . . .   25___          # jobs
 Alert if on hold?  . . . . . . .   *NO_           *NO, *YES




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

MA     A                                                                05/037
```

Enter the parameters as follows:

Job Queue Watch Name — Enter a unique name that will be assigned to this job queue watch task. This name will be used as part of the watch job name with the letters "IW" added before it. It will also be used when ending the job queue watch.

Job Que to monitor

Enter the name of the job queue that you want to monitor or one of the following special values:

*ALL — All job queues in the specified library will be watched. A specific library name must be used when *ALL is specified.

GENERIC* — All job queues in the specified library with names that start with specified string will be watched. A specific library name must be used when *ALL is specified.

When either of the special values is used, each job queue that qualifies will be watched. When ever any of these queues has an alert condition detected, an alert will be issued.

Job Que Library

Enter the name of the library where the queue is located. The special value *LIBL will use all libraries in the current session library list.

Notification address

See the Notification Address(s) section of this manual on page 5.

Check interval

Enter a value, in minutes, that indicates how frequently you want to check the job queue stack. The default value is 15 minutes but you can specify as low as 1 and as high as 999, but 15 minutes is a good setting to start with.

Job count threshold

Enter the number of jobs that you want to be advised about. When the job queue contains more than this number of jobs that are waiting to be run, an alert will be generated. This alert will be repeated at each check interval until either the monitor is stopped or the number of jobs waiting to run returns to a lower level.

Alert if on hold?

This value controls whether iEventMonitor will send out advisory alerts when this job queue is placed on hold.

Choose one of the following values:

*NO — No job queue on hold alerts will be issued.

*YES — An alert will be issued when this job queue is placed on hold. The alerts will continue until the job queue is released.

Using the F10 function key will display an additional parameter as follows:

Alert Subject Text

iEventMonitor will issue an alert with the default subject text if you leave this set to *DFT. If you want a unique alert subject text used, enter that value here and it will be used if an alert is issued.

When you start the Job Queue Watch, it will run in the IEMONITOR subsystem.

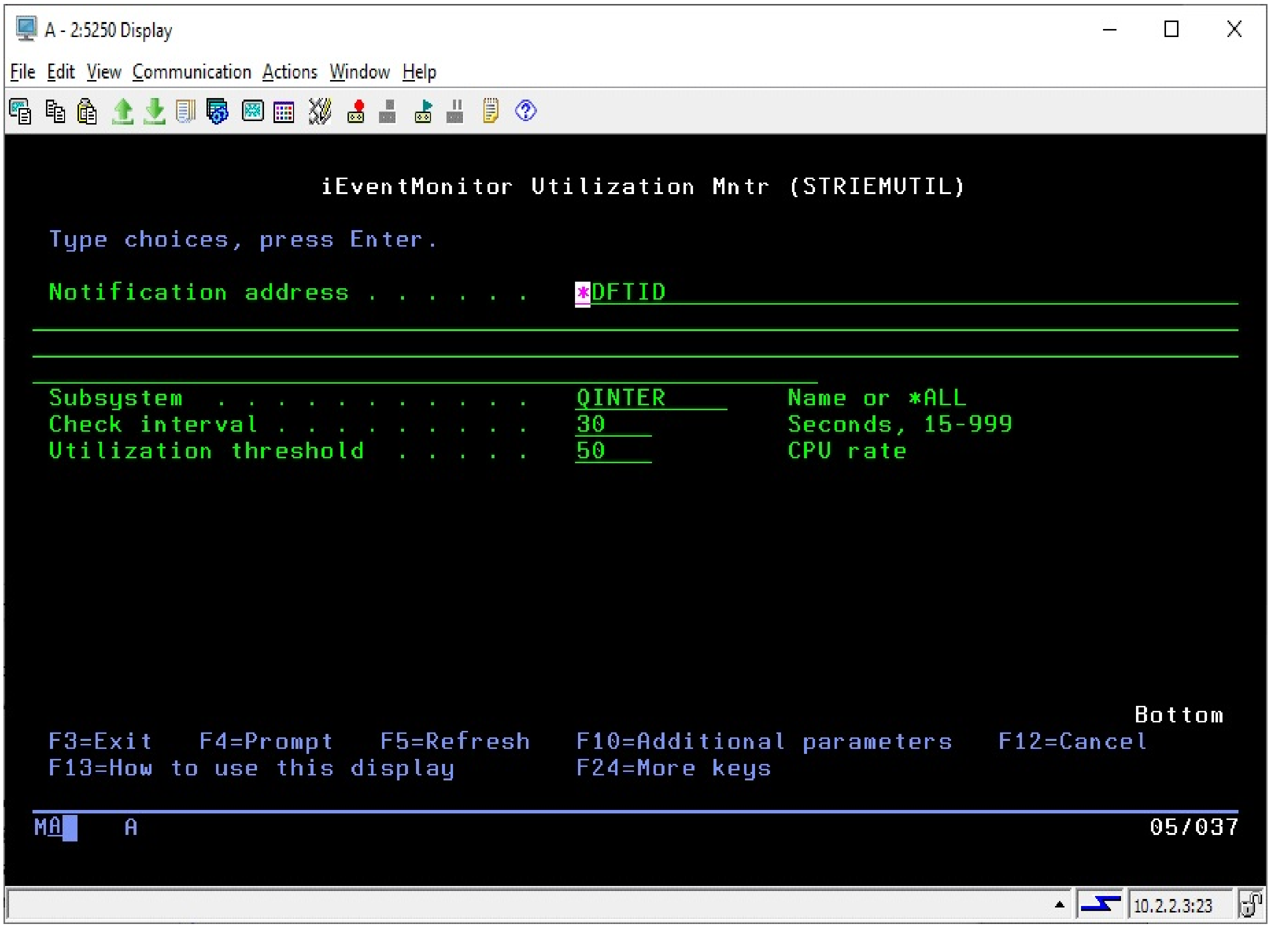
The Job Queue Watch will end whenever the ENDIEM command is run. It can also be ended from the list of active tasks when you run option #1 on the MASTER menu. To end an active job watch and remove it from the list of tasks, use option 2 on the WATCH2 menu or prompt the ENDWCHJQ command. This will cause the watch task to end immediately without sending any alert notification.

Utilization Monitor

iEventMonitor includes a Utilization Monitor feature. Using this feature, you can monitor interactive subsystems, such as QINTER, for jobs that are using too much CPU capacity. High use of CPU can be an indication of a runaway job or an application that is poorly designed.

To use this feature, two options appear on the WATCH2 menu. Option #3 will start a utilization monitor and option #4 will end a utilization monitor.

When you start a Utilization Monitor, the following will be displayed:



```
                     iEventMonitor Utilization Mntr (STRIEMUTIL)

 Type choices, press Enter.

 Notification address . . . . . .   *DFTID




 Subsystem  . . . . . . . . . . .   QINTER        Name or *ALL
 Check interval . . . . . . . . .   30            Seconds, 15-999
 Utilization threshold  . . . . .   50            CPU rate









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

MA      A                                                                05/037
```

Fill in the parameters as follows:

Notification address — See the Notification Address(s) section of this manual on page 5.

Subsystem — Enter the sub-system name that you want to watch. The default value of QINTER will watch jobs running in the system default interactive subsystem. Kisco does not recommend using this feature to monitor jobs in a batch processing subsystem. To monitor total system utilization, use the special value of *ALL.

Check interval — Enter a value in seconds. The monitor will check for excess utilization every specified interval.

Utilization threshold — Enter the utilization threshold value that you want the monitor to check. This is expressed as a percentage of the CPU utilization for the job.

Using the F10 function key will display an additional parameter as follows:

Alert Subject Text — iEventMonitor will issue an alert with the default subject text if you leave this set to *DFT. If you want a unique alert subject text used, enter that value here and it will be used if an alert is issued.

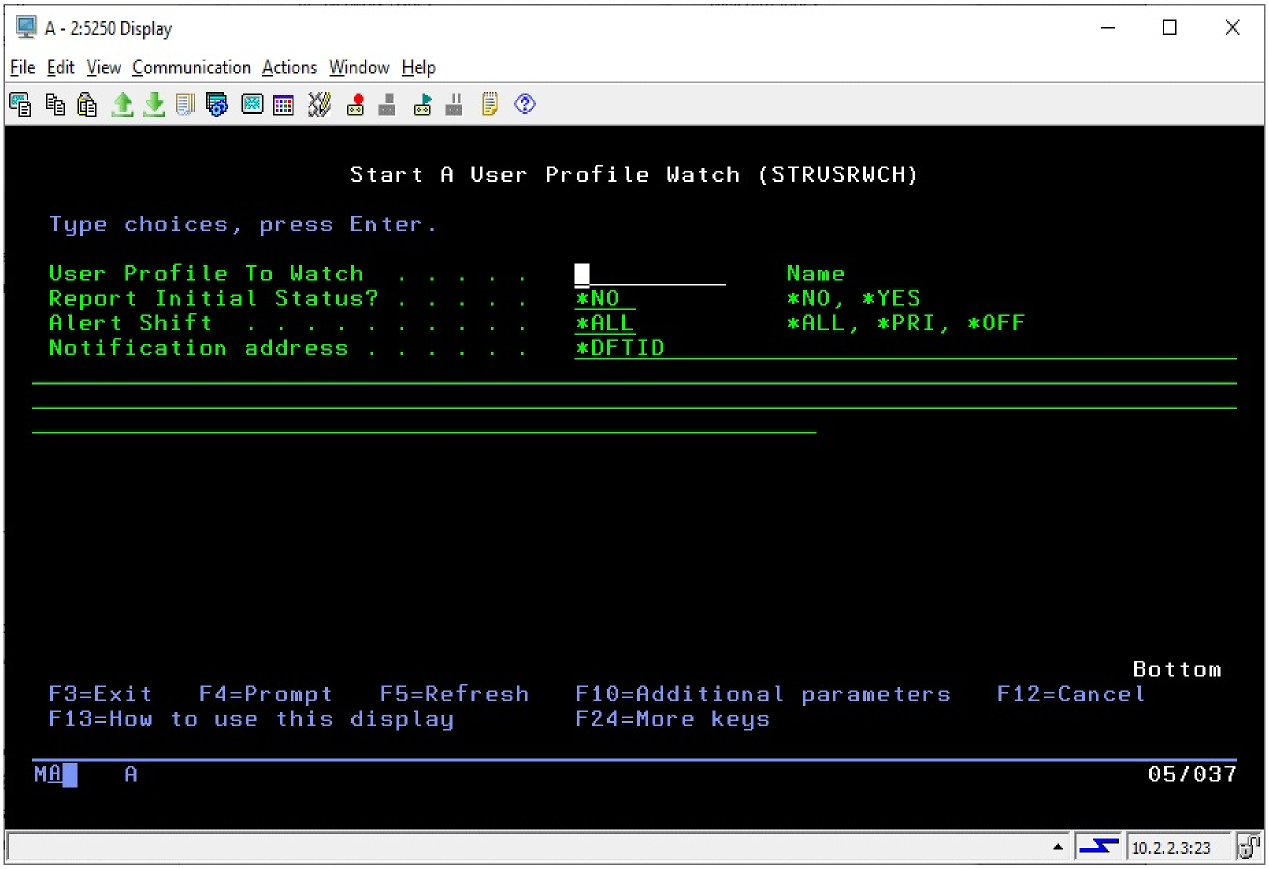
With this monitor running, jobs in the specified subsystem (or all jobs if you used the *ALL option) will be checked at each interval break. If any jobs are showing CPU utilization in excess of the threshold value entered, an alert will be generated. If the situation persists, additional alerts will continue to be reported until either the monitor is stopped or the utilization issue is resolved.

The utilization monitor will end whenever the ENDIEM command is run. It can also be ended from the list of active tasks when you run option #1 on the MASTER menu. To end an active job watch and remove it from the list of tasks, use option 4 on the WATCH2 menu or prompt the ENDIEMUTIL command.

User Profile Watch

The User Profile Watch feature will let you track user profile use for interactive sessions. When a user profile watch is started, it will alert when a user profile is used for an interactive signon process or a signoff process. The watch will stay active and continue watching for signon and signoff activity.

The User Profile Watch function appears on the WATCH2 menu. Option 5 on the menu will start a user profile watch and option 6 can be used to end it. The startup display is as follows:



```
                   Start A User Profile Watch (STRUSRWCH)

 Type choices, press Enter.

 User Profile To Watch . . . . . .   _________     Name
 Report Initial Status? . . . . .   *NO            *NO, *YES
 Alert Shift  . . . . . . . . . .   *ALL           *ALL, *PRI, *OFF
 Notification address . . . . . .   *DFTID



                                                                    Bottom
 F3=Exit   F4=Prompt   F5=Refresh   F10=Additional parameters   F12=Cancel
 F13=How to use this display        F24=More keys
MA      A                                                           05/037
```

The options are as follows:

User Profile To Watch — Enter the name of the user profile that you want to track.

Report Initial Status? — Controls the initial status reporting for the specified user profile.

Choose one of the following values:

*NO — The current status of the user profile sessions will not be alerted.

*YES — At startup, the current status of the user profile sessions will be issued as an alert.

Alert Shift

Controls whether alerts are issued all the time or only during prime or off-prime shift times.

Choose one of the following values:

*ALL Alerts will be issued regardless of the shift time.

*PRI Alerts will only be issued when the occur during the time period identified as prime shift.

*OFF Alerts will only be issued when the occur during the time period identified as off shift.

Note: Shift times and days of the week are set on the IEMSET command. See option #9 on the INSTALL menu.

Notification address

See the Notification Address(s) section of this manual on page 5.

There are two optional parameters that you can access using the F10 function key as follows:

Watch name

Earlier versions of iEventMonitor used a job name that included the user profile when they were active. This has been changed to provide you with the following options:

*USER The job that iEventMonitor uses for this user profile watch will run with a job name of the user profile being watched.

*GEN The job that iEventMonitor uses for this user profile watch will run with a generated job name in the form of UWnnnnnn where nnnnnn is a sequential number assigned by the software at each job start. Each time the watch is started, a different job name will be used.

Name The job that iEventMonitor uses for this user profile watch will run with a job name entered here.

Alert Subject Text

iEventMonitor will issue an alert with the default subject text if you leave this set to *DFT. If you want a unique alert subject text used, enter that value here and it will be used if an alert is issued.

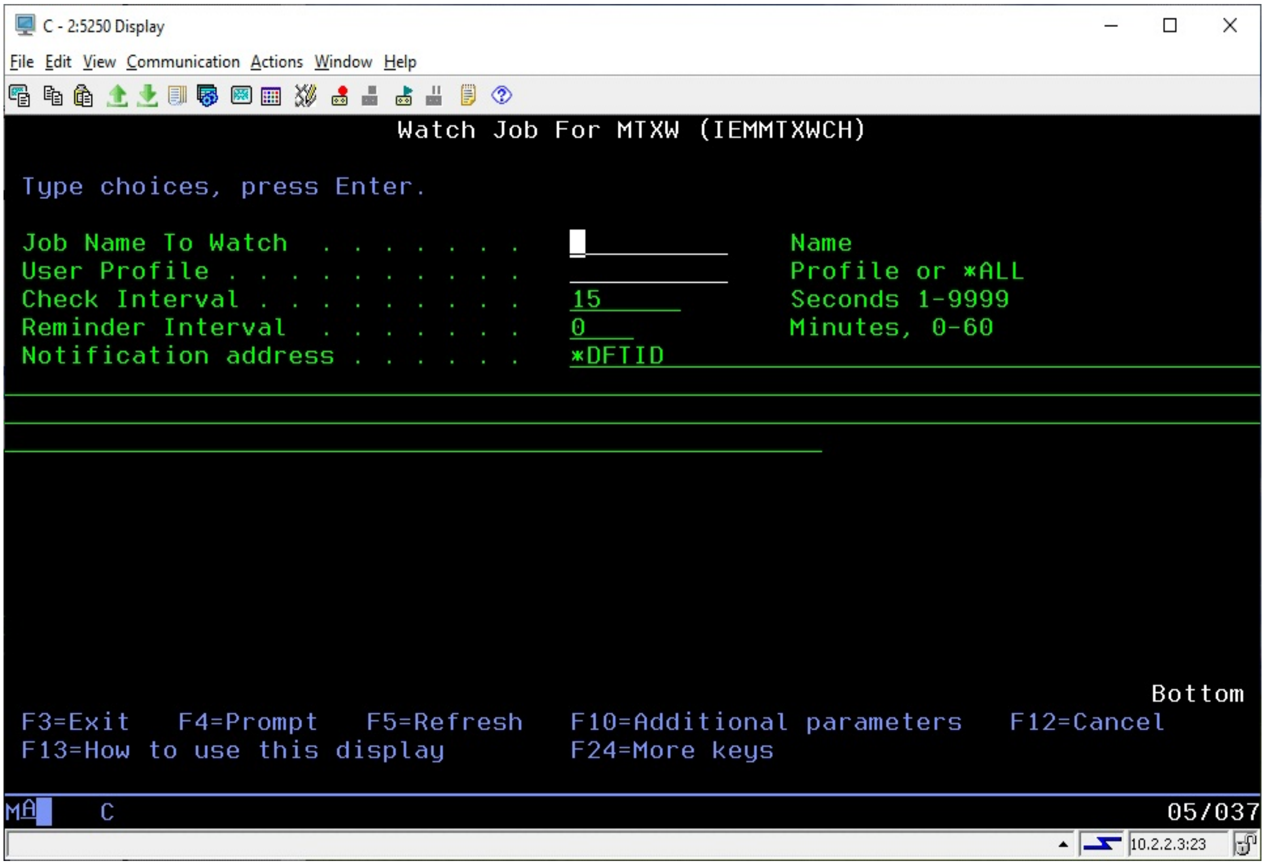
Once a user profile watch has been started, whenever the user profile is used for an interactive logon or whenever an interactive session for the user ends, an alert will be generated.

The watch will end whenever the ENDIEM command is run. It can also be ended from the list of active tasks when you run option #1 on the MASTER menu. To end an active watch and remove it from the list of tasks, use option 6 on the WATCH2 menu or prompt the ENDUSRWCH command.

Mutex-Wait Watch

This feature watches for Mutex Wait status (MTXW) to be reported for a specified job running for a specific user profile. Once the task has reported MTXW status for a full interval specified, then an alert will be issued. This feature is implemented on the WATCH2 menu as options 7 and 8.

To start a Mutex Wait Watch, run option 7 on the WATCH2 menu or use the IEMMTXWCH command. The following screen will be prompted:



```
                         Watch Job For MTXW (IEMMTXWCH)

 Type choices, press Enter.

 Job Name To Watch . . . . . . . .   __________     Name
 User Profile . . . . . . . . . .    __________     Profile or *ALL
 Check Interval . . . . . . . . .    15             Seconds 1-9999
 Reminder Interval  . . . . . . .    0              Minutes, 0-60
 Notification address . . . . . .    *DFTID




                                                                        Bottom
 F3=Exit   F4=Prompt   F5=Refresh   F10=Additional parameters   F12=Cancel
 F13=How to use this display        F24=More keys
MA     C                                                                05/037
```

Enter the parameters as follows:

Job Name To Watch	Enter the specific job name that you want to watch. If there are multiple jobs with the same name, all of them will be watched.
User Profile	Enter the specific user profile that started the job you want to watch. If you want to watch all instances of the requested job name, use the special value of ***ALL**.
Check Interval	Enter how frequently you want to check for the job showing the MTXW status, in seconds. The default value of 15 seconds is a good starting point.
Reminder Interval	Enter the number of minutes that you want to lapse before a

	reminder alert is sent after an initial alert has been issued. If you enter the value of zero, then no reminder alerts will be issued.
Notification address	See the Notification Address(s) section of this manual on page 5.

Using the F10 function key will display an additional parameter as follows:

Alert Subject Text	iEventMonitor will issue an alert with the default subject text if you leave this set to *DFT. If you want a unique alert subject text used, enter that value here and it will be used if an alert is issued.

To start the MTXW watch, press ENTER when all parameters have been set. Whenever a requested job enters MTXW status, iEventMonitor will note that and then check again at the next requested interval. If it remains in MTXW status, then an alert will be issued. If a reminder is specified, then reminder alerts will be issued with the frequency specified on that setting.

Whan a Mutex Wait Watch job is started, it will be logged into the list of iEventMonitor tasks (option 1 on the MASTER menu). Once this has been done, then the STRIEM and ENDIEM commands can be used to start and end this task along with all other listed iEventMonitor tasks.

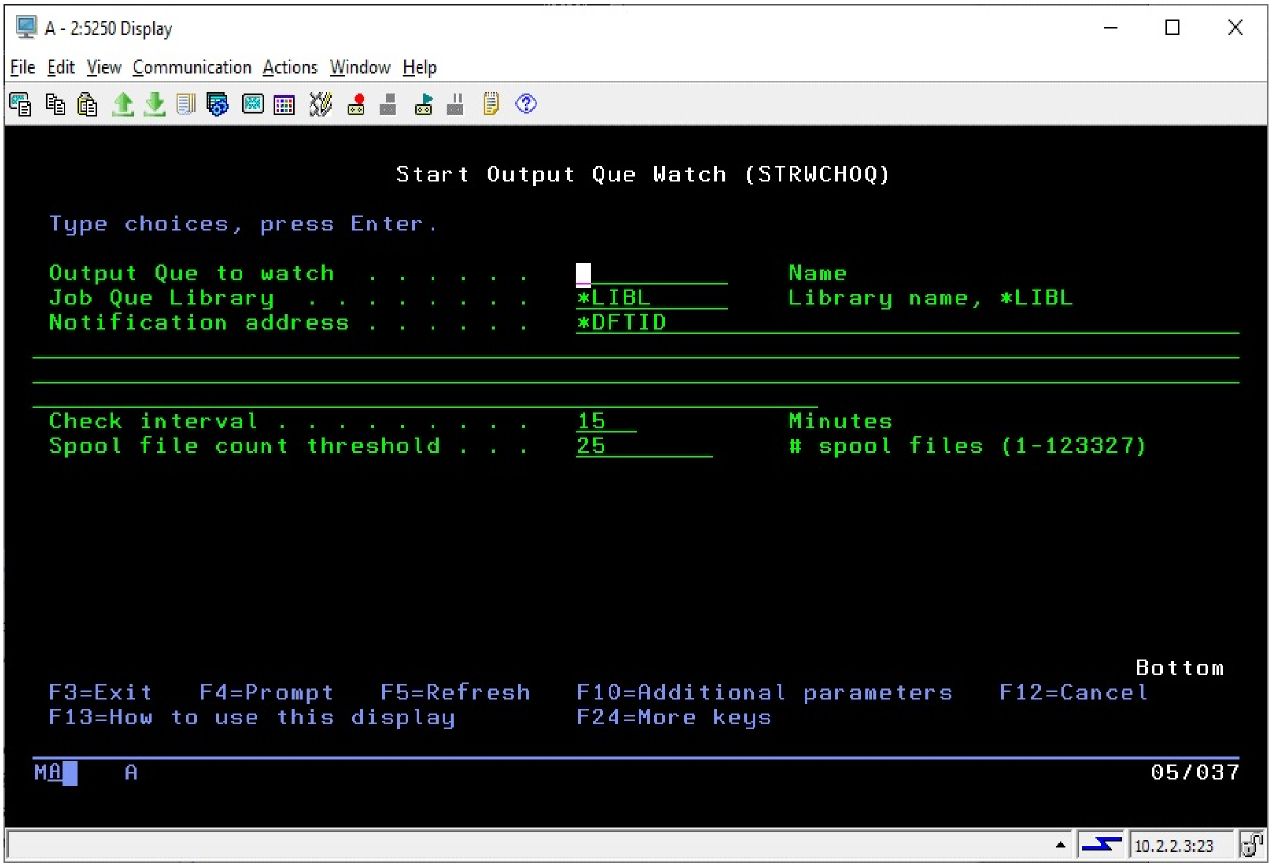
The watch will end whenever the ENDIEM command is run. It can also be ended from the list of active tasks when you run option #1 on the MASTER menu. To end an active watch and remove it from the list of tasks, use option 6 on the WATCH2 menu or prompt the IEMMTXWEND command. The parameters on this command are as follows:

Job Name To Watch	Use the exact same value that was used to start the MTXW watch
User Profile	Use the exact same value that was used to start the MTXW watch

Output Queue Watch

iEventMonitor can watch an output queue for unprocessed spool files in ready status. When the number of spool files exceeds a threshold value that you set when the watch is started, an alert will be issued.

To start an output queue watch, run option 9 from the WATCH2 menu or just issue the STRWCHOQ command. The following prompt will be shown:



```
                    Start Output Que Watch (STRWCHOQ)

 Type choices, press Enter.

 Output Que to watch . . . . . . .                 Name
 Job Que Library . . . . . . . . .  *LIBL          Library name, *LIBL
 Notification address . . . . . .  *DFTID



 Check interval . . . . . . . . .   15             Minutes
 Spool file count threshold . . .   25             # spool files (1-123327)








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

MA     A                                                              05/037
```

Enter the parameters as follows:

Output Que to watch	Enter the name of the output queue that you want to watch.
Job Que Library	Enter the name of library where the output queue is located.
Notification address	See the Notification Address(s) section of this manual on page 5.
Check interval	Enter a value, in minutes, that indicates how frequently you want to check the output queue. The default value is 15 minutes but you can specify as low as 1 and as high as 999, but 15 minutes is a good setting to start with.
Spool file count threshold	Enter the spool file threshold that you want checked. When the number of spool files in ready status waiting to be

processed exceeds this value during a check cycle, then an alert will be issued. Any value up to 123,327 can be used.

There are two optional additional parameters available. To access these additional settings, press the F10 key and the following will be prompted:

Include Holds? The default value of *NO will exclude reports that are on hold in the output queue from being counted. By changing this to *YES, reports that are on hold will be included along with those that are ready to print.

Alert Subject Text iEventMonitor will issue an alert with the default subject text if you leave this set to *DFT. If you want a unique alert subject text used, enter that value here and it will be used if an alert is issued.

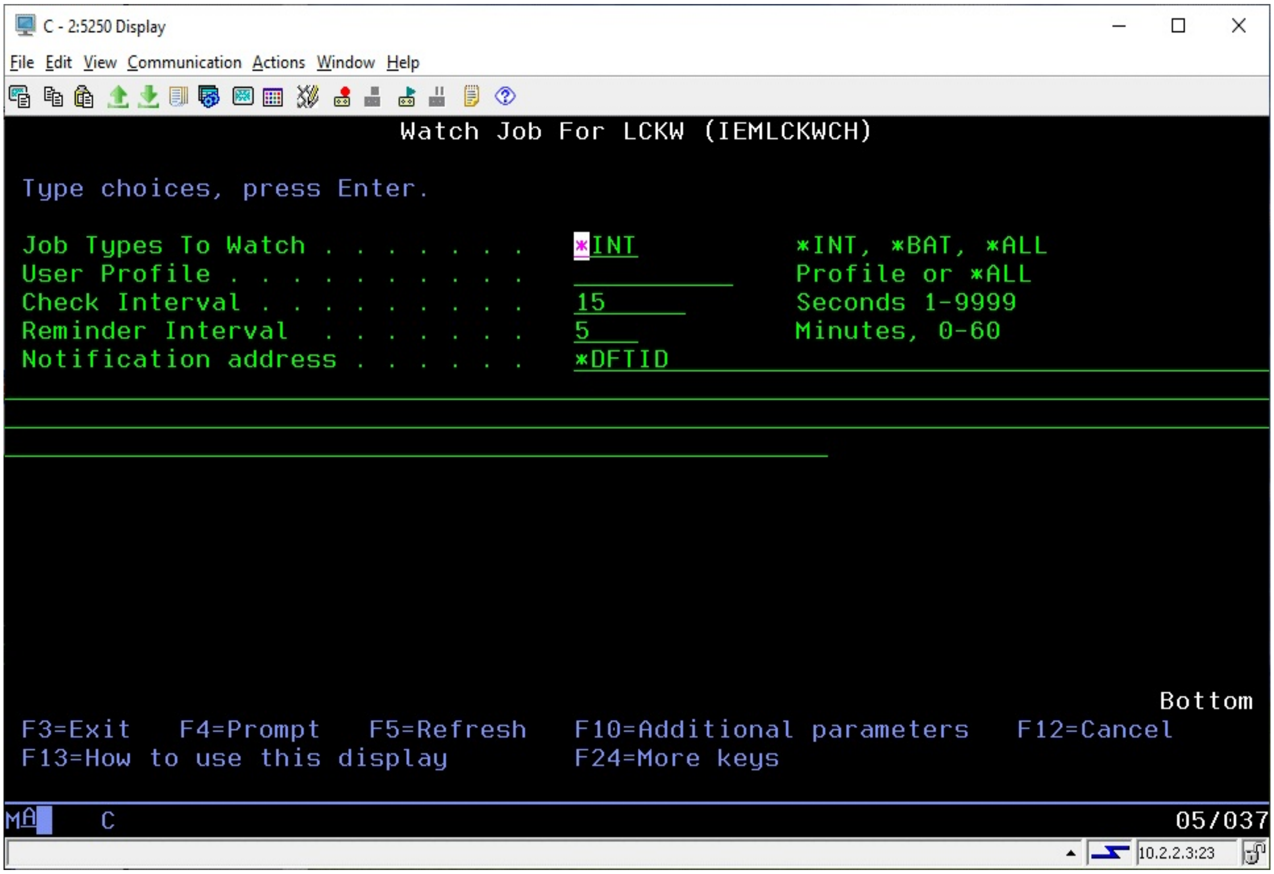
Press ENTER to start the output queue watch. Whenever the number of spool files waiting to be processed exceeds the level that you set, an alert will be issued. This can be helpful with an output queue where the printer should always be active or for an output queue that is being monitored automatically for output email processing or spool file conversion processing. When spool files start to stack up, iEventMonitor will alert you.

The watch will end whenever the ENDIEM command is run. It can also be ended from the list of active tasks when you run option #1 on the MASTER menu. To end an active watch and remove it from the list of tasks, use option 10 on the WATCH2 menu or prompt the ENDWCHOQ command.

Lock Wait Watch

This feature watches for Lock Wait status (LCKW) to be reported for a job running for the indicated type and user profile. Once the task has reported LCKW status for a full interval specified, then an alert will be issued. This feature is implemented on the WATCH2 menu as options 11 and 12.

To start a Lock Wait Watch, run option 11 or use the IEMLCKWCH command. The following screen will be prompted:



```
                         Watch Job For LCKW (IEMLCKWCH)

 Type choices, press Enter.

 Job Types To Watch . . . . . . .   *INT           *INT, *BAT, *ALL
 User Profile . . . . . . . . . .   __________     Profile or *ALL
 Check Interval . . . . . . . . .   15             Seconds 1-9999
 Reminder Interval  . . . . . . .   5              Minutes, 0-60
 Notification address . . . . . .  *DFTID

                                                                          Bottom
 F3=Exit   F4=Prompt   F5=Refresh   F10=Additional parameters   F12=Cancel
 F13=How to use this display        F24=More keys
MA     C                                                                 05/037
```

Fill in the parameters as follows:

Job Types To Watch — Indicates the type of jobs to be watched on your system.

Choose one of the following values:

*INT Just check for lock waits on interactive jobs.

*BAT Just check for lock waits on batch jobs.

*ALL Check for lock waits on all jobs.

User Profile — You can check for lock waits for a specific user profile or *ALL user profiles.

Check Interval — Enter how frequently you want to check for jobs in lock wait status, expressed in seconds.

Reminder Interval — Enter the number of minutes that you want to lapse before a reminder alert is sent after an initial alert has been issued. If you enter the value of zero, then a reminder will be sent for each INTERVAL value seconds that you have set in the previous parameter setting.

Notification address — See the Notification Address(s) section of this manual on page 5.

Using the F10 function key will display an additional parameter as follows:

Alert Subject Text — iEventMonitor will issue an alert with the default subject text if you leave this set to *DFT. If you want a unique alert subject text used, enter that value here and it will be used if an alert is issued.

Once a task has been found to be in LCKW status, the watch will wait for the period of time specified by the REMIND parameter and then check again. If the job persists in LCKW status, it will issue the alert again. This will continue until the LCKW status is resolved. If a reminder setting of zero is used, the reminder alerts will be issued for every check interval.

Whan a Lock Wait Watch job is started, it will be logged into the list of iEventMonitor tasks (option 1 on the MASTER menu). Once this has been done, then the STRIEM and ENDIEM commands can be used to start and end this task along with all other listed iEventMonitor tasks.

The monitor will end whenever the ENDIEM command is run. It can also be ended from the list of active tasks when you run option #1 on the MASTER menu. To end an active watch and remove it from the list of tasks, use option 12 on the WATCH2 menu or prompt the IEMLCKWEND command.

Excluding Jobs From Lock Wait Watch

Some customers using this watch report that lock waits occur regularly on their system and they are expected, so they would like to have the ability to ignore certain lock wait alerts. iEventMonitor can now ignore lock wait alerts issued for certain specific jobnames. This ignore feature has a capacity for specifying up to 20 jobnames to be ignored.

To activate this feature, you need to create a special data area in the iEventMonitor application library. You can create the data area using the following command:

```
CRTDTAARA DTAARA(IEMLIB/LCKWOK) TYPE(*CHAR) LEN(200) VALUE(' ')
TEXT('Optional Lock-Wait Ignore List')
```

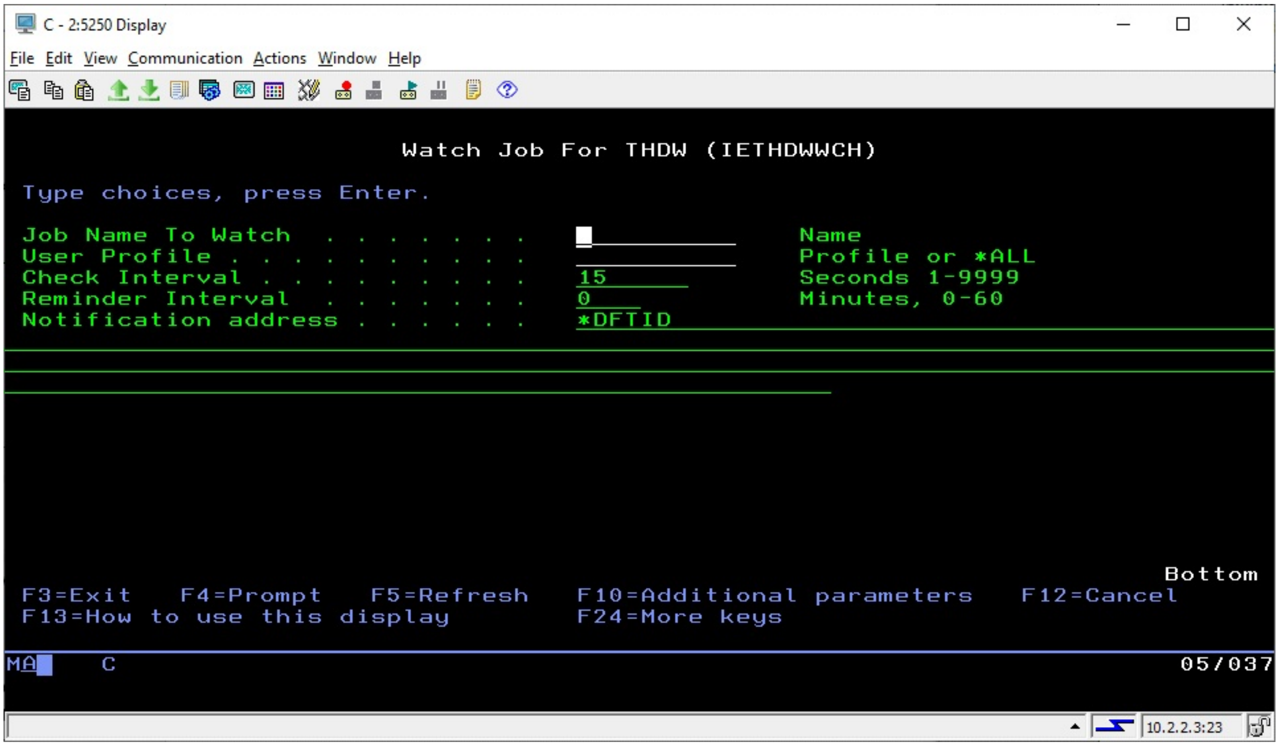
Once the data area has been created, you can specify up to 20 jobnames that you want iEventMonitor to ignore for lock wait alerts. The jobnames are stored every 10 characters in the data area. Do not leave any 10 character slot blank as the process will stop checking once it finds a 10 character slot that is blank. The entries do not need to be in any particular sequence.

After the data area has been created and populated with jobnames, then the next time the lock wait watch starts on your system, any lock wait conditions that happen in a job that is in the data area will be ignored for alert posting purposes.

Thread Wait Watch

This feature watches for Thread Wait status (THDW) to be reported for a job running for the indicated type and user profile. Once the task has reported THDW status for a full interval specified, then an alert will be issued. This feature is implemented on the WATCH2 menu as options 13 and 14.

To start a Thread Wait Watch, run option 13 or use the IEMTHDWCH command. The following screen will be prompted:



```
                         Watch Job For THDW (IETHDWWCH)

 Type choices, press Enter.

 Job Name To Watch . . . . . . . .   __________    Name
 User Profile . . . . . . . . . .    __________    Profile or *ALL
 Check Interval . . . . . . . . .    15_____       Seconds 1-9999
 Reminder Interval  . . . . . . .    0____         Minutes, 0-60
 Notification address . . . . . .   *DFTID





                                                                         Bottom
 F3=Exit   F4=Prompt   F5=Refresh   F10=Additional parameters   F12=Cancel
 F13=How to use this display        F24=More keys
MA     C                                                                05/037
```

Fill in the parameters as follows:

Job Name Watch	Enter the specific job name that you want to watch. If there are multiple jobs with the same name, all of them will be watched.
User Profile	You can check for thread waits for a specific user profile or *ALL user profiles.
Check Interval	Enter how frequently you want to check for jobs in thread wait status, expressed in seconds.
Reminder Interval	Enter the number of minutes that you want to lapse before a reminder alert is sent after an initial alert has been issued. If you enter the value of zero, then a reminder will be sent for each INTERVAL value seconds that you have set in the previous parameter setting.

Notification address	See the Notification Address(s) section of this manual on page 5.

Using the F10 function key will display an additional parameter as follows:

Alert Subject Text	iEventMonitor will issue an alert with the default subject text if you leave this set to *DFT. If you want a unique alert subject text used, enter that value here and it will be used if an alert is issued.

Once a task has been found to be in THDW status, the watch will wait for the period of time specified by the REMIND parameter and then check again. If the job persists in THDW status, it will issue the alert again. This will continue until the THDW status is resolved. If a reminder setting of zero is used, the reminder alerts will be issued for every check interval.

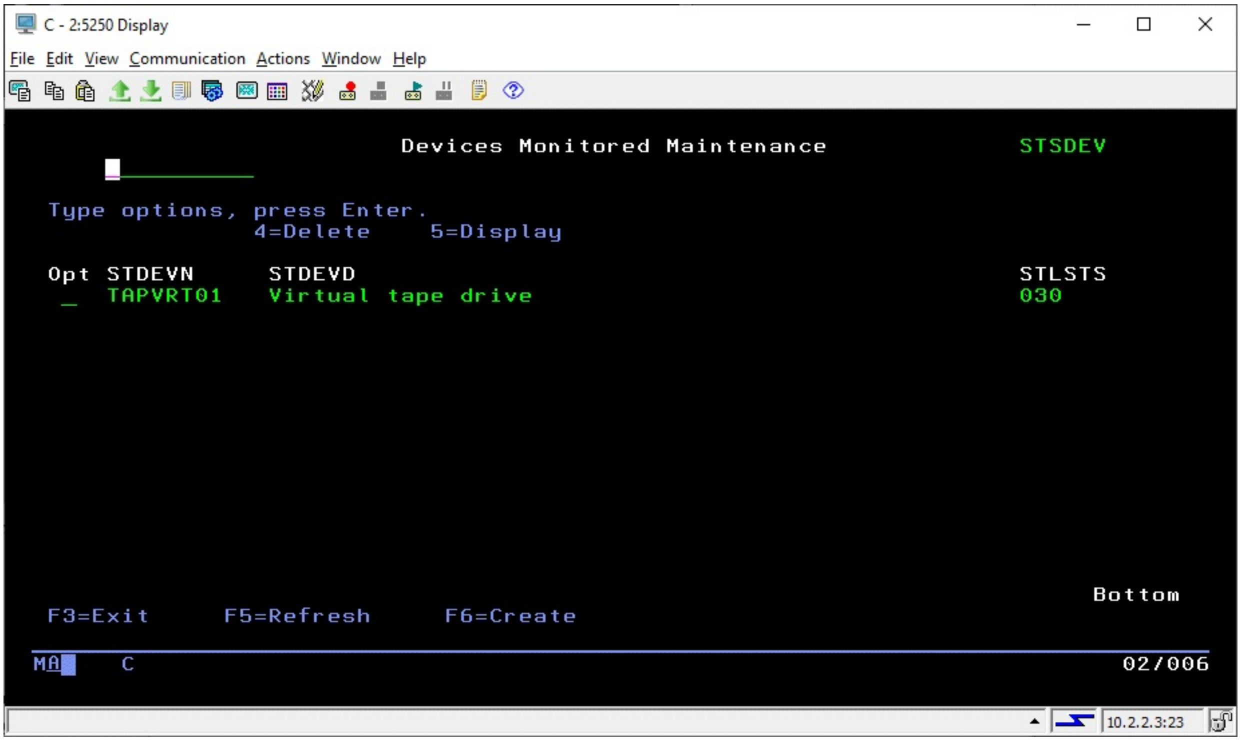
Whan a Thread Wait Watch job is started, it will be logged into the list of iEventMonitor tasks (option 1 on the MASTER menu). Once this has been done, then the STRIEM and ENDIEM commands can be used to start and end this task along with all other listed iEventMonitor tasks.

The monitor will end whenever the ENDIEM command is run. It can also be ended from the list of active tasks when you run option #1 on the MASTER menu. To end an active watch and remove it from the list of tasks, use option 14 on the WATCH2 menu or prompt the IEMTHDWEND command.

Device Watch

This feature watches for specific devices on your system and will issue an alert when a specified device is not in a useable state. This feature is implemented on the WATCH3 menu as options 1, 2 and 3.

Before you can use this watch, you must first let iEventMonitor know which specific devices that you want to watch. This is done using option #3 on the WATCH3 menu or by using the WRKDEVWCH command in library IEMLIB. When you start this command, the following will be shown:

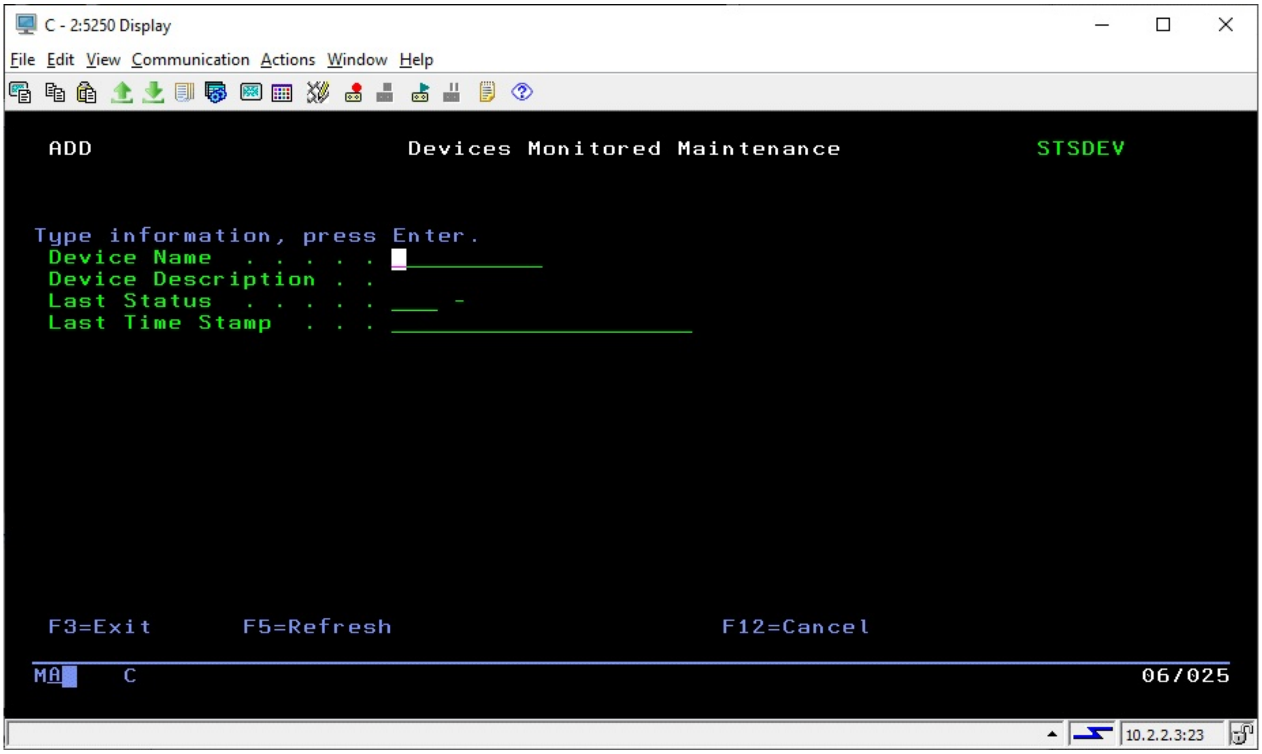


```
                          Devices Monitored Maintenance                STSDEV
      _________

  Type options, press Enter.
               4=Delete     5=Display

  Opt STDEVN      STDEVD                                               STLSTS
   _  TAPVRT01    Virtual tape drive                                   030










                                                                           Bottom
  F3=Exit      F5=Refresh      F6=Create

 MA     C                                                                02/006
```

Options on this display will let you view details for the device status (option 2) or delete the device from the list (option 4).

The watch will end whenever the ENDIEM command is run. It can also be ended from the list of active tasks when you run option #1 on the MASTER menu. The watch will be restarted when the STRIEM command is run. To end an active watch and remove it from the list of tasks, use option 2 on the WATCH3 menu or prompt the ENDDCMW command.

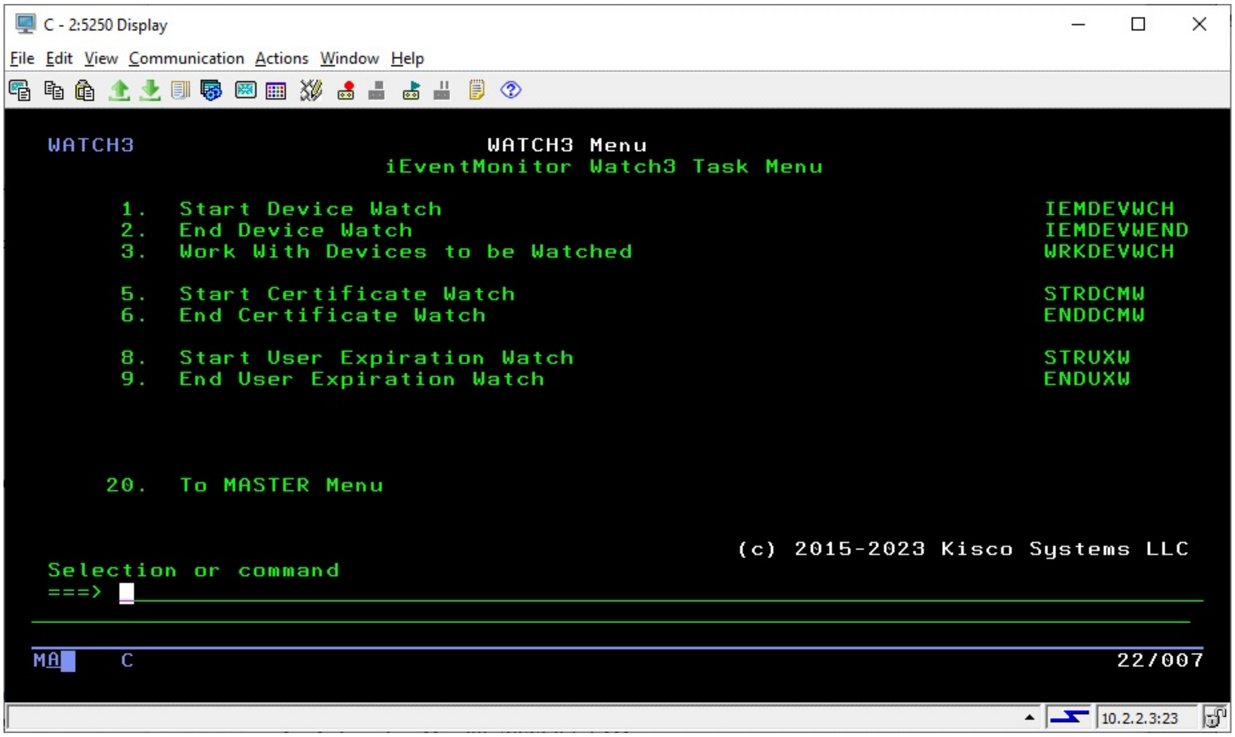
To add a new device, use the F6 function key and the display on the following page will be shown:



```
ADD                     Devices Monitored Maintenance           STSDEV

Type information, press Enter.
 Device Name  . . . . . ▮__________
 Device Description . .
 Last Status  . . . . . ___ -
 Last Time Stamp  . . . ____________________

 F3=Exit      F5=Refresh                       F12=Cancel

MA█   C                                                    06/025
```

To register a new device, just enter its name in the Device Name field and press ENTER. The device name will be validated and then shown with the system description for it. After the device watch has been running, the most recent status found for the device will also be shown.

To start the Device Watch, use option #1 on the WATCH3 menu or the IEMDEVWCH command. The following display will be shown:



```
WATCH3                           WATCH3 Menu
                         iEventMonitor Watch3 Task Menu

      1.  Start Device Watch                                   IEMDEVWCH
      2.  End Device Watch                                     IEMDEVWEND
      3.  Work With Devices to be Watched                      WRKDEVWCH

      5.  Start Certificate Watch                              STRDCMW
      6.  End Certificate Watch                                ENDDCMW

      8.  Start User Expiration Watch                          STRUXW
      9.  End User Expiration Watch                            ENDUXW


     20.  To MASTER Menu

                                        (c) 2015-2023 Kisco Systems LLC
Selection or command
===> ▮

MA█   C                                                    22/007
```

Fill in the parameters as follows:

Range To Check — Enter a value that represents how often you want the Device Watch to run. The value entered will be the number of minutes.

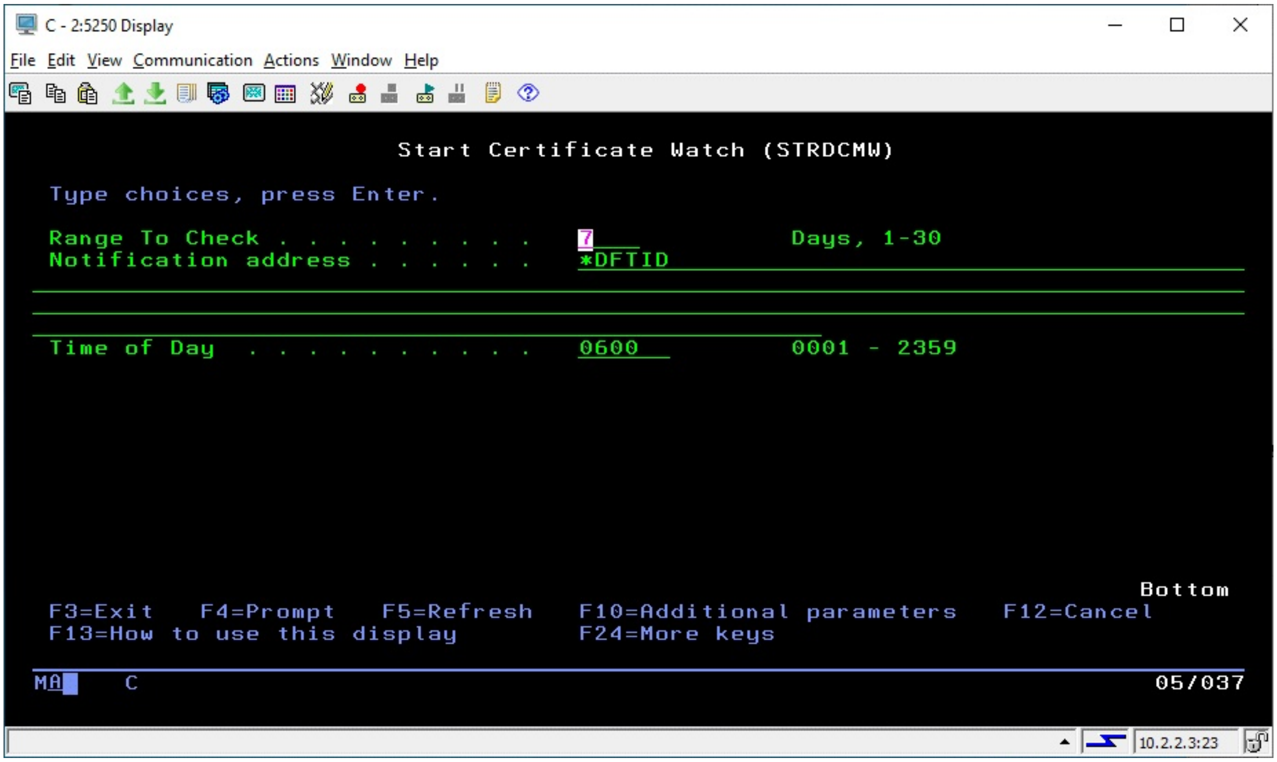
Notification address — See the Notification Address(s) section of this manual on page 5.

Alert Subject Text — iEventMonitor will issue an alert with the default subject text if you leave this set to *DFT. If you want a unique alert subject text used, enter that value here and it will be used if an alert is issued.

The watch will end whenever the ENDIEM command is run. It can also be ended from the list of active tasks when you run option #1 on the MASTER menu. The watch will be restarted when the STRIEM command is run. To end an active watch and remove it from the list of tasks, use option 9 on the WATCH3 menu or prompt the ENDUXW command.

Certificate Watch

This feature scans the digital certificates on your system once per day and issues an alert when one or more will expire within a specified period of time from when the scan is run. To start the Certificate Watch, use option #5 on the WATCH3 menu. The following display will be shown:



```
                     Start Certificate Watch (STRDCMW)

 Type choices, press Enter.

 Range To Check . . . . . . . . .   7              Days, 1-30
 Notification address . . . . . .  *DFTID



 Time of Day  . . . . . . . . . .   0600           0001 - 2359









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

MA    C                                                             05/037
```

Fill in the parameters as follows:

Range To Check — Enter a value that represents how many days until the expiration date that you want to receive an alert.

Notification address — See the Notification Address(s) section of this manual on page 5.

Time of Day — Enter time of day when you want this watch to run. When you start the watch, it will run immediately. Once it has been started, then it will run once per day at the time that you specify.

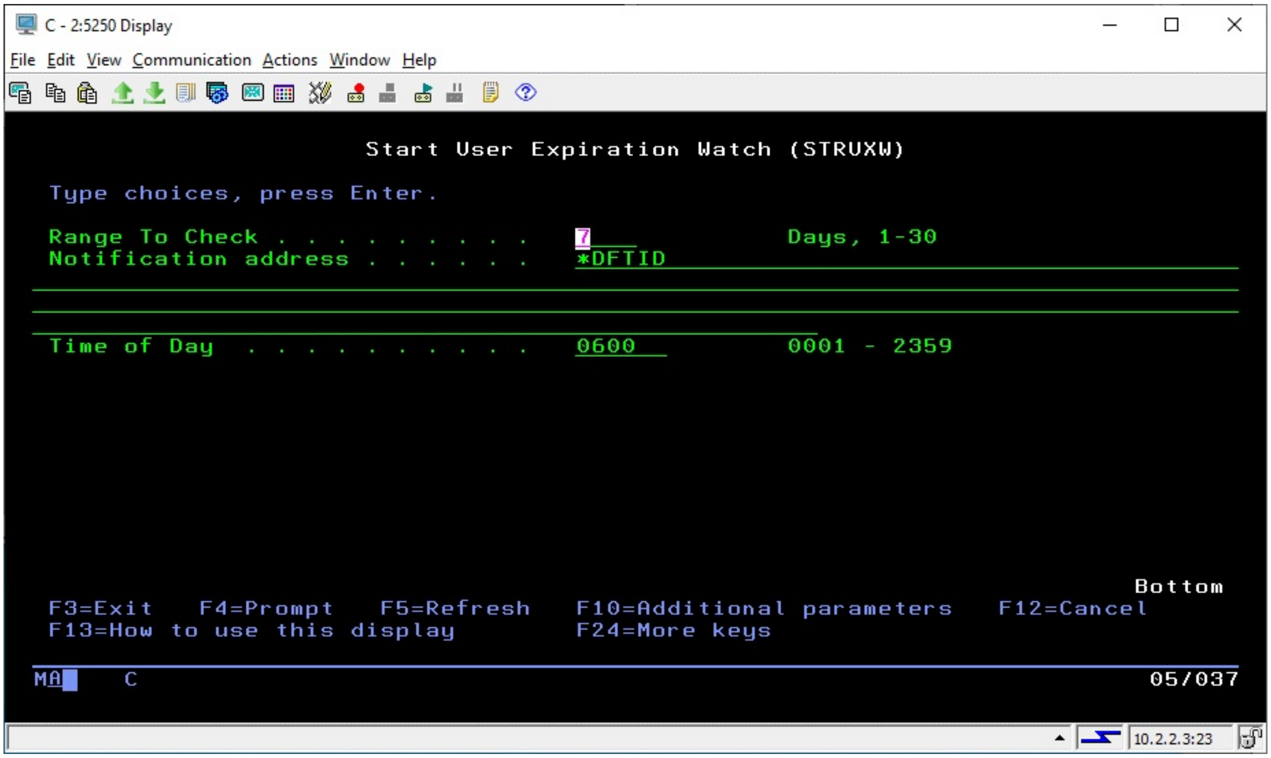
Using the F10 function key will display an additional parameter as follows:

Alert Subject Text — iEventMonitor will issue an alert with the default subject text if you leave this set to *DFT. If you want a unique alert subject text used, enter that value here and it will be used if an alert is issued.

The watch will end whenever the ENDIEM command is run. It can also be ended from the list of active tasks when you run option #1 on the MASTER menu. The watch will be restarted when the STRIEM command is run. To end an active watch and remove it from the list of tasks, use option 6 on the WATCH3 menu or prompt the ENDDCMW command.

User Profile Expiration Watch

This feature scans the active user profiles on your system once per day and issues an alert when one or more will expire within a specified period of time from when the scan is run. To start the User Profile Expiration Watch, use option #8 on the WATCH3 menu. The following display will be shown:



```
                       Start User Expiration Watch (STRUXW)

 Type choices, press Enter.

 Range To Check . . . . . . . . .   7              Days, 1-30
 Notification address . . . . . .  *DFTID



 Time of Day  . . . . . . . . . .   0600           0001 - 2359









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

MA      C                                                           05/037
```

Fill in the parameters as follows:

Range To Check — Enter a value that represents how many days until the expiration date that you want to receive an alert.

Notification address — See the Notification Address(s) section of this manual on page 5.

Time of Day — Enter time of day when you want this watch to run. When you start the watch, it will run immediately. Once it has been started, then it will run once per day at the time that you specify.

Using the F10 function key will display an additional parameter as follows:

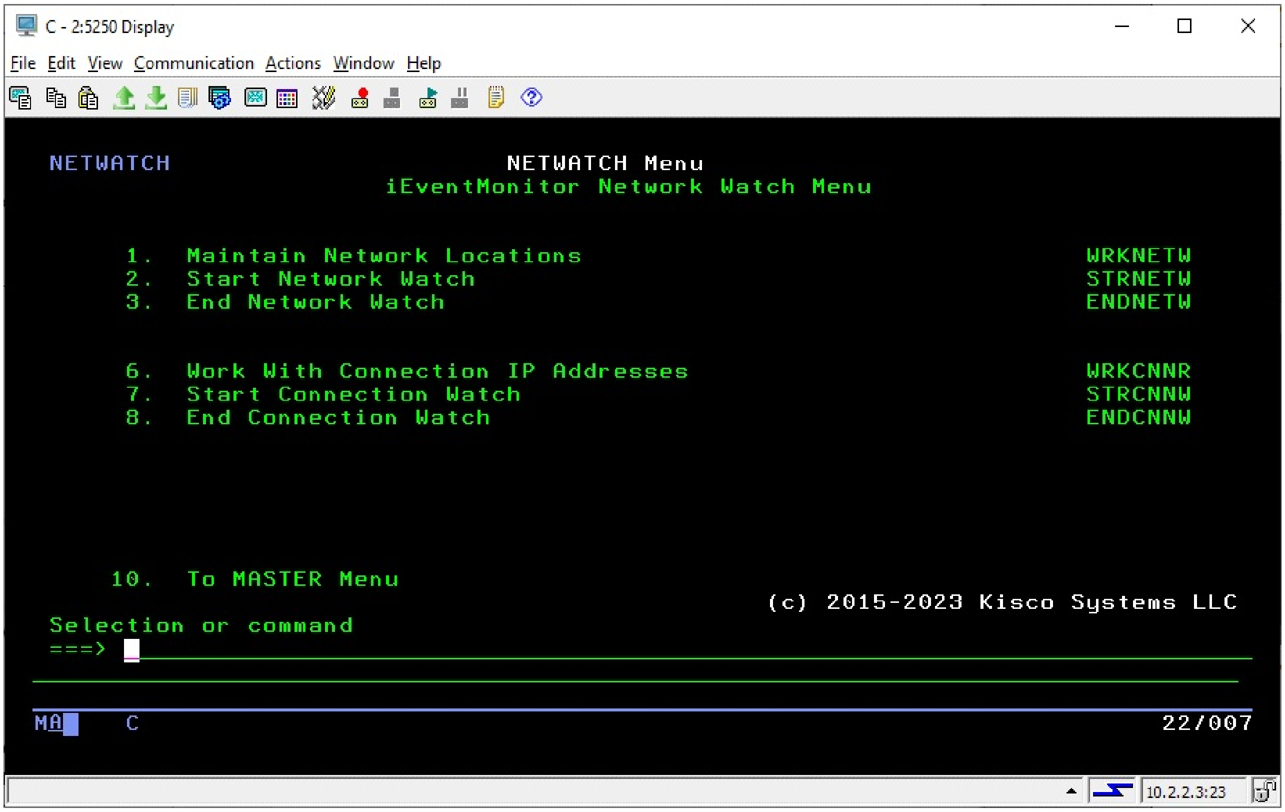
Alert Subject Text — iEventMonitor will issue an alert with the default subject text if you leave this set to *DFT. If you want a unique alert subject text used, enter that value here and it will be used if an alert is issued.

The watch will end whenever the ENDIEM command is run. It can also be ended from the list of active tasks when you run option #1 on the MASTER menu. The watch will be restarted when the STRIEM command is run. To end an active watch and remove it from the list of tasks, use option 9 on the WATCH3 menu or prompt the ENDUXW command.

Network Functions

iEventMonitor includes features to watch network connections to your IBM i system. A Network Watch will periodically test the connection to a remote system to make sure that it is active. If the connection goes inactive or there are problems detected on the connection, an alert will be issued. A Connection Watch will check for incoming connections established and can alert you about connections from untrusted locations.

The NETWATCH menu supports this feature:



```
 NETWATCH                     NETWATCH Menu
                      iEventMonitor Network Watch Menu


      1.   Maintain Network Locations                             WRKNETW
      2.   Start Network Watch                                    STRNETW
      3.   End Network Watch                                      ENDNETW


      6.   Work With Connection IP Addresses                      WRKCNNR
      7.   Start Connection Watch                                 STRCNNW
      8.   End Connection Watch                                   ENDCNNW






     10.   To MASTER Menu
                                         (c) 2015-2023 Kisco Systems LLC
 Selection or command
 ===>

MA     C                                                              22/007
```

The menu options are as follows:

1. Maintain Network Locations — Maintain a list of network locations that can be used for monitoring.

2. Start Network Watch — Starts a Network Watch for a registered locations.

3. End Network Watch — Ends a Network Watch previously started.

6. Work With Connection IP Addresses — Work with valid connection IP addresses

7. Start Connection Watch — Start the Connection Watch feature

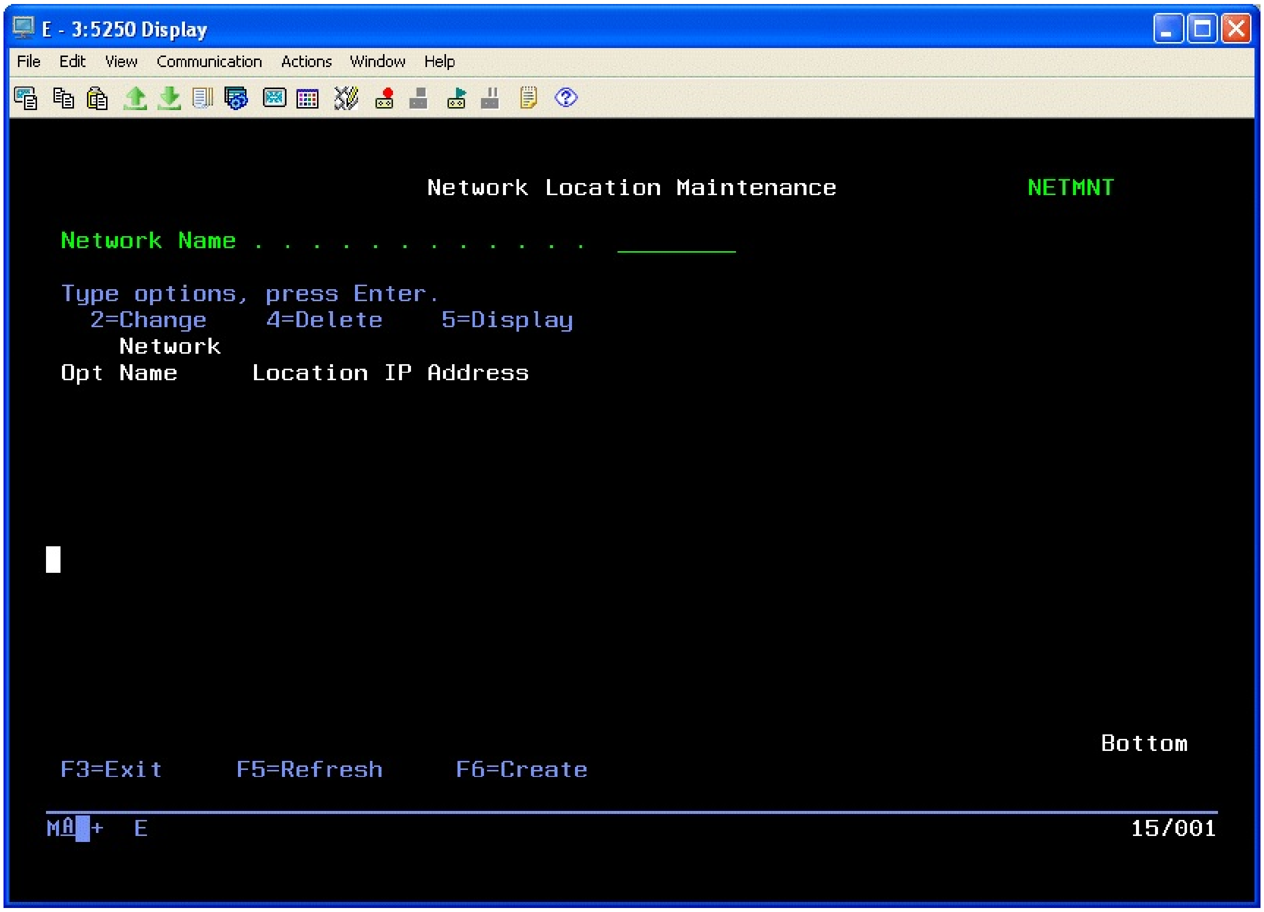
8. End Connection Watch — End the Connection Watch feature

Each of these menu options is discussed in this section of the user's guide.

Maintain Network Locations

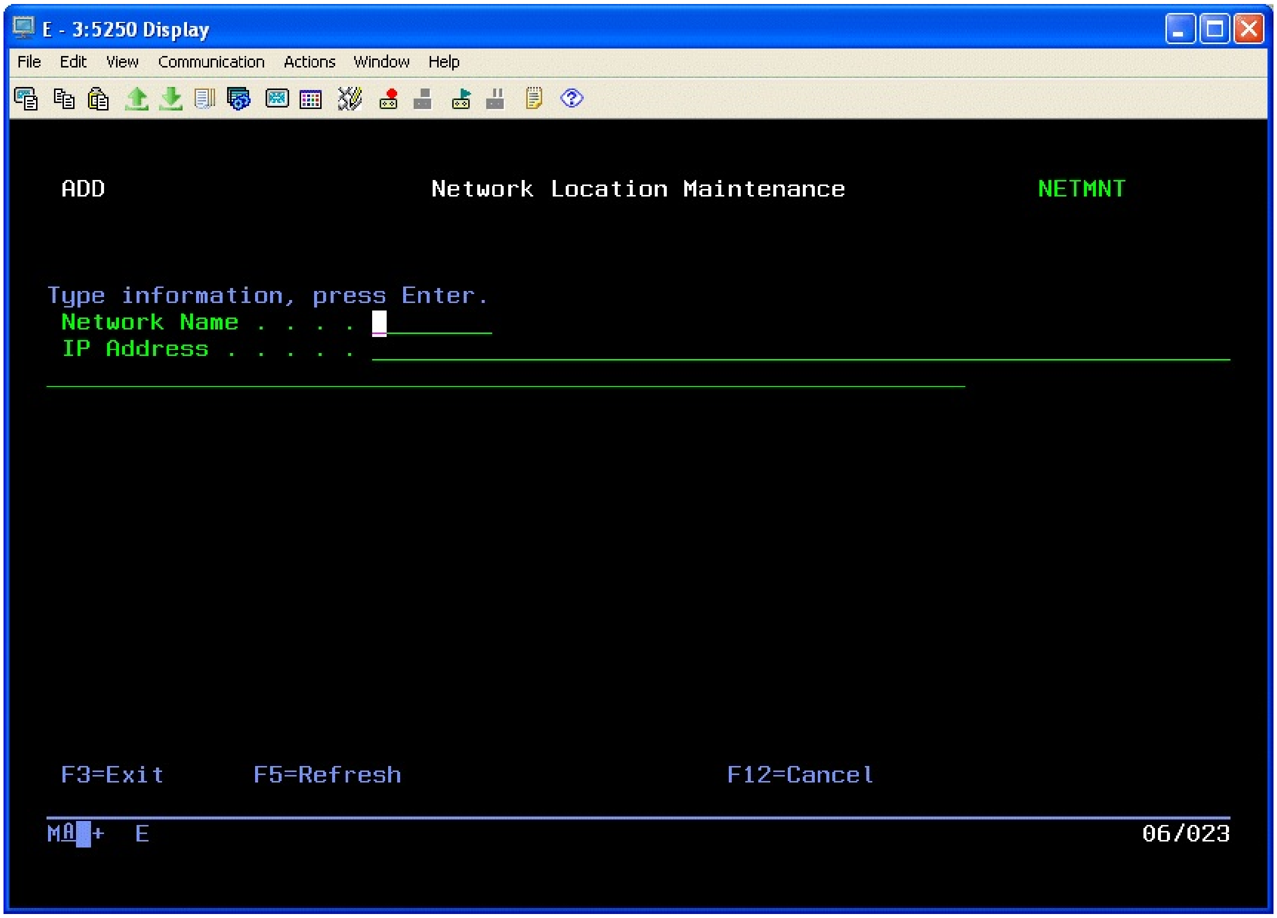
iEventMonitor's network location watch can issue an alert when a connection that you depend on is not working or is reporting lost packets or other interruptions.

Before a network location can be watched, it has to be defined to iEventMonitor. Using option #1, you can create a record for each network address that you want to be able to watch. When you start option #1, the following screen will be displayed:



```
                         Network Location Maintenance              NETMNT

 Network Name . . . . . . . . . . . .  ________

 Type options, press Enter.
   2=Change     4=Delete     5=Display
     Network
 Opt Name      Location IP Address










                                                                  Bottom
 F3=Exit      F5=Refresh      F6=Create

MA + E                                                            15/001
```

Use the F6 function key to add a new entry to the list of network connections to be monitored.



```
 ADD                      Network Location Maintenance              NETMNT


Type information, press Enter.
 Network Name . . . . _________
 IP Address . . . . . ___________________________________________________



 F3=Exit      F5=Refresh                      F12=Cancel

MA + E                                                              06/023
```

When you add a record to the Network Location file, you assign a unique short, 8 character, name to the location and then associate that with a specific IP address. The IP address can be either a numeric address such as "10.1.2.3" or a named address such as companyname.com.

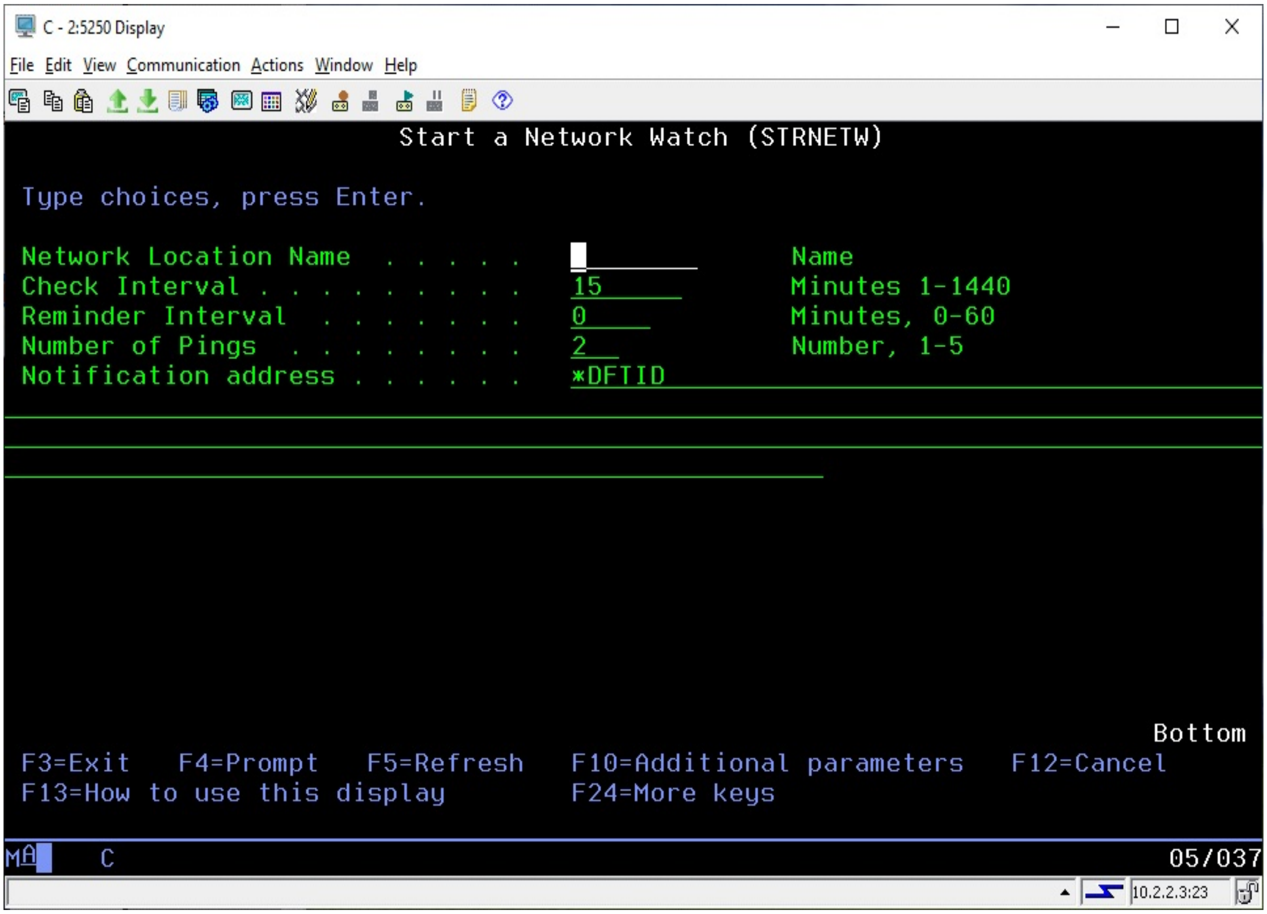
Enter the values as follows:

Network Name	Enter the unique 8 character name you have assigned to the network location to be monitored.
IP Address	Enter the IP address to be monitored.

When you create an entry, the IP address will be validated. If the address cannot be validated, the entry cannot be completed.

Start Network Watch

Once a location has been added to the Network Location file, you can then start a monitor for it using option #2 or the STRNETW command. The parameters for this command are as follows:



```
                     Start a Network Watch (STRNETW)

 Type choices, press Enter.

 Network Location Name . . . . .   _________      Name
 Check Interval . . . . . . . . .  15_____        Minutes 1-1440
 Reminder Interval  . . . . . . .  0___           Minutes, 0-60
 Number of Pings  . . . . . . . .  2__            Number, 1-5
 Notification address . . . . . .  *DFTID

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

Fill in the parameters as follows:

Network Location Name	Enter the 8 character network name that was created in the Network Locations list using option #1 on the NETWATCH menu. A Network Watch can only be run for a location established on this list.
Check Interval	Enter how frequently you want iEventMonitor to check the network connection in minutes.
Reminder Interval	If you want delayed reminders issued when a problem is found, enter that delay time here in minutes. An entry of zero will cause the alerts to be re-issued based on the INTERVAL setting.
Number of Pings	Enter the number of remote pings that you want iEventMonitor to use when checking the network connection. We recommend a minimum setting of at least 2.

Notification address	See the Notification Address(s) section of this manual on page 5.

Using the F10 function key will display an additional parameter as follows:

Alert Subject Text	iEventMonitor will issue an alert with the default subject text if you leave this set to *DFT. If you want a unique alert subject text used, enter that value here and it will be used if an alert is issued.

After you start the Network Watch, the IP address will be tested immediately. If it passes, then it will be re-tested following each Check Interval time period. If a problem is found, an alert will be issued. If the Reminder Interval is left as zero, then each subsequent Check Interval will also issue an alert until the network connection resumes working normally. If you want to delay subsequent alerts, use the Reminder Interval setting. For example, you can check a location every 15 minutes (Check Interval = 15), but if a problem is found, only issue a subsequent alert once an hour (Reminder Interval = 60).

Once a Network Watch has been set, you can end it without removing it using the ENDIEM command. It will be automatically restarted the next time you use the STRIEM command. You can also manage the Network Watch using the WRKIEM (option #1 on the MASTER menu) function.

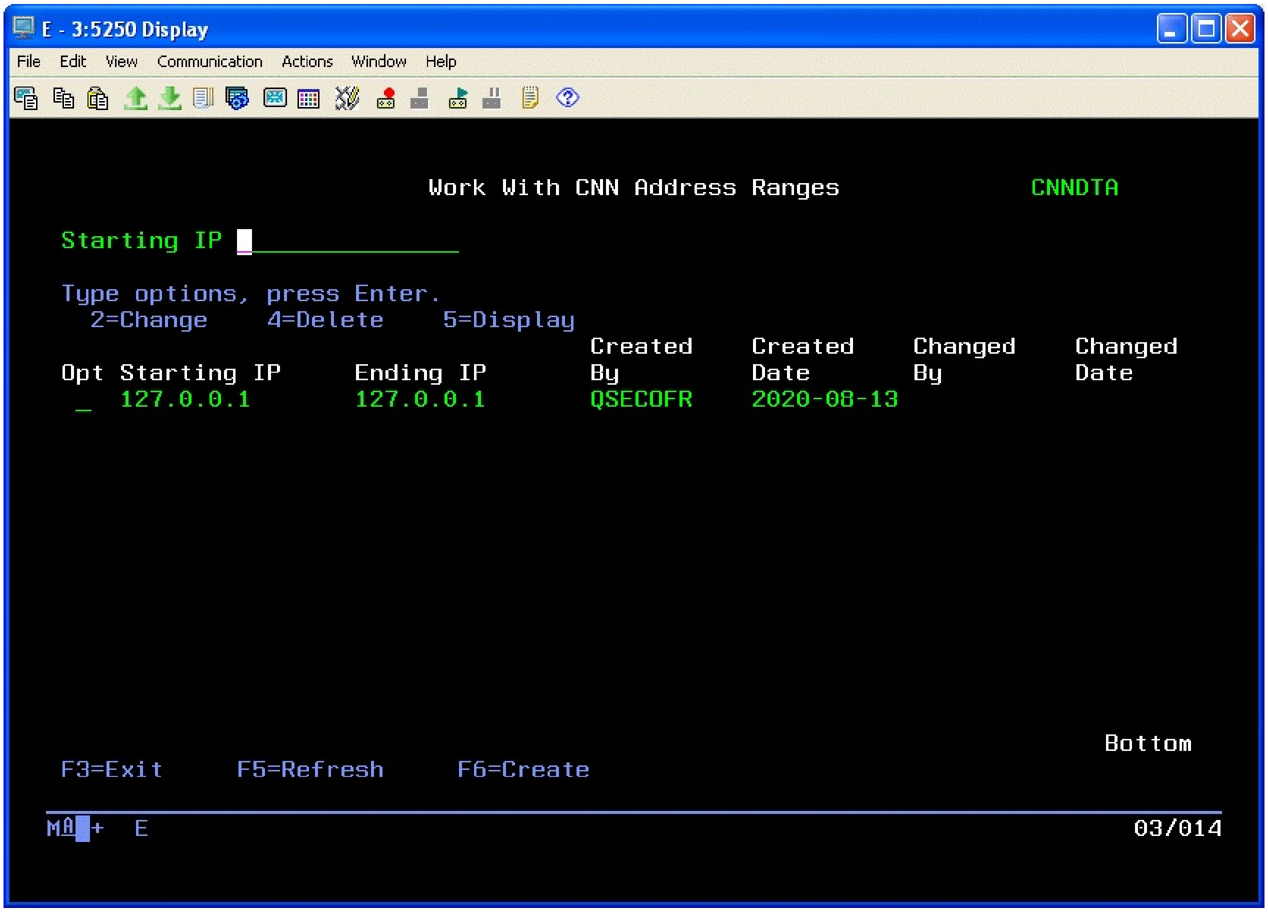
Running option #3 on the NETWATCH menu will stop the Network Watch and also remove it from the WRKIEM list of monitors and watches.

Connection Watch

iEventMonitor includes a feature that lets you watch for "foreign" systems connecting to your system via network connections. It allows you to define the specific IP addresses that are allowed to connect and only issues alerts when a system not authorized tries to establish a connection.

The Connection Watch includes an optional Exit Program feature. Using this exit program, you can code your own program to deal with questionable network connection attempts. There are no parameters in the call to your exit program, but when it starts running, a physical database file will be present in the QTEMP library named UTIL30. This file will contain one record for each IP address included in the current alert. Your exit program can take any additional actions you may want to take including cancelling the connection using the ENDTCPCNN command. You will find a source physical file name QSAMPLE in the application library IEMLIB that contains a sample CL program named CNNEXIT that you can use to see how your own exit program might be implemented. We recommend that you develop and store your exit program in a library other than IEMLIB as a future upgrade from Kisco could remove your program from the system.

Option #6 on the NETWATCH menu will let you maintain a list of IP addresses that you recognize as being legitimate for your system. When start this option, the following display will appear:



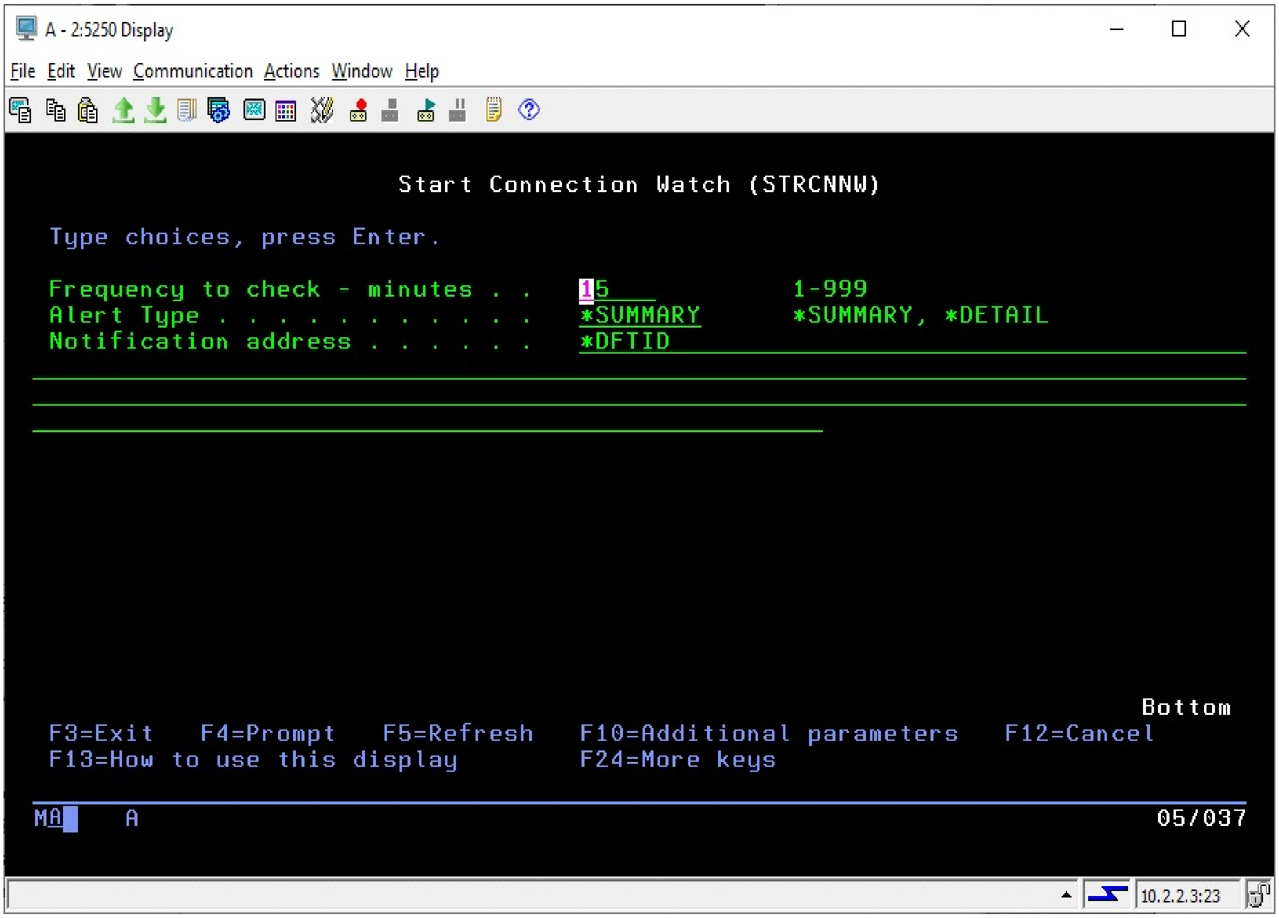
```
                         Work With CNN Address Ranges              CNNDTA

 Starting IP _______________

 Type options, press Enter.
   2=Change     4=Delete     5=Display
                                Created     Created     Changed     Changed
 Opt Starting IP      Ending IP        By          Date        By          Date
  _  127.0.0.1        127.0.0.1        QSECOFR     2020-08-13









                                                                        Bottom
 F3=Exit      F5=Refresh      F6=Create

MA + E                                                                03/014
```

When the Connection Watch runs, it will check the active external connections to your system against this list and ignore any that are included in the list.

For example, if you use menu option #6 to define a range of IP addresses from 10.1.1.1 to 10.1.1.255, then all of those addresses will be considered to be valid when they connect to your system. Any other addresses will result in an alert.

Note that the entry for 127.0.0.1 should be included in this list for all systems.

To start a Connection Watch, use menu option #7 or use the STRCNNW command. The following display will appear:



```
                     Start Connection Watch (STRCNNW)

 Type choices, press Enter.

 Frequency to check - minutes . .   15            1-999
 Alert Type . . . . . . . . . . .   *SUMMARY      *SUMMARY, *DETAIL
 Notification address . . . . . .  *DFTID




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

MA     A                                                            05/037
```

Enter the parameters as follows:

Frequency to check - minutes	Enter a value that represents how often you want the Connection Watch to check for current connections. The value entered will be the number of minutes.
Alert Type	Controls the type of alerts that will be issued. Choose one of the following values: *SUMMARY When the Connection Watch runs, if any questionable connections are found, they will be placed into a listing and sent as an email attachment. Kisco recommends that you use the *SUMMARY option

when first starting to work with the Connection Watch feature.

*DETAIL

A separate alert notice will be issued for each questionable connection found when the Connection Watch runs. If none are found, no alert will be issued.

Notification address

See the Notification Address(s) section of this manual on page 5.

When you press the F10 key, you will see the following three additional parameters:

Alert Subject Text

iEventMonitor will issue an alert with the default subject text if you leave this set to *DFT. If you want a unique alert subject text used, enter that value here and it will be used if an alert is issued.

Exit program

If you want to call your own exit program during alert processing, enter the name of the program here. When a Connection Watch alert is issued, your program will be called for any additional processing that you may want to do. When the exit program is called, a database file will be available in the QTEMP library for the program session. The file will be named UTIL30 (a shell version of this file is in the IEMLIB library). This file will contain one record for each IP address included in the current alert. Your exit program can take any additional actions you may want to take including cancelling the connection using the ENDTCPCNN command. You will find a source physical file name QSAMPLE in the application library IEMLIB that contains a sample program named CNNEXIT that you can use to see how your own exit program might be implemented. We recommend that you develop and store your exit program in a library other than IEMLIB as a future upgrade from Kisco could wipe your program from the system.

If you do not want to call an exit program, use the default value of *NONE.

Exit program library

If you are using an exit program, enter the name of the library where your exit program is stored.

Send alerts

When you use an exit program, you can use this option to suppress the alerts issued automatically by iEventMonitor. This could be done to allow your exit program to decide whether or not the alert needs to be issued.

Once you have started the Connection Watch, you can monitor it using option #1 on the MASTER menu. It will be the CN type entry. From there you can stop it, change the settings and restart it. As long as it appears in this list, it will start whenever you run the STRIEM command and it will end using the ENDIEM command. If you want to end the Connection Watch and remove it from the list, you can use option #8 on the NETWATCH menu. Running this option will stop the current Connection Watch and delete from the list of active tasks.

Audit Functions

iEventMonitor has the ability to monitor your system for security events getting logged to the system security audit journal. You can set up audit monitors for one or more of specific security events. For each audit monitor, you can also specify how frequently you want the check for the audit journal entries.

The IBM i/OS contains extensive audit logging capabilities for security related events on your system. Before you can start checking for these events, the system audit function needs to be activated. In fact, it may already be active on your system. To test this, just run the following command from the command line:

```
DSPJRN JRN(QAUDJRN)
```

If information is displayed on the screen, then the system audit journal already exists on your system. If not, it needs to be created. You can do this by running the following two commands from the command line:

```
CRTJRNRCV  JRNRCV(QGPL/AUDRCV0001) THRESHOLD(100000)
        AUT(*EXCLUDE)  TEXT('Auditing Journal Receiver')

CRTJRN  JRN(QSYS/QAUDJRN) JRNRCV(QGPL/AUDRCV0001)
       MNGRCV(*SYSTEM) DLTRCV(*NO) AUT(*EXCLUDE)
       TEXT('Auditing Journal')
```

This process will create the initial journal receiver and then the associated journal.

Once you have either verified that the system security journal exists or you have created it, then you will need to activate the journal features that you are interested in tracking using iEventMonitor.

iEventMonitor can issue alerts for the following audit events on your system:

Audit Code	Description
AD	Audit changes
AF	Authority failures
AX	Row and column access control
CD	Command line use for registered user profiles
CP	User profiles changed, created or restored
DS	DST password reset
EV	System environment variables
OW	Object ownership changes
PS	Profile swaps
PW	Invalid passwords
SK	Secure socket connections
SO	Server security user information actions
ST	Use of service tools
SV	System value changes

To make sure that the items above are correctly captured in the security audit journal, certain system values need to be set. Use the following command to display the specific system values that you will need to work with:

```
WRKSYSVAL SYSVAL(QAUD*)
```

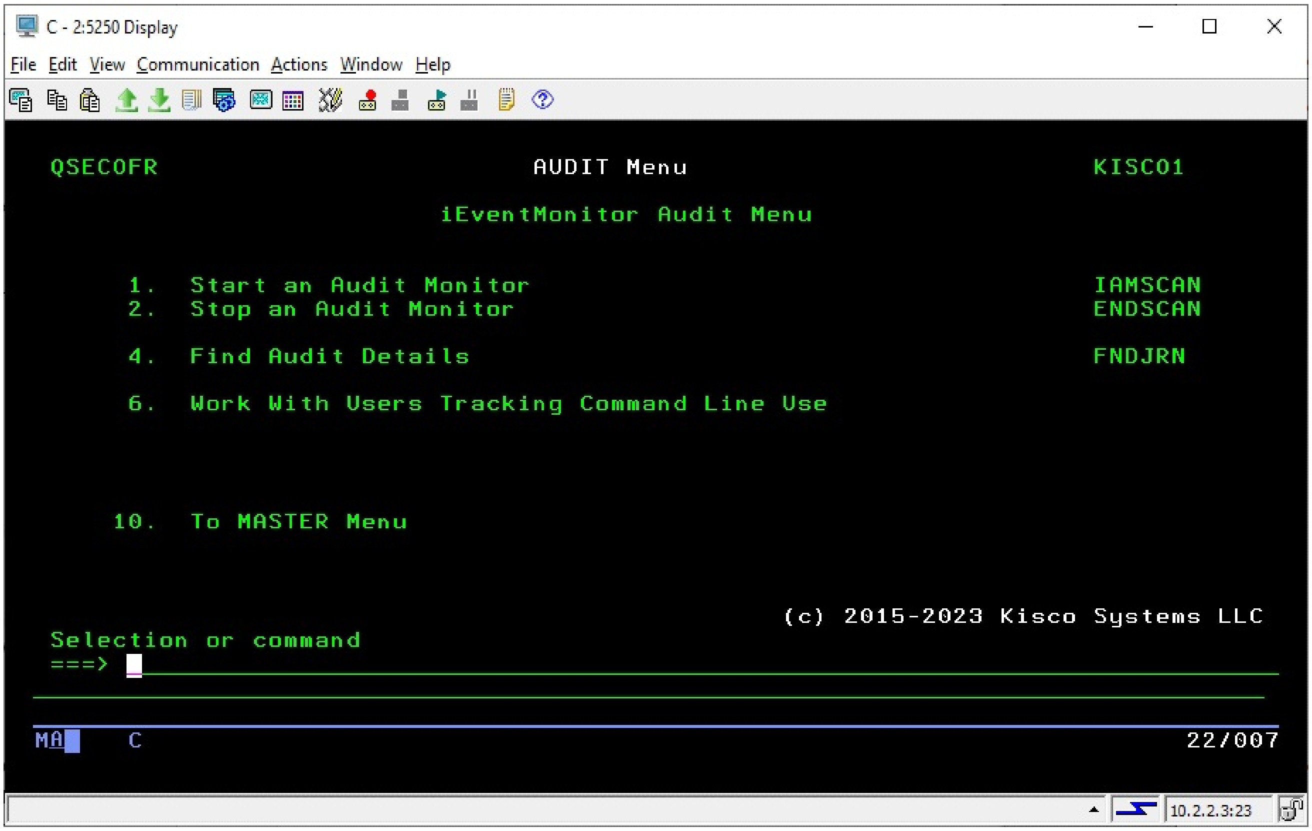
This will display the system values that are used to control audit journals. Under the QAUDCTL system value, you must have the setting of *AUDLVL set. In the QAUDLVL system value, you should have a minimum of the *AUTFAIL and *SECURITY settings. If you want to track object deletes using iEventMonitor, you will also have to add the *DELETE setting.

If you are new to using the system security audit journal, keep in mind that as the journal receivers fill up, they are periodically detached and a new journal receiver is created. Over time, these receivers may end up taking up a lot of space on your system. If you are running iEventMonitor for reporting on events, only the most recent receiver or two will be used. Unless you need the older receivers for other purposes, they can be periodically removed from your system. You can check to see if there are journal receivers to be deleted using this command:

```
WRKOBJ OBJ(QGPL/AUD*)
```

The AUDIT Menu

The AUDIT menu controls all of the iEventMonitor audit functions:



```
QSECOFR                         AUDIT Menu                         KISCO1
                         iEventMonitor Audit Menu

       1.   Start an Audit Monitor                                 IAMSCAN
       2.   Stop an Audit Monitor                                  ENDSCAN

       4.   Find Audit Details                                     FNDJRN

       6.   Work With Users Tracking Command Line Use



      10.   To MASTER Menu



                                        (c) 2015-2023 Kisco Systems LLC
Selection or command
===>

MA     C                                                           22/007
```

The options on the menu are as follows:

1. Start an Audit Monitor — Starts a specific system security audit monitor task

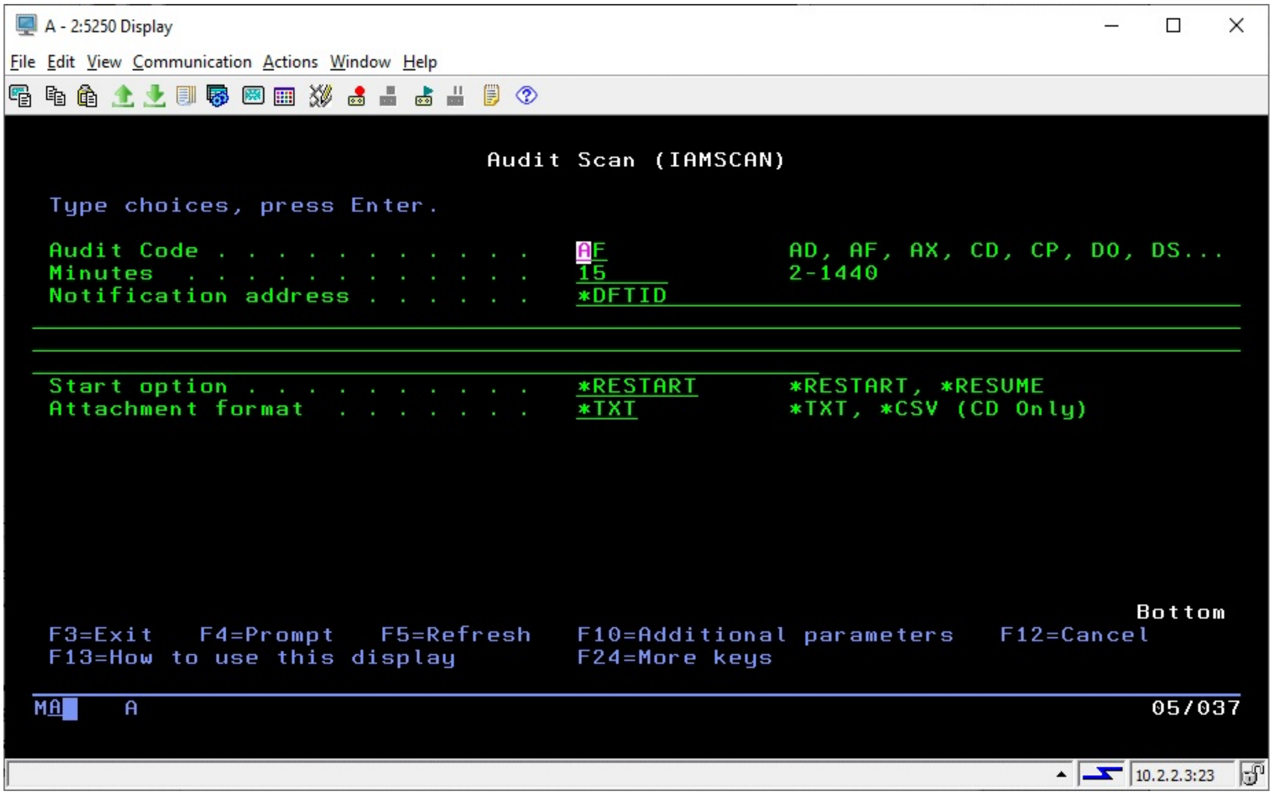
2. Stop an Audit Monitor — Stops a previously started security audit monitor. Can also be used to stop all active audit monitors at once.

4. Find Audit Details — Used to drill down and find more details about a specific audit event that was reported by iEventMonitor.

6. Work With Users Tracking Command Line Use — Register and un-register user profiles for command line use tracking purposes.

Starting an Audit Monitor

To start an audit monitor task, select menu option #1 from the AUDIT menu or you can use the use the IAMSCAN command in library IEMLIB. The following will be displayed:



```
                          Audit Scan (IAMSCAN)

 Type choices, press Enter.

 Audit Code . . . . . . . . . . . AF            AD, AF, AX, CD, CP, DO, DS...
 Minutes  . . . . . . . . . . . . 15            2-1440
 Notification address . . . . . . *DFTID


 Start option . . . . . . . . . . *RESTART      *RESTART, *RESUME
 Attachment format  . . . . . . . *TXT          *TXT, *CSV (CD Only)








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

MA     A                                                               05/037
```

Enter the parameters as follows:

Audit Code — Select the two character audit code that you want to track using iEventMonitor. You can use the HELP key (or F1 key) to see an explanation for each code.

Minutes — Enter a numeric value between 2 and 1440. This will be the time delay between tests for the monitored audit information. For example, if you choose a value of 2 minutes, then iAuditMonitor will check for the specified audit code every 2 minutes. A value of 1440 will cause the audit event to be checked once per day.

Notification address — See the Notification Address(s) section of this manual on page 5.

Start option — Controls how the monitor treats the startup process.

Choose on of the following values:

*RESTART — When the Audit Scan starts, it will reset the process and start reporting new events as they occur following the startup.

*RESUME — When the Audit Scan starts, it will pick up from where it was when it was last stopped.

Attachment Format Enter the format that you want for the audit alert detail attachment.

Choose from the following list:

*TXT The attachment will be a standard text file format.
*CSV The attachment will be a comma separated values file format. (Note that this is currently only valid for Audit Code CD.)

When you press the F10 key, you will see the following additional parameter:

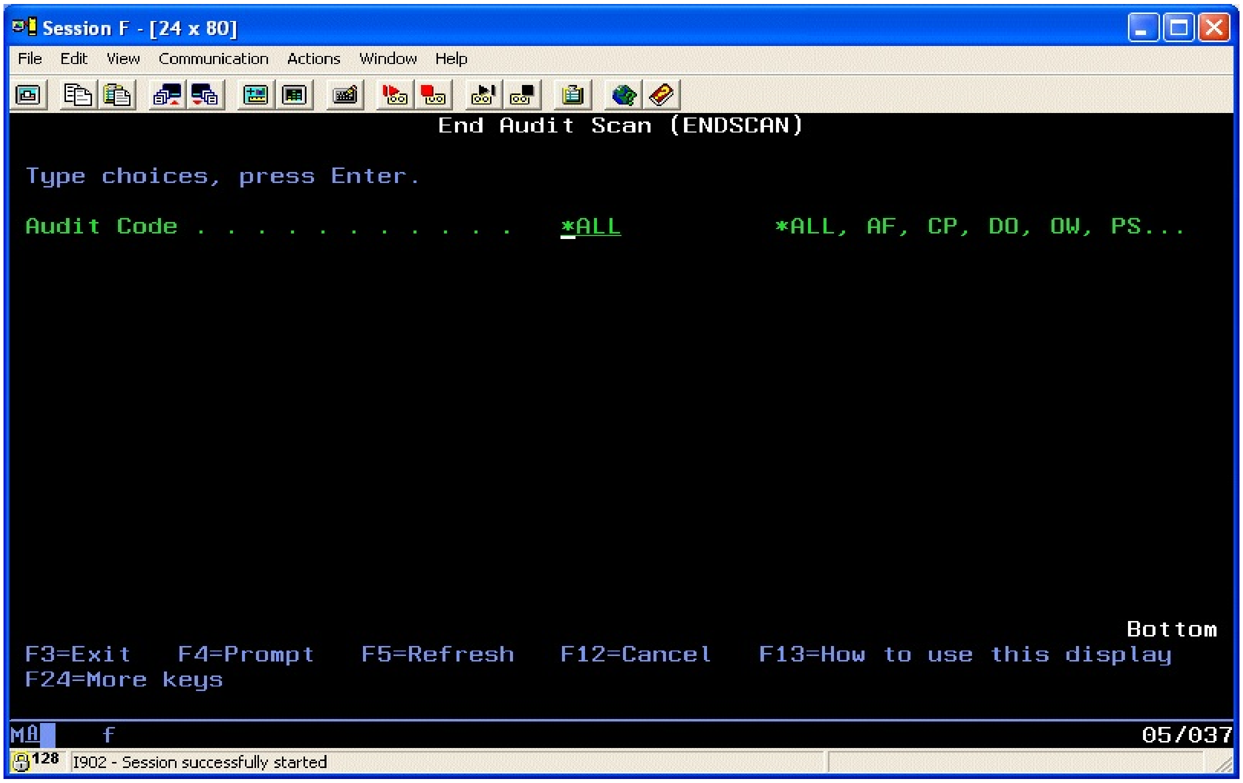
Alert Subject Text iEventMonitor will issue an alert with the default subject text if you leave this set to *DFT. If you want a unique alert subject text used, enter that value here and it will be used if an alert is issued.

Press ENTER and iEventMonitor will start your audit monitor. At every time period interval specified by the "Minutes" parameter, iEventMonitor will check for the specified audit events in the system audit journal. If any are found, an email will be generated and sent to the notification address(s). If no events are identified, no alert notice will be sent.

Stoping an Audit Monitor

Once an audit monitor has been started, you can stop it using the ENDIEM command or from the WRKIEM list of tasks (menu option #1 on the MASTER menu). This will keep the monitor on the task list and it will be restarted whenever the STRIEM startup process is run.

You can also choose to stop active audit monitors using the ENDSCAN command (option 2) will remove these Audit Monitors from automatic restart processing.

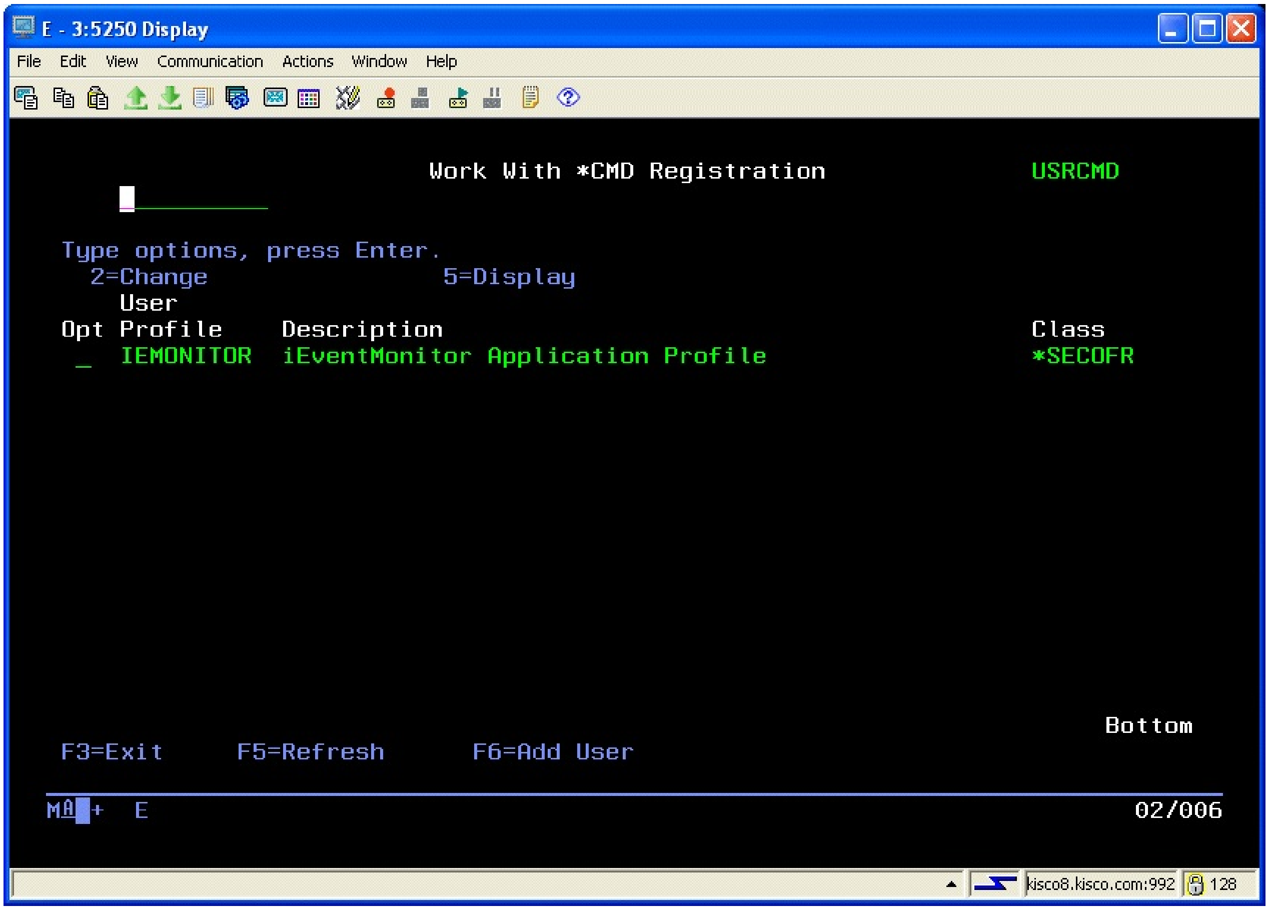


```
                          End Audit Scan (ENDSCAN)

 Type choices, press Enter.

 Audit Code . . . . . . . . . . .   *ALL          *ALL, AF, CP, DO, OW, PS...




                                                                        Bottom
 F3=Exit   F4=Prompt   F5=Refresh   F12=Cancel   F13=How to use this display
 F24=More keys
MA     f                                                              05/037
128 I902 - Session successfully started
```

Tracking Command Line Use

The CD audit tracking option will monitor command line use for user profiles that are registered in the IBM i OS. Option 6 on the AUDIT menu lets you see which user profiles are currently configured for command line tracking. It will also let you add a user profile or remove a user profile from the list.

When you start menu option #6, the following display will appear:



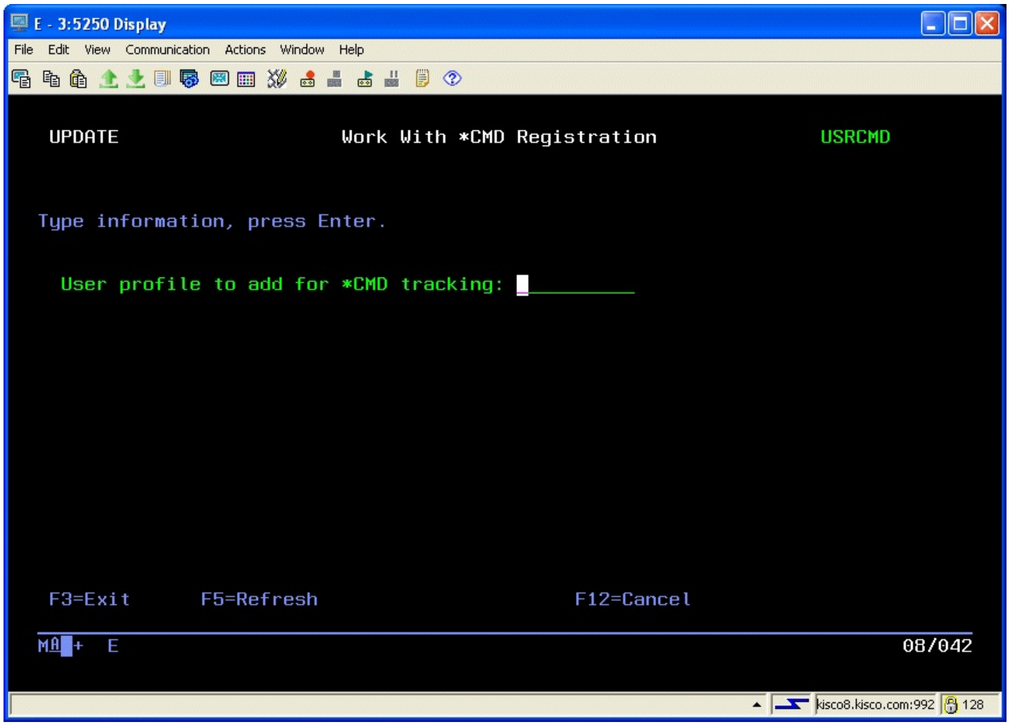
```
                     Work With *CMD Registration                 USRCMD

   Type options, press Enter.
     2=Change                     5=Display
       User
   Opt Profile      Description                                  Class
    _  IEMONITOR    iEventMonitor Application Profile            *SECOFR









                                                                      Bottom
   F3=Exit      F5=Refresh      F6=Add User

 MA  +  E                                                          02/006
```

When you first start this option, any user profiles already registered for command line audit tracking will be shown. If no users are registered, the display will be empty.

Note that this information is all stored in the IBM i OS and not in iEventMonitor.

When you add a user profile to this list, all command line activity that uses a CL command, including commands used in called CL programs, will be tracked by iEventMonitor and reported as an alert at the specified interval with the audit watch. **If you are registering a new user profile, CD tracking reporting will start the next time they sign on to the system.**

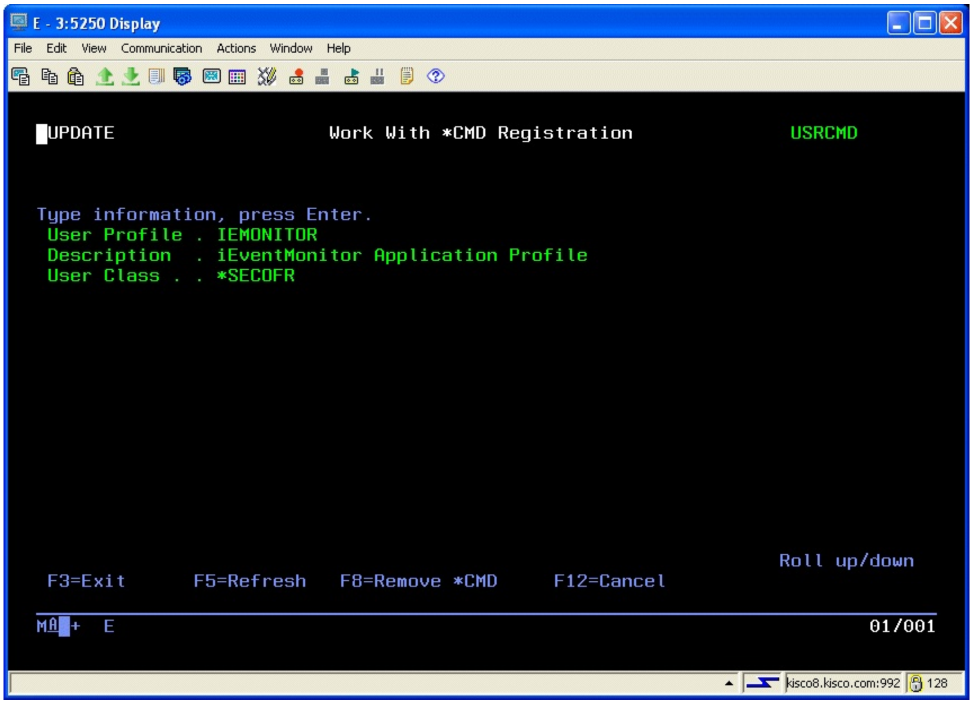
To add a new user profile to the list, use the F6 function key. The following will be displayed:



```
 UPDATE                    Work With *CMD Registration             USRCMD

Type information, press Enter.

  User profile to add for *CMD tracking: __________

 F3=Exit      F5=Refresh                      F12=Cancel

MA + E                                                            08/042
```

Enter the user profile you want to register and press ENTER. You will then be returned to the AUDIT menu. Run option #6 again to confirm that the user profile is now registered.

To remove a registration, place a 2 (Change) next to the user profile and press ENTER. The following will be displayed:



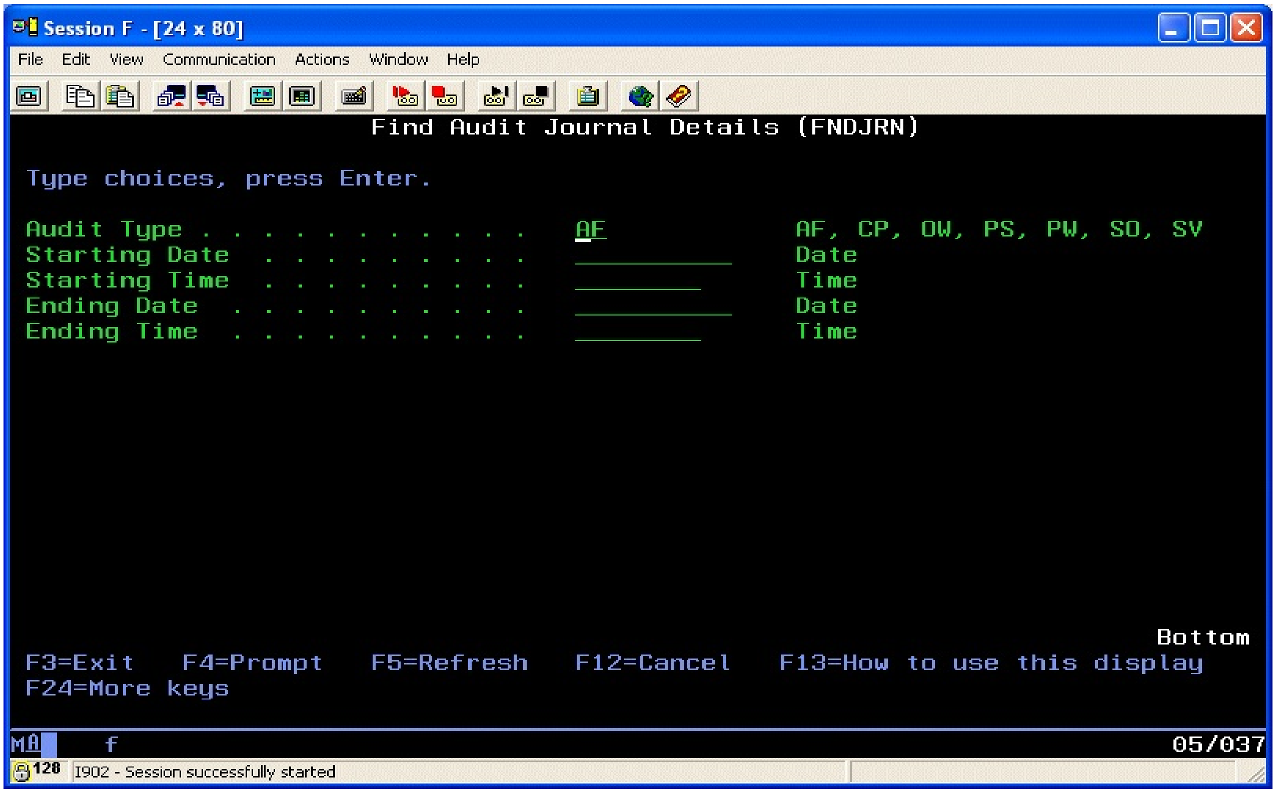
```
UPDATE                    Work With *CMD Registration             USRCMD

Type information, press Enter.
 User Profile . IEMONITOR
 Description  . iEventMonitor Application Profile
 User Class . . *SECOFR

                                                          Roll up/down
 F3=Exit      F5=Refresh    F8=Remove *CMD     F12=Cancel

MA + E                                                            01/001
```

Confirm that the user profile shown is the one that you want to remove from the list. If it is correct, press the F8 key and the user profile will be removed from the list and the AUDIT menu will be re-displayed. Run option #6 on the AUDIT menu again to confirm that the user profile has been removed from the list.

Finding More Details for an Audit Event

When an audit monitor reports an event, or a series of events, a report is attached to the email that is sent. In most cases, the exact nature of the event is apparent from the information reported with the email. In some cases, however, you may want to research more and see all of the information reported in the security journal.

To find and display the details for a specific event, use option #4 on the AUDIT menu or you can also use the FNDJRN command:



```
                     Find Audit Journal Details (FNDJRN)

 Type choices, press Enter.

 Audit Type . . . . . . . . . . .   AF            AF, CP, OW, PS, PW, SO, SV
 Starting Date  . . . . . . . . .   __________    Date
 Starting Time  . . . . . . . . .   ________      Time
 Ending Date  . . . . . . . . . .   __________    Date
 Ending Time  . . . . . . . . . .   ________      Time

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

MA     f                                                              05/037
128  I902 - Session successfully started
```

Fill in the parameters as follows:

Audit Type — Enter the code for the event that you are tracking with this inquiry

Starting Date — To zero in on the event on the system audit journal, enter the date that was reported with the event by iEventMonitor. If you leave the starting date blank, all matching events will be shown

Starting Time — Enter the time that you want to start the display with. If you leave this blank, all events from the starting date will be shown.

Ending Date — To limit the amount of information displayed, enter the same date as the starting date.

Ending Time — You can also limit the amount of information displayed by specifying an ending time

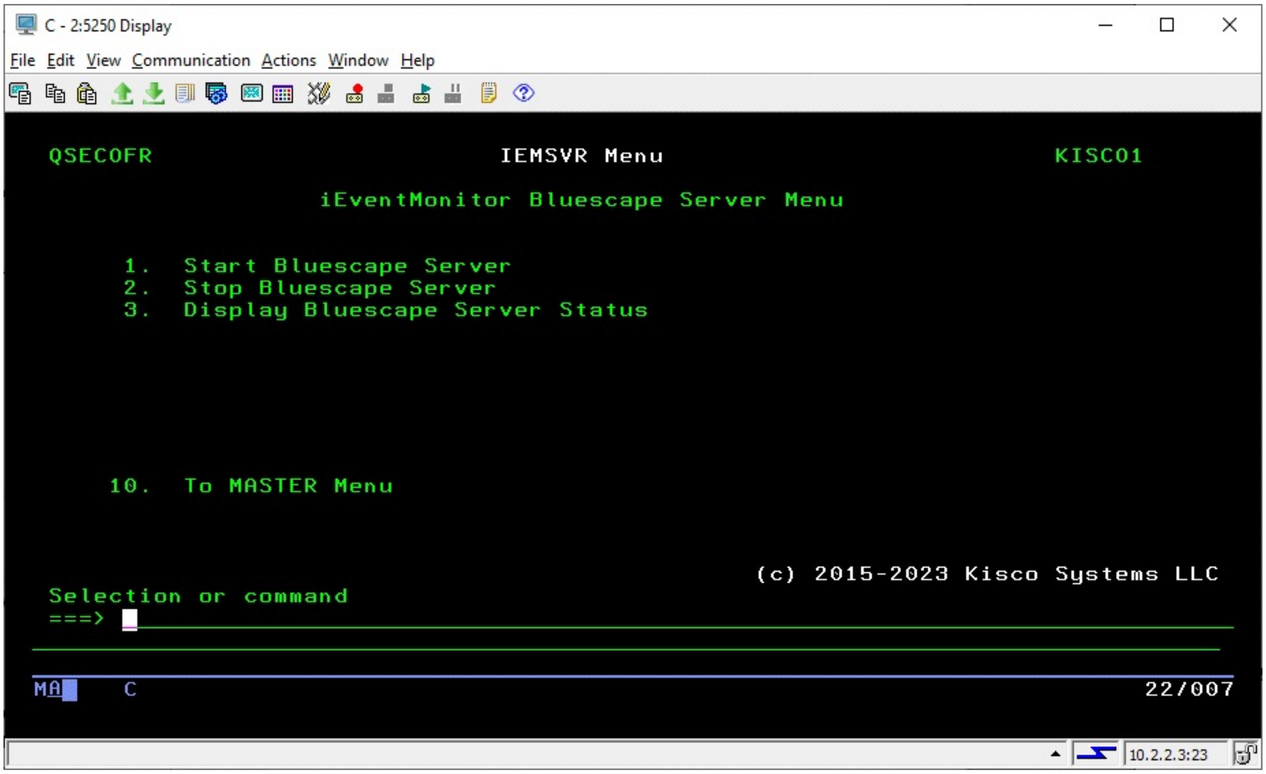
When you find the specific audit record that you are looking for, you may have to refer to IBM security journal documentation to fully understand the information displayed. If you have difficulty with this, feel free to contact support at Kisco Systems for additional help.

The Server Menu

The Server Menu (IEMSVR) can be used to manually control the IEVENTMON HTTP server instance on your system. This server is used for the IEM Respond feature and also for the iEventMonitor Bluescape web interface for the software.

If the IEVENTMON server exists on your system, it will always be started when you run the STRIEM command when iEventMonitor is configured for either IEM Respond or IEM Bluescape. These settings are on the IEMSET command (option 9 on the INSTALL menu).

When you take option 25 on the MASTER menu, the following server menu will be displayed:



```
QSECOFR                      IEMSVR Menu                          KISCO01
                  iEventMonitor Bluescape Server Menu

       1.  Start Bluescape Server
       2.  Stop Bluescape Server
       3.  Display Bluescape Server Status





      10.  To MASTER Menu


                                          (c) 2015-2023 Kisco Systems LLC
Selection or command
===>
```

The following options are available:

1 - Starts the server instance

2 - Ends the server instance

3 - Displays the current status of the server by listing the server jobs currently active. If no jobs display, the server is not active.

10 - Returns to the MASTER menu

Installation and Configuration

Before any iEventMonitor functions will work, the initial install procedure must be run. iEventMonitor can be installed from a download file obtained from the Kisco Systems website.

This installation procedure will install the base support for iEventMonitor when used with a standard terminal-based interface. To use the web-enabled features of iEventMonitor from your web browser, some additional installation and configuration steps will be needed. Please see the separate documentation that arrived with your software for these instructions.

Installation from Download

Use the install instructions from the iEventMonitor Download web page.

https://www.kisco.com/iem/iemdload.html

After you download the ISO CD image install file and documentation from the website, print the Download page and use it for reference while completing the installation.

Release Upgrade Installation

When Kisco Systems completes work on a new Release of iEventMonitor, you will be notified of the availability for the new release. New releases are available via download from the Kisco website for iEventMonitor.

To install an upgrade, follow the above link. Be sure to get the most recent copies of the updated documentation as well.

---

iEventMonitor Removal

Removing iEventMonitor may happen when doing a license transfer to a different system or when you have decided not to go ahead with a purchase following a free trial.

Before you remove iEventMonitor from your system you must first run option #15 on the INSTALL menu (Remove Message Handling Exit Program).   Once this has been done, then the application library name IEMLIB can be safely deleted and the software will be removed.

SMTP Port# Variable

iEventMonitor allows you to specify a non-standard port number for SMTP when sending alerts by email. If your system uses port 25 (which is a standard industry practice and applies to most installations), then you do not need to do anything.

If you want to use a different SMTP port number, it is stored in the data area named IEMCONTROL in the IEMLIB library. The value is in positions 796-800 and is expressed in hexadecimal. You can use the following command to make changes:

```
  CHGDTAARA DTAARA(IEMLIB/IEMCONTROL (796 5)) VALUE(X'0000000019')
```

Note: the above command sets the SMTP port# to 25, the default value.

This only applies when you are using the internal email delivery protocol in iEventMonitor. If your system is using the IBM i OS SNDSMTPEMM protocol, then check with IBM support if you want to use a different port number.

IEM Respond Configuration

For the IEM Respond feature of iEventMonitor to work, you will have to configure and activate a server instance for the Apache HTTP server on your IBM i.

The following checklist will have to be done to complete the configuration. The details will follow for each step.

Step 1: Start the Apache Administrative server tool on your IBM i.
Step 2: Create a new HTTP server instance named IEVENTMON
Step 3: Install the HTTP Server objects for iEventMonitor
Step 4: Start the new IEventMonitor server instance
Step 5: Set IEMSET Parameters for IEM Respond

Step 1: Start the Apache Administrative server tool on your IBM i.

To configure an Apache server instance, you must first start the Administration server instance for Apache. You can do this from a command line on your IBM i with the following command:

```
STRTCPSVR SERVER(*HTTP) HTTPSVR(*ADMIN)
```

The server may take a while to initialize, so wait a few minutes before starting up the configuration wizard in your browser. When you are ready, point your browser to the following web address:

http://*yoursystemi.com*:2001/HTTPAdmin

The system will prompt you for a user profile and password. Once that has been supplied, the Web Administration wizard that comes with your OS will be displayed.

Step 2: Create a new HTTP server instance named IEventMonitor

After you sign on and get to the Web Administration page, navigate to the “Manage” tab and then the “HTTP Servers” tab below that. Under the “Common Tasks and Wizards”, select “Create HTTP Server”. For server name, you MUST specify the value “IEVENTMON”. The server description of “Kisco iEventMonitor Server” can also be used. Click on Next for all of the following displays taking all of the default options presented until you reach the “Create HTTP Server” panel with a “Finish” button at the bottom. Press the Finish button to complete creating the new server instance.

Step 3: Install the HTTP Server objects for iEventMonitor

On a terminal session where you are signed on as a security officer, go to the INSTALL menu in library IEMLIB by entering the following command:

```
GO IEMLIB/INSTALL
```

Run option #11 (Install HTTP Server Instance Objects) from this menu. This will install the HTTP server objects needed by iEventMonitor.

Step 4: Start the new IEventMonitor server instance

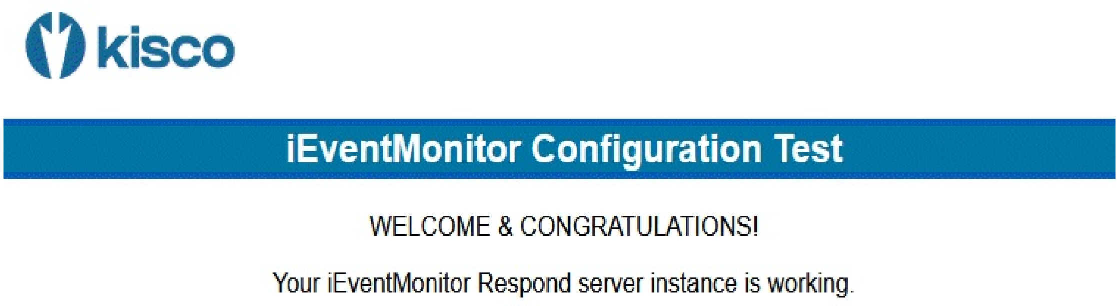
Start the newly created server instance. You can do this from the Web Administration page or from your command line. If you do this from the command line, issue the following:

```
STRTCPSVR SERVER(*HTTP) HTTPSVR(IEVENTMON)
```

The server instance will now be active. You can now test the server instance by going to your browser and entering the following URL to bring up the test page:

http://*yoursystemi.com*:8077

A test page like this will be displayed:



iEventMonitor Configuration Test

WELCOME & CONGRATULATIONS!

Your iEventMonitor Respond server instance is working.

At this point, the server instance is ready for use.

Step 5: Set IEMSET Parameters for IEM Respond

Before you can use the IEM Respond feature, several settings must be updated in the IEMSET command (option #9 on the INSTALL menu) as follows:

IEM Respond Active? This must be set to *YES.

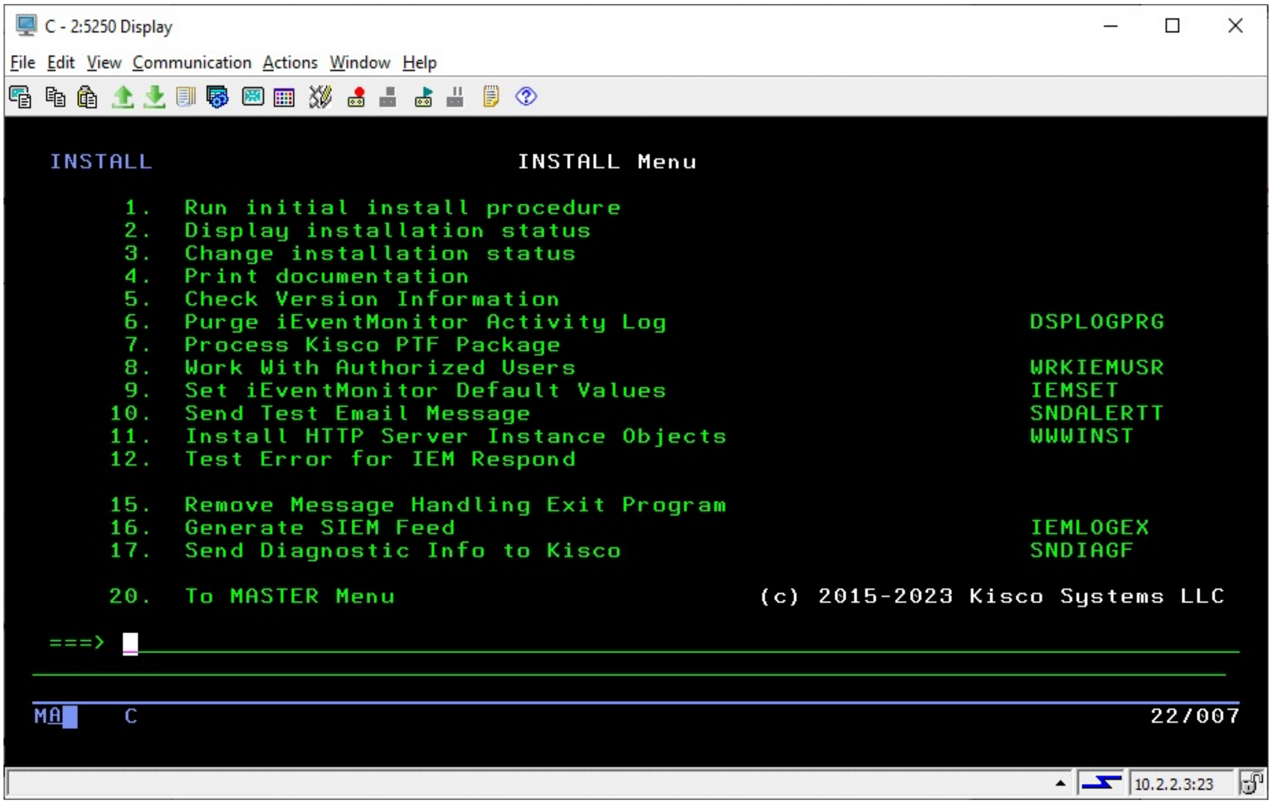
IEM Respond Page Heading This allows you to customize the browser display heading for your installation.

IEM Browser Respond IP Sets the HTTP address used for your browser session.

Refer to the documentation for option #9 (IEMSET) on the INSTALL menu contained in the following section of this user's guide.

The Install Menu

When you select item 30 from the MASTER menu, the installation menu is displayed as follows:



```
 INSTALL                         INSTALL Menu

      1.  Run initial install procedure
      2.  Display installation status
      3.  Change installation status
      4.  Print documentation
      5.  Check Version Information
      6.  Purge iEventMonitor Activity Log                     DSPLOGPRG
      7.  Process Kisco PTF Package
      8.  Work With Authorized Users                           WRKIEMUSR
      9.  Set iEventMonitor Default Values                     IEMSET
     10.  Send Test Email Message                              SNDALERTT
     11.  Install HTTP Server Instance Objects                 WWWINST
     12.  Test Error for IEM Respond

     15.  Remove Message Handling Exit Program
     16.  Generate SIEM Feed                                   IEMLOGEX
     17.  Send Diagnostic Info to Kisco                        SNDIAGF

     20.  To MASTER Menu                  (c) 2015-2023 Kisco Systems LLC

 ===>

MA      C                                                           22/007
```

Menu items perform the following functions. Each function is discussed in greater detail later in this document:

1. Run initial install procedure - **Do not use this option** unless directed to do so by Kisco Support staff. This option is automatically run during normal install processing.

2. Display installation status — Displays a screen showing the current installation status for the software.

3. Change installation status — Displays the current software installation status and allows for changes to be made.

4. Print documentation — Prints the documentation changes since this manual was last updated.

5. Check Version Information — Displays information about the specific version of iEventMonitor that is installed on your system.

6. Purge iEventMonitor Activity Log — Lets you purge the activity log using the DSPLOGPRG command.

7. Install Kisco PTF package — Allows you to process a corrective PTF package received from Kisco for program fixes.

8. Work With Authorized Users
Allows you to maintain which user profiles are allowed to use the iEventMonitor product features.

9. Set iEventMonitor Values
Lets you set up global default settings for iEventMonitor.

10. Send Test Email Message
Sends a test email message to the email address that you provide. Used when getting email notification configured.

11. Install HTTP Server Instance Objects
Installs the IEM Respond feature server objects on your system. Only needs to be run once.

12. Test Error for IEM Respond
Submits a job to QBATCH which will force an error message that requires a response. This can be used when setting up the IEM Respond feature for your testing process.

15. Remove Message Handling Exit Program
Only used when removing iEventMonitor from your system. **DO NOT USE** at any other time. This option makes sure that the exit program used for message queue reminders is not registered in the IBM i OS exit registration.

16. Generate SIEM Feed
Used to generate the optional SIEM Feed file for SIEM integration.

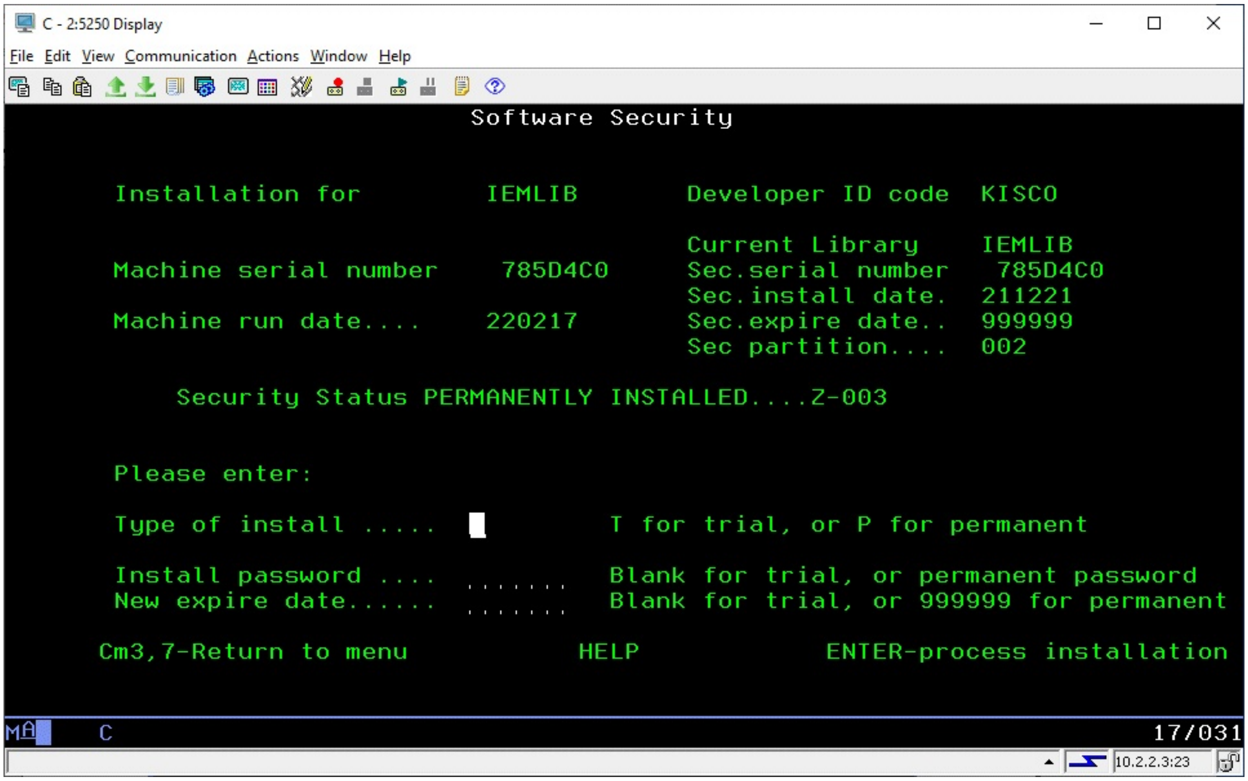
17. Send Diagnostic Info to Kisco
Collects diagnostic information about iEventMonitor on your system and emails it to Kisco Systems for analysis purpose. You should only use this option as directed by Kisco support staff.

20. To MASTER Menu -
Will display the iEventMonitor MASTER menu.

Details on each of these menu options are covered in the following sections of this documentation.

Display installation status

At any time, you can check the current installation status of your copy of iEventMonitor by selecting this menu option. You must be signed on with security authority of QSECOFR or equivalent. The following screen will be displayed:



```
                               Software Security

       Installation for         IEMLIB        Developer ID code   KISCO

                                              Current Library     IEMLIB
       Machine serial number     785D4C0      Sec.serial number    785D4C0
                                              Sec.install date.   211221
       Machine run date....     220217        Sec.expire date..   999999
                                              Sec partition....   002

           Security Status PERMANENTLY INSTALLED....Z-003


       Please enter:

       Type of install .....                T for trial, or P for permanent

       Install password ....   .......      Blank for trial, or permanent password
       New expire date......   .......      Blank for trial, or 999999 for permanent

      Cm3,7-Return to menu           HELP           ENTER-process installation
```

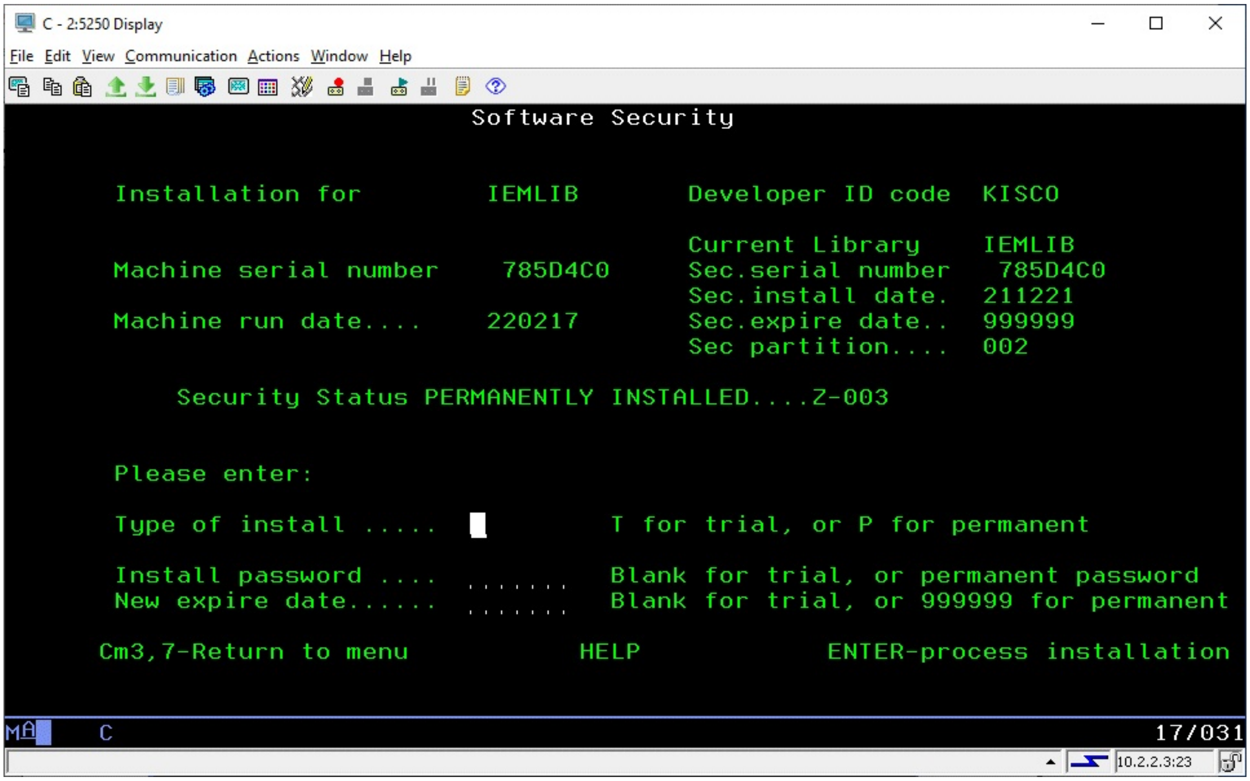
The message at the center of the screen indicates your current installation status. You should also check the Sec. expire date for an expired trial period. iEventMonitor may still show as installed on a trial basis but, if the trial is expired, it will no longer function. This date is shown in the form YYMMDD.

The following are the possible status messages that can appear on this display:

Message	Explanation
Z-001 NOT INSTALLED	Trial installation not started
Z-002 TRIAL EXPIRED	Trial period has ended
Z-003 PERMANENTLY INSTALLED	Software is permanently installed
Z-004 INSTALLED ON TRIAL	Software is installed on trial
Z-005 PASSWORD NOT ACCEPTED	Password keyed is not valid
Z-006 WRONG LIBRARY	Programs must run from our library
Z-007 PLEASE RUN TRIAL INSTALL	Must have trial install before perm.
Z-008 INVALID INSTALL REQUEST	Must be P or T
Z-009 INVALID SECURITY (REC#6)	Call Kisco
Z-010 INVALID SECURITY (NO ZZ)	Call Kisco
Z-011 INVALID SECURITY (HASH.)	Call Kisco

Change installation status

To make changes to your installation status, use this menu option. The changes processed can include both a trial period extension and permanent installation. You must be signed on with QSECOFR security authority or equivalent. When you select this option, the following screen is displayed:



```
                              Software Security


       Installation for        IEMLIB       Developer ID code  KISCO

                                            Current Library    IEMLIB
       Machine serial number    785D4C0     Sec.serial number   785D4C0
                                            Sec.install date.  211221
       Machine run date....    220217       Sec.expire date..  999999
                                            Sec partition....  002

           Security Status PERMANENTLY INSTALLED....Z-003


       Please enter:

       Type of install .....                T for trial, or P for permanent

       Install password ....   .......      Blank for trial, or permanent password
       New expire date......   .......      Blank for trial, or 999999 for permanent

      Cm3,7-Return to menu          HELP            ENTER-process installation


MA     C                                                                 17/031
```

Trial extension

To extend a trial period, contact Kisco Systems and request an extension. We will provide you with an extension password and new expiration date. On the above screen, enter the following:

Type of install	Enter 'T' for trial
Install password	Enter all six digits of the extension password provided, including any leading zeros
New expire date	Enter the new expiration date in the format YYMMDD (ie: Jan 12, 2021 would be 210112)
User count	Enter the number of users that you are authorized for from Kisco

When the parameter fields have been completed, press enter to reactivate your software.

Permanent installation

To permanently install your software package, use the permanent password provided by Kisco Systems following receipt of payment. On the above screen, enter the following:

Type of install	Enter 'P' for permanent
Install password	Enter all six digits of the extension password provided, including any leading zeros
New expire date	Enter all 9's (ie: 999999)
User count	Enter the number of users that you are authorized for from Kisco

When the parameter fields have been completed, press enter. Your software is now permanently installed.

Print additional documentation

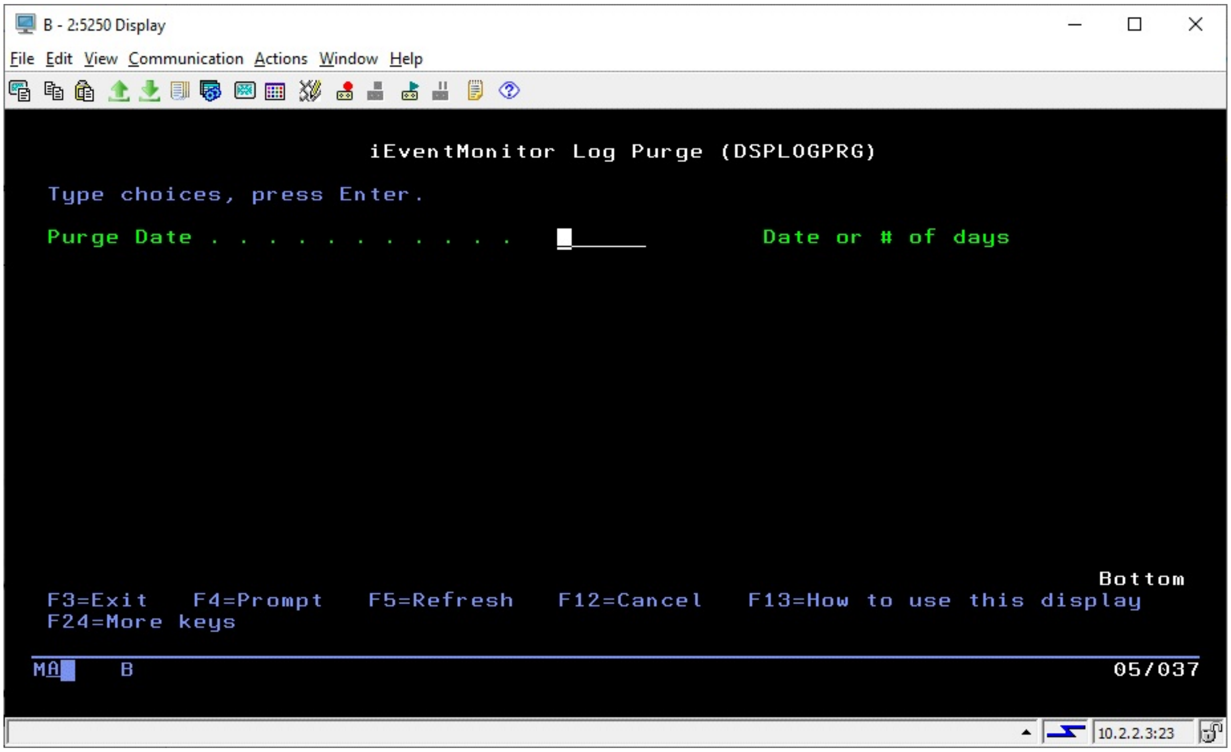
At any time, you can reproduce the Additional Documentation Topics by using this menu option. A full copy will be printed.

Check Version Information

This menu option will display the current release level and PTF information for your version of iEventMonitor. Kisco may need to verify this when working with you on a support issue.

Purge Activity Log

Option 6 on the INSTALL menu will prompt the DSPLOGPRG command to let you remove records from the iEventMonitor Activity Log. When select the option, the following screen prompt will be displayed:



```
                    iEventMonitor Log Purge (DSPLOGPRG)

 Type choices, press Enter.

 Purge Date . . . . . . . . . . .   _______        Date or # of days













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

MA     B                                                              05/037
```

Enter the date that you want to purge up to. The date format should agree with the way your system is configured for date presentation. All records prior to the date entered will be purged.

If you don't want to specify a date, you can enter up to three digits in this field to indicate the number of days that you want to keep on file in the log. All older entries will be purged.

The purged records will be removed from the Activity Log. If you want a listing of them before you run the purge, you can do that from the Activity Log display, option #9 on the MASTER menu.

Install Kisco PTF Package

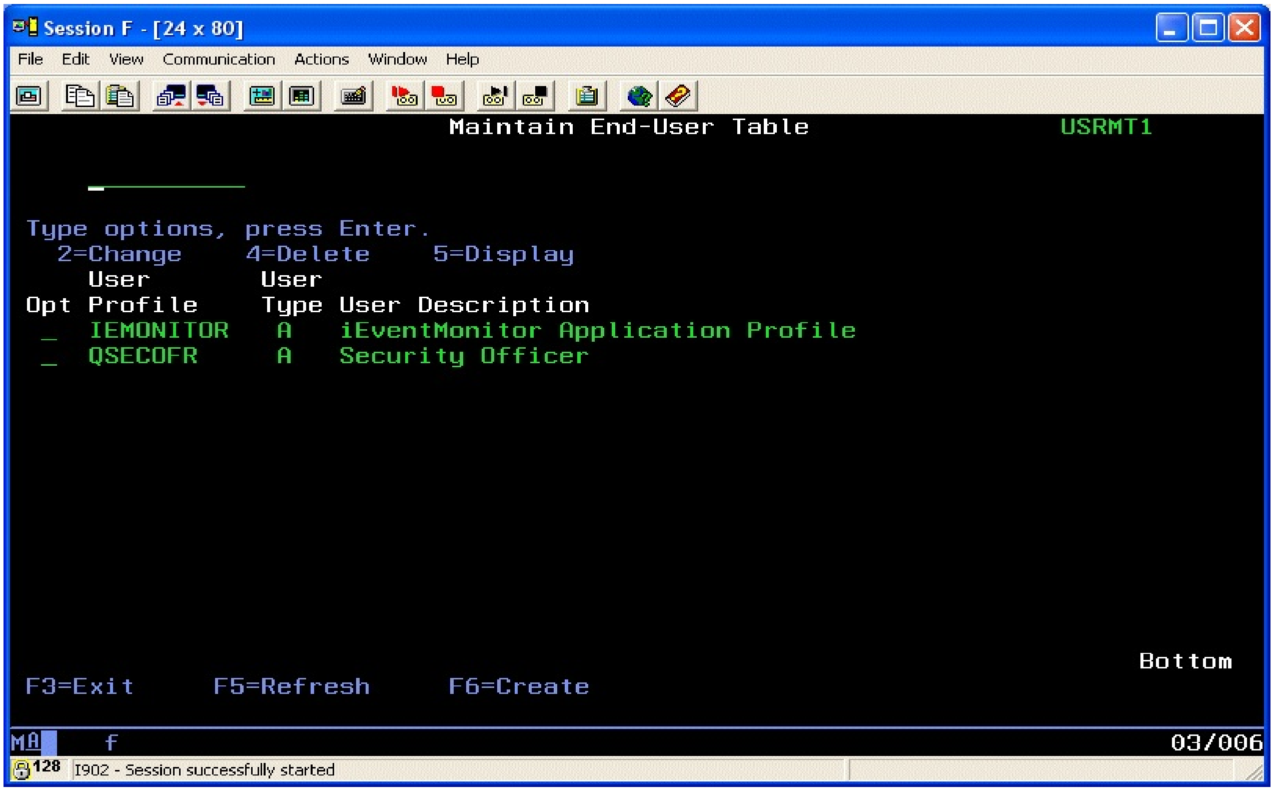
iEventMonitor supports distribution of program updates remotely by email attachments. When programs in iEventMonitor are updated or program fixes are required, Kisco Systems can send the updates directly to you. If needed, we will send E-mail to you with an attached file. This file, when loaded into a folder on your system, can be used to post program updates and changes to your copy of iEventMonitor.

The current instructions for PTF installation can be found at the Kisco Systems website using the following link:

https://www.kisco.com/iem/support/ieptfupd.html

Work With Authorized Users

When iEventMonitor is initially installed, it can only be used by a user profile with *ALLOBJ authority (such as QSECOFR). To grant access to use iEventMonitor to users who do not have *ALLOBJ authority, use option #8 on the INSTALL menu or use the WRKIEMUSR command:

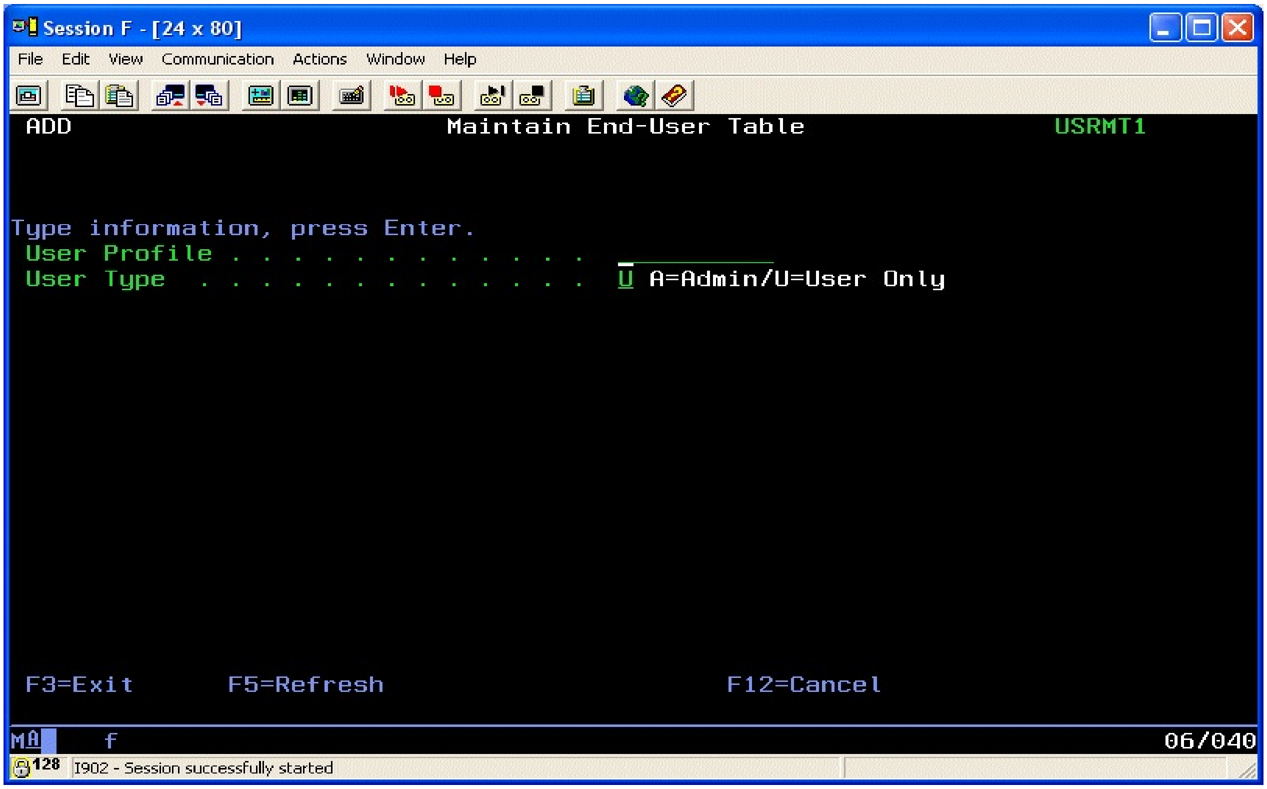

Session F - [24 x 80]
File Edit View Communication Actions Window Help

```
                           Maintain End-User Table                   USRMT1


 Type options, press Enter.
   2=Change     4=Delete     5=Display
     User         User
 Opt Profile      Type User Description
  _  IEMONITOR     A   iEventMonitor Application Profile
  _  QSECOFR       A   Security Officer










                                                                        Bottom
 F3=Exit      F5=Refresh      F6=Create
MA     f                                                               03/006
```

128 I902 - Session successfully started

As shipped from Kisco Systems, the user profiles QSECOFR and IEMONITOR are automatically granted access to use iEventMonitor. Do not remove either of these entries.

To add a new user to the list of those who can use the software, select the F6 function key:



Session F - [24 x 80]
File Edit View Communication Actions Window Help

```
 ADD                          Maintain End-User Table                 USRMT1


Type information, press Enter.
 User Profile . . . . . . . . . . . .   __________
 User Type  . . . . . . . . . . . . .   U A=Admin/U=User Only









 F3=Exit      F5=Refresh                       F12=Cancel
MA     f                                                               06/040
```

128 I902 - Session successfully started

To authorize your additional user profile, enter the profile here. You must also then specify the type of user you want them to be as follows:

User Type A — Is an administrative user. An admin user can use all functions and features of the iEventMonitor software product.

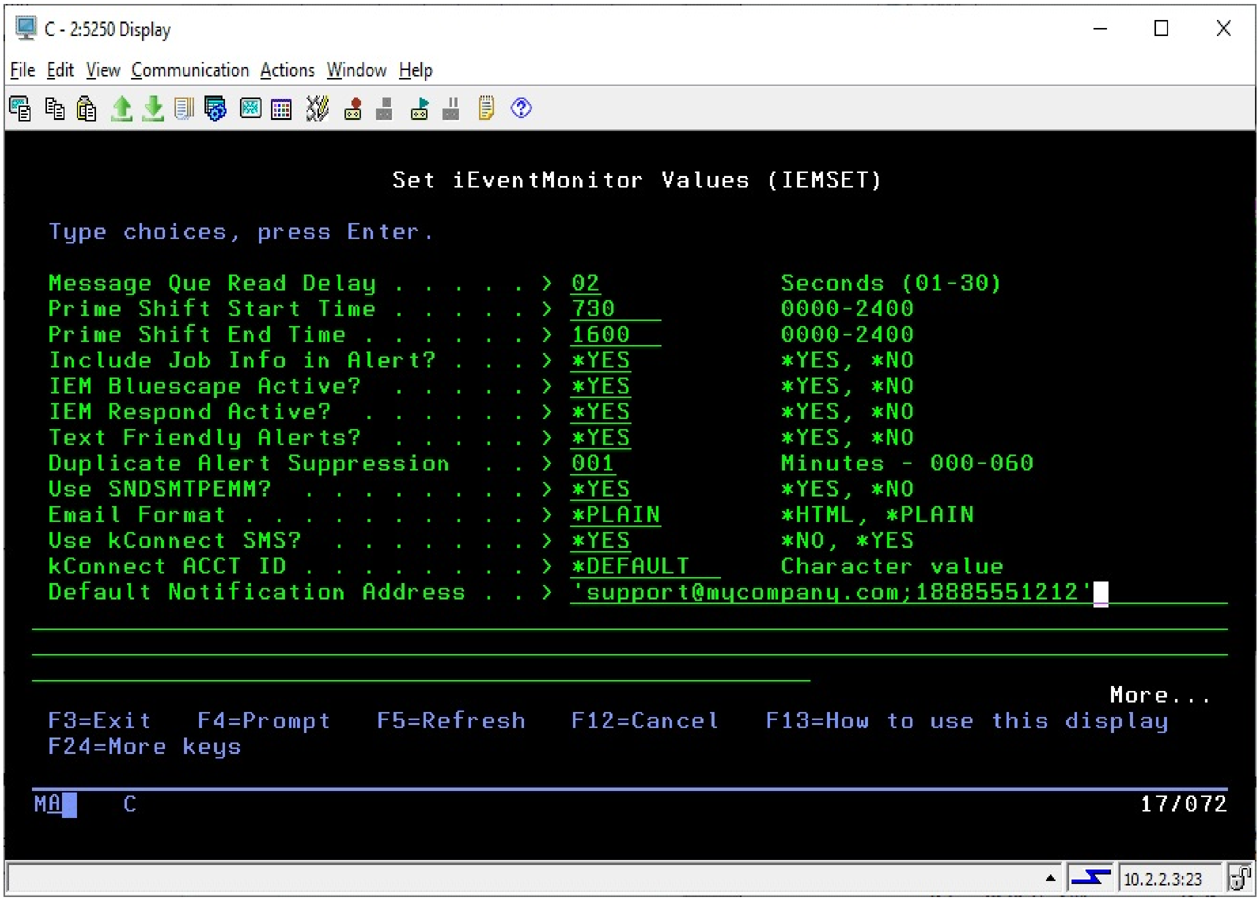
User Type U — Is a user. All functions of iEventMonitor are available to them except for option #8 on the INSTALL menu.

For the Bluescape web browser interface for iEventMonitor administration, a user type can only look at settings and active tasks, they cannot change them, set up new monitors or start and stop monitors.

This allows you to let specific users use iEventMonitor, but restricts granting and removing this permission to just those user who are categorized as administrative users.

iEventMonitor Default Values

Choose menu option #9 from the INSTALL menu to set default values. The following prompt will be displayed:



```
                      Set iEventMonitor Values (IEMSET)

 Type choices, press Enter.

 Message Que Read Delay . . . . . . > 02            Seconds (01-30)
 Prime Shift Start Time . . . . . . > 730           0000-2400
 Prime Shift End Time . . . . . . . > 1600          0000-2400
 Include Job Info in Alert? . . . . > *YES          *YES, *NO
 IEM Bluescape Active?  . . . . . . > *YES          *YES, *NO
 IEM Respond Active?  . . . . . . . > *YES          *YES, *NO
 Text Friendly Alerts?  . . . . . . > *YES          *YES, *NO
 Duplicate Alert Suppression  . . . > 001           Minutes - 000-060
 Use SNDSMTPEMM?  . . . . . . . . . > *YES          *YES, *NO
 Email Format . . . . . . . . . . . > *PLAIN        *HTML, *PLAIN
 Use kConnect SMS?  . . . . . . . . > *YES          *NO, *YES
 kConnect ACCT ID . . . . . . . . . > *DEFAULT      Character value
 Default Notification Address . . . > 'support@mycompany.com;18885551212'

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

MA     C                                                             17/072
```

Set these parameters as follows:

Message Que Read Delay	This value is no longer used by iEventMonitor.
Prime Shift Start Time	Defines your primary shift starting time expressed in 24 hour clock format (hhmm).
Prime Shift End Time	Defines your primary shift ending time expressed in 24 hour clock format (hhmm).
Include Job Info in Alert?	This option can add more information to each message queue monitor alert notification. With this option activated, the job name, job number and user profile for the job issuing the message to the message queue will be included in the notification. Choose one of the following values: ***NO** No additional logging will be done. ***YES** The additional logging information will be posted to

the joblog and to the system history log.

IEM Bluescape Active?

Tells iEventMonitor whether or not the Bluescape web browser interface is installed and configured. This is initially set to *NO. After the additional configuration work has been completed, this can be set to *YES. **DO NOT set this to *YES until you are sure that you are ready.**

IEM Respond Active?

Tells iEventMonitor whether or not the IEM Respond feature has been activated on your system. When initially installed, this defaults to *NO. Once you have completed the additional configuration steps as outlined in this user's guide, you can set this to *YES to enable the feature. **DO NOT set this to *YES until you are sure that you are ready.**

Text Friendly Alerts?

Choose one of the following values:

***NO** If you are not using the IEM Respond feature, leave this set to *NO.
***YES** If you are using the IEM Respond feature and you are issuing alerts to text destination addresses, this option will cause the alerts that require a response to be formatted better for those receiving the alert by text.

Duplicate Alert Suppression

This option controls suppression of duplicate message queue monitor alerts issued within a short period of time. It can be used to make sure that your email stream issued from your IBM i systems does not get clogged if an application error gets into a looping condition.

This setting is in minutes and the default value is set to 5. If an identical message is issued by the same user profile within the given period of time, only the first instance will result in an alert being issued.

Changing this value to zero will turn this feature off for your system.

Use SNDSMTPEMM?

Controls which email transport mechanism is used by iEventMonitor to send email from your system. If you make a change to this setting, it will not take effect until the next time you end and restart iEventMonitor.

Choose one of the following values:

*YES When an alert is sent, the IBM i SNDSMTPEMM protocol will be used. Note: This is only valid on system running IBM i OS 7.3 or later.

*NO The legacy protocol will be used to send email. This is required on systems running IBM i OS 7.2 or earlier.

If you make a change to the SNDSMTPEMM setting while iEventMonitor is active, you must then stop and restart your monitors using the ENDIEM and STRIEM commands.

Email Format

Controls how your alert notification emails are formatted when you are using the SNDSMTPEMM protocol.

Choose one of the following values:

*HTML — The email body will be encoded using HTML formatting. This option is not available when the previous option is set to *NO.

*PLAIN — The email body will be encoded using plain text formatting.

If you make a change to the format setting while iEventMonitor is active, you must then stop and restart your monitors using the ENDIEM and STRIEM commands.

Use kConnect SMS?

If you have Kisco Connect installed on your system, then changing this value to *YES will integrate iEventMonitor with Kisco Connect for text notifications.

kConnect ACCT ID

If Kisco Connect is activated, a valid Account ID must be specified here.

Default Notification Address

This is the email address field that will be used by iEventMonitor whenever the special value *DFTID is used for an alert.

See the Notification Address(s) section of this manual on page 5.

In the example above, an email address is specified and is stacked with a cell phone number. This is for an installation that has Kisco Connect installed.

Press the roll-up key once to access additional parameters on the next screen panel as follows:

Alternate Notification Address

Enter the email address information that you want to use for off-shift notifications locations.

See the Notification Address(s) section of this manual on page 5.

If you do not want to use the off-shift notification process, enter the special value *NONE here.

Support Email Address

Enter a single email address. This address will be used with all alert emails as the “from” email and the “reply-to” address.

Support Name Description

Enter a name description that you want to show up on the email as the sender of your alert notices.

Default Alert Subject

Enter the standard email Subject text that you want used for all alert notices. If you are using iEventMonitor on multiple systems or partitions, you might want to have each install use a Subject that identifies the system that it is coming from.

Note: If you use either the header or trailer option, additional text will be included in all alerts. If you are routing alert messages by text, this could result in incomplete alert information when text size is limited by a cell carrier.

Optional Alert Header Text

Enter up to 80 characters that you want added as the first line header of every alert message that is issued. If you use the special value of *NONE, no first line header will be included in the alert.

Optional Alert Trailer Text

Enter up to 80 characters that you want added as the last line trailer of every alert message that is issued. If you use the special value of *NONE, no last line trailer will be included in the alert.

IEM Respond Page Heading

This is used as a web page heading when the IEM Respond feature is active for your installation.

IEM Browser Respond IP

This is your system web address to be used for the IEM Respond feature.

An example might look like this:

http://*yoursystemi.com*:8077

Note that the port reference of 8077 must be included. You can also specify a numeric IP address like the following example:

http://*10.1.2.3*:8077

Escalation Notification Addrs

Some features in iEventMonitor provide for reminder alerts to be sent when a situation has not been resolved yet. If you want to send an alert to any additional addresses, you can enter those here. Do not repeat any addresses that are already included in the primary notification.

See the Notification Address(s) section of this manual on page 5.

Off-Shift Days

If you are using the off-shift alternate notification feature and you want to define certain days of the week as off shift all day (such as Saturday and Sunday), enter those days here. You can enter up to 5 values. Use the standard system values for the days of the week (*MON *TUE *WEB *THU *FRI *SAT *SUN). If you do not want any days to be considered as off-shift all day, use the special value *NON for none.

Purge Days Range

Enter the number of days to be used when an automatic purge is run. The automatic purge runs whenever the STRIEM command is issued. If this is set to 000, then the purge will be bypassed during startup processing. To use the automatic purge, a number of days within the range of 007-365 must be specified. All activity log entries older than the number of days specified will be purged.

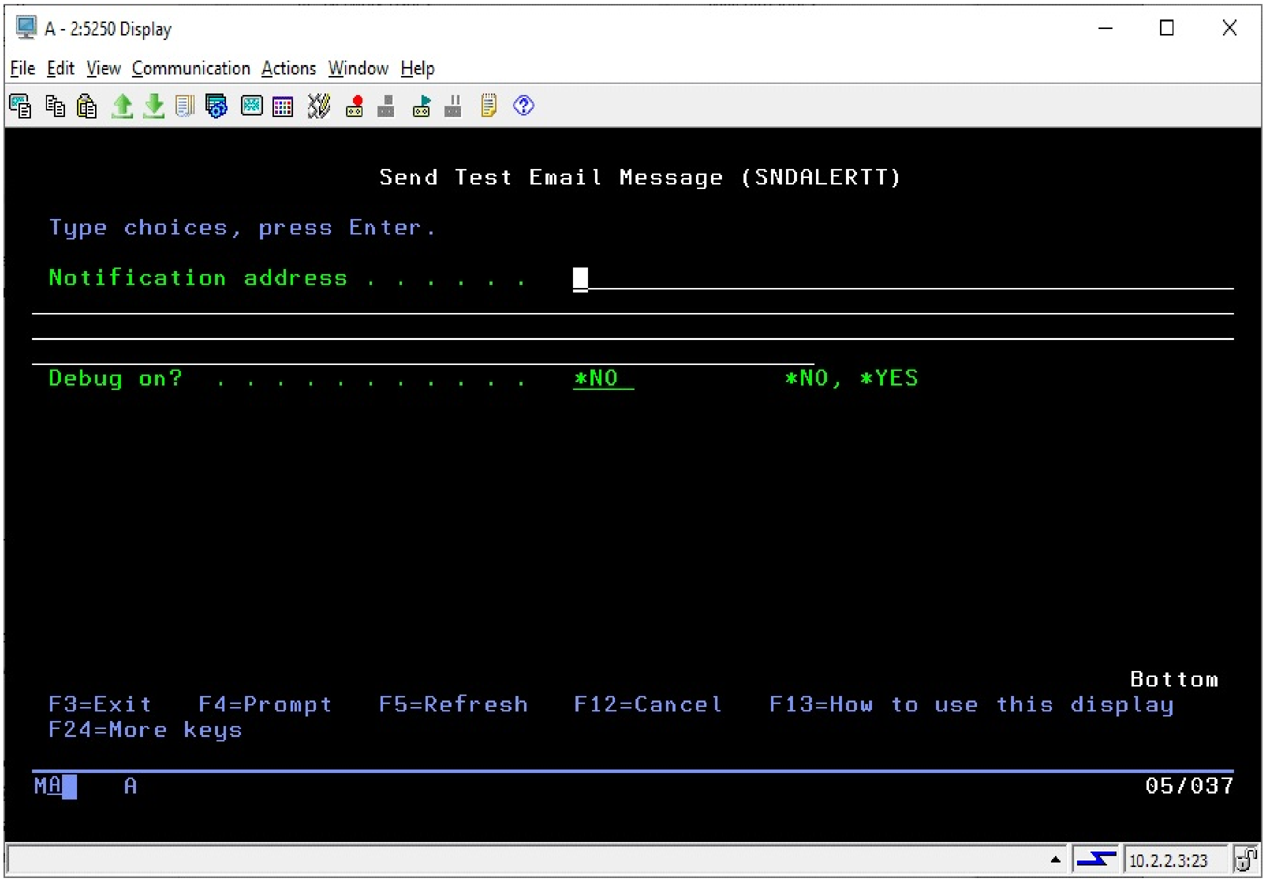
List Purged Records?

If you are using the automatic purge feature, this setting will control whether a listing of the purged activity log entries will be created during the purge. Changing this setting to *YES, will cause the listing to be created.

Note: Before you can use email alerts in iEventMonitor, a test email must be successfully sent from your system using option #10 on the INSTALL menu.

Send Test Email Message

iEventMonitor can send alerts via email. To check to make sure that the email transport mechanism is working on your system, an option is available on the INSTALL menu to send a test message by email. To send a test email using iEventMonitor, select option #10 on the INSTALL menu. The following prompt field will be shown:



```
                         Send Test Email Message (SNDALERTT)

 Type choices, press Enter.

 Notification address . . . . . .   _________________________________________
 _____________________________________________________________________________
 _____________________________________________________________________________

 Debug on? . . . . . . . . . . .   *NO              *NO, *YES




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

MA     A                                                                05/037
```

Enter a valid email address where you want to send the test and press ENTER. During the initial processing of the request, several system configuration tests will be run to make sure that the basic email environment needed for iEventMonitor is valid. Watch for these initial error messages. Once those tests are completed, then the test email transmission will be done.

If you have Kisco Connect installed on your system, you can also specify a cell number for an SMS text test. This test does not support stacking multiple addresses together.

If the email gets delivered, then you know that the process is configured correctly and will work. If no email arrives or if you get an error message, enter the following command:

```
DSPJOBLOG
```

When the display comes up, press F10 and then F18. This will display details from your session joblog that should contain diagnostic information about what may have failed. If you need help with this, contact Kisco Systems. Kisco may want to see the detailed joblog at this point. You can generate a detailed joblog using the following command:

```
DSPJOBLOG OUTPUT(*PRINT)
```

This will place the joblog in the output queue named QEZJOBLOG. Kisco will want you to email this to them for review.

There is also a debug option. If the joblog does not reveal the source of the issue and you are NOT using the IBM i OS SNDSMTPEMM protocol, try repeating the test with the debug option set to *YES. This will generate a short 2-3 page listing to you session output queue. Review that listing for clues as to what might be causing your email delivery to fail.

If you are having problems with email processing, check the following web page at our website for tips and suggestions:

http://www.kisco.com/emailconfig.htm

SIEM Feed Option

iEventMonitor includes an optional feature that lets you generate a feed to an external Security Information and Event Management (SIEM) system. The feed is formatted using the IBM LEEF 2.0 standard. This update for SIEM will process all messages from any monitored message queue.

To generate the feed file, a new option has been added to the INSTALL menu. Option #15 (or using the IEMLOGEX command) will create a new feed file with all new events since the last time it was run. The first time it is run, it will pick up events logged since the PTF (or version update) was installed.

When the option runs, it will create a new file each time. The file will be named "iem_siem_nnnnn.txt" and will be located in the "/tmp" path in the IFS. The nnnnn in the file name will be a sequential number starting with "00001". If you prefer to have the file generated with a different name or in a different IFS path, contact Kisco Systems for instructions on how to make this change.

Each SIEM feed record will include standard LEEF 2.0 header fields along with standard src, usrName, devTime and devTimeFormat fields. Two custom event keys have been added which are msgID and msgText.

Optional Activity Trace

iEventMonitor includes an option that will let you trace successful alerts created by iEventMonitor. With the trace active, every successful alert issued by iEventMonitor will be noted in the joblog for the respective alert task with a copy of the trace being recorded in the system history log. You can view entries in the system history log using the DSPLOG command from IBM.

To activate this option, just run the following command:

```
CHGDTAARA DTAARA(IEMLIB/IEMCONTROL (627 1)) VALUE('X')
```

To deactivate it once it has been started, run the following:

```
CHGDTAARA DTAARA(IEMLIB/IEMCONTROL (627 1)) VALUE(' ')
```

SETALT Command

iEventMonitor includes a command, SETALT (Set Alternate Address On/Off). This command can be used to temporarily switch all alert notifications from iEventMonitor to use the Alternate Notification Address for alerts. When you first install the software, it will be set to *OFF status.

You can use this command to switch alerts to your alternate addresses for special circumstances that fall outside of the range of shift times and off-shift days. For example, if your support staff has a meeting during the day and you want backup staff to handle any alerts.

To use the command, simply prompt the SETALT command in library IEMLIB. There is a single parameter of either *OFF or *ON. If you turn the feature *ON, it is the customer's responsibility to turn it back *OFF when your circumstances return to normal.