CA Critical Path Monitor

User Guide

r11

Second Edition

CA Technologies Product References

This document references the following CA Technologies products:

- CA Datacom®/AD
- CA Jobtrac ™ Job Management (CA Jobtrac)
- CA Scheduler ® Job Management (CA Scheduler)
- CA Workload Automation SE, formerly CA 7® Workload Automation

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Contents

Chapter 1: Understanding CA CPM

This section contains the following topics:

Overview

This guide describes CA Critical Path Monitor (CPM) r11 installation and use. CA CPM monitors critical job flows selected by the user as crucial to achieving electronic business objectives. CA CPM integrates with the following products:

- CA Workload Automation SE
- CA Jobtrac
- CA Scheduler

CA CPM provides an ISPF interface letting users:

- Anticipate when a stream of batch jobs will miss a deadline
- Take the necessary corrective actions to ensure that the deadline is met

You benefit by knowing precisely the status of a critical job flow and having time to take action if a deadline is in jeopardy of being late. CA CPM is a tool that monitors the performance of groups of batch jobs (flows) against user-defined deadlines. CA CPM lets you monitor flows through their entire execution periods and warns you when a flow is predicted to exceed its service level agreement (SLA) completion time.

A significant function of CA CPM is its predictive ability. Based on historical data, CA CPM can determine whether key jobs in the flow are running late and whether the flow is likely to miss its SLA completion time. Upon detecting a problem, CA CPM warns that your flow is projected to miss its deadline so that steps can be taken to preempt the problem before it occurs.

Functionality

CA CPM provides the following functionality:

- Interfacing with CA job management engines to determine the jobs in each flow
- Monitoring the critical path for each flow
- Calculating the estimated completion times of flows based on historical data and critical path
- Displaying the status of flows, including estimated completion times in an ISPF application
- Supporting a high volume of jobs and flows
- Logging of abnormal statuses and flow completions

Flow Concept

The concept of the flow is central to the design of CA CPM. A flow is a series of jobs identified by a unique eight-character name. A flow can consist of a few jobs grouped under a single schedule or thousands of jobs encompassing multiple schedules.

Flows are defined in the scheduling product whether it is CA Workload Automation SE, CA Jobtrac, or CA Scheduler. You define each flow by identifying the starting and ending jobs. CA CPM dynamically uses the starting and ending jobs to build the list of jobs in the flow as well as the predecessor and successor relationships among these jobs.

When a change in job status occurs (such as when a job starts, ends, or abends), the scheduling product detects it and generates a CAIENF CPM event. This CPM event is passed to the CPM Server task. If the CPM Server task is not active, the CAIENF event is recorded in the CAIENF database so it can be passed to CPM Server task later when it becomes active.

A flow name can be shared between different job management products on the same system, or by copies of the same job management product on different systems. However, the same flow name cannot be used by two copies of the same job management product on the same system. For example, CA CPM can track two CA Workload Automation SE flows with the name PAYFLOW1 if one copy of CA Workload Automation SE runs on system A and the other copy runs on system B.

The CA CPM ISPF Interface can display the status of the flows and jobs that CA CPM is monitoring. The information available includes CA CPM estimate of when each flow will complete, based on the historical information retrieved from the controlling job management product. You can also display the current critical path for each flow, display other paths, and interact with the CA CPM Server task.

Related Documentation

This document does not describe the configuration parameters and tasks necessary for enabling the CA CPM tool in the required products. For details, see the documentation for the following products:

- CA Jobtrac
- CA Scheduler
- CA Workload Automation SE

Chapter 2: Installation and Configuration

This section contains the following topics:

Step 1: Install Required Common Component Services

The CA CPM component requires CAIENF (Event Notification Facility) and CAICCI (Common Communication Interface) from the CA Common Services for z/OS (CCS) tape.

Note: Previously CCS has been named Unicenter TNG Framework for OS/390 and CA90s.

All z/OS images within a SYSPLEX must be connected using CAICCI. The specific protocol (VTAM, TCP/IP, and so forth) used for the connection does not matter.

Note: This step can be skipped if the required components have already been installed and configured for another CA product.

Access the *CA Common Services for z/OS Getting Started* guide at http://ca.com/support to install and configure the required components.

Step 2: Verify CPM Installation

Starting with CA CPM r11, CA CPM is installed when the one of the following job management packages is installed. The CPM code follows the product name:

- CA Workload Automation SE (7)
- CA Scheduler (S)
- CA Jobtrac (J)

The SMP/E function CCPMB00 is received, applied, and accepted into the same SMP/E environment as the job management product. After the installation is finished, all the CA CPM data sets are allocated, and the configuration of CA CPM can proceed.

Step 3: Update System Libraries

System libraries require various changes. Some of these changes can require an IPL to take effect. Most sites make these changes dynamically.

- LOADLIB Requirements

  The CA CPM load library, CCPMPLD, must be APF authorized. To authorize the data set, add it to the IEAAPFxx or PROGxx members in SYS1.PARMLIB.

- TSO ISPF Requirements

  CCPMCLS0 (CLIST library) member CPM must be in the ISPF SYSPROC concatenation. Update the CLIST member CPM with the correct data set names for your site. You can update an existing ISPF menu to select the CPM CLIST.

  You can optionally uncomment the allocation for ddname CPMSKIP1 in the CPM CLIST. If the ddname is allocated, the CA CPM dialog skips the CA CPM server selection list when the list contains only one CA CPM server.

Note: These changes are required on each image where the CA CPM Server task is to execute and where the CA CPM ISPF application is invoked.

More information:

Selecting a CA CPM Server (see page 18)

Step 4: CAIENF Updates

Verify that the CAIENF option RECORD is set to YES. The RECORD option is read at CAIENF startup from DD statement ENFPARMS.

The CCPMJCL member CPMENF defines an event to CAIENF (r11 or earlier) and makes it active. CAIENF must be shut down to run the job. Restart CAIENF after the job completes. Follow the directions in the SAMPJCL member to tailor the job, and then submit it. The job should end with a return code of zero.

Note: The CA CPM load library, CCPMPLD, must be APF authorized before this job is run.

If your site is executing CAIENF r12 or later, the method by which events defined to CAIENF has changed. Starting with r12, you are no longer required to ADD the events to the CAIENF database with a separate utility. The DCMs and events are established dynamically at CAIENF startup based on initialization parameters.

The CA CPM load library (CCPMPLD) must either be link-listed or added to the CAIDCM DD statement concatenation in the CAIENF JCL procedure.

You can specify the following statements for CA CPM in the CAIENF r12 options (ENFPARMS DD input).

```
*-----------------------------------------------------------------
*  Critical Path Monitoring  (DCM=CADBODCM EVENT=CABMSSTA)
*-----------------------------------------------------------------
DCM(CADBODCM)         * Critical Path Monitoring
EVENT(CABMSSTA,ACT)
EVENT(CABMSSTA,REC)
EVENT(CABMSSTA,PURGE=Y)
EVENT(CABMSSTA,RP=1)
```

CAIENF requirements for the CA Workload Automation SE r11.3 include the r11.3 DCM defining CAIENF CA7LOG events. Also set these events to RECORD.

Note: For more information, see the *CA Workload Automation SE Systems Programming Guide*.

Step 5: Tailor the CA CPM Server Task

CCPMPROC member CPMSRVR contains the JCL procedure for the CA CPM started task. This member must be in the SYS1.PROCLIB concatenation and updated with the correct data set names.

The parameter OPTLIB points to a series of commands that are executed when the CA CPM Server task begins. Copy member CPMOPTS from the CA CPM CCPMPARM data set to another data set, then review the commands, changing as necessary for your site.

A CPMSRVR task is required on each system where a job management product (CA Workload Automation SE, CA Scheduler, or CA Jobtrac) will be submitting jobs. For CA Workload Automation SE, this is the same system where the CA Workload Automation SE started task (CA7ONL) executes. For CA Scheduler, this is the MCPUSUB system. For CA Jobtrac, this is the primary submission system. A CPMSRVR task is not required on other systems, even if jobs submitted by the job management product execute on those systems.

Each CPMSRVR task needs its own checkpoint data set. CCPMJCL member CPMCKPT allocates a checkpoint data set. Execute this job once per checkpoint data set. This job should end with a return code of zero.

The CPMSRVR task may also need additional DD statements for the specific mainframe job management (scheduling) product being used. See the following sections for information relevant to your site.

CA Workload Automation SE CA CPM Server Task Requirements

The CPMSRVR task needs the CA Workload Automation SE load library (CAL2LOAD) in the STEPLIB concatenation or in the linklist.

The CA Workload Automation SE CA CPM interface uses CA Workload Automation SE CAICCI terminals for communication. By default, this interface communicates with the local copy of CA Workload Automation SE using the CPMSRVR task user ID as the CA Workload Automation SE user ID. You can override these defaults by specifying a CA7PARMS DD in the CPMSRVR task JCL and providing explicit values for these variables.

Note: For specific information about the CA Workload Automation SE interface with CPM, see the *CA Workload Automation SE Interface Reference Guide*.

CA Scheduler CA CPM Server Task Requirements

CA Scheduler r11 does not need any DD statements in the CPMSRVR task. The CA Scheduler CAILOAD and Advantage CA Datacom/AD CUSLIB/CAILOAD are required in the STEPLIB concatenation or in the linklist.

Note: For more information about the CA Scheduler interface with CPM, see the *CA Scheduler Interfaces Guide*.

CA Jobtrac CA CPM Server Task Requirements

The following topics discuss requirements for supported releases.

CA Jobtrac r3.5

The CPMSRVR task needs the CA Jobtrac load library (CAILOAD) in the STEPLIB concatenation or in the linklist. Add the CA Jobtrac checkpoint (JOBTRAC*x*) and history (JOBHIST*x*) DDs to the CPMSRVR task. Reference your CA Jobtrac Started Task for the token (*x*) being used and the data set names.

For example, if your CA Jobtrac token is Y and your checkpoint and history files are CAI.JOBTRAC.CHKPT and CAI.JOBTRAC.JOBHIST, add the following DD statements to the CPMSRVR task:

```
//JOBTRACY DD DSN=CAI.JOBTRAC.CHKPT,DISP=SHR
//JOBHISTY DD DSN=CAI.JOBTRAC.JOBHIST,DISP=SHR
```

Note: For more information about the CA Jobtrac interface with CPM, see the *CA Jobtrac Extended Scheduling Services Guide*.

CA Jobtrac r11

The CPMSRVR task needs the CA Jobtrac r11 load library (CAILOAD) and the CA Datacom/AD CUSLIB and CAILOAD in the STEPLIB concatenation or in the linklist. The CA Jobtrac token must be specified by adding a JOBTRAC*x* dummy DD to the CPMSRVR task. Reference your CA Jobtrac started task for the token (*x*) being used.

For example, if your CA Jobtrac token is Y, add the following DD statement to the CPMSRVR task:

```
//JOBTRACY DD DUMMY
```

If you are running multiple CA Jobtrac subsystems, define only the default token.

Note: For more information about the CA Jobtrac interface with CPM, see the *CA Jobtrac Extended Scheduling Services Guide*.

Step 6: Start the CA CPM Server Task

Start the CA CPM Server task by issuing the MVS command S CPMSRVR. CAIENF must be active for the CPMSRVR task to run.

To shut down the CPMSRVR task, issue the command P CPMSRVR.

Note: You can optionally update the CAIENF startup commands (CAIENF DD statement ENFCMDS) to start the CPMSRVR task automatically when CAIENF initializes. This change helps ensure that the CPMSRVR task does not come up before CAIENF.

Step 7: Access the ISPF Dialog

To access the CA CPM ISPF dialog, execute CLIST CPM (for example, "TSO %CPM").

You need to have one or more flows active before anything is displayed.

Note: You can add this option to an existing ISPF menu.

Chapter 3: Interface with ISPF

The CA CPM ISPF interface can display the status of the flows and jobs that CA CPM is monitoring. The information available includes the CA CPM estimate of when each flow is to complete, based on the historical information retrieved from the controlling job management product. You can also display the current critical path for each flow, display other paths, and interact with the CA CPM Server task.

This section contains the following topics:

Job Names

CA CPM displays job names in a format consistent with the job management product that controls the job.

- CA Workload Automation SE jobs are displayed in the following format:

  jobname (*sid*)

  jobname is the name of the job, and *sid* is the schedule ID.

- CA Jobtrac jobs are displayed in the format:

  jobname osd ver

  jobname is the name of the job, *osd* is the scheduled date, and *ver* is the version number.

- CA Scheduler jobs are displayed in the format:

  jobname jno station schedule

  jobname is the name of the job, *jno* is the job number, *station* is the station number, and *schedule* is the job's schedule.

Selecting a CA CPM Server

Start the CA CPM ISPF Interface by executing the CPM CLIST. The first screen displayed lists all the CA CPM servers that are currently accessible.

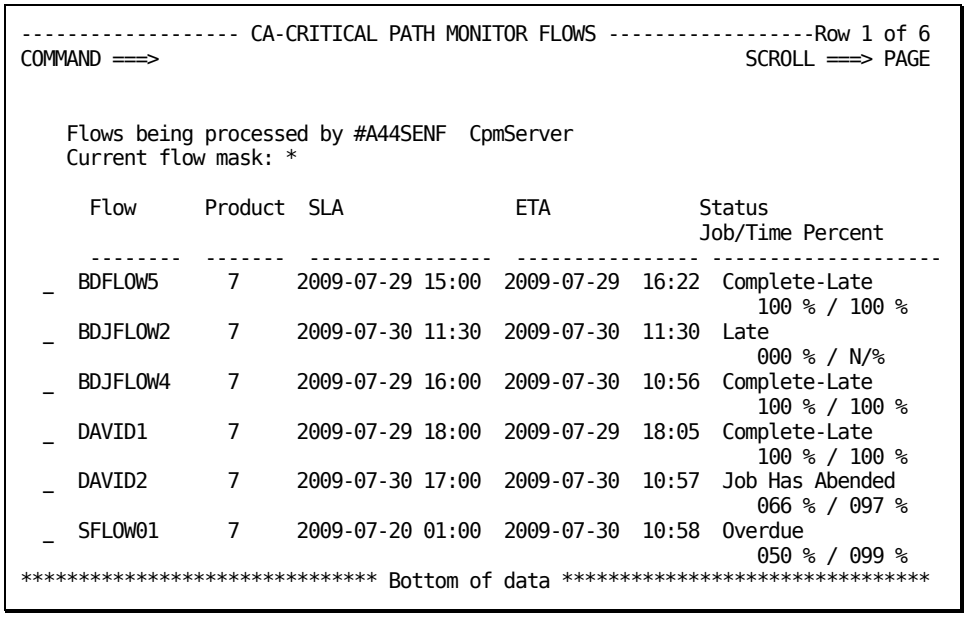
```
----------------- CA-CRITICAL PATH MONITOR SERVERS ------------Row 1 to 2 of 2
COMMAND ===>                                                   SCROLL ===> CSR


   Servers available for CpmServer

     CCINode   Task Name
     --------  ---------
 _   A04IENF   CPMSRVR
 _   A44SENF   CPMSRVR
****************************** Bottom of data ********************************
```

Select the CA CPM server you want to use by typing an S to the left of the name and pressing Enter.

By default, the CA CPM Server selection is always displayed, even if only a single CA CPM Server is found. Some sites have only one CA CPM Server. These sites can suppress the Server selection list. To do so, uncomment the DD statement for CPMSKIP1 in the CPM CLIST. The CA CPM dialog skips the Server selection list when only one CA CPM Server is found and the ddname of CPMSKIP1 is allocated.

Flow Display

After the CA CPM server has been selected, a list of flows known to that server is displayed.



```
------------------- CA-CRITICAL PATH MONITOR FLOWS ------------------Row 1 of 6
COMMAND ===>                                                  SCROLL ===> PAGE


    Flows being processed by #A44SENF  CpmServer
    Current flow mask: *

      Flow      Product  SLA               ETA             Status
                                                           Job/Time Percent
      --------  -------  ----------------  ---------------- --------------------
  _   BDFLOW5      7     2009-07-29 15:00  2009-07-29  16:22  Complete-Late
                                                              100 % / 100 %
  _   BDJFLOW2     7     2009-07-30 11:30  2009-07-30  11:30  Late
                                                              000 % / N/%
  _   BDJFLOW4     7     2009-07-29 16:00  2009-07-30  10:56  Complete-Late
                                                              100 % / 100 %
  _   DAVID1       7     2009-07-29 18:00  2009-07-29  18:05  Complete-Late
                                                              100 % / 100 %
  _   DAVID2       7     2009-07-30 17:00  2009-07-30  10:57  Job Has Abended
                                                              066 % / 097 %
  _   SFLOW01      7     2009-07-20 01:00  2009-07-30  10:58  Overdue
                                                              050 % / 099 %
******************************** Bottom of data ********************************
```

Note: Nothing is displayed if you have not defined and executed any flows from your job management product.

Refresh this screen by pressing PF5 (RFIND).

This panel contains the following fields:

Flow

Indicates the name of the flow, as defined in the job management product.

Product

Indicates the type of job management product. Possible values are the following:

- 7 for CA Workload Automation SE
- S for CA Scheduler
- J for CA Jobtrac

SLA

Indicates the time at which the flow must complete (Service Level Agreement) as defined in the job management product.

ETA

Indicates the time that CA CPM estimates the flow will complete (Estimated Time of Arrival), or, if the flow has already completed, the actual time the flow completed.

Status

Indicates the status of the flow. Possible values are the following:

Almost Late

Indicates the CA CPM estimates that the flow will complete by the SLA, but only by a narrow margin. The installation option FlowWarnPercent controls how narrow the margin is.

Complete

Indicates the flow has completed on time.

Complete-Late

Indicates the flow has completed, but after the SLA had passed.

Job Has Abended

Indicates one or more jobs in the flow have abended or have ended with a bad return code (as defined to the job management product).

Late

Indicates that CA CPM estimates that the flow will complete after the SLA.

Load Failed

Indicates that CA CPM was unable to collect information about the flow from the job management product. This failure may be due to a CA CPM HOLD command, the job management product being unavailable, or a problem in the job management product.

Loaded

Indicates basic information about the flow has been loaded. CA CPM is calculating the critical path.

Loading

Indicates that CA CPM is asking the job management product for information about the flow.

No Path

Indicates that CA CPM cannot find any string of jobs connecting the first job to the last job.

No End Job

Indicates the job management product informed CA CPM about a flow, but did not provide the ending job of the flow. It is the job management product's responsibility to pass more information to CA CPM.

No Start Job

Indicates th job management product informed CA CPM about a flow, but did not provide the starting job of the flow. It is the job management product's responsibility to pass more information to CA CPM.

Not Yet Started

Indicates that CA CPM has successfully loaded the flow and determined the critical path. The first job in the flow has not yet started.

On Time

Indicates thatCA CPM estimates that the flow will complete by the SLA.

Overdue

Indicates th flow has not completed by the SLA, which has now passed.

Unknown

Indicates no status available.

Job Percent

Percentage of the total number of jobs in the flow that are now complete.

Time Percent

Percentage of the total time in the critical path that has elapsed.

Multiple Displays

Use the LEFT and RIGHT commands (usually PF10 and PF11) to display alternate flow status screens. The various screens sometimes show different columns, truncated columns, or columns in a different order. The last screen displayed is stored in your ISPF profile and is used automatically on your next CA CPM session.

AUTO Command

The AUTO command can automatically refresh the display. Enter the command on the command line.

This command has the following syntax:

AUTO*n*

n

Indicates the number of seconds between refreshes. The number of seconds can range from 10 to 600 (ten minutes). If a number of seconds is not entered, then a default of 60 seconds is used.

The keyboard is locked while automatic refresh is set. To stop the automatic refresh, use the ATTN or PA1 keys depending your terminal type

Line Commands

You can enter the following line commands to the left of the flow name:

S

Selects the flow to display detailed information about the flow.

J

Displays a list of all of the jobs in the flow, in alphabetical order.

P or L

Displays the jobs in the current critical path, in execution order. If present, displays other paths.

LOCATE Command

The LOCATE command can position the display to a specified value.

This command has the following syntax:

L *value*

The most recently sorted column is searched (or the leftmost column if a sort has not been done) for the specified value. If the value is found, that row is positioned to the top of the display. If the value is not found, the row that would immediately precede the value is positioned to the top.

MASK Command

The MASK command can limit the display of flows.

This command has the following syntax:

`MASK` *`value`*

value

Indicates a string that is used to select which flows to display. The string can contain one or more wildcard characters. The character '*' (asterisk) can be used to match any number of characters, including no characters. The character '?' will only match a single non-blank character. If a mask value is not entered, a mask of '*' is used.

The following table gives some examples of mask values and flow names that they would and would not match.

Mask Value	Match	No Match
*	Everything	Nothing
ABC*	ABC ABCC ABCXYZ	AB ABXC
*ABC	ABC AABC XYZABC	ABCD
AB?	ABC ABD	AB ABCD
A*B	AB AXXB	ABC
ABC	ABC ABCD XABC XABCD	ABXC
A??B	AXXB ABBB	AB ABB
A*B*C	ABC ABBB	AB ABB

CA CPM records your mask value in the ISPF profile and uses it automatically on future CA CPM sessions.

SORT Command

The SORT command changes the order on the Flow Status screen. Issue the SORT command on the command line to change the order of the displayed flows.

This command has the following syntax:

SORT *column-name*

column-name

Indicates the name of the column being displayed.

For example, the command SORT SLA would sort the display so that the earliest service level agreement is displayed at the top.

The fields are sorted alphabetically, with the exception of the status column. A SORT STATUS command orders the flows with the most severe statuses at the top of the display.

CA CPM has a default definition for the severity of flow statuses that is used to sort the display. You can use the default definition or override the order on a user by user basis.

Use the SORT ORDER command to change the order of the flow statuses.

More information:

Flow Display (see page 19)
Sort Order Dialog (see page 36)

Flow Detail

Type an S next to a Flow Name in the Flow Display to display the Flow Detail screen.

```
--------------------- CA-CRITICAL PATH MONITOR FLOW DETAIL--------------------
COMMAND ===>

Flow Name:  BDJFLOW4      Product:  7    Status: Complete-Late


  First Job:  JFLOW001 (004)
  Last Job:   JFLOW010 (004)

  Number Of:
    Paths  . . . . . . 1                 Critical Path # . . . 1
    Jobs   . . . . . . 2
    Completed Jobs . . 2
    Abended Jobs . . . 0

  Times:                                 Percents:
    Load . . . . . . . 2009-07-30 10:56    Jobs Complete . . .100 %
    Last Calculation . 2009-07-30 10:56    Time Complete . . .100 %
    SLA  . . . . . . . 2009-07-29 16:00
    ETA  . . . . . . . 2009-07-30 10:56

  Last Event:
    Event for Job  . . JFLOW010 (004)
    Time of Event  . . 2009-07-30 10:56            Type . .CMPL

Press Enter to refresh, or enter END to exit.
```

Refresh this screen by pressing Enter.

This panel contains the following fields:

Flow Name

Indicates the name of the flow being displayed.

Product

Indicates the type of job management product. Possible values are the following:

- 7 for CA Workload Automation SE
- S for CA Scheduler
- J for CA Jobtrac

Status

Indicates the status of the flow. See the list of possible statuses in the Flow Display section in this chapter.

First Job

Indicates the first job in the flow. The job name in the example shown here is in CA Workload Automation SE format.

Last Job

Indicates the last job in the flow. The job name in the example shown here is in CA Workload Automation SE format.

Number of Paths

Indicates the total number of job successor routes that can be taken from the first job in the flow to the last job.

Number of Jobs

Indicates the total number of jobs in the flow. Not all these jobs may be on the critical path.

Number of Completed Jobs

Indicates the total number of jobs in the flow that have completed successfully.

Number of Abended Jobs

Indicates the total number of jobs in the flow that are currently in an abended or failed status.

Critical Path #

Indicates the specific path that CA CPM has calculated to have the longest execution time.

Load Time

Indicates the date and time when CA CPM learned about the flow.

Last Calculation Time

Indicates the date and time when CA CPM last evaluated the flow to determine whether it can complete by the SLA.

SLA Time

Indicates the date and time, defined by the job management product, when the flow must complete.

ETA Time

Indicates the date and time calculated by CA CPM that the flow is expected to complete. If the flow has completed, this field shows the actual end time.

Jobs Complete Percent

Indicates the percentage of the jobs in the flow that have successfully completed.

Time Complete Percent

Indicates the percentage of the total execution time that has elapsed.

Last Event

Displays the job, date and time, and type of the most recent event that CA CPM has received for this flow. The job name in the example shown here is in CA Workload Automation SE format. The following are possible values for the Event Type:

LOAD

Indicates the flow has been loaded, but the first job has not yet started.

STRT

Indicates the job has started.

CMPL

Indicates the job has successfully completed.

ABTM

Indicates the job has abended or failed.

DELT

Indicates the job has been canceled on CA Workload Automation SE.

PURG

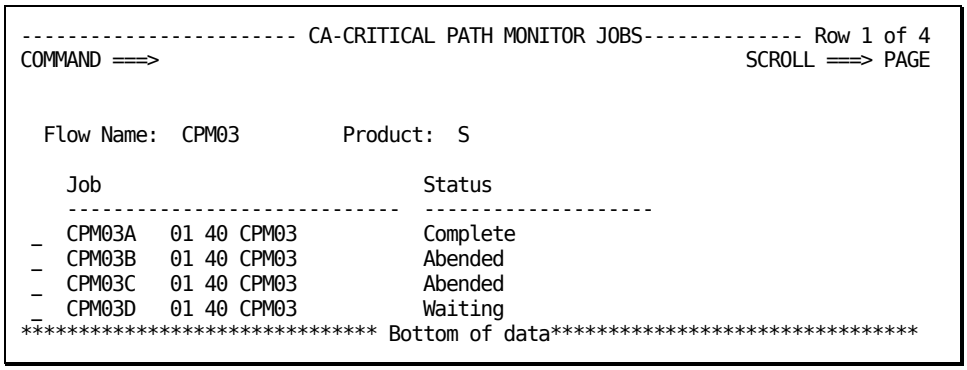
Indicates the job has been force completed on CA Workload Automation SE.

More information:

Job Names (see page 17)

Job Display

Type a J next to a flow in the Flow Display to display the list of jobs that are in a flow.



Refresh the screen by pressing PF5 (RFIND).

All the jobs in the flow are displayed. Jobs are displayed in alphabetical order, which is not necessarily in execution order. Not all the jobs listed may be in the critical path.

This panel contains the following fields:

Flow Name

Indicates the name of the flow to which the listed jobs belong.

Product

Type of job management product controlling this flow.

Job

Name of the job. The job names in the example shown here are in CA Scheduler format.

Status

Current status of the job. The following are possible values:

Abended

Indicates the job has either abended or received a bad return code (as defined and interpreted by the controlling job management product).

Compl. by Succ.

Indicates that CA CPM did not receive notification from the controlling job management product that this job ended, but successors of the job have started. CA CPM assumes, because this job's successors have started, that this job must have completed successfully.

Complete

Indicates the job has successfully completed.

Complete Late

Indicates the job has successfully completed, but the job management product marked the job late.

Deleted

Indicates the job has been canceled or deleted in the job management product.

Pending

Indicates the job was not in the job management product's queue at the time that the flow was loaded. The status changes to Running when the job starts.

Purged

Indicates the job has been removed from the job management product.

Running

Indicates the job is currently executing.

Running Late

Indicates that the job should complete by a certain time, but it has not started.

Running Long

Indicates the job is taking longer than normal to complete. CA CPM option JobLongPercent controls how much longer than normal the job must execute before this status occurs.

Start is Late

Indicates the job management product indicated that the job should start by a certain time, but it has not started.

Unknown

Indicates no status is available for the job.

Waiting

Indicates the job is waiting for something, preventing it from starting.

More information:

Job Names (see page 17)

AUTO Command

The AUTO command can automatically refresh the display. Enter the command on the command line.

This command has the following syntax:

AUTO*n*

n

Indicates the number of seconds between refreshes. The number of seconds can range from 10 to 600 (ten minutes). If a number of seconds is not entered, then a default of 60 seconds is used.

The keyboard is locked while automatic refresh is set. To stop the automatic refresh, use the ATTN or PA1 keys depending your terminal type

Line Command

Enter the following line command to the left of the job name to change the order of the data on the Job status screen.

S

Selects the job to display detailed information about the job.

Sort Command

The SORT command is used to change the order on the Job status screen. Issue the SORT command on the command line to change the order of the displayed flows.

This command has the following syntax:

SORT *column-name*

column-name

Indicates the name of the column being displayed.

For example, the command SORT JOB sorts the display so that the jobs are displayed in alphabetical order.

The fields are sorted alphabetically, with the exception of the status column. A SORT STATUS command orders the flows with the most severe statuses at the top of the display.

CA CPM has a default definition for the severity of job statuses that is used to sort the display. You can use the default definition or override the order on a user by user basis.

Use the SORT ORDER command to change the order of the job statuses.

More information:

Sort Order Dialog (see page 36)
Job Display (see page 28)

Path Display

Type a P or an L next to the words Flow Name in the Flow Display to display the list of jobs in a specific path.

```
----------------------- CA-CRITICAL PATH MONITOR PATH ------------ Row 1 of 15
COMMAND ===>                                                  SCROLL ===> PAGE

  Flow Name:  JTPAYROL      Product:  J
     Path #:  2        Total Paths:  2    Critical Path:  2


    Job                           Status
    ----------------------------  --------------------
_   PAYR1A   0806 0001            Complete
_   PAYR1B   0806 0001            Complete
_   PAYR1C   0806 0001            Running
_   PAYR1F   0806 0001            Waiting
_   PAYR1G   0806 0001            Waiting
_   PAYR1H   0806 0001            Waiting
_   PAYR1I   0806 0001            Waiting
_   PAYR1J   0806 0001            Waiting
_   PAYR1K   0806 0001            Waiting
_   PAYR1L   0806 0001            Waiting
_   PAYR1M   0806 0001            Waiting
_   APAY1L   0806 0001            Waiting
_   APAY1M   0806 0001            Waiting
_   APAY1N   0806 0001            Waiting
_   PAYR1O   0806 0001            Waiting
******************************** Bottom of data********************************
```

The initial display shows the jobs in the current critical path in execution order.

The display can be refreshed by pressing PF5 (RFIND). Refreshing the display shows the status of the jobs in the displayed path. The displayed path may or may not be the current critical path after a refresh.

To display the jobs in a different path, type the path number on the command line and press Enter.

This panel contains the following fields:

Flow Name

Indicates the name of the flow to which the listed jobs belong.

Product

Indicates the type of job management product controlling the flow.

Path #

Indicates the number of the path currently being displayed.

Total Paths

Indicates the number of routes that CA CPM has found from the first job in the flow to the last job.

Critical Path

Indicates the number of the critical path that CPM expects to take the longest to execute.

Job

Indicates the name of the job. The job names in the example shown here are in CA Jobtrac format.

Status

Indicates the status of the job. See the list of possible status values in the topic Job Display in this chapter.

More information:

Job Names (see page 17)

AUTO Command

The AUTO command can automatically refresh the display. Enter the command on the command line.

This command has the following syntax:

AUTO*n*

n

Indicates the number of seconds between refreshes. The number of seconds can range from 10 to 600 (ten minutes). If a number of seconds is not entered, then a default of 60 seconds is used.

The keyboard is locked while automatic refresh is set. To stop the automatic refresh, use the ATTN or PA1 keys depending your terminal type

Line Command

Enter the following line command to the left of the job name to change the order of the data on the Job status screen.

S

Selects the job to display detailed information about the job.

Job Detail

The Job Detail screen is displayed when an S is typed to the left of a job name in either the job or path displays.

```
--------------------- CA-CRITICAL PATH MONITOR JOB DETAIL---------------------
COMMAND ===>

  Job Name:   PAYR1J   0806 0001            Status: Complete
  Flow Name:  JTPAYROL                     Product:  J

  Number Of:
    Successors . . . . 1
    Predecessors . . . 1                  Number Complete Preds . .1


  Times:
    Job Start  . . . . 2009-08-06 11:19    Historical Run Time. . . 000300
    Job End  . . . . . 2009-08-06 11:21    Actual Run Time  . . . . 000200
    Early Start  . . . 2009-08-06 00:00
    Must Start . . . . 2009-08-06 23:59
    Must Complete  . . 0000-00-00 00:00
    Last Event   . . . 2009-08-06 11:21

Enter END to exit.
```

Refresh the screen by pressing Enter.

This panel contains the following fields:

Job Name

Indicates the name of the job. The job name in the example shown here is in CA Jobtrac format.

Status

Indicates the current status of the job. See the list of possible status values in the Job Display section.

Flow Name

Indicates the name of the flow to which this job belongs. A given job can be a part of multiple flows, but each instance is tracked separately by CA CPM.

Product

Indicates the type of job management product controlling the flow.

Number Of Successors

Indicates the number of jobs in the flow that follow this job.

Number Of Predecessors

Indicates the number of jobs in the flow that precede this job.

Number Complete Preds

Indicates the number of predecessor jobs in the flow that have successfully completed.

Job Start Time

Indicates the date and time of the most recent start of the job. Date and time stamps are in the format yyyy-mm-dd hh:mm (year, month, day, hours, minutes).

Job End Time

Indicates the date and time of the most recent end of the job. Date and time stamps are in the format yyyy-mm-dd hh:mm (year, month, day, hours, minutes).

Early Start Time

Indicates the earliest the job can start, as reported by the job management product. Date and time stamps are in the format yyyy-mm-dd hh:mm (year, month, day, hours, minutes).

Must Start Time

Indicates the latest the job can start before being marked late, as reported by the job management product. Date and time stamps are in the format yyyy-mm-dd hh:mm (year, month, day, hours, minutes).

Must Complete Time

Indicates the latest the job can complete before being marked late, as reported by the job management product. Date and time stamps are in the format yyyy-mm-dd hh:mm (year, month, day, hours, minutes).

Last Event Time

Indicates the date and time of the most recent event received for this job. Date and time stamps are in the format yyyy-mm-dd hh:mm (year, month, day, hours, minutes).

Historical Run Time

Indicates the average execution time for this job, as reported by the job management product. The format is hhmmss (number of hours, minutes, seconds).

Actual Run Time

Indicates the execution time for this run of the job. While the job is executing, this field shows elapsed time so far. The format is hhmmss (number of hours, minutes, seconds).

Commands

Commands can be sent to the CA CPM server (after selecting a server) from any screen by typing "CPM *command*" on the command line. For example, to display the current CA CPM options, the following could be entered on the command line:

```
----------------------- CA-CRITICAL PATH MONITOR FLOWS----------- Row 1 of 7
COMMAND ===> cpm d opt                                          SCROLL ==> PAGE
```

The output of the command is displayed in browse.

Sort Order Dialog

The flow display and job display dialogs allow the lists of flows or jobs to be sorted by their status. To tailor the order that the statuses are sorted, use the SORT ORDER command.

When the SORT ORDER command is entered from the flow or job display, the sort order screen is displayed:

```
------------------ CA-CRITICAL PATH MONITOR STATUS SORT ORDER ----------
OPTION  ===>

   1  Default Flow Status Order   (Selected)
   2  Custom Flow Status Order

   3  Default Job Status Order    (Selected)
   4  Custom Job Status Order









Enter END to Exit.
```

The sort order screen shows the current order that a SORT STATUS command sorts flows and jobs. You can select the default sort order described in the following topic, or set your own custom sort order.

The screen displays "(Selected)" next to the options that your CA CPM session is currently using.

Default Flow Status Order

The default order for sorting flows by status is shown following:

1. Load Failed
2. Overdue
3. Late
4. Almost Late
5. Unknown
6. Job Has Abended
7. No Path
8. Not Yet Started
9. No Start Job
10. No End Job
11. On Time
12. Loaded
13. Complete-Late
14. Complete
15. Deleted
16. Loading

Default Job Status Order

The default order for sorting jobs by status is shown following:

1. Abended
2. Failed
3. Running Late
4. Running Long
5. Start is Late
6. Running
7. Waiting
8. Pending
9. Unknown
10. Complete Late
11. Compl. By Succ.
12. Complete
13. Deleted
14. Purged

Custom Sort Orders

Use options 2 or 4 from the sort order display to set a custom sort order. Option 2 sets a custom sort order for flows, while option 4 sets a custom sort order for jobs. The screens work identically. The following is the screen for flow status:

```
--------------- CA-CRITICAL PATH MONITOR FLOW STATUS SORT ORDER -- Row 1 of 16
COMMAND ===>                                                  SCROLL ===> PAGE

Use Move and Before/After commands to move the status to the desired order.

        Status
        ---------------
  _     Load Failed
  _     Overdue
  _     Late
  _     Almost Late
  _     Unknown
  _     Job Has Abended
  _     No Path
  _     Not Yet Started
  _     No Start Job
  _     No End Job
  _     On Time
  _     Loaded
  _     Complete-Late
  _     Complete
  _     Deleted
  _     Loading
****************************** Bottom of data ************************
```

You can move a status before or after another status by typing an M (for Move) to the left of the status to move. Type an A or B (for After or Before) to indicate where to move the status, and then press Enter. The row is moved to the new location.

Enter the RESET command on the command line to reset the list to the default order.

Enter the CANCEL or CAN command on the command line to exit the list without making any changes.

Change the Default Status Sort Order

To change the default order that statuses are sorted by for your site

1. Use the procedure described in the "Custom Sort Orders" section to place the status texts in the desired order.
2. Copy the custom dialog table from your ISPPROF data set to the CPM.CCPMTBL0 data set, renaming as you copy.

   For flow status, copy ISPPROF member CPMFLUSR to the CPM.CCPMTBL0 data set and name it CPMFLORD.

   For job status, copy ISPPROF member CPMJBUSR to the CPM.CCPMTBL0 data set and name it CPMJBORD.

Important! We recommend that you keep a backup copy of the original CPMFLORD or CPMJBORD members.

Chapter 4: Commands

Enter commands from the CPMPARMS initialization data set, from an operator console using the MODIFY command (z/OS), or by typing "CPM command" on the command line of any CA CPM. All response messages are routed back to the source of the command. Descriptions of all supported commands follow.

This section contains the following topics:

ALLOCATE Command

The ALLOCATE command dynamically allocates a data set to the CA CPM started task.

This command has the following format:

```
ALLOCate DDName=ddname {DSName=dsn|PATH=pathname|SYSout=sysclass}
                       [DISP={SHR|OLD|MOD}]
```

DDName

Specifies the ddname for the allocation.

DSName

Allocates a normal MVS data set, named *dsn*.

PATH

Allocates an HFS data set named *pathname*. *pathname* can be an absolute pathname, or relative to the home directory for the user ID used by the CA CPM task.

SYSout

Allocates a spool data set to class *sysclass*.

DISP

(Optional) Specifies the normal disposition for the data set. SHR is the default.

CANCEL Command

The CANCEL command terminates processing for one or more flows with immediate removal of all related control structures. All flows that match the specified criteria are removed.

This command has the following format:

```
CANCEL (flowname[,productid[,prodinfo]])
```

Note: Leading parameters can be excluded by using commas. For example, CANCEL ,,CA71.

flowname

Specifies a partial name of the flow to cancel.

productid

(Optional) Considers only flows that belong to the specified product.

prodinfo

(Optional) Considers only flows that belong to the instance of the product.

CHECKPOINT Command

The CHECKPOINT command saves the current CA CPM environment to a checkpoint data set.

This command has the following format:

CHECKPOINT *filespec*

filespec

Identifies the file to which to write the checkpoint. This value can be any of the following:

- DD reference of the form DD:*ddname*
- Partial name of a TSO data set that is completed by adding the effective USERID as a prefix
- Name of a file in a mounted HFS
- Fully qualified name of an MVS data set in the form //'*datasetname*'

The preferred form is DD:*ddname*, because other forms sometimes result in the creation of unwanted or unexpected data sets.

DISPLAY Command

The DISPLAY command displays information about the CA CPM server environment and about the managed workflows.

This command has the following format:

```
DISPLAY {ALL|
         FLOW=(flowname[,prodid[,prodinfo]])|
         LISteners|
         OPTions=optlist|
         PATH=(flowname[,prodid[,prodinfo][,pathid]]),
         PROduct|
         STATistics={ALL|RESET}|
         STORage}
```

Note: Use commas to exclude leading parameters for FLOW and PATH. For example, DISPLAY FLOW=(,,CA71).

ALL

Displays all available information.

FLOW

Displays information about one or more flows. *flowname* is the partial name of the flow to display. If provided, *flowname*, *prodid*, and *prodinfo* limit the list of displayed flows. When no selection criteria are provided, a short summary of all known flows is displayed. When criteria are provided, only flows that match the provided data are displayed, and a summary of each job in the displayed flows is included.

LISteners

Displays information about registered listeners.

OPTions

Displays CA CPM operating parameters. If *optlist* is provided, only the named options or parameters are displayed. See the SET command for OPTion keywords.

PATH

Displays path information for each flow, that matches the specified selection criteria. The display includes the names and status of each job on the path; if *pathid* is not provided, the critical path is displayed. *flowname* represents the partial name of the flows to display.

PROduct

Displays a list of supported scheduling products, and the status of each.

STATistics

Displays statistics counters. If ALL is specified, displays all counters, even if the value is zero. RESET sets all counters to zero after being displayed. All other values (including blanks) for STATISTICS= causes only non zero counters to display.

STORage

Displays storage use statistics.

More information:

SET Command (see page 51)

FREE Command

The FREE command dynamically deallocates a data set from the CPM started task.

This command has the following format:

```
FREE ddname
```

ddname

Indicates the name of the DD to free.

HOLD Command

The HOLD command tells CA CPM that a given scheduling product has been shut down and is unavailable. CPM does not build any flows for the product until the RELEASE command is issued. The HOLD command is typically used only during CA CPM recovery (CA CPM has been down). Issuing a HOLD command is not necessary when restarting the scheduling product.

This command has the following format:

```
HOLD ident
```

ident

Identifies the product to hold. This value can be the full name or the single-character product ID, as shown in the DISPLAY PRODUCT command.

LISTEN Command

The LISTEN command registers an MVS operator's console for selected CA CPM alerts or events.

This command has the following format:

```
LISTEN    [,PATH={ALL|NONE}]
          [,FLOW=(flist)]
          [,JOBS=(jlist)]
          [,ENF={ALL|NONE}]
          [,DEST={ORIGIN|CONSOLE|CMPLOG|SYSLOG}]
```

PATH

Specifies which path events to display. The value can be ALL or NONE.

FLOW

Specifies which flow events to send to the console. The value can be one or more of the following:

ALL

Displays all flow events and alerts.

NONE

Sends no flow events or alerts.

STATUS

Sends flow status change events and alerts.

COMPLETE

Sends flow completion events.

LOAD

Sends flow loaded events.

START

Sends flow start events.

DELETE

Sends flow delete events.

Note: To unregister for a single event type, prefix the type with NO (for example, LISTEN FLOW=NOLOAD).

JOBS

Specifies which job events to display. The value can be one or more of the following:

ALL

Displays all job events and alerts.

NONE

Sends no job events or alerts.

LATE

Sends job late alerts.

LONG

Sends job running long alerts.

ABEND

Sends job ABEND alerts.

CANCEL

Sends job canceled alerts.

START

Sends job started events.

END

Sends job complete events.

LOAD

Sends job loaded events.

Note: To unregister for a single event type, prefix the type with NO (for example, LISTEN JOBS=(NOLOAD,NOEND)).

ENF

Specifies which CAIENF events to display. The value can be ALL or NONE.

DEST

Specifies where to send the requested events/alerts:

CONSOLE

Sends events to the master console

CPMLOG

Sends events to the CA CPM log data set

SYSLOG

Sends events to the system log (MVS only)

ORIGIN

Sends events to the default destination, depending on where the LISTEN command was issued:

CPMPARMS

Sends events to CPMLOG.

Console

Sends events to the master console (MVS) or to the shell/window where the CA CPM task is running.

LOAD Command

The LOAD command restores the CA CPM environment from a checkpoint data set.

This command has the following format:

```
LOAD filespec
```

filespec

Identifies the file from which to read the checkpoint. This value can be any of the following:

- DD reference of the form DD:*ddname*
- Partial name of a TSO data set that is completed by adding the effective USERID as a prefix
- Name of a file in a mounted HFS
- Fully qualified name of an MVS data set in the form //'*datasetname*'

The preferred form is DD:*ddname*, because the other forms sometimes result in the creation of unwanted or unexpected data sets.

PLAYBACK Command

The PLAYBACK command replays CA CPM previously recorded events.

This command has the following format:

```
PLAYBACK filespec
```

filespec

Identifies the data set that contains the events to replay. This value can be any of the following:

- DD reference of the form DD:*ddname*
- Partial name of a TSO data set that is completed by adding the effective USERID as a prefix
- Name of a file in a mounted HFS
- Fully qualified name of an MVS data set in the form //'*datasetname*'

The preferred form is DD:*ddname*, because the other forms may result in the creation of unwanted or unexpected data sets.

RECORD Command

The RECORD command records CA CPM events for later playback. This command is useful for testing, especially for evaluating the effect of some of the CA CPM processing options.

This command has the following format:

```
RECORD {filespec|OFF}
```

filespec

Identifies the data set to which to record subsequent CA CPM events. This value can be any of the following:

- DD reference of the form DD:*ddname*
- Partial name of a TSO data set that will be completed by adding the effective USERID as a prefix
- Name of a file in a mounted HFS
- Fully qualified name of an MVS dataset in the form //'*datasetname*'

The preferred form is DD:*ddname*, because the other forms may result in the creation of unwanted or unexpected data sets.

OFF

Stops CA CPM recording events.

RELEASE Command

The RELEASE command releases a scheduler product previously made unavailable for use by CA CPM through the HOLD command.

This command has the following format:

```
RELEASE ident
```

ident

Identifies the product to release. This value can be the full name or the single-character product ID, as shown in the DISPLAY PRODUCT command.

SET Command

The SET command modifies the operating parameters of the CA CPM server.

This command has the following format:

```
SET   [,AUTOAdd=aaopt{No|Yes}]
      [,AUTOPrune=apopt{Yes|No}]
      [,CCIApplname={CpmServer|name}]
      [,CCIRecvsize={32768|size}]
      [,CCISendsize={32768|size}]
      [,CHECKPOINTFile=(list)]
      [,CHECKPOINTInterval={600|secs}]
      [,FLOWLatepercent={100|pct}]
      [,FLOWOverduepercent={110|pct}]
      [,FLOWWarnpercent={90|pct}]
      [,JOBLongpercent={110|pct}]
      [,LOGFile={DD:cpmlog|fname]
      [,MAXCalcdelay={300|secs}]
      [,MAXDepth={1000|count}]
      [,MAXPaths={10000|count}]
      [,MAXSENDerrors=count]
      [,MINAlerttime={0|secs}]
      [,MINCAlcdelay={0|secs}]
      [,MINCCidelay={0|msecs}]
      [,MINJoblongtime={60|secs}]
      [,PURGedelay=secs]
      [,RELOADcheckpoint={Yes|No}]
      [,RESTARttime=timestamp]
      [,RUNOpt={trap(off)|opts}]
      [,STORagesize={131072|bytes}]
      [,TIMERinterval={60|secs}]
      [,TRACE=(optlist)]
      [,USERid=uname]
```

AUTOAdd

Controls whether jobs should automatically be added to a workflow if a flow event for the job is detected. Specify Yes or No. The default is No.

AUTOPrune

Controls whether to remove jobs from a workflow when they do not appear on any complete path from the start job to the end job. Specify Yes or No. The default is Yes.

CCIApplname

name is the application name for CAICCI communication. The default is CpmServer. If None is specified, the CAICCI communication task is not started.

CCIRecvsize

size specifies the maximum size for an incoming CAICCI message. The minimum value is 512 and the maximum is 32768. The default is 32640.

CCISendsize

size specifies the maximum size for an outgoing CAICCI message. The minimum value is 200 and the maximum is 32768. The default is 32640.

CHECKPOINTFile

list is a list of 1 to 4 file specifications for the checkpoint files. Each specification can be a ddname reference of the form DD:*ddname*, the name of a file within a mounted HFS, or the name of an MVS data set of the form //'*datasetname*'. This name can be abbreviated as CKPTF.

CHECKPOINTInterval

secs is the minimum number of seconds between automatic checkpoints. The minimum value is 30 and the maximum is 86400. The default is 600 (10 minutes). This name can be abbreviated as CKPTI.

FLOWLatepercent

pct specifies how long a flow must be running, as a percentage of the difference between the required completion time and the actual start time, before a flow late alert is sent. The minimum value is 50 and the maximum is 10000. The default is 100. This name can be abbreviated as FLP.

FLOWOverduepercent

pct specifies how long a flow must be running, as a percentage of the difference between the required completion time and the actual start time, before a flow overdue alert is sent. The minimum value is 50 and the maximum is 10000. The default is 110. This name can be abbreviated as FOP.

FLOWWarnpercent

pct specifies how long a flow must be running, as a percentage of the difference between the required completion time and the actual start time, before a flow almost late alert is sent. The minimum value is 50 and the maximum is 10000. The default is 90. This name can be abbreviated as FWP.

JOBLongpercent

pct specifies how long a job must be running, as a percentage of the historical runtime for the job, before a job running long alert is sent. The minimum value is 50 and the maximum is 10000. The default is 110. This name can be abbreviated as JLP.

LOGFile

fname specifies the name for the CA CPM log file. The default is DD:cpmlog.

MAXCalcdelay

secs is the maximum time, in seconds, between evaluation/calculations for a flow, even if no events related to the flow have been received. The minimum value is 1 and the maximum is 3600. The default is 300 (5 minutes).

MAXDepth

Maximum depth for a path; paths that exceed MAXDepth are not included in the analysis of the critical path. The minimum value is 1 and the maximum is 100000. The default is 1000.

MAXPaths

Maximum number of paths that are examined while determining the critical path. The minimum value is 1 and the maximum is 1000000. Default is 10000.

MAXSENDerrors

Maximum number of CCI errors for a registered LISTENER. If count is exceeded, the LISTENER is removed. The minimum value is 1 and the maximum is 1000000. The default is 10. This name can be abbreviated as MAXSEND.

MINAlerttime

secs is the minimum time, in seconds, between alerts for the same job or workflow. The minimum value is 0 and the maximum is 3600. The default is 0.

MINCAlcdelay

secs is the minimum time, in seconds, between calculations for a workflow. If events for a flow arrive more rapidly, internal control blocks are updated, but analysis of critical path and projected completion time are delayed. This situation can reduce overhead significantly when there are many short-running jobs. The minimum value is 0 and the maximum is 3600. The default is 0.

MINCCidelay

msecs is the minimum time, in milliseconds, between outgoing CAICCI messages. This setting is necessary on some platforms to avoid CAICCI errors caused by sending messages too quickly. The minimum value is 0 and the maximum is 3600. The default is 0.

MINJoblongtime

secs is the minimum elapsed time, in seconds, which must pass before a Job running long alert is issued. This setting prevents alerts for short-running jobs. The minimum value is 60 and the maximum is 3600. The default is 60.

PURGedelay

secs is the time, in seconds to retain completed flows in the CA CPM environment. The minimum value is 0 and the maximum is 86400. The default is 300.

RELOADcheckpoint

Controls the use of checkpoint data at CA CPM restart. If Yes is specified, CA CPM reloads the environment from the most recently written checkpoint file. If NO is specified, all checkpoint data is ignored. This is normally specified in the PARM field for the CA CPM server, not in a CPMPARMS data set. The default is YES.

RESTARttime

Overrides the time from which flow events should be requested from CAIENF. This timestamp is in the form of yydddhhmmssth. Default is N/A, which means that the restart time is taken from the checkpoint file, or current time if no checkpoint is reloaded. This is normally specified in the PARM field for the CA CPM server, not in a CPMPARMS data set.

RUNOpt

Specifies a string of runtime options to pass to all subtasks. This value is useful only on MVS systems. The default is "trap(off)".

STORagesize

Specifies the amount of storage, in bytes, to acquire whenever additional storage is needed. CPM subdivides each acquired block as needed. The default is 131072, which is the minimum amount that can be specified. The maximum is 268435456.

TIMERinterval

Specifies the length, in seconds, of the timer that periodically awakens time-driven CA CPM components. The minimum value is 1, and the maximum value is 600. The default is 60.

TRACE

Specifies any combination of the following:

OFF

Logs no trace messages. The current list of trace options is retained.

ALL

Logs all trace messages.

CCI

Includes CAICCI trace messages.

CALCulations

Includes messages for flow calculations.

CHECKpoint

Includes messages for the checkpoint read/write routines.

COMMands

Includes messages for the operator command processor.

CONTROLblocks

Includes formatted control blocks. This value can be abbreviated as 'CB'.

DATa

Includes formatted data buffers.

ENF

Includes messages for CAIENF processing.

ENTRy

Includes messages for module/function entry.

EVENTs

Includes messages for event processing.

EXIT

Includes messages for module/function exit.

FLOWstatus

Includes messages for flow status processing.

JOBstatus

Includes messages for job status processing.

RETURNcodes

Include messages for all non-zero return codes. This value can be abbreviated as 'RC'.

SCHEDapi

Includes messages for calls made to the scheduler flow API.

Note: To turn off individual trace options, prefix the option name with NO. For example, SET TRACE=(ALL,NOCCI,NOJOB) turns on all tracing options, except for CCI and JOBstatus.

USERid

Specifies the user name/ID passed to the scheduling products in the FLOW API.

STOP Command

The STOP command is used to terminate the CA CPM server.

This command has the following format:

```
STOP
```

Chapter 5: Messages

The following messages issued by CA CPM are listed alphanumerically.

Messages

CPM0001E

Invalid product identification

Reason:

The product ID in a LOAD event received by CA CPM is not recognized. The event is discarded.

Action:

None.

CPM0002E

Invalid event type

Reason:

CA CPM received a request, using CAIENF, CAICCI, or TCP/IP with an unrecognized event type. The request is ignored. If this message occurs repeatedly, it is probably an indication that an improperly configured software program is inadvertently sending messages to CA CPM.

Action:

Contact CA Support for assistance in determining the origin of the invalid requests.

CPM0003E

Requested flow not found

Reason:

The flow specified in a query request received by CA CPM using CAIENF, CAICCI, or TCP/IP could not be found. Processing for the request is terminated.

Action:

None.

CPM0004E

Unable to create flow control block

Reason:

CA CPM was unable to acquire storage for control blocks while processing a LOAD flow event. The event is discarded. All subsequent events for the flow are discarded.

Action:

No immediate action is required, but this message is probably an indication that the REGION for the CA CPM started task should be enlarged.

CPM0005E

Requested job not found

Reason:

The flow specified in a query request received by CA CPM using CAIENF, CAICCI, or TCP/IP could not be found. Processing for the request is terminated.

Action:

None.

CPM0006E

Unable to create job control block

Reason:

CA CPM was unable to acquire storage for control blocks while processing a LOAD flow event. Processing continues, but CA CPM may be unable to determine path information for the flow.

Action:

No immediate action is required, but this message probably indicates that the REGION for the CA CPM started task should be enlarged.

CPM0011E

Invalid keyword parameter "*kwd*"

Reason:

The keyword "*kwd*" was found in an operator command, but the command processor did not recognize it. The keyword and its associated value are discarded.

Action:

Correct the error and reissue the command.

CPM0012E

Unexpected positional parameter "*text*"

Reason:

While processing an operator command, CA CPM encountered an unexpected positional parameter, "*text*". Processing for the command is terminated.

Action:

Correct the error and reissue the command.

CPM0013E

Invalid positional parameter "*text*"

Reason:

While processing an operator command, CA CPM encountered a positional parameter, "*text*". Although a parameter is expected, the entered value is not recognized. Processing for the command is terminated.

Action:

Correct the error and reissue the command.

CPM0023E

Missing product name

Reason:

The product name was missing on a HOLD or RELEASE command.

Action:

Reissue the command with the appropriate product name.

CPM0024E

Unknown Product "*text*"

Reason:

The product ID ('*text*') specified in a HOLD or RELEASE command does not match the name or abbreviation of any supported scheduling product. The command is terminated.

Action:

Correct the error and reissue the command.

CPM0025E

Open failed for checkpoint data set '*fspec*'

Reason:

While trying to write a checkpoint, CA CPM was unable to open the output data set identified by *fspec*. The checkpoint is skipped.

Action:

Correct the file specification and restart CA CPM.

CPM0026E

Write failed for checkpoint data set '*fspec*'

Reason:

While writing a checkpoint, CA CPM experienced a write failure for the output data set identified by *fspec*. The checkpoint is terminated.

Action:

Correct the file specification and restart CA CPM.

CPM0027E

Read failed for checkpoint data set '*fspec*'

Reason:

While trying to restore the CA CPM environment from a checkpoint data set, CA CPM was unable to read from the input data set identified by *fspec*.

Action:

Correct the file specification and restart CA CPM.

CPM0028E

Open failed for playback data set '*fspec*'

Reason:

While processing a RELOAD command, CA CPM was unable to read from the input data set identified by *fspec*. The RELOAD command is terminated.

Action:

Correct the error and reissue the command.

CPM0029E

Missing file name

Reason:

The command processor determined that a file name is required for the current command, but the file name was not provided. Processing of the command terminates.

Action:

Correct the error and reissue the command.

CPM0030W

Checkpoint header verification failed

Reason:

While reading a checkpoint data set, CA CPM determined that the beginning of the data set does not contain a valid checkpoint identifier. The load operation terminates.

Action:

Correct the file specification and restart CA CPM.

CPM0031I

No valid checkpoint available

Reason:

During initialization, CA CPM determined that none of the checkpoint data sets available to it contain a valid checkpoint. CA CPM initialization continues. Processing of the command terminates. This message is normal the first time CA CPM is started with a new checkpoint data set.

Action:

None.

CPM0032E

Invalid integer value "'*val*'" for keyword "'*kwd*'"

Reason:

The CA CPM command processor has determined that the keyword operand '*kwd*' requires an integer value, but the provided value '*val*' is not an integer.

Action:

Correct the error and reissue the command.

CPM0033E

Too many filenames in "'*flist*'" - limit is 4

Reason:

The CA CPM command processor has determined that too many file specifications were provided on a SET CheckpointFile command. Processing of the SET command is terminated.

Action:

Correct the error and reissue the command.

CPM0034E

Missing value for option "'*opt*'"

Reason:

The CA CPM command processor determined that the '*opt*' parameter requires a value, but the value was not provided on the command. Processing of the command is terminated.

Action:

Correct the error and reissue the command.

CPM0035E

Invalid value "'*val*'" for option "*kwd*"

Reason:

The CA CPM command processor determined that the value ('*val*') provided for keyword '*kwd*' is not acceptable. Processing of the command is terminated.

Action:

Correct the error and reissue the command.

CPM0036E

Missing operands for '*cmd*' command

Reason:

The CA CPM command processor determined that one or more positional parameters required by the '*cmd*' command are missing. Processing of the command is terminated.

Action:

Correct the error and reissue the command.

CPM0037E

Unable to acquire storage for '*area*'

Reason:

CA CPM was unable to acquire storage for an internal control block of type '*area*'. CA CPM fails the current operation but attempts to continue if possible.

Action:

If the problem persists, increase the region size for CA CPM.

CPM0038E

"'*val*'" is less than the minimum value ('*min*') for keyword '*kwd*'

Reason:

The CA CPM command processor determined that the provided value ('*val*') for keyword operand '*kwd*' is not acceptable, because it is less than the minimum permitted value, '*min*'. Processing of the command is terminated.

Action:

Correct the error and reissue the command.

CPM0039E

"'*val*'" is greater than the maximum value ('*max*') for keyword '*kwd*'

Reason:

The CA CPM command processor determined that the provided value ('*val*') for keyword operand '*kwd*' is not acceptable, because it is greater than the maximum permitted value, '*max*'. Processing of the command is terminated.

Action:

Correct the error and reissue the command.

CPM0043E

Open failed for recording data set '*fname*'

Reason:

While preparing to record events in response to a RECORD command, CA CPM could not open '*fname*'. The RECORD command is terminated, without enabling event recording.

Action:

Correct the error and reissue the command.

CPM0044E

Invalid ENF timestamp

Reason:

An incorrect value has been specified for the RestartTime either on a SET command or in the PARM field of the CA CPM started task. The value must be numeric and no longer than 13 characters.

Action:

Supply a valid CAIENF timestamp in the form yydddhhmmssth and restart CA CPM.

CPM1000I

Command Output

Reason:

A command has been issued to CPM. The output of the command follows this message.

Action:

None.

CPM1001I

Critical Path Monitor Release *xxx* Genlevel *yyyy* is now active

Reason:

The CA CPM Server task for the specified version and generation level has successfully started.

Action:

None.

CPM1002I

Option Display:

CPM1003I

'*kwd*'='*value*'

Reason:

This message is the response to a DISPLAY OPTIONS command. Message CPM1003I repeats for each known option. '*kwd*' is the name of an option, and '*value*' is the current value for that option.

Action:

None.

CPM1004I

Critical Path Monitor stopped

Reason:

The CA CPM task has terminated.

Action:

None.

CPM1005I

Parameter update complete

Reason:

This message acknowledges successful completion of a SET command.

Action:

None.

CPM1006F

Unable to allocate '*count*' bytes of storage - terminating

Reason:

CA CPM was unable to acquire storage for an internal control block and cannot proceed. The CA CPM server is terminated.

Action:

Restart the CA CPM server. If the problem persists, increase the region size for CA CPM.

CPM1007I

Workflow ('*flowid*') status changed from '*oldstat*' to '*newstat*'

Reason:

CA CPM determined that the status of the flow named '*flowid*' should be changed from '*oldstat*' to '*newstat*'.

Action:

None.

CPM1008I

Input command: "*text*"

Reason:

CA CPM received a command, contained in "*text*", from an operator console, from an input data set, or from an external request.

Action:

None.

CPM1009I

Input from CPMPARMS

CPM1010I

'*text*'

Reason:

These messages show the list of commands processed from the CPMPARMS data set during CA CPM initialization. Message CPM1010I is issued for each non-comment in the input data set.

Action:

None.

CPM1011W

Unexpected post ignored

Reason:

CA CPM has been awakened but cannot determine the reason because none of its internal ECBs/semaphores has been posted. CA CPM resumes its normal WAIT.

Action:

None.

CPM1012F

JOBLIB/STEPLIB is not APF authorized - terminating

Reason:

On MVS, CA CPM requires APF authorization so that it can WAIT on the STOP/MODIFY ECB. Because the current environment is not APF-authorized, the CA CPM server terminates immediately.

Action:

Correct the error and restart CA CPM.

CPM1013I

'*taskname*' subtask started - TCB='*addr*'

Reason:

During initialization, the CA CPM subtask named '*taskname*' started and is assigned task identifier '*addr*'.

Action:

None.

CPM1014I

'*taskname*' subtask stopped - TCB='*addr*'

Reason:

During termination, the CA CPM subtask named '*taskname*' with task identifier '*addr*' stopped.

Action:

None.

CPM1015F

Unexpected return code ('*rc*') from ENF INIT - terminating

Reason:

During initialization, CA CPM received return code '*rc*' from the #ENF INIT macro. The CA CPM server task cannot proceed and terminates immediately.

Action:

Confirm the CAIENF task is active, and then restart CA CPM.

CPM1016F

Unexpected return code ('*rc*') from ENF LISTEN - terminating

Reason:

During initialization, CA CPM received return code '*rc*' from the #ENF LISTEN macro. The CA CPM server task cannot proceed and terminates immediately.

Action:

Confirm the CAIENF task is active, and then restart CA CPM.

CPM1017F

'*taskname*' subtask terminated unexpectedly - terminating

Reason:

CA CPM received notification that the subtask named '*taskname*' terminated. The CA CPM server terminates immediately.

Action:

Perform the following actions:

- Refer to previous warning and error messages.
- Restart CA CPM when the error is corrected.

CPM1018W

Unexpected cell size ('*size*') requested - using getmain/freemain

Reason:

The internal CA CPM storage manager received a request for an unexpected size. Obtaining storage directly from the operating system rather than from the internal storage pool satisfies the request.

Action:

None.

CPM1019W

Text unavailable for message '*msgid*'

Reason:

The CA CPM message handler was unable to locate the text for message '*msgid*'. This situation is probably the result of incorrect modification of the CPMMSG data set/member.

Action:

Verify the content of the data set, and restore from a backup if necessary.

CPM1020E

Unable to allocate storage for ENF event - discarded

Reason:

The CAIENF subtask was unable to acquire storage for a new event. Normal processing continues after discarding the event.

Action:

If the problem persists, increase the region size for CA CPM.

CPM1021E

Unexpected return code ('*rc*') from ENF DATA - discarded

Reason:

The CAIENF subtask received return code '*rc*' from the #ENF DATA macro. The current CAIENF event is discarded.

Action:

None.

CPM1022E

Event '*type*' failed

Reason:

An internal processing error occurred while processing an event request. The request is discarded.

Action:

None.

CPM1023E

Unexpected positional parameter "'*text*'" - ignored

Reason:

The CA CPM command processor has detected unexpected text in a command. The extra text is discarded, and processing of the command proceeds.

Action:

None.

CPM1026C

Unable to load module '*mod*' - analysis for '*prod*' is disabled

Reason:

CA CPM experienced a failure while trying to load the dynamic module named '*mod*', which is the FlowAPI module for product '*prod*'. CA CPM continues, but no flows for the product can be tracked.

Action:

Verify that CA CPM can access your scheduling product load library.

CPM1027E

Command '*cmd*' not found

Reason:

'*cmd*' is not the name or abbreviation of any of the CA CPM commands. The command is discarded.

Action:

Correct the error and reissue the command.

CPM1028I

Processing complete for '*cmd*' command

Reason:

This message is a confirmation that the operator command '*cmd*' completed typically.

Action:

None.

CPM1030I

Storage Display:

CPM1031I

Size Allocated Use Count

CPM1032I

'*size*' '*acnt*' '*ucnt*'

Reason:

This message is the response to the DISPLAY STORAGE command. Message CPM1032I is repeated for each different size in the CA CPM storage pool.

size

Indicates the size of the blocks in the storage pool.

acnt

Indicates the number of blocks of this size that have been allocated.

ucnt

Indicates the number of times a block of this size has been requested.

Action:

None.

CPM1040I

Product Display:

CPM1041I

Product='*prod*' Status='*stat*'

Reason:

This message is the response to a DISPLAY PRODUCT command. Message CPM1041I is repeated for each defined product.

prod

Indicates the name of the product.

stat

Indicates the status of the product.

Action:

None.

CPM1042E

Unknown DISPLAY option '*text*' - ignored

Reason:

The CA CPM command processor found an unrecognized operand in a DISPLAY command. The offending text is discarded, and processing of the command continues.

Action:

Correct the error and reissue the command.

CPM1043E

Unknown TRACE option '*txt*' - ignored

Reason:

The CA CPM command processor found an unrecognized option '*txt*' for the SET TRACE command. The offending text is discarded, and processing of the command continues.

Action:

Correct the error and reissue the command.

CPM1044E

Workflow ('*flowid*') not found

Reason:

No work flows could be found that matched the specified criteria '*flowid*' in a DISPLAY or CANCEL command.

Action:

Correct the error and reissue the command.

CPM1045I

No workflows loaded

Reason:

This message is the response to a DISPLAY FLOW command when no work flows are currently known to CA CPM.

Action:

None.

CPM1050I

Flow Display:

CPM1051I

Flow=('*flowid*')

CPM1052I

LoadTime='*ltim*' SlaTime='*slatim*'

CPM1053I

StartTime='*stim*' ETA='*etim*'

CPM1054I

FirstJob='*fjob*' LastJob='*ljob*'

CPM1055I

LastEvenTime='*evtim*' LastEventJob='*lejob*'

CPM1056I

JobCount='*jct*' Completed='*cct*'

CPM1057I

PathCount='*pct*' CriticalPath='*cpid*'

CPM1058I

Status='*fstat*' LastCalc='*ctim*'

CPM1059I

JobPct='*jpct*' EtaPct='*epct*'

CPM1060I

LastEventType='*evt*' Abended='*abcnt*'

CPM1061I

Job='*jnam*'

CPM1062I

SLAtime='*jsla*' EndTime='*jetim*'

CPM1063I

EarlyStart='*jest*' ActualStart='*jast*'

CPM1064I

HistRuntime='*hrtim*' ActualRuntime='*artim*'

CPM1065I

Successors='*sct*' Predecessors=('*prct*','*cpct*')

CPM1066I

Status='*jstat*'

Reason:

This message is the response to a DISPLAY FLOW command. Messages CPM1061I through CPM1066I appear only if a selective form of the command was issued. These messages are repeated for each job in the work flow.

abcnt

Indicates the number of jobs that are currently in ABEND status.

artim

Indicates the actual elapsed time for the job.

cct

Indicates the number of completed jobs.

cpct

Indicates the number of completed predecessor jobs.

cpid

Indicates the ID of the current critical path.

ctim

Indicates the time of day when last CA CPM calculation was performed for the flow.

epct

Indicates the estimated percentage complete, based on current ETA.

etim

Indicates the estimated time the flow is to complete.

evt

Indicates the name of the most recent flow event.

evtim

Indicates the time of day the last event for the flow that CA CPM received.

fjob

Indicates the name of the first job in the flow.

fstat

Indicates the status of the flow.

hrtim

Indicates the historical runtime for the job.

jast

Indicates the time of day when the job actually started.

jct

Indicates the total number of jobs in the flow.

jest

Indicates the time of day before which the job should not start.

jetim

Indicates the time of day when the job completed.

jnam

Indicates the name of the job.

jpct

Indicates the percentage of jobs that have completed.

jsla

Indicates the time of day by which the job must be completed to be considered on time.

jstat

Indicates the status of the job.

lejob

Indicates the name of the last job for which an event that CA CPM received.

ljob

Indicates the name of the last job in the flow.

ltim

Indicates the time of day when the flow was loaded into the CA CPM environment.

pct

Indicates the number of distinct paths in the flow.

prct

Indicates the number of predecessor jobs.

sct

Indicates the number of successor jobs.

slatim

Indicates the time of day by which the flow must complete to be considered on time.

stim

Indicates the time of day when the first job start event for the flow that CA CPM received.

Action:

None.

CPM1070E

Missing workflow name

Reason:

A command has been entered that requires one or more work flow names, but none was provided.

Action:

Correct the error and reissue the command.

CPM1071E

Unexpected parameter '*txt*'

Reason:

The CA CPM command processor detected an unexpected parameter '*txt*' on a DISPLAY FLOW, DISPLAY PATH, or CANCEL command. The command is terminated.

Action:

Correct the error and reissue the command.

CPM1072E

'*txt*' is not a valid path id

Reason:

While processing a DISPLAY PATH command, CA CPM has encountered '*txt*' where a path identifier was expected. The command is terminated.

Action:

Correct the error and reissue the command.

CPM1080I

Path Display:

CPM1081I

Flow=('*flow*') Path='*pid*'

CPM1082I

Job='*jobn*' Status='*stat*'

CPM1084I

Flow=('*flow*') has no paths

CPM1085I

Flow=('*flow*') path '*pid*' not found

Reason:

This message is the response to a DISPLAY PATH command. Message CPM1081I, CPM1084I, or CPM1085I is issued for each work flow that matches the specified criteria. Message CPM1082I is repeated for each job in the path.

flow

Indicates the name of the work flow.

pid

Indicates the path identifier.

jobn

Indicates the name of a job in the path.

stat

Indicates the status of the job.

Action:

None.

CPM1090E

Event recording is already active - request ignored

Reason:

A RECORD command has been issued, but CA CPM is already recording to a data set. The RECORD command is terminated.

Action:

None.

CPM1091I

Events are now recording to '*fspec*'

Reason:

As a result of a RECORD command, CA CPM is now recording events to the file designated in '*fspec*'.

Action:

None.

CPM1092I

Event recording terminated

Reason:

In response to a RECORD OFF command, CA CPM stopped recording events.

Action:

None.

CPM1101I

Workflow ('*flow*') canceled

Reason:

In response to a CANCEL command, the flow named '*flow*' has been canceled and removed from the CA CPM environment.

Action:

None.

CPM1103I

Workflow ('*flow*') deleted

Reason:

The work flow '*flow*' is deleted from the CA CPM environment.

Action:

None.

CPM1104I

Workflow ('*flow*') loaded from checkpoint

Reason:

During a restore operation, work flow '*flow*' has been loaded from a checkpoint file.

Action:

None.

CPM1105I

Job ('*job*') loaded from checkpoint

Reason:

During a restore operation, '*job*' has been loaded from a checkpoint file.

Action:

None.

CPM1106I

Flow=('*flow*') is still loading - CANCEL aborted

Reason:

The CA CPM command processor detected that work flow 'flow' cannot be canceled at this time, because another CA CPM subtask is actively loading information about that flow.

Action:

None.

CPM1121I

'*prod*' has been held

Reason:

In response to a HOLD command, the product '*prod*' has been held.

Action:

None.

CPM1122I

'*prod*' has been reset

Reason:

In response to a RELEASE command, the product '*prod*' has been released.

Action:

None.

CPM1131I

Checkpoint successfully written to '*fspec*'

Reason:

A checkpoint has been successfully written to the file identified by '*fspec*'.

Action:

None.

CPM1132I

Checkpoint successfully read from '*fspec*' - timestamp '*yydddhhmmssth*'

Reason:

A checkpoint has been successfully restored from the file identified by '*fspec*'. '*yydddhhmmssth*' represents the CAIENF timestamp of the most recent flow event received from CAIENF before the checkpoint. Unless overridden by the RESTARtime parameter, all flow events not earlier than '*yydddhhmmssth*' are retrieved from CAIENF to update.

Action:

None.

CPM1133I

Flow='*flow*' is still loading - excluded from checkpoint

Reason:

While writing a checkpoint, CA CPM encountered a work flow named '*flow*' that is still loading. To prevent possible inconsistencies that could result from restoring such a work flow from a checkpoint, the work flow is excluded from the checkpoint.

Action:

None.

CPM1141I

'*cnt*' events loaded from '*fspec*'

Reason:

While executing a PLAYBACK command, CA CPM reloaded '*cnt*' events from the data set identified by '*fspec*'.

Action:

None.

CPM1150I

Statistics Display:

CPM1151I

Event/Action Count

CPM1152I

'*ctr*' '*cnt*'

Reason:

This message is the response to a DISPLAY STATISTICS command. Message CPM1152I is repeated for each statistics counter.

ctr

Indicates the name of a counter.

cnt

Indicates the number of times that CA CPM performed the related event or action.

Action:

None.

CPM1160I

No listeners registered

Reason:

This message is the response to a DISPLAY LISTENERS command when no listeners are currently registered for CA CPM events.

Action:

None.

CPM1161I

Listener Display:

CPM1162I

CCISystem='*ccis*' Appl='*ccia*'

CPM1163I

LastReg='*rtim*' LastMsg='*mtim*'

CPM1164I

Type='*rtyp*' Count='*cnt*'

CPM1165I

CPMLog

CPM1166I

Console

CPM1167I

Errors='*ecnt*'.

CPM1168I

Syslog

CPM1170I

Master Console

Reason:

This message is the response to a DISPLAY LISTENERS command. For each registered listener, Messages CPM1162I, CPM1165I, CPM1166I, CPM1168I, CPM1169I, CPM1170I, or CPM1171I are included, depending on the type of destination.

ccis

Indicates the name of the system for a registered CAICCI application.

ccia

Indicates the name of the registered CAICCI application.

rtim

Indicates the time of day when the listener last registered.

mtim

Indicates the time of day when last notification was sent to the listener.

rtyp

Indicates the type of notification.

cnt

Indicates the number of notifications of this type.

ecnt

Indicates the number of errors encountered while sending to this listener.

Action:

None.

CPM1180I

Hosts Display:

CPM1181I

Name IpAddr Sess SendCnt RecvCnt

CPM1182I

'*hnam*' '*ipad*' '*icnt*' '*scnt*' '*rcnt*'

Reason:

This message is the response to the DISPLAY HOSTS command. Message CPM1182I is issued for each defined host.

hnam

Indicates the host name.

ipad

Indicates the TCP/IP address.

icnt

Indicates the current number of sessions.

scnt

Indicates the number of messages sent to the host.

rcnt

Indicates the number of messages received from the host.

Action:

None.

CPM1501I

CCI INIT failed - rc='*rc*'

Reason:

During initialization, CA CPM received return code '*rc*' from the CciInit function. The CAICCI subtask terminates immediately.

Action:

Perform the following actions:

- Refer to the CAIENF and CAICCI tasks for any warning or error messages.
- Restart CA CPM when CAICCI is functional.

CPM1502E

CCI Receive failed rc='*rc rsn*'

Reason:

CA CPM received return code '*rc*' and reason code '*rsn*' from the CciRecv function. The CAICCI subtask retries up to three times. If all three retries fail, the CAICCI subtask terminates.

Action:

Perform the following actions:

- Refer to the CAIENF and CAICCI tasks for any warning or error messages.
- Restart CA CPM when CAICCI is functional.

CPM1503E

CCI Send to ('*sys*','*appl*') failed rc='*rc*' -'*rsn*'

Reason:

CA CPM received return code '*rc*' and reason code '*rsn*' from the CciSend function while trying to send a message to application '*appl'* on system '*sys*'. The message is discarded.

Action:

None.

CPM1504E

Too many send errors to ('*sys*','*appl*') - connection terminated

Reason:

CA CPM experienced the maximum permitted number of send errors to application '*appl*' on system '*sys*'. The registration for the listener is deleted.

Action:

None.

CPM1510E

DDNAME required for ALLOCATE command

Reason:

An ALLOCATE command has been issued without a ddname specification. The command is terminated.

Action:

Correct the error and reissue the command.

CPM1511E

Invalid DDNAME '*text*'

Reason:

The CA CPM command processor detected '*text*' where a ddname is expected. The command is terminated.

Action:

Correct the error and reissue the command.

CPM1512E

DSNAME, PATHNAME, and SYSOUT are mutually exclusive

Reason:

The CA CPM command processor detected that two or more of these keywords are specified on an ALLOCATE command, but only one is permitted. The command is terminated.

Action:

Correct the error and reissue the command.

CPM1513E

DSNAME, PATHNAME, or SYSOUT required for ALLOCATE command

Reason:

The ALLOCATE command terminated because none of these keywords were provided.

Action:

Correct the error and reissue the command.

CPM1514E

Invalid DSNAME '*text*'

Reason:

The CA CPM command processor detected '*text*' where a dsname is expected. The command is terminated.

Action:

Correct the error and reissue the command.

CPM1515E

Invalid SYSOUT class '*text*'

Reason:

The CA CPM command processor detected '*text*' where a sysout class is expected. The command is terminated.

Action:

Correct the error and reissue the command.

CPM1516E

Invalid pathname class '*text*'

Reason:

The CA CPM command processor detected '*text*' where an HFS pathname class is expected. The command is terminated.

Action:

Correct the error and reissue the command.

CPM1517E

Invalid DISP '*text*'

Reason:

The CA CPM command processor detected '*text*' where a DISP parameter is expected. The command is terminated.

Action:

Correct the error and reissue the command.

CPM1518E

Dynamic allocation failed - rc='*rc*' err='*err*' info='*inf*'

Reason:

The MVS DYNALLOC service failed an ALLOCATE command. '*rc*', '*err*', and '*inf*' are the return code, error code, and info text from DYNALLOC, respectively.

Action:

Correct the CA CPM command that caused the allocation attempt to occur.

CPM1519E

Dynamic unallocation failed - rc='*rc*' err='*err*' info='*inf*'

Reason:

The MVS DYNALLOC service failed a FREE command. '*rc*', '*err*', and '*inf*' are the return code, error code, and info text from DYNALLOC, respectively.

Action:

Correct the CA CPM command that caused the allocation attempt to occur.

CPM1520E

Unable to load module '*mod*'

Reason:

An attempt to load the dynamic module named '*mod*' failed.

Action:

Confirm that CA CPM has the correct JOBLIB/STEPLIB specifications. If so, increase the CA CPM region size and restart CA CPM.

CPM1521I

Unknown message type received from ('*sys*','*appl*') - discarded

Reason:

CA CPM received an unknown message type from application '*appl*' on system '*sys*'. The message is discarded without any response to the sender.

Action:

None.

CPM1522I

Now recording to '*fspec*'

Reason:

In response to a RECORD command, CA CPM is now recording events to the data set identified by '*fspec*'.

Action:

None.

CPM1601I

('*flow*') '*npid*' '*opid*' '*eta*' '*pjct*' '*pcct*'

Reason:

This message is the body of the critical path change notifications sent to an MVS console or to the CA CPM log.

flow

Indicates the name of the flow.

npid

Indicates the new critical path ID.

opid

Indicates the old critical path ID.

eta

Indicates the current estimated completion time for the flow.

pjct

Indicates the number of jobs on the critical path.

pcct

Number of completed jobs on the critical path.

Action:

None.

CPM1602I

**('*flow*') '*act*' '*stat*' '*eta*' '*jct*' '*cct*' '*sla*' '*pct*'

Reason:

This message is the body of flow status notifications sent to an MVS console or to the CPM log as the result of a previous LISTEN command.

flow

Indicates the name of the flow.

act

Indicates the action that triggered the notification.

stat

Indicates the current or new status for the flow. The following statuses are valid:

Unknown

Indicates no status available.

Loaded

Indicates the loading of the basic flow information. CA CPM is calculating the critical path.

No_paths

Indicates that CA CPM cannot find any string of jobs connecting the first job to the last job.

Not_started

Indicates that CA CPM has successfully loaded the flow and determined the critical path. The first job in the flow has not yet started.

Job_abended

Indicates that one or more jobs in the flow abended or ended with a bad return code (as defined to the job management product).

On_time

Indicates that CA CPM estimates that the flow can complete by the SLA.

Almost_late

Indicates the CA CPM estimates that the flow can complete by the SLA, but only by a narrow margin. The installation option FlowWarnPercent controls how narrow the margin is.

Late

Indicates that CA CPM estimates that the flow completes after the SLA.

Complete

Indicates that the flow is complete on time.

No_firstjob

Indicates that the job management product informed CA CPM about a flow but did not provide the starting job of the flow. The job management product is responsible for passing more information to CA CPM.

No_lastjob

Indicates that the job management product informed CA CPM about a flow but did not provide the ending job of the flow. The job management product is responsible for passing more information to CA CPM.

Overdue

Indicates that the flow is not complete by the SLA, which has now passed.

Complete_late

Indicates that the flow is complete, but after the SLA is passed.

Loading

Indicates that CA CPM is asking the job management product for the flow information.

Load_failed

Indicates that CA CPM was unable to collect flow information from the job management product. This failure can result from a CA CPM HOLD command, the job management product being unavailable, or a problem in the job management product.

Missed_start

Indicates that the starting job was not submitted before its deadline time. This status is used only for CA Workload Automation SE flows.

eta

Indicates the current estimated completion time for the flow.

jct

Indicates the number of jobs in the flow.

cct

Indicates the number of completed jobs in the flow.

sla

Indicates the required completion time.

pct

Indicates the percentage flow complete.

Action:

None.

CPM1603I

('*flow*') '*job*' '*act*' '*stat*' '*eta*' '*pct*'

Reason:

This message is the body of job status notifications sent to an MVS console or to the CPM log as the result of a previous LISTEN command.

flow

Indicates the name of the flow.

job

Indicates the name of the job.

act

Indicates the action that triggered the notification.

stat

Indicates the current/new status for the flow.

eta

Indicates the current estimated completion time for the flow.

pct

Indicates the percentage flow complete.

Action:

None.

CPM1604I

enfmsg

Reason:

This message is the body of CAIENF notifications sent to an MVS console or to the CA CPM log as the result of a previous LISTEN command.

Action:

None.

Chapter 6: Abends

The following abends issued by CA CPM are listed alphanumerically.

U1000

Reason:

During initialization, validation of internal control blocks failed. This abend is probably the result of an incorrect installation.

Action:

For assistance, contact CA Support at http://ca.com/support.

U1001

Reason:

Memory allocation failed.

Action:

Increase the REGION parameter on the EXEC statement, and restart CPMSRVR.

For assistance, contact CA Support at http://ca.com/support.

U1002

Reason:

An internal logic error has been detected.

Action:

For assistance, contact CA Support at http://ca.com/support.

U1003

Reason:

An internal logic error has been detected.

Action:

For assistance, contact CA Support at http://ca.com/support.

U1004

Reason:

Unable to read the CPMMSG data set.

Action:

Examine the JOBLOG for the CPMSRVR task to determine the cause of the failure.

Appendix A: Contacting CA Support

Before you contact CA Support, try to resolve your problem by reading the guides that were shipped with your software and by using online help. If necessary, contact CA Support for the scheduling product that you are using (CA Jobtrac, CA Scheduler, or CA Workload Automation SE). For online technical assistance and a complete list of locations and telephone numbers, contact CA Support at http://ca.com/support.

Note: Only your local CA Support Center can provide native language assistance. Use English when contacting any North American center.

If you are unable to resolve the problem, have the following information ready before contacting CA Support:

- The version of z/OS that you are using.
- What occurred.
- What you were doing when the problem occurred.
- All logs, traces, or messages related to the problem.

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