

## ***PAMtutorials* 5: Concurrent Manager Activity**

**Cunningly clairvoyant (or Am I having a bad day?)**

**PIPER-Rx Application Monitor – **PAM**  
**VIRTUAL APPS ADMINISTRATOR****

**PAM** Version 4.0

*“Blurring the line between software product and training”*

May 2012

## Table of Contents

1	What you'll get out of <i>PAM</i> tutorials 5.....	4
1.1	Concurrent manager alert.....	4
1.2	Maintenance Mode alert.....	4
1.3	Completed Requests alert.....	5
1.4	Completed Error alert.....	5
1.5	Completed Warning alert.....	6
2	“Today” activity.....	7
2.1.1	Why “today” activity measurement works.....	7
2.1.2	But we are a 24 * 7 site!.....	8
3	Internal Concurrent Manager Status.....	9
3.1	CM-001 – Internal Concurrent Manager Status.....	9
3.2	Detecting when the internal manager is down.....	9
3.3	What if the managers have been shut down?.....	11
3.4	Preventing multiple alerts.....	13
3.5	Changing the alert delay time.....	13
3.6	Reset delay.....	13
3.7	Preventing false alerts on manager shutdown.....	13
3.8	Configuring the <i>PAM</i> Internal Concurrent Manager check.....	14
3.9	How do I turn the ICM alert off?.....	16
3.10	Changing alert check frequency and / or severity.....	16
4	CM-004 - Alert when the concurrent managers have been re-started.....	17
4.1	<i>PAM</i> Concurrent manager restated e-mail alert.....	17
4.2	What to do with this information.....	18
4.3	Turning CM-004 alert off and on.....	18
5	Maintenance mode.....	19
5.1	GA-002 - Maintenance Mode.....	19
5.2	Manually enabling / disabling maintenance mode.....	20
5.3	How do you know if you are in maintenance mode?.....	20
5.4	Not all releases supported by <i>PAM</i> have maintenance mode.....	20
5.5	Preventing multiple alerts.....	21
5.6	Changing the delay time.....	21
5.7	Reset delay.....	21
5.8	How do I turn the <i>PAM</i> Maintenance Mode alert off and on again?..	22
5.9	Changing alert check frequency and / or severity.....	22
6	Completed Concurrent Request alert.....	23
6.1	CR-003 Total Completed Concurrent Requests “Today”.....	23
6.2	Alert once per day only.....	24
6.3	What to do with the information.....	25
6.4	How does <i>PAM</i> set the threshold value?.....	26
6.5	Setting the threshold manually.....	26
6.6	Setting the threshold automatically.....	27

- 6.7 Changing the alert cutoff hour.....27
- 6.8 Turning the Complete Requests alert off and on again.....27
- 6.9 Changing alert check frequency and or severity .....27
- 7 Completed Error .....28
  - 7.1 CR-002 - Completed Error Requests .....28
  - 7.2 Report sets and report set stages.....29
  - 7.3 Preventing duplicate alerts.....29
  - 7.4 What to do with the information .....30
  - 7.5 Setting the alert threshold .....30
  - 7.6 Turning the Complete Error alert off and on again.....30
  - 7.7 Changing alert check frequency and / or severity .....31
- 8 Completed Warning.....32
  - 8.1 CR-004 – Completed Warning Requests.....32
  - 8.2 Report sets and report set stages.....33
  - 8.3 Preventing duplicate alerts.....33
  - 8.4 What to do with the information .....34
  - 8.5 Setting the alert threshold .....34
  - 8.6 Turning the Completed Warning alert off and on again .....34
  - 8.7 Changing alert check frequency and / or severity .....35
- 9 Disclaimer.....36

## 1 What you'll get out of PAMtutorials 5

**PAMtutorials 5** will cover the following **PAM** e-mail alert features:

- ❖ Alert when the concurrent managers are down
- ❖ Alert when the Application is in maintenance mode
- ❖ Alert when the number of completed concurrent requests “today” exceeds the most requests you have completed on any prior day
- ❖ Alert when completed error requests detected
- ❖ Alert when completed warning requests detected

### 1.1 Concurrent manager alert

This tutorial will cover a couple of methods of determining if the concurrent managers are down and the benefits / pitfalls of each method.

We will detail how **PAM** will send an e-mail alert when the concurrent managers are down and have not been shut down correctly and how **PAM** will continue to send a reminder that the managers are down but on a much less frequent basis if the condition persists for a period.

We will also detail how **PAM** will not alert that the concurrent managers are down if the managers have been shut down correctly. Thus, **PAM** will not send false alarms when the managers have been shut down for normal maintenance / backup activities.

### 1.2 Maintenance Mode alert

In this tutorial we will cover the OEBS “maintenance mode” feature which was introduced in release 11.5.10. It is a simple concept whereby you can prevent users from connecting to the Application whilst you are performing maintenance activities like patching. In reality it is a great way to ensure your users do not connect to the Application.

The issue with maintenance mode is that it is not always turned off after maintenance activity. What happens then is users are prevented from connecting to the Application and they are presented with a cryptic message when they try and log on.

In this tutorial we will detail how **PAM** will send an e-mail alert when the application is placed in “maintenance mode” and how **PAM** will continue to send a reminder that the application is in maintenance mode but on a much less frequent basis.

### 1.3 Completed Requests alert

Given the concurrent managers perform 90+% of the overall Application activity they are a good indicator as to the overall activity for the day hence it is important to know:

- ❖ How many requests does your site run per day?
- ❖ How do you know your application is working harder than normal?
- ❖ Are you having a bad day?

A simple review of the number of completed requests can provide answers to all these questions.

In this tutorial we will detail how **PAM** will send an e-mail alert when you have exceeded the threshold number of completed requests per day. The earlier you get this alert during the day the harder your application is working.

We will also detail how the threshold values are calculated or how they can be manually reset.

### 1.4 Completed Error alert

When a concurrent request encounters an error during the program execution the concurrent request will complete with a status of error. All requests that complete with a status of error should be investigated.

In general users don't check their reports for errors, so we as Apps Administrators should check them and report them back to the user, teaching them to check their own requests.

I was once called in to explain why the GL was “out” by several million dollars. On review I found several posting requests that had completed with a status of error during the prior week. The reason it was “out” was that the user did not check the error requests (posting) and did not rectify the posting error.

In this tutorial we will detail how *PAM* will send an e-mail alert when the number of requests that complete with a status of “error” exceeds the site’s threshold. We will also explain how *PAM* will not continue to report on the same errors but will alert when additional requests complete with a status of “error” during the day.

## 1.5      **Completed Warning alert**

When a concurrent request is sent to a printer that does not exist or has been taken off line at the OS level the concurrent program will complete with a status of warning.

In this tutorial we will detail how *PAM* will send an e-mail alert when the number of requests that complete with a status of “warning” exceeds the site’s threshold. We will also explain how *PAM* will not continue to report on the same errors but will alert when additional requests complete with a status of “warning” during the day.

## 2 “Today” activity

In *PAMtutorials* 1 we introduced the daily activity monitor where *PAM* records the total activity for the prior day, this was the first time we introduced the concept of the *PAM* activity day.

In this tutorial we will introduce for the first time the concept of intraday activity or “Today”; that is we will alert on activity that has occurred since midnight (Application time). At midnight the *PAM* activity values are set back to zero for such collector items as:

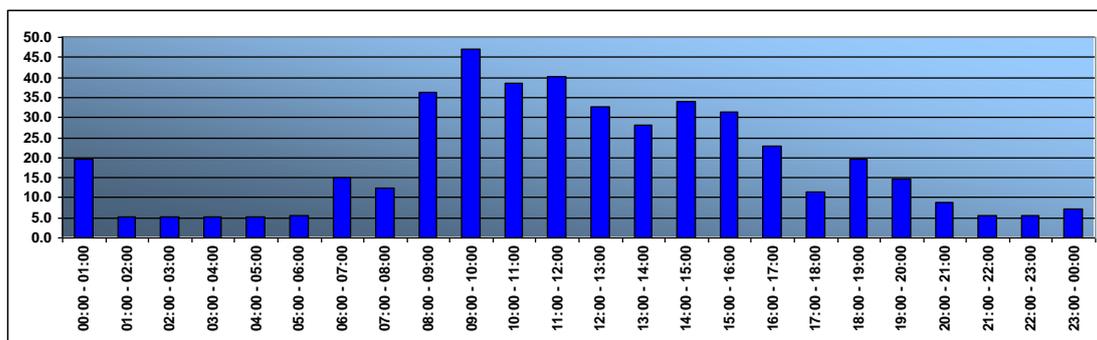
- ❖ Number of requests completed today
- ❖ The number of error requests today
- ❖ The number of warning requests today
- ❖ Users connections

This value of this concept will become clearer when we introduce intraday activity where we sample and alert on activity throughout the day and use these values to alert.

### 2.1.1 Why “today” activity measurement works

In an E-Business suite environment the normal activity profiles generally follows the working day, users come in at say 8:00am and leave at 6:00 pm, the only change to this activity cycle is that at certain times during the business cycle there is much higher activity e.g. Month and year end, payroll runs etc... but it is still predominantly a 9 – 5 application.

**Example Daily Activity**

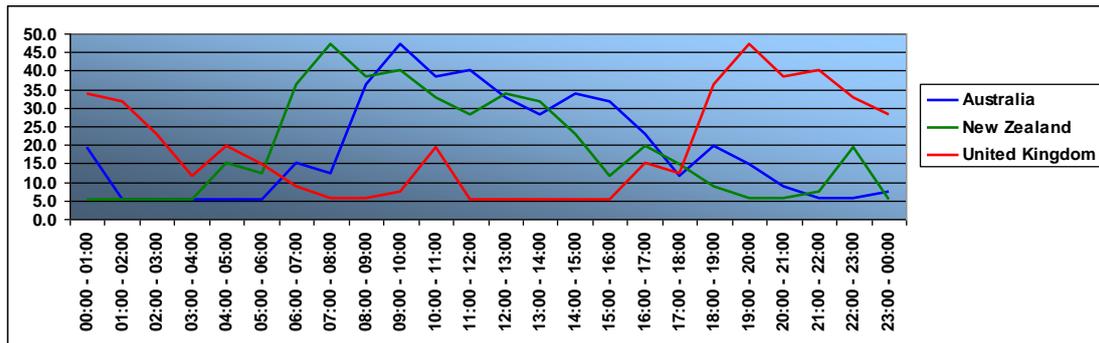


In this example chart you can clearly see the 9:00 – 5:00 activity and the afterhours 6:00 – 8:00 pm post day processing.

### 2.1.2 But we are a 24 \* 7 site!

Most sites believe they are “24 \* 7” but in reality there are multiple 9-5 patterns of the various time zones of their sites locations. In the example chart below you again will see low processing times although not so many and you will clearly see processing profile patterns for each time zone, you will also clearly see a dominant 9-5 pattern, usually the one where the server is located (head office).

Example Time Zone Activity



It is possible to differentiate your multi location activity patterns, not easy but possible. If we get sufficient interest we will add this feature to **PAM**.

## 3 Internal Concurrent Manager Status

### 3.1 CM-001 – Internal Concurrent Manager Status

The ICM (Internal Concurrent Manager) controls the behavior of all concurrent managers, STANDARD, INVMGR, FNDCRM etc... The main functions of the ICM include:

- ❖ Start up and shutdown the individual concurrent managers
- ❖ Reset the managers processes after one them has a failure (common cause – a terminated concurrent request)
- ❖ Verify manager processes. E.g. If you increase or lower the number of manager processes it is the ICM that adds or removes manager processes

**Note:** Terminating a concurrent request kills the concurrent manager process and the ICM will, on wakeup restart a new process for that manager

If **PAM** detects the concurrent managers are down **PAM** will send an e-mail alert. **PAM** will continue to send an alert on a less frequent basis until the issue is resolved.

### 3.2 Detecting when the internal manager is down

There is any number of methods for detecting if the concurrent managers are down; the following are just three (3):

#### Method 1: - Checking `fnd_concurrent_queues`

The easiest and least accurate method is to check the entry in the `fnd_concurrent_queues` table:

```
SELECT running_processes
FROM applsys.fnd_concurrent_queues
WHERE application_id = 0
      and concurrent_queue_id = 1
      and concurrent_queue_name = 'FNDICM';
```

The problem with this method is that when the database is shut down before the managers the entry in the `fnd_concurrent_queues` table is not updated so when the database is restarted the managers will be shown as up. Restarting the managers will reset the values in the table.

## Method 2 - Checking concurrent manager processes

If you are a DBA techie, you know that all the concurrent manager process information can be easily obtained; all you then have to do is check those processes against the database sessions...simple ☺

### Example SQL Code

```

SELECT fcp.concurrent_processor_name concurrent_manager,
       fcq.concurrent_queue_name queue_name,
       fcqt.user_concurrent_queue_name user_queue_name,
       --fcpr.db_domain,
       --fcpr.node_name,
       --fcpr.db_name,
       fcpr.os_process_id,
       fcpr.session_id,
       fcpr.oracle_process_id
FROM   applsys.fnd_concurrent_processors fcp,
       applsys.fnd_concurrent_queues fcq,
       applsys.fnd_concurrent_queues_tl fcqt,
       applsys.fnd_concurrent_processes fcpr
WHERE  fcp.application_id      = fcq.processor_application_id
       and fcp.concurrent_processor_id = fcq.concurrent_processor_id
       and fcq.application_id      = fcpr.queue_application_id
       and fcpr.process_status_code = 'A'
       and fcq.concurrent_queue_id  = fcpr.concurrent_queue_id
       and fcq.application_id       = fcqt.application_id
       and fcq.concurrent_queue_id  = fcqt.concurrent_queue_id
       and fcqt.language            = userenv('LANG');
    
```

### Example Output

MANAGER	QUEUE NAME	USER QUEUE NAME	OS PROCESS ID	SESSION ID	ORACLE PROCESS ID
FNDLIBR	FNDICM	Internal Manager	1896:864	17066	10
FNDCRM	FNDCRM	Conflict Resolution Manager	1036:1272	17069	13
FNDLIBR	STANDARD	Standard Manager	1892:1668	17067	11
FNDLIBR	STANDARD	Standard Manager	1984:1768	17068	12

However, if you understand how the concurrent managers work, you will see why this method can produce false alerts. When a concurrent request is terminated, the concurrent process running that request is “killed”.

This has two issues:

- ❖ Hopefully the program that was running is able to recover from a termination

- ❖ The concurrent process is no longer available so that manager will show a missing process until the internal manager restarts a new process for that manager, which will have a new process ID

...hence the false alarm - "A concurrent manager process cannot be found"

### Method 3 – Check for the ICM process (the *PAM* method)

Check the database sessions table [gv\\$session](#). When the managers are running there will be an entry in the table for the ICM:

```
SELECT COUNT(*)
  INTO v_session_count
 FROM gv$session
 WHERE upper(module) LIKE upper(v_internal_mgr_module_name);
```

If the managers are down there will not be an ICM process.

### 3.3 What if the managers have been shut down?

*PAM* will send an e-mail alert when the managers are down but not send an alert if the managers have been manually shut down. *PAM* does this by first checking the [fnd\\_concurrent\\_queues](#) table:

```
SELECT running_processes
 FROM applsys.fnd_concurrent_queues
 WHERE application_id = 0
       and concurrent_queue_id = 1
       and concurrent_queue_name = 'FNDICM';
```

If the managers have been correctly shutdown the number of running processes will be zero. When this occurs the *PAM* ICM check (CM-001) takes no further action. It would appear pointless alerting that the managers are down when they have been shut down.

**Note:** In a later *PAMtutorials* we will detail how *PAM* will send an alert if a manual shutdown has been requested. In that way you will be alerted that the managers have been shut down and have a record of a shutdown.

If there number of running ICM processes is >0 (i.e. the ICM is running) we then check for a database process in the [gv\\$session](#) table. If the ICM process does not exist then *PAM* will raise an alert that the ICM process could not be found.

---

**Example PAM CM-001 - PAM Internal Concurrent Manager Status e-mail alert message**

**ALERT MESSAGE FROM PAM - PIPER-Rx Application Monitor - DO NOT REPLY**

Company = Company name

Site = Site name

Alert Level = **Critical**

Detected = 23-Feb-11 (Wed) 07:46:01

Alert Frequency = 5 Minutes

---

**The Internal Concurrent Manager process could not be found (GV\$SESSIONS)**

---

**Alert Information:**

**CM-001 Internal Concurrent Manager Status**

**THE PROCESS FOR THE INTERNAL CONCURRENT MANAGER COULD NOT BE FOUND IN THE DATABASE *GV\$SESSION* TABLE. THIS COULD INDICATE THE CONCURRENT MANAGERS ARE DOWN AND NEED TO BE RESTARTED.**

**Technical Note:** The manager module string *PAM* looks for is set in the [piper\\_rx\\_pam\\_settings](#) table - setting id "internal\_mgr\_module". The SQL that performs the check adds a % before and after the module string and uses a LIKE function to check against *gv\$session*

**Note 1:** This alert will not have been generated if the managers have been shutdown correctly

**Note 2:** This alert will continue to alert until the managers are either restarted or shutdown correctly. Subsequent checks will occur on a less frequent basis.

### 3.4 Preventing multiple alerts

The default **PAM** ICM check (**PAM** Alert ID CM-001) frequency is every 5 minutes. In order to prevent an annoying e-mail alert every 5 minutes that the managers are down, after the first alert is raised **PAM** adds a delay time to the next ICM check.

The current delay time (minutes) can be found using the following SQL:

```
SELECT working_value_description,  
       working_numeric_value  
FROM   piper_rx_pam_config  
WHERE  alert_id = 'CM-001';
```

Thus after the first alert is raised, **PAM** will continue to send an e-mail alert on a less frequent basis.

### 3.5 Changing the alert delay time

The delay time can be changed using the following **PAM** API:

```
exec PIPER_RX_PAM_API_2.PAM_SET_DELAY_ICM_CHECK ( 25 );
```

The parameter is the number of minutes to delay before the next check and alert.

**Note:** The minimum delay is 10 minutes; setting the parameter to anything smaller than 10 minutes will default to 10 minutes.

### 3.6 Reset delay

When the **PAM** alert check runs with a success status the delay time is not added and the alert monitoring will be run at the normal alert check frequency.

### 3.7 Preventing false alerts on manager shutdown

There may be the occasion where a concurrent manager shutdown has been submitted, and at the same time the **PAM** Internal manager check is run. This could result in an alert being raised when in fact the manager are correctly being stopped.

**PAM** will not run the ICM check if there are any concurrent manager control programs running. Concurrent manager control programs include:

- ❖ Deactivate Concurrent Manager
- ❖ Verify Concurrent Managers
- ❖ Restart Concurrent Manager
- ❖ Abort Concurrent Manager
- ❖ Shutdown Concurrent Manager
- ❖ Startup Concurrent Manager

### 3.8 Configuring the **PAM** Internal Concurrent Manager check

The **PAM** Internal **C**oncurrent **M**anager (ICM) check looks for a specified module name in the database `gv$session` table. You need to inform the **PAM** application of the module name **PAM** is to look for in the `gv$session` table and then enable the internal concurrent manager check. (This check is disabled by default.)

Use the **PAMreports** - Config **PAMC015-PAM ICM Module** to obtain a list of modules from the database `gv$session` object. (An example report is provided below.)

**Note:** The concurrent managers must be running during this check.

#### Example **PAMC015 PAM ICM Module** report

PAMC015-10	PIPER-RX - APPLICATION MONITOR Internal Concurrent Manager Setting - Module List As at 19-Apr-09 19:54:41 For SITE_NAME NOT SET	PIPER - Rx
<b>Module</b>		
<div style="color: red;">ICM@localhost.localdomain (TNS V1-V3)</div> <div>AMSDMIN@localhost.localdomain (TNS V1-V3)</div> <div>OAM</div> <div>STANDARD@localhost.localdomain (TNS V1-V3)</div> <div>fnf.framework.navigate.server.OANavigatePortf:R</div> <div>STANDARD@localhost.localdomain (TNS V1-V3)</div>		

Identify the internal concurrent manager module using **PAMreports** - Config **PAMC015 PAM ICM Module**.

**Note:** The most obvious options if any will be displayed in **red**.

**Tech note:** The **PAM** application will add a % to either end of the string and use a like statement as part of the check. I.e. setting the value to "ICM" will produce a statement WHERE module like '%ICM%'

Update the **PAM** settings table using the following API, changing the ICM value to your selected portion of the module name that is unique to the internal concurrent manager:

```
exec PIPER_RX_PAM_API.PAM_ICM_VALUE_SET ('ICM');
```

Parameter: The unique ICM value to be used by **PAM** when performing the internal concurrent manager check. (Do not include the % signs.)

You can check the setting by running **PAMreports** - Config **PAMC002-10 PAM Settings**. An example report is as follows:

Example **PAMC002 PAM Settings** report

Setting ID		Description	Date Value:	Numeric Value:
<b>PAMC002-20 PAM - PIPER-RX - APPLICATION MONITOR PIPER - Rx</b> PAM Global Settings As at 23-Feb-11 10:26:45 For APPS 12i				
PAM_VERSION	PAM Version			
Vchar Value:	2.0 - Feb 2011	Date Value:		Numeric Value:
PAM_AUTHOR	PAM Author			
Vchar Value:	PIPER-RX - Gary Piper	Date Value:		Numeric Value:
AGED_USERS_AGE	Aged Users - Number of days of inactivity before the account is aged			
Vchar Value:		Date Value:		Numeric Value: 120
AGED_USERS_GRACE	Aged Users - Number of grace days for when the account is created			
Vchar Value:		Date Value:		Numeric Value: 30
AT_HISTORY_DAYS	Minimum days of online history for AT			
Vchar Value:		Date Value:		Numeric Value: 25
DEBUG_MODE	Collection debug mode Y or N			
Vchar Value:	N	Date Value:		Numeric Value:
DISPLAY_ACTIONS	Display alert actions in e-mail			
Vchar Value:	Y	Date Value:		Numeric Value:
INTERNAL_MGR_MODULE	The internal manager module name			
Vchar Value:	ICM	Date Value:		Numeric Value:
LR_MIN_RUNS	The minimum number of historical runs before a program is included in the long running			
Vchar Value:		Date Value:		Numeric Value: 5

Once the correct **PAM** ICM has been added to the **PAM** settings table, enable the internal manager check (Alert ID CM-001) using the following API:

```
exec PIPER_RX_PAM_API.PAM_ALERT_ENABLE ('CM-001','Y');
```

Parameter 1: The **PAM** alert\_id.  
 Parameter 2: The alert status; Y = Enable, N = Disable

You can check the status by running **PAMreports** - Config **PAMC001a PAM Config (basic)** which should now display the CM-001 Concurrent Manager Alert status as “active”:

### Example PAMC001a PAM Config (basic) report

Alert ID	Alert Description	Alert Status	Alert Frequency	Alert Action
<b>CM - Concurrent Manager Alerts</b>				
CM-001	Alert when the internal concurrent manager process cannot be found	Active	5 Minutes	CM-001
CM-002	Alert when the number of pending requests exceeds the threshold	Active	5 Minutes	CM-002
CM-003	Alert when potential long running requests are found	Active	10 Minutes	CM-003
<b>CP - Concurrent Program Alerts (Program Monitor)</b>				
CP-001	Alert when selected programs are either missing or on-hold	Active	1 Day	CP-001
CP-002	Alert when selected programs complete with error or warning	Active	5 Minutes	CP-002
CP-003	Alert when selected programs have been submitted	Active	5 Minutes	CP-003
CP-004	Alert when duplicate requests have been detected	Active	15 Minutes	CP-004

### 3.9 How do I turn the ICM alert off?

The **PAM** ICM alert can be turned off using the following **PAM** API:

```
exec PIPER_RX_PAM_API.PAM_ALERT_ENABLE ( 'CM-001', 'N');
```

The alert can be re-enabled using the following **PAM** API:

```
exec PIPER_RX_PAM_API.PAM_ALERT_ENABLE ( 'CM-001', 'Y');
```

### 3.10 Changing alert check frequency and / or severity

Both the alert check frequency and alert severity can be changed. Please refer to the **PAM** FAQs for more information on how to change an alert frequency and alert severity.

---

## 4 CM-004 - Alert when the concurrent managers have been re-started

**PAM** manages the concurrent manager status by a combination of the following three (3) **PAM** alerts:

- ❖ The **PAM** CM-001 alert:- Alert when the internal concurrent manager process cannot be found. Alerts when the concurrent managers session could not be found in the databases `gv$session` object. The alert is not raised when a concurrent manager control program such as is running or the concurrent managers have been shut down.
- ❖ The **PAM** CP-003 alert (Covered in a later **PAMtutorials**):- Alert when selected programs have been submitted. **PAM** sends an e-mail alert when a monitored program has been submitted. Out of the box these programs include:
  - Activate Concurrent Manager
  - Deactivate Concurrent Manager
  - Restart Concurrent Manager
  - Abort Concurrent Manager
  - Shutdown Concurrent Manager
  - Restart Concurrent Manager
- ❖ The **PAM** CM-002 Alert (Covered in a later **PAMtutorials**):- Alert when the number of pending requests exceeds the threshold. Should the concurrent managers fail and the concurrent manager process still exist in the databases `gv$session` object, both CM-001 and CP-003 will not alert. The fall-back position is that in this instance the number of pending requests will increase over the **PAM** threshold value and an alert will be raised by the **PAM** CM-002 check.

To complete the set **PAM** introduced the CM-004 Alert:- Alert when the concurrent managers have been re-started. When **PAM** detects the concurrent managers have been re-started, this alert is designed to inform you that the concurrent managers may have been restarted and may now be available for use.

### 4.1 PAM Concurrent manager restated e-mail alert

When **PAM** detects the concurrent managers have been restated a **PAM** alert e-mail is raised:

**Example PAM CM-004 – PAM Concurrent manager restated e-mail alert message**

**ALERT MESSAGE FROM PAM - PIPER-Rx Application Monitor - DO NOT REPLY**

Company = Company name  
Site = Site name  
Alert Level = **Informational**  
Detected = 10-Jan-12 (Tue) 13:25:05  
Alert Frequency = 5 Minutes

---

**The Concurrent Managers may have been restarted 10-Jan-12 13:24**

---

**Alert Information:**

**CM-004 Concurrent Manager Restart Alert**

**PAM has detected that the internal concurrent manager has been restarted.**

## 4.2 What to do with this information

This alert is informational only, when the concurrent managers have been down for an extended period, this alert will inform you when they are back up.

## 4.3 Turning CM-004 alert off and on

The **PAM** CM-004 alert can be turned off using the following **PAM** API:

```
exec PIPER_RX_PAM_API.PAM_ALERT_ENABLE ( 'CM-004', 'N' );
```

The alert can be re-enabled using the following **PAM** API:

```
exec PIPER_RX_PAM_API.PAM_ALERT_ENABLE ( 'CM-004', 'Y' );
```

## 5 Maintenance mode

### 5.1 GA-002 - Maintenance Mode

Maintenance mode was introduced in release 11.5.10. It is a simple concept whereby you can prevent users from connecting to the Application whilst you are performing maintenance activities like patching. In reality it is a great way to ensure you users do not connect to the Application.

The issue is that maintenance mode isn't always turned off after maintenance activity and users are presented with cryptic messages when they try and log on:

- ❖ There are no applications available for this responsibility
- ❖ There are no valid navigations for this responsibility

However, if you setup a scheduled down time using OAM (Oracle Applications Manager), users are redirected to a system downtime URL explaining the Application is undergoing scheduled maintenance.

When **PAM** detects the Application is in maintenance mode **PAM** will generate the following e-mail alert:

#### Example **PAM** GA-002 – **PAM** Maintenance Mode e-mail alert message

**ALERT MESSAGE FROM **PAM** - PIPER-Rx Application Monitor - DO NOT REPLY**

Company = Company name

Site = Site name

Alert Level = **Critical**

Detected = 23-Feb-11 (Wed) 07:46:01

Alert Frequency = 5 Minutes

---

**Maintenance Mode = MAINT – Maintenance Mode**

---

**Alert Information:**

## GA-002 - Maintenance Mode

### THE APPLICATION HAS BEEN PLACED IN MAINTENANCE MODE

No users can connect to the application whilst the application is in maintenance mode

**Note 1:** This alert will continue to alert until the application is no longer in maintenance mode. Subsequent checks will occur on a less frequent basis during the shutdown

**Note:** You will be notified again when the maintenance mode has been re-instated back to normal operation.

## 5.2 Manually enabling / disabling maintenance mode

Maintenance mode can be enabled / disabled using the following SQL:

```
sqlplus <APPS_Schema name>/<APPS Password>@adsetmmd.sql ENABLE | DISABLE
```

**Note:** Do not run this SQL unless you are fully familiar with maintenance mode and the consequences of placing the Application in maintenance mode.

## 5.3 How do you know if you are in maintenance mode?

Apart from the users not being able to connect, there is a profile option ([APPS\\_MAINTENANCE\\_MODE](#)) that is set. The value of the profile option can be found using the following SQL:

```
SELECT apps.fnd_profile.value('APPS_MAINTENANCE_MODE') from dual;
```

If the query returns **'MAINT'**, then Maintenance Mode has been enabled, if the query returns **'NORMAL'** then Maintenance Mode is disabled and users will be able to use the Application.

## 5.4 Not all releases supported by PAM have maintenance mode

As maintenance mode was introduced 11.5.10, some of the OEBS releases **PAM** supports do not have maintenance mode.

First **PAM** checks to see if the maintenance mode profile option exists, if it does not then **PAM** takes no further action. Next **PAM** checks the value of the maintenance mode profile option. If it returns any value other than “NORMAL” a **PAM** alert is raised.

## 5.5 Preventing multiple alerts

The default **PAM** maintenance mode check (**PAM** Alert ID GA-002) frequency is every 5 minutes. In order to prevent an annoying e-mail alerts every 5 minutes when the Application is in maintenance mode, after the first alert is raised **PAM** adds a delay time to the next maintenance mode check.

The current delay time (minutes) can be found using the following SQL:

```
SELECT working_value_description,
       working_numeric_value
FROM   piper_rx_pam_config
WHERE  alert_id = 'GA-002';
```

Thus when an alert is raised **PAM** will continue to send an alert on a less frequent basis until the Application is no longer in maintenance mode.

## 5.6 Changing the delay time

The **PAM** maintenance mode alert delay time can be changed using the following **PAM** API:

```
exec PIPER_RX_PAM_API_2.PAM_SET_DELAY_MM_CHECK ( 25 );
```

The parameter is the number of minutes to delay before the next check and alert.

**Note:** The minimum delay is 10 minutes; setting the parameter to anything smaller than 10 minutes will default to 10 minutes.

## 5.7 Reset delay

When the **PAM** alert check runs with a success status the delay time is not added and the alert monitoring will be run at the normal alert check frequency.

## 5.8      How do I turn the *PAM* Maintenance Mode alert off and on again?

The *PAM* maintenance mode alert can be turned off using the following *PAM* API:

```
exec PIPER_RX_PAM_API.PAM_ALERT_ENABLE ( 'GA-002', 'N');
```

and can be re-enabled using the following *PAM* API:

```
exec PIPER_RX_PAM_API.PAM_ALERT_ENABLE ( 'GA-002', 'Y');
```

## 5.9      Changing alert check frequency and / or severity

Both the alert check frequency and alert severity can be changed. Please refer to the *PAM* FAQs for more information on how to change an alert frequency and alert severity.

## 6 Completed Concurrent Request alert

### 6.1 CR-003 Total Completed Concurrent Requests “Today”

The basic principle behind this alert is to let you know if you have completed more concurrent requests than you have completed on any prior day (limited to the past 32 days). The **PAM** historical reference value excludes weekend activity as this would artificially lower the average value as there is normally less activity on weekends.

**Note:** Out of the box the **PAM** threshold is set to the activity for the past 32 days.

If you receive the **PAM** CR-003 alert during the working day you know you are performing more activity than “normal”. The next step is to find out why and if this is going to be normal behavior for the Application.

#### Example **PAM** CR-003 – **PAM** Total Completed Requests e-mail alert message

**ALERT MESSAGE FROM **PAM** - PIPER-Rx Application Monitor - DO NOT REPLY**

Company = Company name  
Site = Site name  
Alert Level = **Informational**  
Detected = 23-Feb-11 (Wed) 19:35:06  
Alert Frequency = 30 Minutes

---

**The number of completed requests has exceeded the threshold value of 1059**

---

**Alert Information:**

**CR-003 Total Completed Requests**

**THE TOTAL NUMBER OF CONCURRENT REQUESTS SUBMITTED HAS EXCEEDED THE ALERT THRESHOLD VALUE FOR THE DAY. THIS INDICATES THAT THERE HAS BEEN MORE THAN NORMAL**

**CONCURRENT REQUEST ACTIVITY FOR THE DAY.**

If you want to obtain a report that will assist you in identifying if this alert is a result of an overall concurrent request growth pattern or this is a one off occurrence you can use *PAMreports* -Actions **PAMACR004 Completed Requests by Day**

**Note 1:** This alert will alert once per day only

**Note 2:** Given the concurrent managers perform the bulk of the application activity; the number of requests completed per day is a good indicator as to the overall activity level of the application. Therefore, if you receive this alert during the working day it is good practice to assess the cause of the excessive number of requests

**Note 3:** If you want to change the alert threshold value refer to the FAQs for more information

## 6.2 Alert once per day only

*PAM* CR-003 will only send one e-mail alert per day when the alert threshold has been exceeded. The value of this alarm is to let you know if you are having a bad day, that is you have completed more requests than any other day in your available history (limited to the past 32 days). Remember the earlier in the day you get this alert the worse the day is (more activity / more load).

For this alert it is usually pointless to receive an alert after the working day has completed. As such this *PAM* alert has a cutoff time of day after which an alert will not be sent. *PAM* will set the threshold value to the number of requests completed prior to the cutoff time.

Example: Setting the cutoff time to 18 (6:00 pm)

- ❖ Evaluate the concurrent request runtime history for all requests completed before 18:00
- ❖ *PAM* will run the completed requests alert check from midnight to 18:00 only, after this time the alert check will not run
- ❖ If the completed requests threshold has been exceeded prior to 18:00 an alert will be sent.

### 6.3 What to do with the information

**Step 1:** Assess if the high level of requests is a growth trend or an aberration.

You can use **PAMreports** - Actions **PAMACR004 Completed Requests by Day**. This report will show the daily activity for completed requests since the **PAM** application was installed.

**Note:** When the **PAM** daily activity collector was installed it pre populated the **PAM** repository with the prior 31 days activity (subject to available on-line history).

Using this report you can identify if the number of completed requests has been increasing over time or that the alert is an aberration. This information will allow you to plan for the future.

**Step 2:** Who has been hammering my Application?

You can use the **PAMreports** - Admin **PAMADCR008Completed Requests By Requestor (summary)** to list the users who have been submitting requests for a selected day.

Example **PAMADCR008 Completed Requests By Requestor (summary)** report

PAMADCR008-20		PAM - PIPER-RX - APPLICATION MONITOR Completed Requests Summary By Requestor For 23-Feb-11 (Wed) As at 23-Feb-11 (Wed) 13:00 APPS 12i						PIPER -Rx	
User Id	User Name	Description	Total Runs	Normal	Error	Warn	Canc	Term	
1914	GPIPER	Gary Piper	30	30	0	0	0	0	
<b>Completed Totals:</b>			30	30	0	0	0	0	

**PAMreports** – Admin **PAMADCR009 Completed Requests By Requestor (Detail)** provides detailed information on the requests a given user has submitted for a selected day.

Example **PAMADCR009 Completed Requests By Requestor (Detail)** report

PAMADCR007-20		PAM - PIPER-RX - APPLICATION MONITOR					PIPER - Rx	
Completed Requests By Requestor								
(1914:GPIPER) - Gary Piper								
For 23-Feb-11 (Wed)								
As at 23-Feb-11 (Wed) 13:01								
APPS 12i								
Req Id	Program Name	Argument Text	Started	Completed	Run Time DD:HH:MM	Printer	Status	
306161	PIPER-RX PAM Collector	(None)	23-Feb-11 13:00	23-Feb-11 13:00	00:00:00	ads printer (0)	Normal	
306160	PIPER-RX PAM Collector	(None)	23-Feb-11 12:50	23-Feb-11 12:50	00:00:00	ads printer (0)	Normal	
306159	PIPER-RX PAM Collector	(None)	23-Feb-11 12:40	23-Feb-11 12:40	00:00:00	ads printer (0)	Normal	
306158	PIPER-RX PAM Collector	(None)	23-Feb-11 12:30	23-Feb-11 12:30	00:00:00	ads printer (0)	Normal	
306157	PIPER-RX PAM Collector	(None)	23-Feb-11 12:20	23-Feb-11 12:20	00:00:00	ads printer (0)	Normal	
306156	PIPER-RX PAM Collector	(None)	23-Feb-11 12:10	23-Feb-11 12:10	00:00:00	ads printer (0)	Normal	
306155	PIPER-RX PAM Collector	(None)	23-Feb-11 12:00	23-Feb-11 12:00	00:00:00	ads printer (0)	Normal	
306154	PIPER-RX PAM Collector	(None)	23-Feb-11 11:50	23-Feb-11 11:50	00:00:00	ads printer (0)	Normal	
306153	PIPER-RX PAM Collector	(None)	23-Feb-11 11:40	23-Feb-11 11:40	00:00:00	ads printer (0)	Normal	
306152	PIPER-RX PAM Collector	(None)	23-Feb-11 11:30	23-Feb-11 11:31	00:00:00	ads printer (0)	Normal	
306151	PIPER-RX PAM Collector	(None)	23-Feb-11 11:20	23-Feb-11 11:20	00:00:00	ads printer (0)	Normal	
306150	PIPER-RX PAM Collector	(None)	23-Feb-11 11:10	23-Feb-11 11:10	00:00:00	ads printer (0)	Normal	

What you are looking for are particular users / departments that have completed more requests than normal. You can then to approach the user to find out if this is a one off or if is going to be normal from now on as you need to plan for this activity in the future.

## 6.4 How does *PAM* set the threshold value?

During install *PAM* calculates the maximum requests completed on any day in the past 32 days (subject to online data availability) using the default cutoff time of 18:00 (6 pm).

**Note:** If you are purging some records on a more frequent basis than 31 days the maximum value will be understated.

Later *PAMtutorials* will introduce auto thresholds which will periodically reset the alert value based on your actual activity.

The threshold can be set both manually and automatically using the *PAM* APIs described below.

## 6.5 Setting the threshold manually

You can raise or lower the threshold value using the following *PAM* API:

```
exec PIPER_RX_PAM_API_2.PAM_THRESHOLD_CR003_SET ( 20000 );
```

The parameter is the alert threshold value in complete requests.

## 6.6 Setting the threshold automatically

The following **PAM** API will set the response time value to the historical maximum value (up to the past 32 days excluding weekends) for requests completed prior to the cutoff hour:

```
exec PIPER_RX_PAM_API_2.PAM_THRESHOLD_CR003_SET_AUTO;
```

## 6.7 Changing the alert cutoff hour

The **PAM** completed requests alert cutoff hour of day can be change using the following **PAM** API:

```
exec PIPER_RX_PAM_API_2.PAM_CUTOFF_HR_CR003_SET ( 18 );
```

The parameter is the hour of day (24 hr clock) after which the **PAM** alert will not be generated. The parameter must be between 17 (5:00pm) and 23 (11pm). E.g. If you set the parameter to 18 (6:00pm) no alerts will be generated after 6:00pm.

**Note:** Setting the cutoff hour using this API will recalculate the alert threshold value.

## 6.8 Turning the Complete Requests alert off and on again

The **PAM** completed requests alert can be turned off using the following **PAM** API:

```
exec PIPER_RX_PAM_API.PAM_ALERT_ENABLE ( 'CR-003', 'N' );
```

The alert can be re-enabled using the following **PAM** API:

```
exec PIPER_RX_PAM_API.PAM_ALERT_ENABLE ( 'CR-003', 'Y' );
```

## 6.9 Changing alert check frequency and or severity

Both the alert check frequency and alert severity can be changed. Please refer to the **PAM** FAQs for more information on how to change an alert frequency and alert severity.

## 7 Completed Error

### 7.1 CR-002 - Completed Error Requests

When a concurrent request encounters an error during program execution the concurrent request will complete with a status of error.

For the technically minded the `fnd_concurrent_request.status_code = 'E'`

All requests that complete with a status of error should be investigated.

**PAM** does not send an e-mail per concurrent request but will send an alert based on an increase in the number of completed error requests between each alert check (default 30 minutes).

#### Example **PAM** CR-002 – **PAM** Completed Error Requests e-mail alert message

Company = Company name  
Site = Site name  
Alert Level = **Warning**  
Detected = 23-Feb-11 (Wed) 17:03:48  
Alert Frequency = 30 Minutes

---

**The number of error requests has exceeded the threshold value of 12**

---

#### **Alert Information:**

#### **CR-002 Completed Error Requests**

**THE NUMBER OF CONCURRENT REQUESTS THAT HAVE COMPLETED WITH A STATUS OF ERROR HAS EXCEEDED THE ALERT THRESHOLD VALUE FOR THE DAY.**

If you wish to obtain a list of the requests that have completed with a status of Error you can use **PAMreports** Actions **PAMACR001 Completed Error (day)**

**Note 1:** Both the alert and report exclude report set and report set stages

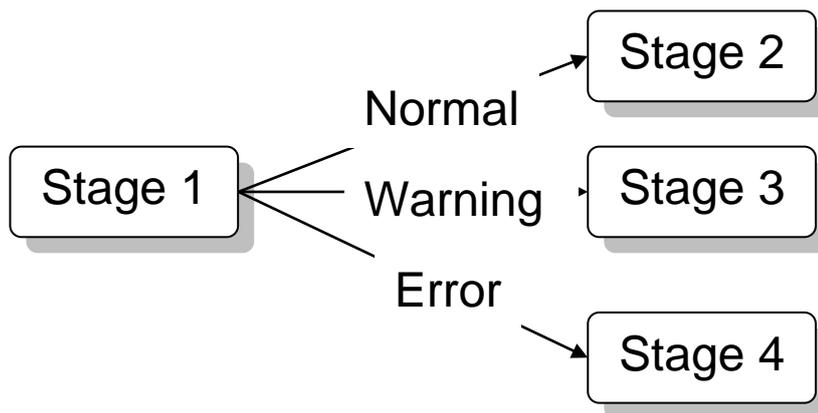
**Note 2:** *PAM* will alert when any additional requests complete with a status of Error during the day

**Note 3:** If you want to change the alert threshold value refer to the FAQs for more information

## 7.2 Report sets and report set stages

*PAM* excludes both “Report Sets” and “Reports Set Stages” from this check as these programs are basically control programs that are designed as part of normal behavior complete with a status of error, warning and normal.

A request set stage can finish with a status of normal, warning or error. The completion status of a stage will determine which of the next stages to run. In the example below if stage 1 completes normal then stage 2 is processed but if stage 1 fails (error) stage 4 is processed.



As it is normal behavior to see stages complete with a status of error *PAM* excludes these from the alert check.

## 7.3 Preventing duplicate alerts

The trick with this alert is to alert when the threshold value has been exceeded but not to continue to alert unless there have been more requests completing with a status of error during the day. The default *PAM* check frequency is 30 minutes.

PAM will only alert when the threshold value has been exceeded and will continue to alert **only** when the number of completed error requests increases during the day.

## 7.4 What to do with the information

For a list of concurrent requests that completed with a status of error for any given day you can use **PAMreports** - Alerts **PAMACR001 Completed Error (day)**. This report draws its information from `fnl_concurrent_requests`, so if the concurrent requests have been purged for the day of interest this report will have no data to show.

Example **PAMACR001 Completed Error (day)** report

Request ID	Requestor Argument Completion Text	Program Name	Start Date
305992	GPIPER None Concurrent Manager encountered an error while running SQL*Plus for your concurrent request 305992.	PIPER-RX Pam Long running request	11-Feb-11 14:49
305993	GPIPER None Concurrent Manager encountered an error while running SQL*Plus for your concurrent request 305993.	PIPER-RX Pam Long running request	11-Feb-11 14:49
305994	GPIPER None Concurrent Manager encountered an error while running SQL*Plus for your concurrent request 305994.	PIPER-RX Pam Long running request	11-Feb-11 14:49
305995	GPIPER None Concurrent Manager encountered an error while running SQL*Plus for your concurrent request 305995.	PIPER-RX Pam Long running request	11-Feb-11 14:49

The information provided in the completion text is not perfect, but it is a start. The next step would be to look at the request output log file.

## 7.5 Setting the alert threshold

The number of completed requests with a status of error threshold can be changed using the following **PAM** API:

```
exec PIPER_RX_PAM_API_2.PAM_THRESHOLD_CR002_SET ( 5 );
```

The parameter is the number of completed “error” requests.

## 7.6 Turning the Complete Error alert off and on again

The **PAM** completed error alert can be turned off using the following **PAM** API:

```
exec PIPER_RX_PAM_API.PAM_ALERT_ENABLE ( 'CR-002', 'N');
```

The alert can be re-enabled using the following **PAM** API:

```
exec PIPER_RX_PAM_API.PAM_ALERT_ENABLE ( 'CR-002', 'Y');
```

## 7.7      **Changing alert check frequency and / or severity**

Both the alert check frequency and alert severity can be changed. Please refer to the **PAM** FAQs for more information on how to change an alert frequency and alert severity.

## 8 Completed Warning

### 8.1 CR-004 – Completed Warning Requests

When a concurrent request is sent to a printer that does not exist or has been taken off line at the OS level the concurrent request will complete with a status of warning.

For the technically minded the `fnl_concurrent_request.status_code = 'G'`

**PAM** does not send an e-mail per concurrent request but will send an alert based on an increase in the number of completed warning requests between each alert check (default 30 minutes).

#### Example **PAM** CR-004 – **PAM** Completed Warning Requests e-mail alert message

Company = Company name

Site = Site name

Alert Level = **Warning**

Detected = 23-Feb-11 (Wed) 17:03:48

Alert Frequency = 30 Minutes

---

**The number of warning requests has exceeded the threshold value of 10**

---

#### **Alert Information:**

#### **CR-004 Completed Warning Requests**

**THE NUMBER OF CONCURRENT REQUESTS THAT HAVE COMPLETED WITH A STATUS OF WARNING HAS EXCEEDED THE ALERT THRESHOLD VALUE FOR THE DAY.**

If you want to obtain a list of the requests that have completed with a status of warning you can use **PAMreports** -Actions **PAMACR002-Completed Warning (day)**

**Note 1:** Both the alert and report excludes report set and report set stages

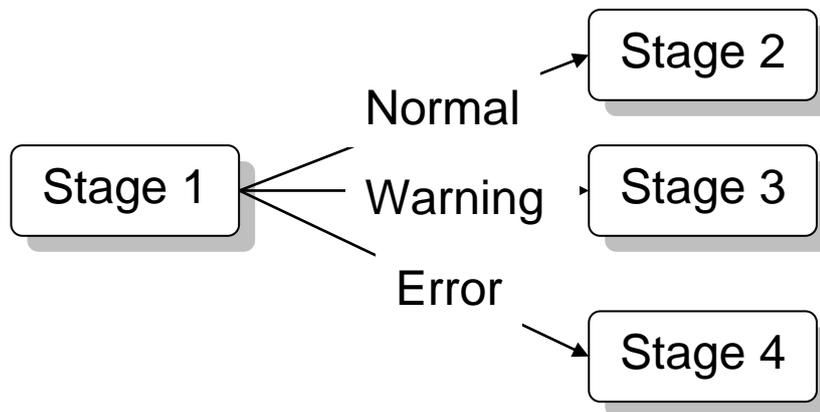
**Note 2:** *PAM* will alert when any additional requests complete with a status of warning during the day

**Note 3:** If you want to change the alert threshold value refer to the FAQs for more information

## 8.2 Report sets and report set stages

*PAM* excludes both “Report Sets” and “Reports Set Stages” from this check as these programs are basically control programs that are designed as part of normal behavior complete with a status of error, warning and normal

A request set stage can finish with a status of normal, warning or error. The completion status of a stage will determine which of the next stages to run. In the example below if stage 1 completes normal then stage 2 is processed but if stage 1 fails (error) stage 4 is processed.



As it is normal behavior to see stages complete with a status of warning *PAM* excludes these from the alert check.

## 8.3 Preventing duplicate alerts

The trick with this alert is to alert when the threshold value has been exceeded but not to continue to alert unless there have been more requests completing with a status of error during the day. The default *PAM* check frequency is 30 minutes.

*PAM* will only alert when the threshold value has been exceeded and will continue to alert **only** when the number of completed warning requests increases during the day.

## 8.4 What to do with the information

For a list of concurrent requests that completed with a status of warning for any given day you can use **PAMreports** - Actions **PAMACR002 Completed Warning (day)**. This report draws its information from **fnd\_concurrent\_requests**, so if the concurrent requests have been purged for the day of interest this report will have no data to show.

Example **PAMACR002 Completed Warning (day)** report

PAMACR002-10				
PAM - PIPER-RX - APPLICATION MONITOR				
COMPLETED WARNING - For 25-AUG-09 (Tue)				
As at 25-Aug-09 14:12:05				
For OEBS 12 DEMO				
Request ID	Requestor Argument	Program Name	Start Date	Printer
2171194	GPIPER 3	PIPER-RX Pam Long running request	25-Aug-09 13:41	noprint(1)
2171201	GPIPER 1	PIPER-RX Pam Long running request	25-Aug-09 13:46	noprint(1)

In this example, sending a report to “noprint” with copies greater than zero is a sure fire way to generate a report that completes with a status of warning...

## 8.5 Setting the alert threshold

The number of completed requests with a status of warning threshold can be changed using the following **PAM** API:

```
exec PIPER_RX_PAM_API_2.PAM_THRESHOLD_CR004_SET ( 5 );
```

The parameter is the number of completed “warning” requests.

## 8.6 Turning the Completed Warning alert off and on again

The **PAM** completed warning alert can be turned off using the following **PAM** API:

```
exec PIPER_RX_PAM_API.PAM_ALERT_ENABLE ( 'CR-004', 'N' );
```

The alert can be re-enabled using the following **PAM** API:

```
exec PIPER_RX_PAM_API.PAM_ALERT_ENABLE ( 'CR-004', 'Y' );
```

## 8.7    **Changing alert check frequency and / or severity**

Both the alert check frequency and alert severity can be changed. Please refer to the **PAM** FAQs for more information on how to change an alert frequency and alert severity.

## 9 Disclaimer

All material contained in this document is provided by the author "as is" and any express or implied warranties, including, but not limited to, any implied warranties of merchantability and fitness for a particular purpose are disclaimed. In no event shall the author be liable for any direct, indirect, incidental, special, exemplary, or consequential damages (including, but not limited to, loss of use, data, or profits; or business interruption) however caused and on any theory of liability, whether in contract, strict liability, or tort (including negligence or otherwise) arising in any way out of the use of any content or information, even if advised of the possibility of such damage. It is always recommended that you seek independent, professional advice before implementing any ideas or changes to ensure that they are appropriate.

*Oracle®, Oracle Applications® & Oracle E-Business Suite® are registered trademarks of  
Oracle Corporation  
TOAD® is a registered trademark of Quest Software*