

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

***PAM* – what, how and why....**

***PAM* Version 3.0**

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

**January 2012**

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## **1 What is PAM?**

Established in August 2009, **PAM** (**P**IPER-RX **A**pplication **M**onitor) is a FREE open source e-mail alert on exception, extensible, self-maintaining application

It is designed to sit in the background, and let you know when it finds something you should know about; your “virtual Applications Administrator” if you will.

**PAM**, being open source in design, means its educational value is even more enhanced. If you want to see how **PAM** does something the code is all there for you to learn from...all you have to do is look!

## 2 PAM History

After over 20+ years working with Oracle (the product, not the Company) and Oracle E-Business Suite (since Release 5) I always thought that I would write a book on how to look after your OEBS application. In my experience I have found that the DBA / Apps DBA only tends to look after the database and the ever more complex technology stack and the business user usually only looks after business activity. Consequently, at nearly all sites I have been exposed to (and these number in the hundreds, it has been a long career!) there is one common theme - the basics of Applications Administration usually get missed. Reflecting on this I was eventually to decide that a combined tutorial and software offering was the best way to help bridge the gap.

With introduction of TOAD reports manager in TOAD 9.6 I was able to write simple reports that provided much of what I needed to manage the day to day Applications Administration activities in an OEBS environment. As time progressed my reports became more detailed and complex, particularly when I learnt how to call stored procedures from within a TOAD report. At the end of my “TOAD reports” project I had approximately 400 reports... ☺ maybe I needed to get out more...

Then in mid-2008 I ceased fulltime work and took up small strategic contracts only. This gave me the time to write **PAM** incorporating pretty much all I have learnt, monitored and reported on in Applications Administration over the years.

In April 2011 **PAM** version 2 was released and prior to that during the 18 months between August 2009 and February 2011 we built and released **PAM** Version 1.0 as a series of tutorials, each release comprising a software pack and accompanying tutorial that explains:

- ❖ why we look for a particular item
- ❖ the alert that **PAM** provides
- ❖ what to do with the information

My reasoning for providing the tutorial approach was that in today's market place most of the large complex enterprise tools available are provided with training that you have to fit in amongst managing your business. In my opinion the training provided spends more time on configuration of the tool, dashboards and reports, with little to no time on interpreting the information provided and what to do with that information. So as a result, only a small percentage of the tools functionality usually gets used, what generally happens is you just become more efficient at the stuff you know and feel comfortable with. This in my mind defeats the purpose. The basics still get missed.

In addition – once you decide a tool would help, most OEBS tools in the market are large, high cost enterprise level tools which means you generally have to wait a year for the purchase process to complete and then a few months for implementation, training and configuration for your site. Who wants to wait that long?

I thought, wouldn't it be good to have a product that installs in 5 minutes, is self-configuring and provides information alerts, reports and processes in a format readily usable by the apps administrator and business users, just like the old point products used to be...AND you get all the training on why monitored items are important and what to do them.

As a unique point of difference to anything else I have seen out there, **PAM** deliberately focuses on the educational element and provides all the software and reporting you need to implement that learning. Hence the tag,

*“Blurring the lines between product and training”*



### **3 PAM Version 3**

March 2012 saw the release of **PAM** Version 3 which comprises:

- Over 57,000 lines of code
- 218 Reports
- 19 tutorials comprising some 700 pages

Version 3 includes all the functionality of Version 2 as well as many new alerts, reports and tutorials covering key OEBS problem areas including specialisation rules, printers, e-mail address validation and many more. Also, Each **PAM** alert now provides the tutorial reference to make issue resolution easier.

## 4 PAM Future

We are not done with **PAM** yet!

Future development will see **PAM** providing additional alerts as modules that can be independently installed or uninstalled based on your requirements. E.g. If you are not running GL then you don't need to install the GL Module.

Examples of future modules:

### General Ledger

- ❖ Alert when un-posted batches detected older than X months
- ❖ Alert if the GL Program Optimiser has not been run
- ❖ Alert when the number of submitted FSGs exceeds the alert threshold
- ❖ Plus 12 reports covering sets of books, GL code combination selectivity through to who has been running FSGs

### Password Audit

- ❖ Alert when new accounts created
- ❖ Alert when accounts with no password aging found
- ❖ Alert when accounts with password aging days exceeds site policy
- ❖ Alert when excluded accounts with aging days exceeds site policy
- ❖ Alert when accounts with password aging accesses exceeds site policy
- ❖ Alert when excluded accounts with password aging accesses exceeds site policy
- ❖ Alert when a terminated employee's account has not been closed (end dated)
- ❖ Alert when a terminated employees account has been accessed
- ❖ Plus 8 reports detailing the above activity

These are just a few of the modules planned for release during 2012. Also we plan to implement **PAMwebview**. For all of you that just love dashboards, **PAM** will soon have a simple set of web pages showing your Application activity over time.

Finally, a series of "Top 10" reports are on their way as well. Many areas will be covered including.....

- ❖ Users and user activity
- ❖ Concurrent requests
- ❖ Responsibilities

❖ Forms...

...the list goes on!

2012 may well be **PAM**'s busiest year yet!

## 5 Don't want to install *PAM* in your production environment?

We understand your concerns!....

Remember, *PAM* will provide invaluable information when installed on a fresh copy of production; you just won't get the daily activity information... It is certainly worth starting this out this way to get many of the training and general informational benefits of *PAM*.

Remember, TOAD was FREE and open source once.... ☺

## 6 What you need to run *PAM*

1. Oracle E-Business Suite application 11i or 12i
2. An application schema account with the following privileges:
  - ❖ Connect
  - ❖ Resource
  - ❖ DBA
  - ❖ Select any table
  - ❖ Execute any procedure
  - ❖ Select any dictionary
3. TOAD® Version 10 for Oracle
4. SMTP service available on the target application database
5. Sign-on audit level set to a Responsibility (optional). *PAM* requires a minimum of Responsibility level to report on application full service activity

## 7 *PAM* - technical & legal information

### 7.1 *Open source*

The *PAM* application, including all source code is made available under the terms of the GNU Affero General Public License as published by the Free software Foundation [www.gnu.org/licenses/gpl.html](http://www.gnu.org/licenses/gpl.html) and is subject to the **PIPER-RX** legal notices and disclaimer. Refer to the disclaimer section of our web page <http://www.piper-rx.com/pages/disclaimer.html>

## 8 How *PAM* works

*PAM* consists of approximately:

- ❖ 89 control and check alerts
- ❖ 33 packages
- ❖ 32 tables
- ❖ 218 Reports
- ❖ 700 pages of tutorials

*Quantities are subject to change without notice.*

Why so many packages, you ask? If one becomes invalid we don't want the whole application to stop...

At a regular intervals, using the **DBMS JOBS** function, a controlling procedure checks to see if there are any checks (procedures) to be run to check the application.

**Note:** DBMS JOBS has been used as not all OEBS application versions have the DBMS\_SCHEDULER

On exception, an alert is recorded and an alert message is sent via e-mail using the database **UTL.SMTP** function to the target recipient.

It's that simple!

## 9 *PAM* features

This section describes some of the special features available in *PAM*

### 9.1 *Install / uninstall*

The install process should take no longer than 5 minutes and does not require root level access. Unlike some tools on the market, the *PAM* uninstall process will remove all traces of the *PAM* application.

### 9.2 *No complex setup process*

Out of the box, *PAM* will set many of the alert thresholds based on the applications current activity levels.

All check frequencies are either preset or calculated on install based on your site's activity.

### 9.3 *Smart alerting*

*PAM* is an “alert on exception” application. In many cases *PAM* will generally alert once per day for a given item e.g. when the number of completed requests exceeded its threshold value.

Where an alerted item is considered “fixable”, e.g. The Workflow mailer is experiencing issues, *PAM* will alert until the item is actioned.

In some instances where continued alerting is of limited value add, *PAM* will slow the alert frequency down (configurable) so as not to cause mail storms or repeated (annoying) alerts to the recipient.

*PAM* e-mail alerts provide instructions on which of the many TOAD<sup>®</sup> Reports Manager based reports to run to gain more information on the alert.

All Individual *PAM* checks can be turned off if not required.

### 9.4 *Clone protection feature*

If the application running *PAM* is cloned, when the clone is started *PAM* will auto disable its self thus preventing duplicate e-mail alerts. Re enabling *PAM* in the cloned environment is a simple process.



## **9.5**     *Check frequency scheduler*

**PAM** provides the ability to run individual checks in **N** minute, **N** hour, **N** day, **N** week, **N** month time intervals.

## **9.6**     *Time of day*

For daily, weekly and monthly checks **PAM** provides the ability to set the time of day (hour only) that the check will run so you don't accidentally run checks during the working day or during your backup period.

## **9.7**     *Time creep function*

Many single thread monitors have a tendency for their check and or collection process to time creep; that is, the check or collection process runs a little later each day. **PAM**'s time creep function prevents this from occurring (daily, weekly and monthly scheduled checks only).

## **9.8**     *Extensible*

**PAM** is fully extensible; in fact we provide a detailed tutorial with four examples and all the PLSQL you will need to add your own application checks.

## **9.9**     *Auto thresholds*

**PAM** provides an auto threshold feature for a number of alert checks. We use the current application activity levels to set alert threshold values.

- ❖ **PAM** will set an initial alert threshold on install so you are ready to go
- ❖ Where there is insufficient on-line history available for setting thresholds for selected alerts, the Auto threshold feature will be disabled. When sufficient on-line history is available the auto threshold will be re enabled.
- ❖ On a periodic basis **PAM** will reset alert thresholds based on the application activity levels (this feature can be turned off entirely or turned off for individual checks)

Auto thresholds are set for:

- ❖ Application response time
- ❖ Concurrent requests - completed total, error and warning
- ❖ Application connections
- ❖ Self-service connections
- ❖ Self-service page requests
- ❖ Self-service page requests rate
- ❖ All workflow statuses

- ❖ Workflow mailer items

## **9.10 APIs**

**PAM** provides a series of APIs to simplify the management of **PAM**

## **9.11 Self-Purging**

We believe monitoring tools should be self-managing. **PAM** will auto purge its repositories that collect data such as alerts, debug information, application historical activity etc... The amount of data being held in each **PAM** repository object is fully configurable.

## **9.12 Self-Monitoring**

You are in the business of running a business not a monitoring tool. **PAM** is self-monitoring and will alert you if **PAM** discovers:

- ❖ a **PAM** package becomes invalid. **PAM** will alert you and then disable the individual checks associated with that package until the package is re-compiled
- ❖ a **PAM** package is generating a number of errors. **PAM** will alert you and then disable the offending package for the remainder of the day
- ❖ Unbounded growth. When any **PAM** repository objects row count exceeds the **PAM** threshold value you will be alerted

.....and much more.

## 9.13 Compatibility views

In order for **PAM** to maintain its OEBS version independence, **PAM** version 3.0 saw the introduction of compatibility views. In most instances **PAM** uses the base application tables. Where there are version differences between OEBS releases that affect **PAM** a **PAM** view is used.

### **PAM** Compatibility View list

Base Table	PAM View
AR.HZ_PARTIES	PAM_HZ_PARTIES_V
AP.AP_SUPPLIER_CONTACTS	PAM_AP_SUPPLIER_CONTACTS_V
APPLSYS.WF_LOCAL_ROLES	PAM_WF_LOCAL_ROLES_V
APPLSYS.WF_LOCAL_USERS	PAM_WF_LOCAL_USERS_V
APPLSYS.FND_CONCURRENT_REQUESTS	PAM_FND_CONCURRENT_REQUESTS_V
APPLSYS.WF_NOTIFICATIONS	PAM_WF_NOTIFICATIONS_V
APPLSYS.FND_ENV_CONTEXT	PAM_FND_ENV_CONTEXT_V
APPLSYS.FND_CONCURRENT_PROCESSES	PAM_FND_CONCURRENT_PROCESSES_V
APPLSYS.AD_PATCH_RUNS	PAM_AD_PATCH_RUNS_V
APPLSYS.AD_APPLIED_PATCHES	PAM_AD_APPLIED_PATCHES_V
APPLSYS.AD_PATCH_DRIVERS	PAM_AD_PATCH_DRIVERS_V
APPLSYS.AD_APPL_TOPS	PAM_AD_APPL_TOPS_V
APPLSYS.FND_PRODUCT_INSTALLATIONS	PAM_FND_PROD_INSTALLATIONS_V
APPLSYS.FND_CRM_HISTORY	PAM_FND_CRM_HISTORY_V
GL.GL_SETS_OF_BOOKS	PAM_GL_SETS_OF_BOOKS_V
GL.GL_LOOKUPS	PAM_GL_LOOKUPS_V
GL.GL_JE_BATCHES	PAM_GL_JE_BATCHES_V
FND_USER_RESP_GROUPS	PAM_FND_USER_RESP_GROUPS_V

## 10 E-mail alerting

### 10.1 Grouped e-mail alerts

**PAM** prevents alert e-mail storms by grouping large numbers of the same alerts into a single e-mail. The number of alerts to be grouped is configurable.

### 10.2 Multiple destinations routing

**PAM** provides the ability to send different alerts to different recipients e.g. workflow alerts to the workflow administrator, user alerts to the Applications administrator etc...

### 10.3 Heart beat e-mail

If everything is running well you will not receive **PAM** alert e-mails. Because of this **PAM** provides a heartbeat e-mail to let you know **PAM** is still there working for you. The heart beat e-mail lists the number of alerts generated between heart beats and any **PAM** object errors that may have been occurred.

#### **10.4 What to do with the e-mail notification**

Each **PAM** alert e-mail provides detailed information on the nature of the alert and what to do to find out more information about the issue including a **PAM** tutorial reference number which will describe the what, when and how of the alert.

## 11 Application performance

*PAM* is neither an enterprise monitor, nor is it a database monitor; *PAM* only monitors your OEBS application.

*PAM* monitors the overall application performance by measuring a single application response time indicator (the runtime of the concurrent program FNDOAMCOL (default)). Over the years it has been found this performance measure provides a realistic high-quality indicator as to the application's general condition.

*PAM* also records the response time history thereby providing accurate activity level profiling.

As part of the *PAM* install process, *PAM* loads any available historical performance activity into the *PAM* response time history repository thus providing valuable information from day 1.

## 12 PAM alerts list

The following tables list the **PAM** alerts available in Version 3.0.

Each alert comes with a **PAM** tutorial highlighting why we monitor for the item, what the alert looks like, what associated **PAM** reports to use for more details and what to do with this information.

Alert ID	Alert Description	Tutorial
<b>Auto Threshold</b>		
AT-001	Auto threshold module enable / disable ( Internal ) Called by IN-003	14
<b>Concurrent Manager Alerts</b>		
CM-001	Alert when the internal concurrent manager process cannot be found	5
CM-002	Alert when the number of pending requests exceeds the threshold	7
CM-003	Alert when potential long running requests are found	7
CM-004	Alert when the concurrent managers have been re-started	5
<b>Concurrent Program Alerts</b>		
CP-001	Alert when selected programs are either missing or on-hold	12
CP-002	Alert when selected programs complete with error or warning	12
CP-003	Alert when selected programs have been submitted	12
CP-004	Alert when duplicate requests have been detected	7
CP-005	Alert when a scheduled request has been running for longer than a year	19
CP-006	Alert when a scheduled request has crept into the working day	19
CP-007	Alert when duplicate scheduled request are detected	19
<b>Concurrent Request Alerts</b>		
CR-001	Alert when aged on-hold request are found	12
CR-002	Alert when the number of completed error requests exceeds the threshold	5
CR-003	Alert when the number of total completed requests exceeds the threshold	5
CR-004	Alert when the number of completed warning requests exceeds the threshold	5
CR-005	Alert if sign-on audit argument is not incrementing	12

<b>Database Alerts</b>		
DB-001	Alert when there are new application related Invalid Objects	3
DB-002	Index rebuild reminder	3
DB-003	Alert when a tablespace free space drops below X pct or datafiles are added	3
DB-004	Alert when the application patches have been applied	10
DB-005	Alert when the database has been re-started	3
DBA-001	Internal - Collects database session stats - No alert	10
DBA-002	Alert when database session stats exceed their threshold value	10
<b>E-Mail Validation Alerts</b>		
EV-001	Alert when an APPLSYS.FND_USER email address is invalid	17
EV-002	Alert when an HR.PER_PEOPLE_F email address is invalid	17
EV-003	Alert when an AR.RA_CONTACTS email address is invalid	17
EV-004	Alert when an AR.HZ_PARTIES email address is invalid	17
EV-005	Alert when an WF_LOCAL_ROLES email address is invalid	17
EV-006	Alert when an WF_LOCAL_USERS email address is invalid	17
EV-007	Alert when null email addresses found in WF_LOCAL_USERS	17
EV-008	Alert when null email addresses found in WF_LOCAL_ROLES	17
EV-009	Alert when an AP_SUPPLIER_CONTACTS email address is invalid	17
EV-010	Alert when a WF_LOCAL_USERS notification preference has been set to DISABLED	17
EV-011	Alert when a WF_LOCAL_ROLES notification preference has been set to DISABLED	17
EV-012	Alert when workflow notifications have failed	17
<b>General Application</b>		
GA-001	Alert when the sign-on audit level has been changed	1
GA-002	Alert when the application is in maintenance mode	5
GA-003	Alert to trigger an SLA renegotiation	14
<b>Heart Beat</b>		
HB-001	Heart Beat - Used to test the status of the PAM application	1

<b>Internal</b>		
IN-001	Internal - Collects daily application activity - No alert	1
IN-002	Internal - Collects intraday workflow activity - No alert	6
IN-003	Internal - Sets threshold levels based on application usage - No alert	14
IN-004	Internal - Used to remove PIPER_RX email addresses from email routing table - 1 Warning only	
IN-005	Internal - Used to alert if any PAM table has grown beyond expectation	6
IN-006	Internal - Reminder when sign-on audit is not set to either resp or from level	1
IN-007	Internal - Collect stats for long running requests check	
IN-008	Internal - Intraday application activity collector - No alert	10
IN-009	Internal - Alert when PAM errors have been detected	6
IN-010	Internal - Suspend PAM alerts if generating too many alerts	9
IN-011	Internal - Disable PAM alerts if package found to be invalid	12
IN-012	Internal - Disable PAM alerts generating too many errors for the remainder of the day	12
IN-013	Internal - Prevent an e-mail storm if mail service has been down for some time	19
IN-014	Internal - Purge PAM data repositories - No alert	19
<b>Performance Alerts</b>		
PF-001	Alert when the overall application performance is degraded	2
<b>Printer Alerts</b>		
PR-001	Alert when a large print request has been sent to print	16
<b>Specialisation Rule Alerts</b>		
SPR-001	Alert when possible specialisation rule issues are found	18
SPR-002	Alert when a manager is disabled and there are specialisation rules assigned	18
SPR-003	Alert when a program is assigned a request type that does not exist	18
SPR-004	Alert a run alone request has been submitted	18
SPR-005	Alert when the number of pending standby requests exceeds the threshold value	18



<b>User Activity Alerts</b>		
UA-001	Alert when aged application accounts detected	8
UA-002	Alert when the number of connected full service user accounts exceeds the threshold value	9
UA-003	Alert when the number of unsuccessful logins exceeds the threshold value for each user	8
UA-004	Alert when the number of self service sessions exceeds the threshold value	9
UA-005	Alert when the total number of self service page requests (Day) exceeds the threshold value	9
UA-006	Alert when self service sessions have timed out due to page limit exceeded	14
UA-007	Alert when self service sessions have timed out due to connect time limit exceeded	14
UA-008	Alert monitored account has been end dated	8
UA-009	Alert monitored account has been closed	8
UA-010	Alert when end dated accounts are due to expire	8
UA-011	Alert when self-service page requests rate (pages per minute) exceeds the threshold value	9
<b>Workflow Alerts</b>		
WF-001	Alert when there are excessive Workflow Background Processes running	2
WF-002	Alert when there are long running workflows	13
WF-003	Alert when old active workflows are detected	13
WF-004	Alert when possible workflow spinners are detected	6
WF-005	Alert when overdue workflows notifications are detected	6
WF-101	Alert when the number of Active Workflow Items exceeds the threshold value	6
WF-102	Alert when the number of Completed Workflow Items exceeds the threshold value	6
WF-103	Alert when the number of Deferred Workflow Items exceeds the threshold value	6
WF-104	Alert when the number of Error Workflow Items exceeds the threshold value	6
WF-105	Alert when the number of Notified Workflow Items exceeds the threshold value	6
WF-106	Alert when the number of Suspended Workflow Items exceeds the threshold value	6
WF-107	Alert when the number of Waiting Workflow Items exceeds the threshold value	6
WF-108	Alert when the number of Timeout Workflow Items exceeds the threshold value	6
WF-109	Alert when the number of Stuck Workflow Items	6

	exceeds the threshold value	
WF-110	Alert when the number of workflow Mail Items Waiting to be sent exceeds the threshold value	6
WF-111	Alert when the number of active workflows exceeds the threshold value	6
WF-112	Alert when the number of completed workflows exceeds the threshold value	6

## 13 Alerts in more detail

### 13.1 General Application

#### 13.1.1 Sign-on audit level (GA-001)

**PAM** will alert if the sign-on audit level changes from its current setting.

**Note:** **PAM** requires a minimum of Responsibility level to report on full service activity.

#### 13.1.2 Maintenance mode (GA-002)

**PAM** will alert if the application has been placed in maintenance mode. Once in maintenance mode users are unable to connect to the application. **PAM's** maintenance mode check is a good example of **PAM's smart alerting**; once maintenance mode has been detected, the **PAM** check frequency will be slowed for the duration of the maintenance period so as to prevent annoying alerts.

#### 13.1.3 SLA renegotiation trigger (GA-003)

Knowing you cannot maintain your SLA levels forever in a growing application, **PAM** uses a series of checks across your application activity over time and will send an alert when indications are that your SLAs may need to be renegotiated.

### 13.2 Overall Application Performance (PF-001)

Performance measurement is an emotive topic with all parties having a vested interest. **PAM** provides a basic, simple, easy to understand (by all levels of business) measure of overall application performance, alerting when the performance of your application database is degraded.

### 13.3 Concurrent managers

### 13.3.1 Concurrent manager status (CM-001)

*PAM* alerts when the concurrent managers are down and you have not turned them off. This a good example of *PAM's* smart alerting; once the managers have been detected as down, the *PAM* check frequency will be slowed for the duration of the issue so as to prevent annoying alerts.

### 13.3.2 Pending request (CM-002)

*PAM* alerts when the number of pending requests exceeds the calculated threshold value for any given concurrent manager. The calculation is based on the number of concurrent manager processes the manager has been assigned.

### 13.3.3 Long running requests (CM-003)

*PAM* alerts when requests have been running longer than “normal” based on runtime stats collected by *PAM*. Individual programs can be excluded from this check via the *PAM* program exceptions feature.

### 13.3.4 Concurrent Managers Restarted (CM-004)

*PAM* alerts when the internal concurrent manager has been restarted to let you know the managers are back on line.

## 13.4 Concurrent Programs

*PAM* provides a fully configurable concurrent program monitor. You decide what programs should be monitored and let *PAM* do the rest. (*PAM* does provide a starter list).

### 13.4.1 Monitored programs (CP-001)

There are many “normal” maintenance programs that should be run, such as purge concurrent requests. *PAM* will alert when a monitored program either does not exist or has been placed on-hold. *PAM* allows you to add any number of your own programs to be monitored.

### 13.4.2 Completed error or warning (CP-002)

*PAM* alerts when a monitored program completes with a status of error or warning. Depending on your business, you might consider adding statement processing or posting to the program monitor list.

### **13.4.3 Alert when submitted (CP-003)**

*PAM* alerts when a monitored program has been submitted (such as a concurrent manager shutdown) or, if you want, that program you told your users not to submit until after hours.....

### **13.4.4 Duplicate requests (CP-004)**

*PAM* defines a duplicate request as the same user submitting two or more of the same program with the same arguments. It does not include on-hold and scheduled requests. *PAM* alerts when duplicate requests are detected, identifying who and what has been submitted. One or more concurrent programs can be excluded from this check, such as request sets and request set stages etc... these are excluded out of the box.

### **13.4.5 Schedule Request Check (CP-005)**

*PAM* will send a reminder alert when there have been scheduled requests in existence for over a year. This is a reminder for you to check the scheduled requests to ensure they are still valid.

### **13.4.6 Schedule Request Creep (CP-006)**

Where a scheduled request has been configured to resubmit from the end of the prior run, that request will “creep” forward each execution by the prior run time. *PAM* will alert if any schedules requests “creep” into the working day.

### **13.4.7 Duplicate Schedule Request (CP-007)**

*PAM* will alert when duplicate scheduled requests are detected.

## **13.5 Concurrent Requests Activity**

### **13.5.1 Aged on-hold requests (CR-001)**

*PAM* provides a gentle reminder to cleanup all those “old” requests that have been on-hold for long periods.

### **13.5.2 Completed requests (CR-002)**

*PAM* alerts when the number of completed requests exceeds a threshold value.

### 13.5.3 Completed error / warning (CR-003/CR-004)

*PAM* alerts when the number of error or warning requests exceeds a threshold value. Once the threshold has been reached you will be notified of any additional requests that complete with a status of error or warning.

### 13.5.4 Purge Sign-On Audit date parameter not incrementing (CR-005)

*PAM* will alert if the sign-on audit program date argument is not incrementing.

## 13.6 Database alerts

Time to re-iterate ***PAM* is not a database monitor**; there are plenty of good Oracle database monitors on the market. However, this being said, there are a number of database related items that are of interest to the pure Applications Administrator and outside the typical DBA administrator field. These are:

### 13.6.1 Invalid application objects (DB-001)

*PAM* will alert if any application registered or *PAM* object has become invalid since the prior *PAM* invalid object check. *PAM* does not continually alert for the same invalid object. In the unlikely event that several thousand objects become invalid (it does happen) *PAM* will generate a single alert showing the number of invalid objects.

It is not for the Administrator to identify why the object became invalid or to recompile the object. However, it is very helpful to know of any newly invalidated objects. For example, if a new AR object becomes invalid, the Administrator can be fore warned that any left field issue related to AR may be associated with the newly invalidated object.

### 13.6.2 Index maintenance (DB-002)

Indexes on dynamic tables such as [fnd\\_concurrent\\_requests](#) and [wf\\_item\\_activity\\_statuses](#) should be rebuilt on a regular basis.

*PAM* provides an index rebuild alert to remind you that your selected indexes have not been rebuilt in **N** months. Further indexes can be added to the index check in addition to those provided out of the box.

### 13.6.3 DB free space (DB-003)

**PAM** will alert if any tablespace free space drops below a threshold percentage. Unlike most tools **PAM** will only alert when tablespace shrinks. Individual tablespaces can be excluded from this check.

### **13.6.4 Patches (DB-004)**

**PAM** will send an alert when one or more patches have been applied, just so you know what is going on in your application.

### **13.6.5 Database Restarted (DB-005)**

**PAM** alerts when the database or an instance of the database has been restarted; this is a simple notification service to let you know the database is back on line.

## **13.7 DBA Alerts**

Again **PAM** is not a Database monitoring tool, however there are a number of database session stats that have proven to be invaluable as a predictor of overall application performance issues. , As such **PAM** provides a method of monitoring, alerting and reporting on one or more database session statistics.

### **13.7.1 Session stats (DBA-002)**

**PAM** provides the ability to monitor and report on one or more of the databases 200+ session statistics and report should any statistic exceed it threshold value

## **13.8 User Activity**

### **13.8.1 Aged application accounts (UA-001)**

**PAM** alerts when there are unused accounts or accounts that have not been accessed for some time which many be candidates for end dating. **PAM** also provides the processes needed to exclude appropriate accounts from the aged account check.

### **13.8.2 Current connections (UA-002/UA-004)**

A large number of connected users may place higher loads on the application, and application architectural components. **PAM** will alert if the number of connected users exceeds the threshold value.

### **13.8.3 Unsuccessful logons (UA-003)**

*PAM* will alert when any account has had more than three (configurable) unsuccessful login attempts on an account by account basis. *PAM* will continue to alert if there are more unsuccessful attempts on individual accounts during the course of the day.

### **13.8.4 Self-service page requests (UA-005)**

*PAM* will alert if the number of page requests exceeds the threshold value. This will help alert you when your web servers are being put under heavy load by application users.

### **13.8.5 Self-service session limits (UA-006/UA-007)**

Nothing is more annoying than having to regularly reconnect your session due to session timeouts caused by low session limits, particularly if you are a customer. *PAM* will alert if any self-service session has exceeded either its time or page limits.

### **13.8.6 End dated accounts (UA-008)**

There are a number of accounts such as SYSTEM and GUEST that should not, under normal circumstances, be end dated. *PAM* will alert if any of the monitored accounts have been end dated.

### **13.8.7 Expired accounts (UA-009)**

It would, for example, create a number of issues if the SYSTEM account was closed. *PAM* will alert if any of the monitored accounts have expired.

### **13.8.8 Accounts due to expire (UA-010)**

*PAM* will alert when future end dated accounts are due to expire.

### **13.8.9 Self-service page request rate (UA-011)**

*PAM* will alert when the self-service page request rate (pages per minute) exceeds the threshold value.

## **13.9 Workflow Alerts**

Unlike most OEBS application activity (e.g. concurrent requests) Workflow only stores limited instantaneous historical activity and therefore must be treated differently. **PAM** periodically records the workflow status counts and alerts if any of the individual workflow statuses exceeds their threshold value. **PAM** also alerts if the workflow mailer is having trouble.

### **13.9.1 Too many workflow background processes**

**PAM** will alert if your site is running too many workflow background processes. This is a very common problem in the industry and is a complete waste of resources.

### **13.9.2 Long running workflows**

**PAM** alerts when selected (configurable) workflows have been running longer than they “normally” run. To make this feature usable, **PAM** provides a unique feature to filter out all those old workflows that have been hanging around for years and have not been actioned.

### **13.9.3 Old workflows**

Once every couple of months **PAM** will provide an alert identifying the number of “OLD” workflows still hanging around in your application, just to let you know they are still there and will need cleaning up at some stage.

### **13.9.4 Workflow spinners**

This unique **PAM** feature will alert if any workflow is in a spinning state.

### **13.9.5 Active Workflows**

**PAM** will alert when the number of “Active” workflows exceeds the **PAM** threshold value.

### **13.9.6 Completed Workflows**

**PAM** will alert when the number of “Completed” workflows exceeds the **PAM** threshold value. This could indicate your purging process has not been running or that you have introduced new workflows but not included them in your purging program.

### **13.9.7 Workflow items**



**PAM** will alert when any of the workflow item statuses exceeds their individual thresholds. **PAM** will generate one alert per day for workflow items that have exceeded their **PAM** threshold value. Items that can be rectified such as deferred and mailer will continue to alert until the values drop below the **PAM** alert threshold

### **13.9.8 Workflow Mailer**

**PAM** will alert when the number of workflow items waiting to be sent exceeds the **PAM** threshold value. This is a good indicator that there may be an issue with your workflow mailer sub system.

## **13.10 PAM Internal**

### **13.10.1 Daily activity monitor (IN-001)**

**PAM** monitors the total daily activity of the application completed on the prior day and records the activity. The daily activity is also collected retrospectively on install and again if the collection has not been run for a period of time. In this way you have the history to add value from day one and no missing data.

The daily activity data collected includes:

- ❖ Number of requests
- ❖ Number of error and warning requests
- ❖ The amount of log and out file space being generated
- ❖ The number of full and self -service connections including some basic connection statistics
- ❖ Application response time statistics for the day

Great stuff for activity profiling...

### **13.10.2 Intraday workflow activity (IN-002)**

Unlike most OEBS application activity (e.g. concurrent requests) Workflow only stores limited instantaneous historical activity and therefore must be treated differently. **PAM** periodically records the workflow status throughout the day.

### **13.10.3 Auto Threshold (IN-003)**

**PAM** provides the ability for **PAM** to periodically set alert thresholds based on current application activity.

#### **13.10.4 Stop e-mail alerts being sent to piper-rx (IN-004)**

Whilst we don't mind you sending us you e-mail alerts, **PAM** will check and alert if PIPER-RX exists in any of your email alert settings. **PAM** will then automatically remove any PIPER-RX entries from the e-mail settings. This is a one off action.

#### **13.10.5 PAM object growth (IN-005)**

**PAM** collects information in a number of repositories; each repository has an auto purge feature purging information that is older than a **PAM** setting for each repository. E.g. Daily application activity is purged of records older than 3 years (default). Just in case you set the retention period too high, **PAM** will alert if any of its tables is holding more than 500,000 rows (default), that way you will know if any **PAM** table is experiencing unbounded growth.

#### **13.10.6 Sign-on audit level (IN-006)**

This is a reminder that the sign-on audit level is not set to either responsibility or form level and as such **PAM** may not be collecting full service activity information.

#### **13.10.7 Collect long running request stats (IN-007)**

This is a data collector only, recording and updating request runtime stats for use in the **PAM** long running request monitor.

#### **13.10.8 Intraday application activity collector (IN-008)**

This is a data collector only recording the intraday application activity information

#### **13.10.9 PAM Error alert (IN-009)**

**PAM** will alert when any of its internal procedures encounter an error when being called

#### **13.10.10 PAM Alert storm (IN-010)**

Where a **PAM** alert has generated more than **N** alerts in a day that alert will be suspended for the remainder of the day

#### **13.10.11 Invalid PAM Packages (IN-011)**

When *PAM* detects one or more of its package has become invalid, *PAM* will suspend that package and all alerts associated with that package for the remainder of the day or until *PAM* detects the package has been re-compiled.

### **13.10.12 *PAM* Error alert (IN-012)**

Should *PAM* detect that one of internal packages is generating a large number of errors (configurable) *PAM* will disable all checks associated with that package for the remainder of the day

### **13.10.13 SMTP Service Down For an Extended Period (IN-013)**

Where the SMTP subsystem has been down for an extended period of time, *PAM* will mark outstanding alerts as 'Not Sent'. A single alert will be sent when the SMTP subsystem is back on-line indicating the number of *PAM* alerts 'Not Sent'.

### **13.10.14 Internal - Purge *PAM* data repositories – (IN-014)**

In order to control the time of day *PAM* performs its internal object purging, all *PAM* purge routines have been removed from the individual *PAM* collectors and centralised into one procedure.

## **13.11 *Printers***

### **13.11.1 Large print requests (PR-001)**

Alert when a print request that is larger than the *PAM* alert threshold for that printer, has been sent to the printer

## **13.12 *Email Validation***

### **13.12.1 Alert when an applsys.fnd\_user email address is invalid (EV-001)**

*PAM* will send an alert when an e-mail address in the fnd\_user object fails the *PAM* e-mail validation test.

### **13.12.2 Alert when an hr.per\_people\_f email address is invalid (EV-002)**

*PAM* will send an alert when an e-mail address in the `per_people_f` object fails the *PAM* e-mail validation test.

### **13.12.3 Alert when an ar.ra\_contacts email address is invalid (EV-003)**

*PAM* will send an alert when an e-mail address in the `ra_contacts` object fails the *PAM* e-mail validation test.

### **13.12.4 Alert when an ar.hz\_parties email address is invalid (EV-004)**

*PAM* will send an alert when an e-mail address in the `hz_parties` object fails the *PAM* e-mail validation test.

### **13.12.5 Alert when an wf\_local\_roles email address is invalid (EV-005)**

*PAM* will send an alert when an e-mail address in the `wf_local_roles` object fails the *PAM* e-mail validation test.

### **13.12.6 Alert when an wf\_local\_users email address is invalid (EV-006)**

*PAM* will send an alert when an e-mail address in the `wf_local_users` object fails the *PAM* e-mail validation test.

### **13.12.7 Alert when null e-mail addresses found in wf\_local\_users (EV-007)**

*PAM* will send an alert when an e-mail address is missing in the `wf_local_users` object.

### **13.12.8 Alert when null e-mail addresses found in wf\_local\_roles (EV-008)**

*PAM* will send an alert when an e-mail address is missing in the `wf_local_roles` object.

### **13.12.9 Alert when an ap\_supplier\_contacts email address is invalid (EV-009)**

*PAM* will send an alert when an e-mail address in the `ap_supplier_contacts` object fails the *PAM* e-mail validation test.

### **13.12.10 Alert when a wf\_local\_users notification preference has been set to DISABLED (EV-010)**

*PAM* will send an alert when a notification preference in the `wf_local_users` object has been set to DISABLED.

### **13.12.11 Alert when a wf\_local\_roles notification preference has been set to DISABLED (EV-011)**

*PAM* will send an alert when a notification preference in the `wf_local_roles` object has been set to DISABLED.

### **13.12.12 Alert when workflow notifications have failed (EV-012)**

*PAM* will send an alert when one or more notifications have failed.

## **13.13 Specialisation Rules**

### **13.13.1 Alert when possible specialisation rule issues are found (SPR-001)**

*PAM* will send an alert when a concurrent program has been found to be running in multiple concurrent managers.

### **13.13.2 Alert when a manager is disabled and there are specialisation rules assigned (SPR-002)**

*PAM* will send an alert when a manager has been disabled and there are specialisation rules assigning programs to that manager.

### **13.13.3 Alert when a program is assigned a request type that does not exist (SPR-003)**

**PAM** will send an alert when a program has been assigned a request type that has been deleted.

#### **13.13.4 Alert a run alone request has been submitted (SPR-004)**

**PAM** will generate an alert when a run alone requests has been submitted.

#### **13.13.5 Alert when the number of pending standby requests exceeds the threshold value (SPR-005)**

**PAM** will generate an alert when the number of pending standby requests exceeds the **PAM** threshold value.

## **14 PAM Reports**

**PAM** Reports are designed to provide the actual detailed information that resulted in the generation of any **PAM** alert. The reports are often useful as a first point of investigation into an issue or to provide others with the detailed information that gave rise to a specific problem.

These preformatted reports are suitable for wider publication to all levels and all relevant areas of the business.

### **14.1 PAM Action reports**

The **PAM** Action reports are generally the first port of call when an alert is raised, the alert e-mail details will guide you as to which of the **PAM** Action reports will provide the best information on the alert. The reports available are:

- ❖ PAMACP001 Monitored Programs On-hold
- ❖ PAMACP002 Pending Requests (manager)
- ❖ PAMACP003 Running Requests
- ❖ PAMACP004 Scheduled Requests (duplicates)
- ❖ PAMACR001 Completed Error (day)
- ❖ PAMACR002 Completed Warning (day)
- ❖ PAMACR003 Aged On-Hold Requests
- ❖ PAMACR004 Completed Requests by Day
- ❖ PAMADB001 Invalid Objects
- ❖ PAMAUA001 Aged Application Accounts
- ❖ PAMAUA002 Connected Users (time)

- ❖ PAMAUA003 Unsuccessful Logins (day)
- ❖ PAMAUA004 Self Service Sessions (time)
- ❖ PAMAUA005 Self Service Pages (day)
- ❖ PAMAUA006 Self Service Session Timeouts Pages (day)
- ❖ PAMAUA007 Self Service Session Timeouts Time (day)
- ❖ PAMAUA008 Accounts Due To Expire
- ❖ PAMAWF001 Workflow BG Processes
- ❖ PAMAWF002 Workflow Daily Statuses (end of day)
- ❖ PAMAWF003 Workflows by Status
- ❖ PAMAWF004 Workflows by Workflow and Status
- ❖ PAMAWF005 Workflows by Workflow with Status ERROR
- ❖ PAMAWF006 WF Mail Items by workflow
- ❖ PAMAWF007 WF Mail Items by User
- ❖ PAMAWF008 WF Long Running (monitored)
- ❖ PAMAWF009 WF Old Workflows
- ❖ PAMAWF010 Workflows
- ❖ PAMAWF011 Workflows by workflow
- ❖ PAMAWF012 Workflow Spinners
- ❖ PAMAWF013 Workflow Spinners by workflow

## **14.2 PAM Basic Administration Reports**

The **PAM** Basic administration reports provide a window into the normal application activity. The reports available are:

- ❖ PAMADCM001 Concurrent Manager List
- ❖ PAMADCM002 Concurrent Process List
- ❖ PAMADCR001 Running Requests
- ❖ PAMADCR002 Pending Normal Requests
- ❖ PAMADCR003 Pending Error Requests
- ❖ PAMADCR004 On-hold Requests
- ❖ PAMADCR005 Scheduled Requests
- ❖ PAMADCR006 Completed Requests By Program (summary)
- ❖ PAMADCR007 Completed Requests By Program (Detail)
- ❖ PAMADCR008 Completed Requests By Requestor (summary)
- ❖ PAMADCR009 Completed Requests By Requestor (Detail)
- ❖ PAMADCR010 Completed Requests Log and Out file (summary)
- ❖ PAMADCR011 Completed Requests Log and Out file (detail)
- ❖ PAMADENV001 Site Information
- ❖ PAMADENV002 Installed Modules
- ❖ PAMADENV003 FND ENV Variables

## **14.3 PAM Alert Summary Reports**

The **PAM** alert summary reports provide summary and detailed information on alerts generated by **PAM**. The reports available are:

- ❖ PAMAS001 Alerts Summary
- ❖ PAMAS002 Alert Details (month)
- ❖ PAMAS003 Alert Details (today)
- ❖ PAMAS004 Alert Details (day)
- ❖ PAMAS005 Alerts Not Sent (month)

## **14.4 PAM Config Reports**

The **PAM** config reports provide information on both **PAM** configuration settings. The reports available are:

- ❖ PAMC001 PAM Config
- ❖ PAMC001a PAM Config (basic)
- ❖ PAMC001b PAM Config (thresholds)
- ❖ PAMC001c PAM Config (frequency)
- ❖ PAMC001d PAM Config (Tutorial References)
- ❖ PAMC002 PAM Settings
- ❖ PAMC003 PAM Lookups
- ❖ PAMC004 PAM Errors
- ❖ PAMC005 PAM Alert Actions
- ❖ PAMC006 PAM SMTP Settings
- ❖ PAMC007 PAM SMTP Email Routing
- ❖ PAMC008 PAM DBMS Jobs
- ❖ PAMC009 PAM Program Monitor List
- ❖ PAMC010 PAM Program Monitor Validate
- ❖ PAMC011 PAM Aged Users Exclusions
- ❖ PAMC012 PAM Alert Level Estimates
- ❖ PAMC013 PAM Object Check
- ❖ PAMC014 PAM Auto Threshold Settings
- ❖ PAMC015 PAM ICM Module
- ❖ PAMC016 PAM DB Object Exceptions
- ❖ PAMC017 PAM Workflow Long Running Monitor List
- ❖ PAMC018 PAM Account Exclusions Inclusions
- ❖ PAMC019 PAM Installed Languages
- ❖ PAMC020 PAM Alert Email Links
- ❖ PAMC021 PAM Concurrent Manager Exceptions
- ❖ PAMC022 PAM Internal Audit
- ❖ PAMC023 PAM Printer Exceptions

## **14.5 PAM Session Stats Reports**



The **PAM** session stats reports provide information on the **PAM** session stats configuration and information collected by the **PAM** database session stats module. The reports available are:

- ❖ PAMDBASSM001 Session Stats list
- ❖ PAMDBASSM002 Session Stats Monitored
- ❖ PAMDBASSM003 Session Stats (All)
- ❖ PAMDBASSM004 Session Stats (Month)
- ❖ PAMDBASSM005 Session Stats (Day)
- ❖ PAMDBASSM006 Session Stats Exceptions

## **14.6 PAM Daily Activity Reports**

Once per day **PAM** summarises the prior day's activity and records that activity in the **PAM** daily activity repository. The available **PAM** daily activity reports are:

- ❖ PAMRDA001 Concurrent Request Activity
- ❖ PAMRDA002 Concurrent Request Activity (month)
- ❖ PAMRDA003 Registered Application Accounts
- ❖ PAMRDA004 Registered Application Accounts (6 months)
- ❖ PAMRDA005 Active Application Accounts
- ❖ PAMRDA006 Active Application Accounts (6 months)
- ❖ PAMRDA007 Application Response Time
- ❖ PAMRDA008 Application Response Time (month)
- ❖ PAMRDA009 FS Connections
- ❖ PAMRDA010 FS Connections (month)
- ❖ PAMRDA011 SS Connections
- ❖ PAMRDA012 SS Connections (month)
- ❖ PAMRDA013 SS Page Requests
- ❖ PAMRDA014 SS Page Requests (month)
- ❖ PAMRDA015 Daily Activity Comments
- ❖ PAMRDA016 Monthly Report Helper

## **14.7 PAM E-mail Address Validation Reports**

The **PAM** e-mail validation reports cover both the e-mail **PAM** validation exceptions lists and individual report for each **PAM** e-mail validation test. The reports available are:

- ❖ PAMEV001 Valid E-mail Domains
- ❖ PAMEV002 Excluded E-mail Addresses
- ❖ PAMEV003 Banned E-mail Domains

- ❖ PAMEV010 Null E-mail Address wf\_local\_users
- ❖ PAMEV011 Null E-mail Address wf\_local\_roles
- ❖ PAMEV020 E-mail Validation wf\_local\_users
- ❖ PAMEV021 E-mail Validation wf\_local\_roles
- ❖ PAMEV022 E-mail Validation fnd\_user
- ❖ PAMEV023 E-mail Validation per\_people\_f
- ❖ PAMEV024 E-mail Validation ra\_contacts
- ❖ PAMEV025 E-mail Validation hz\_parties
- ❖ PAMEV026 E-mail Validation supplier\_contacts
- ❖ PAMEV040 Disabled Preferences wf\_local\_users
- ❖ PAMEV041 Disabled Preferences wf\_local\_roles
- ❖ PAMEV050 Failed Notifications
- ❖ PAMEV060 User preferences (MAILTYPE)

## **14.8 PAM Intra Day Activity Reports**

**PAM** collects application status information throughout the day and records that activity in the **PAM** intraday activity repository. The available **PAM** intraday activity reports are:

- ❖ PAMRIDA001 Pending Requests
- ❖ PAMRIDA002 Pending Requests (month)
- ❖ PAMRIDA003 Pending Requests (day)
- ❖ PAMRIDA010 Running Requests
- ❖ PAMRIDA011 Running Requests (month)
- ❖ PAMRIDA012 Running Requests (day)
- ❖ PAMRIDA020 Completed Normal
- ❖ PAMRIDA021 Completed Normal (month)
- ❖ PAMRIDA022 Completed Normal (day)
- ❖ PAMRIDA023 Completed Other
- ❖ PAMRIDA024 Completed Other (month)
- ❖ PAMRIDA025 Completed Other (day)
- ❖ PAMRIDA030 User Activity
- ❖ PAMRIDA031 User Activity (month)
- ❖ PAMRIDA032 User Activity (day)
- ❖ PAMRIDA040 Page Requests
- ❖ PAMRIDA041 Page Requests (month)
- ❖ PAMRIDA042 Page Requests (day)
- ❖ PAMRIDA050 Application Status
- ❖ PAMRIDA051 Application Status (month)
- ❖ PAMRIDA052 Application Status (day)

## 14.9 *PAM Printers Reports*

The *PAM* printers reports provide information on the applications printer configurations and overall printer activity. The reports available are:

- ❖ PAMPR001 Printer List
- ❖ PAMPR002 Printer Configurations
- ❖ PAMPR003 Printer Profile Options
- ❖ PAMPR010 Registered Printer Types
- ❖ PAMPR011 Registered Printer Styles
- ❖ PAMPR012 Registered Printer Drivers
- ❖ PAMPR020 Printer Usage By Requests
- ❖ PAMPR021 Printer Usage By Users
- ❖ PAMPR030 Printer Activity Chart By Printer
- ❖ PAMPR031 Printed By Printer
- ❖ PAMPR032 Printed By Printer - Period
- ❖ PAMPR033 Printed By Requestor
- ❖ PAMPR040 Printer Large Print Jobs
- ❖ PAMPR041 Printer Backlog

## 14.10 *PAM Reports Reports*

The *PAM* Reports reports provides secondary information to that provided in the *PAM* alerts reports. The *PAM* reports reports also provide a plethora of information covering all aspects of *PAM* monitoring and alerts. The reports available are:

- ❖ PAMRAA001 FS Activity Audit By User (day)
- ❖ PAMRCP001 Concurrent Program Overview
- ❖ PAMRCP002 Concurrent Programs By Application
- ❖ PAMRCP003 Request Runtime Stats
- ❖ PAMRCP004 Monitored Programs Submitted
- ❖ PAMRCP005 Aged Scheduled Requests
- ❖ PAMRCP006 Scheduled Requests Creep
- ❖ PAMRDB001 DB Space
- ❖ PAMRDB002 DB Patch Details
- ❖ PAMRDB003 DB Index Rebuild List
- ❖ PAMRGA001 Intraday Response Time History
- ❖ PAMRGA002 Intraday Response Time History (day)
- ❖ PAMRGA003 Intraday Response Time History (month)
- ❖ PAMRGA004 Threshold History
- ❖ PAMRGA005 Application Activity (period)

- ❖ PAMRGA006 Application Activity (current)
- ❖ PAMRGA007 SLA Trigger FS Users
- ❖ PAMRGA008 SLA Trigger SS Users
- ❖ PAMRGA009 SLA Trigger Concurrent Requests
- ❖ PAMRGA010 SLA Trigger Response Time
- ❖ PAMRGA011 Profile Options By Application
- ❖ PAMRGA012 Profile Option Values
- ❖ PAMRGA013 Profile Option Duplicates
- ❖ PAMRGA014 SS Activity By User
- ❖ PAMRUA001 Unsuccessful Logins Detail (day)
- ❖ PAMRWF001 Daily Workflow Statuses (end of day)
- ❖ PAMRWF001 Daily Workflow Statuses (end of day)
- ❖ PAMRWF002 ID Workflow Statuses (day)
- ❖ PAMRWF003 Workflow Intraday Activity (day)
- ❖ PAMRWF004 Workflow Intraday Activity (week)
- ❖ PAMRWF005 Workflow Runtime Stats
- ❖ PAMRWF006 Workflow Old Workflows By Workflow
- ❖ PAMRWF007 Workflow Activity By Workflow
- ❖ PAMRWF008 Workflow Active (end of day)
- ❖ PAMRWF009 Workflows Purge Estimate
- ❖ PAMRWF010 Workflows Purge History
- ❖ PAMRWF011 Workflows Overdue Notifications (User)
- ❖ PAMRWF012 Workflows Overdue Notifications (Details)
- ❖ PAMRWF013 Workflow Notifications History (User)
- ❖ PAMRWF014 Workflow Notification Details
- ❖ PAMRWF015 Workflow Routing Rules

### **14.11 PAM Specialisation Rules Reports**

The **PAM** Specialisation rules reports provide information on the applications specialisation rule configurations and incompatibility rules. The reports available are:

- ❖ PAMSPR001 Work Shifts
- ❖ PAMSPR002 Work Shift Assignments
- ❖ PAMSPR010 Program Rules
- ❖ PAMSPR011 User Rules
- ❖ PAMSPR012 Oracle Schema Rules
- ❖ PAMSPR013 Complex Rules
- ❖ PAMSPR014 Complex Rule Definitions
- ❖ PAMSPR015 Request Type Rules
- ❖ PAMSPR016 Request Types
- ❖ PAMSPR017 Request Type Programs
- ❖ PAMSPR020 Rules for Disabled Managers

- ❖ PAMSPR021 Programs With Missing Request Type
- ❖ PAMSPR030 Programs Incompatibilities List
- ❖ PAMSPR031 Programs Incompatibilities By Program
- ❖ PAMSPR032 Run Alone Programs
- ❖ PAMSPR033 Pending Standby List
- ❖ PAMSPR034 Requests Waiting on
- ❖ PAMSPR035 CRM Activity History
- ❖ PAMSPR036 CRM Activity History (Today)
- ❖ PAMSPR040 Manager Utilisation
- ❖ PAMSPR041 Program Run Times By Program
- ❖ PAMSPR042 Program Run Times By Manager
- ❖ PAMSPR054 Manager Backlog Estimate

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