Platform RTM
Version 9.1

Release Notes

SC14-7578-00

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Note
Before using this information and the product it supports, read the information in "Notices" on page 11.

First edition

This edition applies to version 9, release 1 of Platform RTM (product number 5725-G82) and to all subsequent releases and modifications until otherwise indicated in new editions.

Contents

Chapter 1. What's new in Platform RTM 9.1

IBM® Platform RTM 9.1 has the following new features:

Enhanced Alert functions

There are many enhancements that are done in Platform RTM 9.1 for Alerts. You can now use RTM for setting up email notifications for threshold, grid, and syslog alerts. Here are some of the highlights for Alerts enhancement:

- Create and configure Alerts and Alert Templates in the new Alerts dashboard.
- Define how data is retrieved to evaluate if there is an Alert.
- Define email and syslog notifications, and also change email recipients globally.
- Notify users when their Jobs are impacted by an Alert at various levels (Host, Queue, Host Group, Job, User)
- View breached items at time of trigger
- View alert history.

Alert on Host dashboard

The Host dashboard can notify you if any events that are related to defined hosts are triggered. When you set an alert, both audible and visual notifications are enabled for the impacted hosts. When you point to a host icon, you can see the **Alarm** tab, which lists any triggered alarms or grid alerts for that host.

Guaranteed SLA

RTM supports Guaranteed SLA graphs of individual Guaranteed SLA pool resource configuration and usage. With this feature, you can view Guaranteed SLA graphs over time to understand the actual usage for each guaranteed service class.

Support for IBM Platform Dynamic Cluster

The Dynamic Cluster (DC) is an add-on product for LSF® that can turn a static LSF cluster into a dynamic compute environment capable of optimizing the characteristics of resources that are based on workload demand. If you have this add-on, then RTM helps you monitor provisioning jobs.

Export job data

The Job Command is added as one of the export columns. To export Job Command, go to **Grid** > **Settings** > **Job Export** tab.

Ajax filter

Improve your search criteria by enabling this Ajax filter. Enter at least three '%' characters in the **Grid** tab to get a list of all hosts, host group, users, or user group.

Reporting ELIM data

External Load Indices Manager (ELIM) reports the values of dynamic external resources. A dynamic external resource is a user-defined resource with a numeric

value that changes over time, such as space available in a directory. Using RTM, you can select host-based ELIM data to display in both the Grid Load and Grid Hosts interfaces and also create graphs for those ELIMs. You can monitor the configured static shared resource in LSF. You can even define ELIM Graph Templates and apply those Graph Templates to one or more clusters that are based on a rule.

Monitor GPFS™ data

IBM General Parallel File System (GPFS) is a high performance cluster file system. GPFS can scale almost infinitely as it is not a clustered File System but a parallel File System. Using RTM, you can monitor GPFS data. You can use sample GPFS ELIM Templates to analyze your data. You can also monitor both GPFS per volume and overall bandwidth consumption in RTM.

Allow drill down from Statistical dashboard

When you view statistics from the **Statistical** dashboard, you can drill down **Daily Statistics** data to get more information.

Other updates

- Fusion chart is updated to V3.2 which is iPad compatible.
- Platform RTM product package:

  The product package is different depending on which operating system you are using. You can install Platform RTM on RHEL, Scientific Linux, CentOS, or SLES. For more details about these packages, refer to the *IBM Platform RTM Installation Guide*.
- New supported operating systems:
  - You can install Platform RTM on Scientific Linux 5/6.
  - You can install remote LSF poller for Platform RTM on AIX® 6 and 7 (64 bit).

Platform RTM Installation

New all-in-one script to installPlatform RTM 9.1. Installing Platform RTM involves the following steps:

1. Download all the Platform RTM installation packages.
2. Download all the third-party components.
3. Run the all-in-one script to install.

For more information about installing Platform RTM 9.1, refer to the *IBM Platform RTM Installation Guide*.

Upgrading from previous versions

You can upgrade Platform RTM to 9.1 from both versions 2.1.2 and 8.0. For more details on the supported upgrade versions, see the *IBM Platform RTM Installation Guide*.

Chapter 2. Recommended system requirements

Supported Operating Systems

- RHEL 5 (5.2 to 5.8) x86_64
- RHEL 6 (6.2 to 6.3) x86_64
- CentOS (5.2 to 5.8) x86_64
- CentOS 6.3 x86_64
- SLES 10.2 x86_64
- SLES 11.1 x86_64
- Scientific Linux 5.6 X64
- Scientific Linux 6.1 X64
- AIX 6 64-bit (Data poller only)
- AIX 7 64-bit (Data poller only)

Supported LSF versions

- LSF 9.x
- LSF 8.x
- LSF 7.x

Supported browsers

- Internet Explorer 8, 9 and 10
- Firefox 3.6, 11 and up. RTM is tested with Firefox 3.6, 11, 12, and 18.

Supported MySQL versions

- RHEL 5 x86_64: 5.0.77
- RHEL6.2 x86_64: 5.1.52
- RHEL6.3 x86_64:5.1.61
- CentOS 5.7x86_64: 5.1.61
- CentOS 6.3 x86_64: 5.0.77
- SLES 10.2 x86_64: 5.0.61
- SLES 11.1 x86_64: 5.0.26
- Scientific Linux 5.6 X64: 5.0.77
- Scientific Linux6.1 X64: 5.1.52
- AIX 6 64-bit (Data poller only): N/A
- AIX 7 64-bit (Data poller only): N/A

Supported UnixODBC versions

OS	UnixODBC Version
RHEL 5 x86_64	UnixODBC-2.2.11
RHEL6.2 x86_64	UnixODBC-2.2.14
RHEL6.3 x86_64	UnixODBC-2.2.14

OS	UnixODBC Version
CentOS 5.7 x86_64	UnixODBC-2.2.11
CentOS 6.3 x86_64	UnixODBC-2.2.14
SLES 10.2 x86_64	UnixODBC-2.2.11
SLES 11.1 x86_64	UnixODBC-2.2.12
Scientific Linux 5.6 X64	UnixODBC-2.2.11
Scientific Linux 6.1 X64	UnixODBC-2.2.14
AIX 6 64-bit (Data poller only)	UnixODBC-2.3.1
AIX 7 64-bit (Data poller only)	UnixODBC-2.3.1

Supported MyODBC versions

OS	MyODBC Version
RHEL 5 x86_64	Mysql-connector-odbc-3.51.26
RHEL6.2 x86_64	Mysql-connector-odbc-5.1.5r1144
RHEL6.3 x86_64	Mysql-connector-odbc-5.1.5r1144
CentOS 5.7 x86_64	Mysql-connector-odbc-3.51.26r1127-
CentOS 6.3 x86_64	Mysql-connector-odbc-5.1.5r1144
SLES 10.2 x86_64	MyODBC-unixODBC-3.51.12
SLES 11.1 x86_64	MyODBC-unixODBC-3.51.26
Scientific Linux 5.6 X64	Mysql-connector-odbc-3.51.26
Scientific Linux 6.1 X64	Mysql-connector-odbc-5.1.5
AIX 6 64-bit (Data poller only)	Mysql-connector-odbc-3.51.27
AIX 7 64-bit (Data poller only)	Mysql-connector-odbc-3.51.27

Supporting documentation

- Administering IBM Platform RTM 9.1, SC14-7577-00
- Installing IBM Platform RTM 9.1, SC14-7576-00

Chapter 3. Known issues

Issue	Description
If both **Xz_string** and **xz_string** are defined as shared resource, then only the first one is taken into account.	RTM is not case-sensitive for non-binary string search. If you search with **Xz_string**, then you get resources that start wit h either "A" or "a".
Browser hangs on the host dashboard after the resource requirement value is entered.	When LSF LIM is down, the GUI does not respond when on the Host Dashboard page. Restart the browser and try again.
Problem importing metadata if content contains comma.	Try to avoid comma in metadata or use double quotation marks (" ") around the value containing the comma.
The Job Details page is including the Provisioning time in Run Time.	The Job Details page displays Pending Time, Provisioning Time, and Run Time. When the Run Time is calculated, it includes Provisioning Time as well.
The Host icon doesn't change when an alert triggers.	When a host based alert that use SQL query triggers, then there is no notification shown on the Host Dashboard. If a Host based alert uses a SQL query, then as a workaround meet the following conditions to enable the Host Dashboard notifications: • Alert must be associated with a cluster • SQL query statement must include both ClusterID and Host
An error " Error:'1060', Message:'Duplicate column name 'jobid'" is displayed after defining a cross join SQL query.	When you define a grid alert using a cross join SQL query, do not use "*select* * for the list of qualified column names. As a workaround, you can list the fields you want to query in the SQL sentence after the word *select*.
When a job triggers an alert, a notification is sent to one of the email addresses.	If you submit jobs and assign multiple email addresses for alert notification, then the alert notification will be sent only to the last email address.
ssusp time differs between LSF accounting and RTM accounting	It is difficult to catch **ssusp** time in Platform RTM if the total **ususp** time is less than the poller interval. A workaround is to decrease the poller interval but it might not apply to all because of system size.
stime, utime, and mem rusage reports for finished jobs are not same in RTM and LSF	For IBM Platform LSF 7.0.2 or earlier version, the **stime**, **utime**, and **mem rusage** reports for finished jobs in RTM and LSF do not match.
RPMs not relocatable	Because of specific configuration management system and hardcoded paths in some files, no packages can be installed in `/opt` thus, the RTM RPMs are not relocatable and the **rpm --prefix=/usr/local/workspace/rtm rtm*.rpm** command does not work. For now, Platform RTM must be installed in `/opt/`, turn off system cleanup script, and perform symbolic links in `/opt` as required.
License features truncated in Platform RTM	The lmstat output truncates feature names to 23 characters when the expiry date information is shown (**-i output**). If there are feature names greater than 23 characters and the first 23 characters are the same, RTM shows only one feature. To work around this issue, buy and use Flexlm API.
Data Query graphs display the same title in Platform RTM	2 graphs have the same title when they are created with data query. As workaround, go to **Console>Configuration>Settings - Visual >Data Queries> Maximum Field Length**. You must increase the maximum data query field length value.
License data filtering does not work when fields contain commas or quotation marks	Filtering does not work if the license server has commas in any of the filter fields. If the vendor name has a comma, it displays correctly on the detail page. But if you try to filter by the vendor name, it removes all data and sets vendor filter name back to All.

Issue	Description

Rsyslog cannot start because of missing module	On some systems, you can see an error in `/var/log/messages` when you try to start rsyslogd.
	
	Example:
	`Oct 11 21:40:06 xrh51612 rsyslogd: could not load module '/usr/lib64/rsyslog/ommysql', dlopen: /usr/lib64/rsyslog/ommysql: cannot open shared object file: No such file or directory`
	
	Workaround:
	1. Go to `/usr/lib64/rsyslog/` directory.
	2. Check for ommysql.so shared library.
	If it is missing, the mysql module for rsyslog is not installed. Check your OS reference to install it.
	3. Create symbolic link:
	`ln -s ommysql.so ommysql`
	4. Restart service:
	`service rsyslog restart`

Job's running record status is shown as Exited and the job record is not found on the Job Graph/Job Detail page as the time zone of the lsfpoller in RTM Server is not adjusted to remote lsfpoller	All remote pollers must be in the time zone of the cluster. The timezone of the Cluster can be set in **Console->Grid Management->Cluster [edit]->Advanced**.
Error logged polling multiple license servers	When Platform RTM is configured to poll multiple license servers, you might encounter the following error message in the `cacti.log` file: `LIC ERROR: A database insert failed! Error:'1114'` Error 1114 indicates that the table is full. The error occurs because the default value of `max_heap_table_size` for the MySQL database is 64M. This value can result in the License Dashboard "Features In Use" records not being fully updated and experiencing decreased system performance. To resolve this issue, edit the `/etc/my.cnf` file and increase the specified value for `max_heap_table_size`. The new value to specify depends on the number of license servers that Platform RTM polls: Number of license servers - max_heap_table_size 10 - 128M, 20 - 256M, 30 - 1024M 40 - 1280M 50 - 1536M The values assume that for each license server, there are a total of 1000 features; 100 licenses are issued per feature; and 10 licenses are in use (checked out) per feature. Therefore, these values assume that the total number of checkouts per server is 10 000.

Issue	Description

Job graph is not drawn if RRD file's last update time is greater than update time	The rrd files updates are based on the RTM hosts whereas the rusage update times are based on cluster. This inconsistency happens when the actual time was out of sync and a few minutes ahead of the LSF cluster.
	
	Follow these workaround steps:
	1. Update rrd file.
	Example:
	`/usr/bin/rrdtool update /opt/cacti/gridcache/ 923_0_3_1280202981_absolute.rrd --template`
	`utime:stime:mem:swap:npids:npgids:threads 1280203322:67:1:577764:801592:3:1:4 1280203478:165:2:577764:801592:3:1:4`
	`ERROR: illegal attempt to update using time 1280203322 when last update time is 1280203428 (minimum one second step)`
	`# date -d '1970-01-01 1280203428 sec utc' Tue Jul 27 12:03:48 CST 2010`
	`# date -d '1970-01-01 1280203322 sec utc' Tue Jul 27 12:02:02 CST 2010`
	2. Delete the `update_time="2010-07-27 12:02:02"` record in the table "grid_jobs_rusage".
	The correct Job graph is drawn.

Cannot forward **syslog** messages to the RTM host.	This message is displayed when the RTM host is using **rsyslog** and the other host which is sending messages is using **syslog**. To resolve this issue, edit `/etc/rsyslog.conf` by adding this line: `:hostname, contains, "syslogd"`
When embedding graphs in Lotus Notes® email the icon shows as red X.	When a graph is embedded in an email, the icon shows as a red X. The graph is attached to the email so you can view it, but it is not inline as expected. As workaround: 1. Go to Console -> Configuration -> Settings 2. Click the **Misc** tab. 3. Select **Enable Lotus Notus (R) tweak**
Not able to apply new skin for Platform RTM while a third-party plug-in is in use	Certain non-certified Cacti third-party plug-ins might be incompatible with the new Platform RTM configuration. If you encounter compatibility issues with third-party plug-ins, you might disable the **Ptskin** plug-in from **Console ->Configuration ->Plugin Management** to restore the function of those plug-ins.
Job time is not reported correctly for jobs with pre-execution scripts	If a job has a pre-execution script, LSF includes the time in the running value and RTM also includes this time in the pending value.
Issues with requeue jobs	• The final job status is not updated after a requeued job is finished. Sometimes Platform RTM does not show the correct status of a finished job that was requeued. Since LSF resets the run time when the job is requeued, the total time that is shown is based on the last requeue. • Value of PEND time on the Job List page is not updated for requeued jobs. Currently, Platform RTM does not show the correct details for the pending time in the Job List page. Get the correct information from the Job Details page. • Job RUN TIME does not show correct information if a job is requeued multiple times.
Email message text box is restricted to 255 characters	The text box in the email message can save only 255 characters. To expand the number of characters, do the following in MySQL Cacti: 1. Alter table settings modify column `value` varchar(1024) not null default ''. 2. Quit.

Issue	Description
Internet Explorer cannot handle URL with underscore ("_")	If you use the Internet Explorer (IE) to log in to a Platform RTM system that has an underscore in the host name, you can enter the login and password but stays on the password page when Login is clicked. This problem applies in both IE7 and IE8. As workaround, use a different alias for the host or it's IP address in the URL.
Existing host's graph is not updated after the host template's **Associated Graph Templates** or **Associated Data Queries** is changed	After the host template's Associated Graph Templates/Associated Data Queries is changed, the Data Queries are not automatically added and are reindexed only. For now, Graph Templates are only updated after more than 10 minutes.

Chapter 4. Troubleshooting Tips

Detecting usual causes of LSF cluster's diminished status

If LSF cluster is shown in diminished state, refer to the following list for useful tips on resolving specific issues that are related to this state:

- Ping `masterhost/rtm host`. Both hosts must be able to ping each other.
  - Add ip/hostname in either `/etc/hosts` or `LSF_TOP/hosts` and restart the cluster.
  - Add the rtm host name as a client host in the **lsf.cluster.clname** file. Then, run **badmin reconfig**, **lsadmin reconfig**, then restart **master lim** only.
- Check that the EGO enabled status. When you are adding cluster to RTM, ensure that the setting for "EGO enabled" matches LSF cluster's setting.
- "Diminished" status happens when the "minor" collection period is set to be greater than the "major" collection period in the Job Collection Settings for cluster.
- Check the lim log. If LSF lim is not accepting requests from RTM host, it logs a message at default log level when it rejects API requests from RTM host. Add host as LSF client.
- Check for firewall issues:

  `telnet <lsfmasterhost> <lim port>`

  Source the LSF environment in RTM host and run commands like **lsid**, **lsload**, and **bhosts**, in case LSF is installed on a shared filesystem that is inaccessible on RTM host.
- Check that RTM is able to obtain data with LSF APIs from master host, run:

  `./gridhosts -C <clusterid> -d`
- Check that the appkey in the database matches with the one in `/opt/rtm/etc/.appkey`.

  Example:

  ```
  # cat /opt/rtm/etc/.appkey
  a064a7beac71a0596181b6939980eff620ffd6b4
  # mysql cacti -e "select * from settings"  | grep -i key
  app_key a064a7beac71a0596181b6939980eff620ffd6b4
  ```
- Verify that LSF version matches with RTM cluster configuration for that cluster.
- Check whether the grid_processes ran for an unreasonably long time:

  ```
  mysql cacti -e "select * from grid_processes"
  ps -aef | grep -i grid
  ```

  Because of a known design issue, if grid binaries for one cluster hang, other clusters are shown in diminished status.

  Use reasonable LSF API timeouts and timeouts in RTM configuration. If the problem persists even after timeout period, do the following steps:
  - Disable the cluster.
  - Stop the hanging grid binaries so that data collection for other cluster continues. Try to identify why the grid binaries for the cluster hang.

You might see the lim is shut down and cluster status is Down but the Load/Batch of master host status is Ok.

Note RTM is not in real time and lim status is not refreshed in real time. The data depends on how often data is polled (configurable) and how often data is aggregated (5-minute cron job and daily aggregation). There is a configuration option to control the interval named poller_interval with 300 seconds as a default value.

Example:

```
$ mysql -uroot -p -e "select * from cacti.settings where name='poller_interval'"
```

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