Platform Analytics
Version 9.1
for LSF

Release Notes

SC14-7574-00

Note

Before using this information and the product it supports, read the information in "Notices" on page 17.

First edition

This edition applies to version 9, release 1, modification 0 of Platform Analytics (product number 5725-G84) and to all subsequent releases and modifications until otherwise indicated in new editions.

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Chapter 1. What's new in Platform Analytics

The following topics describe what is new in IBM® Platform Analytics.

New workbooks

Platform Analytics 9.1 provides the following new workbooks:

- Pending Reasons — Shows the number of instances for each pending reason
- License Denials — Shows the number of denials per license feature and server
- FlexNet Manager (FNM) Workload Accounting — Analyzes license usage for jobs that use licenses
- FNM License Usage — Analyzes license consumption and utilization by features and servers
- FNM Denials — Analyzes denial events and license denials across license servers

Support for IBM Platform Dynamic Cluster

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

Support for LSF/XL

Platform Analytics 9.1 supports LSF/XL in Platform LSF 9.1. The LSF/XL feature of Platform LSF Advanced Edition is a new architecture to address long-term scalability and performance demands of extreme workloads. It is based on Platform MultiCluster technology, but LSF/XL is not a MultiCluster mode. It is designed for a single data center.

Additional functionality is available through Platform Application Center

Platform Analytics 9.1 can be integrated with IBM Platform Application Center Standard Edition for additional functions, such as batch report generation, report subscription, and viewing past reports.

This is a summary of the new features that are available with the integration of Platform Application Center and Platform Analytics:

- **Simplified Tableau Server configuration**

  A new `tableauconfig.sh` script is now available to simplify the task of configuring Platform Application Center to work with Platform Analytics. The script uses the values that you specify in the `tableau.conf` file to automate the configuration of the connection between Platform Application Center and the Analytics database.
- **Support export in CSV format**

  You can now export a Platform Analytics report in comma-separated value (CSV) format.
- **Schedule and email now**

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Platform Application Center users with report administrator authority now have the option, when you create a report schedule, to create and send a test report to an email address that they specify. An administrator can then test and verify the report without having to wait until the scheduled time.

- **Delete report schedule and history**

  Platform Application Center users with report administrator authority can now remove a report schedule, subscriber information, and report history, even if the report was already deleted in Tableau Server.

- **Report email now contains a link to Platform Application Center**

  The email for subscribed reports now includes a link (URL) to the Platform Application Center web page.

- **Multiple reports per email**

  You can now create a report schedule that includes multiple reports, and those reports are sent in a single email.

Supported third-party products

Platform Analytics 9.1 supports the following third-party products:

- Flexera FlexNet Manager v11, v11.5, v14, and v15
- Flexera FlexNet Server (FlexLM) v11.*x*

Platform Analytics documentation

Along with the software packages, you can download the following PDF documents from the IBM Publications Center at www.ibm.com/e-business/linkweb/publications/servlet/pbi.wss:

- *Installing Platform Analytics 9.1 for LSF*, SC14-7571-00
- *Administering Platform Analytics 9.1 for LSF*, SC14-7572-00
- *Upgrading to Platform Analytics 9.1 for LSF*, SC14-7573-00
- *Integrating Platform Analytics into Platform Application Center*, SC14-7575-00

Chapter 2. What's changed in Platform Analytics

Platform Analytics 9.1 includes changes in enhanced reporting.

Enhanced reports

Platform Analytics 9.1 provides updates to the following existing workbooks:

- Workload Accounting — Provides the following enhancements:
  - Add CPU Time Ranking and Job Efficiency Ranking pie charts on the Rankings dashboard for both the Workload Accounting Raw and Daily workbooks.
  - Add Measure and Roll-up Type report options on the Rankings dashboard for both the Workload Accounting Raw and Daily workbooks.
  - Add CPU Time Ranking and Job Efficiency Ranking filters for each dashboard for both the Workload Accounting Raw and Daily workbooks.
- FlexLM License Usage — Provides time-based FlexLM license usage data to trace license consumption.

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Chapter 3. System requirements

These are the system requirements and recommended hardware specifications for Platform Analytics 9.1.

Important: Do not use a virtual machine (VM) for any of the hosts. All Platform Analytics hosts must run on physical, standalone hardware.

Analytics node

These are the requirements for the Analytics node host.

Supported operating systems

Table 1 describes the supported operating systems for the Analytics node.

Table 1. Supported platforms and operating systems for the Analytics node

Platform and hardware	Operating systems
AIX® 64-bit	• IBM AIX 6 • IBM AIX 7
Linux x86 64-bit (AMD64, EM64T)	• Red Hat Enterprise Linux 4, 5, and 6 • SUSE Linux Enterprise Server 10 and 11 • SUSE Linux Enterprise Server 11 SP2

Recommended hardware specifications

Table 2 describes the optimal hardware configuration of the Platform Analytics node, depending on the size of the clusters in which the node resides.

Table 2. Recommended hardware specifications for the Analytics node hosts

Cluster size	RAM	CPU	Local hard disk	Network
Medium (100 - 1000 hosts)	4 GB	2 × 2.4GHz	7200 RPM SATA/SCSI/SAS 50 GB	Gigabit Ethernet
Large (more than 1000 hosts)	8 GB	4 × 2.4GHz	7200 RPM SATA/SCSI/SAS 50 GB	Gigabit Ethernet

Analytics database

These are the requirements for the Analytics database host.

Supported database

Platform Analytics supports the Vertica Analytic Database version 5.1.5. The license key is provided with the distribution list.

You can install the Vertica database on these (x86) 64-bit operating systems:

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- Red Hat Enterprise Linux 5 or 6
- SUSE Linux Enterprise Server 10 or 11
- Debian Linux 5
- CentOS 5 or 6

Recommended hardware specifications

Table 3 describes the recommended hardware specifications for the Analytics database host, depending on the size of your cluster. The specific hardware recommendations for each database host are the same.

Table 3. Recommended hardware specifications for the Analytics database hosts

Cluster size	Number of hosts	RAM	CPU	Local hard disk	Network
Medium (100 - 1000 hosts)	3	16 GB	4 × 2.4GHz	10000 RPM SATA/SCSI/SAS/SSD RAID 01 or 10 300 GB	Gigabit Ethernet
Large (more than 1000 hosts)	more than 3	32 GB	8 × 2.4GHz	10000 RPM SATA/SCSI/SAS/SSD RAID 01 or 10 1 TB	Gigabit Ethernet

Analytics server

These are the requirements for the Analytics server host.

Supported operating systems

Table 4 describes the supported operating systems for the Platform Analytics server host:

Table 4. Supported operating systems for the Analytics server

Platform and hardware	Operating systems
Windows x86 64-bit (AMD64, EM64T)	• Windows 2003 (all) • Windows 2008 Server (all)

Recommended hardware specifications

If you are not using asynchronous data loading mode, the hardware configuration shown in Table 5 should be sufficient.

Table 5. Recommended hardware specifications for the Analytics server host, not using asynchronous data loading

RAM	CPU	Local hard disk	Network
4 GB	4 × 2.4 GHz	7200 RPM SATA/SCSI/SAS 50 GB	Gigabit Ethernet

If you are using asynchronous data loading mode, the Table 6 on page 7 describes the recommended hardware specifications for the Analytics server host, depending on the size of your cluster.

Table 6. Recommended hardware specifications for the Analytics server host, using asynchronous data loading

Cluster size	RAM	CPU	Local hard disk	Network
Medium (100 - 1000 hosts)	4 GB	4 × 2.4GHz	7200 RPM SATA/SCSI/SAS 50 GB	Gigabit Ethernet
Large (more than 1000 hosts)	8 GB	4 × 2.4GHz	7200 RPM SATA/SCSI/SAS 50 GB	Gigabit Ethernet

Note: Using an NFS disk mount instead of a local hard disk is not recommended.

Analytics reporting server

Table 7 lists the system requirements for the Tableau Server host.

Table 7. Hardware configuration requirements for Tableau Server

Operating system	RAM	CPU	Services	User accounts
Windows Server 2003 (SP2 or higher) Windows Server 2008 Windows Server 2008 R2	4 GB and above	Dual-core	Do not run Internet Information Services (IIS) to avoid conflicts with the web server port 80.	Access to an administrator account to install software and services. Access to a user account that the service can use (optional).

Table 8 describes the optimal hardware configuration of the Platform Analytics reporting server, depending on the size of your cluster.

Table 8. Recommended hardware specifications for the Analytics reporting server host

Cluster size	RAM	CPU	Local hard disk	Network
Medium (100 - 1000 hosts)	4 GB	4 × 2.4GHz	7200 RPM SATA/SCSI/SAS 50 GB	Gigabit Ethernet
Large (more than 1000 hosts)	8 GB	4 × 2.4GHz	7200 RPM SATA/SCSI/SAS 50 GB	Gigabit Ethernet

Supported web browsers

Platform Analytics supports the following web browsers:

- Microsoft Windows:
  - Microsoft Internet Explorer 8 and 9
  - Mozilla Firefox 10, 11, and 12
- Linux:
  - Mozilla Firefox 3.6 on Linux

Adobe Flash version 8 or later is required to access report charts.

Supported LSF family

Platform Analytics supports the following products in the LSF family:

LSF

Platform Analytics supports the following levels of LSF:

- LSF 7.0.2 or higher
- LSF 8.0
- LSF 8.0.1
  - Add-on Data Set requires LSF 8.0.1 with Aug-2011 Qpk and Build 183436
- LSF 8.3 Standard Edition
- LSF 9.1 Standard Edition and Advanced Edition
-

PAC

Platform Analytics supports IBM Platform Application Center 9.1 Standard Edition.

Supported OEMs

Analytics database

Platform Analytics supports Vertica Analytic Database version 5.1.5.

Chapter 4. Scalability

Table 9 describes the maximum scale of clusters that Platform Analytics supports.

Table 9. Maximum scale for supported clusters

Data type	Scalability factor	Value
LSF data	Number of hosts	20 000
	Number of finished jobs per day	5 000 000
FLEXnet server data	Number of license features	2 000
	Number of license servers	450
FLEXnet Manager data	Number of license events per day	3 000 000

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Chapter 5. Known issues and limitations

These are the Platform Analytics and third-party known issues and limitations.

Platform Analytics known issues and limitations

Table 10 lists the known Platform Analytics issues and limitations.

Table 10. Platform Analytics issues and limitations

Issue	Description
Firefox cannot display the allocated colors for the graphs in workbooks.	When using the Firefox browser to view workbook dashboards, the allocated colors for the graphs cannot be displayed to the right of the graph. This is a limitation in the browser's ability to display the necessary number of colors. To avoid this issue, use the Internet Explorer browser.
The Queue filter contains slot status choices in the Cluster Summary of the Cluster Capacity workbook.	In the Cluster Summary dashboard of the Cluster Capacity workbook, the choices for the Queue filter incorrectly show slot statuses instead of queue names.
Some records may be lost the first time FlexLM and FNM data is transformed.	The first time that raw data for FlexLM and FNM is transformed, some records may be lost. This problem only occurs the first time the ETL flow runs to transform the data. Do the following to rerun the ETL flow and recover the missing records: 1. Run the following SQL statements on your Analytics database: a. `DELETE FROM AGGREGATE_INFO WHERE CLUSTER_NAME='`*`cluster_name`*`' AND RAW_TABLE_NAME='`*`anchor_table_name`*`';` where: *`cluster_name`* The name of your cluster *`anchor_table_name`* Either `RPT.FLEXLM.LICENSE.DENIALS` or `RPT.FLEXLM.LICENSE.DENIALS.FLEXEVENTDENIAL` b. `DELETE FROM RPT_LICENSE_DENIALS_RAW WHERE CLUSTER_NAME='`*`cluster_name`*`' AND PLC_ID='`*`plc_id`*`';` where: *`cluster_name`* The name of your cluster *`plc_id`* The PLC ID of your Analytics node 2. On the Analytics server, start the Analytics Console, and run the **LicenseRelatedETL** task.
LSF Dynamic Cluster provision events can cause the appearance of duplicate log records.	Using LSF Dynamic Cluster, provision events such as "end of provision" and "save provision" cause LSF to record new events in the `lsb.status` file. If these provision events occur at the same time, duplicate records will appear in the `lsb.status` file.
The graph in the Pending Ranking dashboard is unreadable when more than 10 pending reason types are selected.	In the Pending Reasons workbook, the default report option in the Pending Ranking dashboard is to display all pending reason types. When there are more than 10 pending reason types, the information displayed in the graph is incomplete and unreadable. To avoid this issue, select fewer pending reasons from the Report Options pane.
Overlapping chart data in the FNM License Usage workbook.	In the FNM License Usage workbook, if you choose more than one feature at the same time, the data in the graph in the License Usage by Server dashboard will appear overlapped. To avoid this issue, select one feature at a time.

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Table 10. Platform Analytics issues and limitations (continued)

Issue	Description
Transformation of FlexLM license usage data may time out if the raw data is delayed.	The FlexLMLicusage data transformer processes report data based on the raw FlexLM license usage data collected from all PLCs. If the raw license usage data is delayed for a specific PLC, the ETL will wait for a timeout period, and then continue to process data from other PLCs. The default timeout period is 1.5 days. The FNMLicusage, FNMWorkload, and LicenseDenials data transformers have the same timeout period; however, their data latency checking does not depend on PLCs.
Calculations in the License Usage by Feature dashboard of the FlexLM License Usage workbook may be incorrect for data collected by data loaders with different sampling intervals.	License features that run on license servers sampled by FlexLMLicusageLoader of different PLCs with different sampling intervals might contain incorrect calculations in the License Usage by Feature dashboard of the FlexLM License Usage workbook. The average license usage of the features may be larger than the average # of features, and the license utilization of the feature may exceed 100%. To avoid this issue, ensure that the FlexLMLicusageLoader data loaders on different PLCs are set to the same sampling interval (**INTERVAL_PERIOD**).

FLEXnet events data loader does not support mapped network drives on Windows.	In the FLEXnet events data loader properties file (**flexliceventloader.properties**), if you defined the `LicenseLogFile` parameter to point to a Windows UNC file path or to a mapped network drive, the data loader log file shows a "not a valid file" or "does not exist" error for "FlexlmEventParser.java".
	
	The FLEXnet events data loader (**flexliceventsloader**) does not support mapped network drives and has limited support for UNC file paths.
	
	To work around this issue, use a slash (/) to define a UNC file path or a local Windows file path rather than a backslash (\). For a mapped network drive, use the UNC file path instead of the mapped network file path.
	
	For example:
	• For a local log file (`c:\logs\flexlicense.log`), use the following to define a Windows file path:
	`LicenseLogFile=c:/logs/flexlicense.log`
	• For a mapped network drive (`\\fileserver\logs\flexlicense.log` mapped to `z:\logs\flexlicense.log`), use the following to define a UNC file path instead of the mapped network file path:
	`LicenseLogFile=//fileserver/logs/flexlicense.log`

Cannot install the Platform Analytics node.	The Platform Analytics node installation will fail when the **LSF_VERSION** parameter defined in the `lsf.conf` file is not the actual version. To resolve this issue, before you install the Analytics node, edit the `lsf.conf` file and change the value of **LSF_VERSION** to an appropriate version. For example, if the actual LSF version is 7.*x* but the **LSF_VERSION** in `lsf.conf` is set to `active`, then before you install the node change the **LSF_VERSION** to `7.0`. After installing the node change the **LSF_VERSION** back to `active`.
Unable to see memory value in the Resource usage report.	When you submit a job to query resources that contains two or more **-R** "**res_req**", the data transformers gets only the first memory value.
Selected dimension is shown as `#Name` in Excel.	If the dimension name has a hyphen (-) prefix, then it is displayed as `#Name` in Excel. To avoid the error, manually set the name to text that does not start with a hyphen.
The values in the report are still showing in MB even though resource usage limits are in GB or KB.	In Platform Analytics, memory usage is shown in MB by default. If you use **LSF_UNIT_FOR_LIMITS** in `lsf.conf` to specify a large unit in GB, Platform Analytics cannot identify the change (from MB to GB). For example, it displays as 100 MB if the value is 100 GB.

Table 10. Platform Analytics issues and limitations (continued)

Issue	Description

Data loaders on clusters running Platform LSF versions 7.0.4 or later do not obtain any job data if `lsb.stream` is not enabled.	By default, IBM LSF versions 7.0.4 or later do not enable the `lsb.stream` file to export job event data.Platform Analytics requires this feature to be enabled from the LSF side.
	
	To resolve this issue, enable the `lsb.stream` file to export job event data.
	1. Edit the `lsb.params` file.
	• UNIX: `$LSF_ENVDIR/lsbatch/`*`cluster_name`*`/configdir/lsb.params`
	• Windows: `%LSF_ENVDIR%\lsbatch\`*`cluster_name`*`\configdir\lsb.params`
	2. In the `lsb.params` file, edit the **Parameters** section to enable the exporting of LSF job event data to the `lsb.stream` file.
	Add the following lines to the **Parameters** section:
	`# Enable streaming of lsbatch system events`
	`ENABLE_EVENT_STREAM=y`
	`# Determines the location of the lsb.stream file. This parameter is optional.`
	`# The default location is: $LSB_SHAREDIR/{clustername}/logdir/stream.`
	`# EVENT_STREAM_FILE=/tmp/lsb.mystream`
	`# Determines the maximum size of the lsb.stream file. This parameter is optional.`
	`# The default size is 100MB.`
	`# MAX_EVENT_STREAM_SIZE=1024`
	3. In the `lsb.params` file, edit the **Parameters** section to enable the exporting of IBM LSF job event data to the `lsb.stream` file. Add the following lines to the **Parameters** section:
	`# Enable streaming of lsbatch system events`
	`ENABLE_EVENT_STREAM=y`
	`# Determines the location of the lsb.stream file. This parameter is optional.`
	`# The default location is: $LSB_SHAREDIR/{clustername}/logdir/stream.`
	`EVENT_STREAM_FILE=LSF_TOP/work/cluster_name/logdir/stream/lsb.stream`
	`# Determines the maximum size of the lsb.stream file. This parameter is optional.`
	`# The default size is 1024MB.`
	`# MAX_EVENT_STREAM_SIZE=1024`
	4. Reconfigure **mbatchd** to apply these changes.
	`badmin mbdrestart`
	5. To verify that these changes are in effect, verify that the **lsb.stream** files exists.
	By default, `lsb.stream` is located at the following directories:
	• UNIX: `$LSB_SHAREDIR/`*`cluster_name`*`/logdir/stream`
	• Windows: `%LSB_SHAREDIR%\`*`cluster_name`*`\logdir\stream`
	If you defined the **EVENT_STREAM_FILE** parameter in `lsb.params`, check the specified file path for the `lsb.stream` file.

Third-party known issues and limitations

Table 11 lists the known third-party issues and limitations.

Table 11. Third-party issues and limitations

Issue	Description
Tableau desktop cannot publish workbooks on Windows 2003 with Internet Explorer version 6.	On Windows 2003, the default version of Internet Explorer is version 6. However, Tableau does not support Internet Explorer version 6 and will be unable to publish workbooks. To avoid this issue, upgrade Internet Explorer to version 8 or higher.
Date range slider bar handles are in the wrong position.	When publishing a workbook by connecting to an empty table, the handles in the date range slider bar will be in the wrong position, all the way to one side of the range (left or right). To work around this issue, once you have data in the table, click the **Refresh** icon at the top of the dashboard.
Online map cannot be loaded in workbooks that show locations.	If Tableau Server has no access to the Internet, then, in workbooks that show locations, the online map cannot be loaded, and no location information is displayed for users. To avoid this issue, ensure that Tableau Server has Internet access.

Table 11. Third-party issues and limitations (continued)

Issue	Description
The exported .csv file contains meaningless data when attempting to export from a dashboard with more than two views.	Tableau does not support exporting data to a .csv file from the Tableau Server Web page if the number of views on a dashboard is more than two. Tableau can only export the data area. This is also evident if you schedule and subscribe to a report with Platform Analytics integrated into Platform Application Center, because Platform Application Center uses the Tableau command line to generate the .csv file. To avoid this issue, only schedule a report to export to CSV format for the DATA view.
A message “Out of memory” displays after clicking on the **Data** tab.	This error message is displayed when you try to view big data (greater than 4 GB). To avoid the error, you can either narrow down the data range or increase the memory size of the host.
Session busy error while viewing a dashboard and attempting to sort big data.	When viewing a dashboard, if you select big data and then try to sort, the reporting server may display the following error: `'Unexpected Server Error: Session busy, please try later.'` For example, you will see this error if you select data for more than three years and try to drill down to a specific year that has more than 20K projects and sort by project name. To avoid the error, narrow down the data range or try to view using Platform Analytics Designer.
A message "An error occurred generating images for export" displays while trying to export big data as an Image.	This error message is displayed when you try to export big data to an image. To avoid this error, narrow down the data range or export big data to CSV or PDF.
Timeout when publishing or viewing the workbook.	Tableau Server has several built in time limits for process times and query executions. These limits can keep long-running queries from monopolizing Tableau Server resources. Desired long-running tasks may be prematurely capped by these timeouts. Error messages will warn that these timeouts have been exceeded. They can be seen in Desktop, on Server and while using tabcmd. To avoid this error, follow the instructions as explained here: http://www.tableausoftware.com/support/knowledge-base/timeout-error
In workbooks, the data range is displayed as AGG (Date Range - Min) - AGG (Date Range - Max) or All-All.	When there is no data selected, for Tableau 6.0.x, the date range will show as **AGG(Date Range - Min) - AGG(Date Range - Max)**. For Tableau 6.1, the date range will show as **All - All**. To avoid this error, select at least minimum data and try to generate report.

An error occurs while installing the Analytics (Vertica) database. For example:
 	
`Installing vertica database on host` *`host name`* `error: Failed dependencies:`
 	
`bc is needed by vertica-5.1.5-0.x86_64`
 	
`sudo is needed by vertica-5.1.5-0.x86_64`
 	
`/bin/sh is needed by vertica-5.1.5-0.x86_64`
 	
`Configuring vertica database...`
 	
`./AnalyticsVerticaInstaller.sh: line 307: /opt/vertica/sbin/install_vertica: No such file or directory`
 	
`./AnalyticsVerticaInstaller.sh: line 310: /opt/vertica/sbin/install_vertica: No such file or directory`
	If this error occurs, the Vertica database installation has failed. It is a known issue that, in some environments, the Vertica rpm installation fails because the components `bc`, `sudo`, and `sh` are not available or accessible.
	
	To work around this issue, alter the Analytics Installation script to apply **`--nodeps`** to this part of the installation:
	1. Edit the file `AnalyticsVerticaInstaller.sh`.
	2. Navigate to the following line:
	`rpm -Uvh ${rpm_package}`
	3. Change the line to:
	`rpm --nodeps -Uvh ${rpm_package}`
	4. Save the file and rerun the `AnalyticsVerticaInstaller.sh` installer.

Table 11. Third-party issues and limitations (continued)

Issue	Description
In graphs, colors are the same for different measures and dimensions.	Colors are automatically picked for different measures and dimensions, so there are chances of seeing the same colors used for different measures and dimensions in the graphs. To avoid this issue, specify different colors using Platform Analytics Designer.

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