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## Pivotal Greenplum® Command Center 3.0.0 Release Notes

Greenplum Command Center version: 3.0.0

Greenplum Workload Manager version: 1.6.0

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### About This Release

Pivotal Greenplum Command Center release 3.0.0 contains Greenplum Command Center release 3.0.0 and Greenplum Workload Manager release 1.6.0.

The Greenplum Command Center software is brand new for this release. A native HTML5 front-end and Go backend replace the previous Flash and Python application.

See [About Greenplum Command Center 3.0.0](#) for information about features and improvements in the Command Center 3.0.0 release.

See [About Greenplum Workload Manager Release 1.6.0](#) for information about features and improvements in the Workload Manager 1.6.0 release.

### Supported Platforms

Greenplum Command Center may be installed on the following platforms:

- Red Hat Enterprise Linux 5, 6, or 7, 64-bit
- CentOS 5, 6, or 7, 64-bit
- SUSE Linux Enterprise 11SP4, 64-bit
- Greenplum Database 4.3.x

Greenplum Workload Manager may be installed on the following platforms:

- Red Hat Enterprise Linux 5.5+ or 6, 64-bit
- CentOS 5.5+ or 6, 64-bit
- Greenplum Database 4.3.x

Greenplum Command Center includes:

- OpenSSL version 1.0.1o.

### Pivotal Documentation

Pivotal Greenplum Command Center and Pivotal Greenplum Workload Manager documentation is available on the Pivotal Documentation site at <http://gpcc.docs.pivotal.io/>.

### Greenplum Command Center 3.0.0

The Greenplum Command Center 3.0.0 release contains the Command Center 3.0.0 software release and the Greenplum Workload Manager 1.6.0 release.

### About Pivotal Greenplum Command Center

Pivotal Greenplum Command Center (GPCC) is a management tool for Pivotal Greenplum Database. GPCC monitors query activity and system performance metrics. Pivotal Greenplum Command Center is an interactive graphical web application that can be installed on the master host and used to view and interact with the collected system data from Greenplum Database.

Greenplum Database is a requirement for operating Command Center because Command Center relies on information stored in the Greenplum gpccmon database. Greenplum Database includes data collection agents that run on the Greenplum Database master host and each segment host. The

agents collect data about queries and system utilization and send them to the Greenplum master host at regular intervals. Data stored in the gpperfmon database can be accessed through the Command Center web application or with SQL queries.

## Greenplum Command Center Compatibility

Pivotal Greenplum Command Center is currently certified for the EMC Data Computing Appliance (DCA) and Greenplum Database software-only environments. Command Center monitors the following for each environment:

### Greenplum Data Computing Appliance

- Greenplum Database Module 4.3.x

If you have been using Greenplum's earlier monitoring tool, Performance Monitor, with an older DCA release, we recommend you upgrade to a supported version of DCA.


### Greenplum Database (Software-only Environments)

- Greenplum Database 4.3.x

## About Greenplum Command Center Release 3.0.0

The Greenplum Command Center software is brand new for this release. A native HTML5 front-end and Go backend replace the previous Flash and Python application.

### New Technology

- Native HTML5 frontend – no Flash, no browser plugin required
- Completely new backend written in [Go](#) 
- Same data collection agents, same gpperfmon database schema – no corresponding changes in Greenplum Database


### New Upgrade Process

- Preserve your instance configurations with the new `gpccmdr --migrate` command option

### New Console UI

- Reorganized Dashboard view
- More responsive Query Monitor and Query Details views
- Host Metrics view with new skew severity indication
- Cluster Metrics view with synchronized charts
- History browser view featuring user-defined timespan, integrated charts and query list, pan and zoom timeframe
- System monitoring views for Storage and Segment status

### GPCC 2.x features not carried over into 3.0

NOTE: you can continue to run 2.x on a separate port to access these features until they are reintroduced in a future GPCC 3.x release. See [Running GPCC 2.x in Parallel with 3.x](#)  for instructions to configure this setup.

- Manage resource queues
- Workload management
- Stop and start Greenplum Database
- Recover and rebalance segments

- Usage report
- Display DCA hardware health
- Log alerts
- System detail by metric view

## Command Center Installation and Upgrade Instructions

There is now an upgrade path for all 1.x, 2.x, and 3.x versions. See `gpcmdr --migrate` [for details](#).

### DCA and Greenplum Database Software-only

Instructions for installing, configuring, and upgrading your system for Pivotal Greenplum Command Center are provided in the latest *Pivotal Greenplum Command Center 3.0 Administrator Guide*.

## Accessing Command Center

For enhanced security, beginning with Greenplum Command Center release 1.3.0.1, the `gpadmin` user is not permitted to log in to the Command Center. The Command Center does not accept logins from any user on the host running GPCC configured with `trust` authentication in the `pg_hba.conf` file.

You should create new administrative, operator, and regular Command Center users for Command Center. To create a new Command Center user, first you create a Greenplum Database role, then edit the `pg_hba.conf` file to give that role access to Command Center. An example of this procedure is provided in the *Greenplum Command Center Administrator Guide* and more detailed information can be found in the *Greenplum Database Administration Guide*.

## Greenplum Command Center Resolved Issues

The following table lists issues that were resolved in Pivotal Greenplum Command Center.

Issue	Description	Fixed In
CMDR-1999	Failed to start instance without setting of PGHOST and PGPORT.	3.0.0
CMDR-1910	GPCC hangs on “Loading” because request to “/api” does not respond.	3.0.0
CMDR-1996	Orphaned instances after upgrade	3.0.0
PT-87736724	The Command Center installer does not have support to upgrade existing Command Center instances when upgrading to a new release.	3.0.0

## Greenplum Command Center Known Issues

This section lists the known issues in Pivotal Greenplum Command Center 3.0.0.

Issue	Description
CMDR-297	Heavy workload on the Greenplum Database can affect responsiveness. The refresh rate of the Command Center user interface can be adversely affected by simultaneous heavy workload on the underlying Greenplum Database.
ZD-39405	Systems with segment host names that have changed since GPDB initialization will not show cluster metrics.

## Greenplum Workload Manager 1.6.0

Greenplum Workload Manager 1.6.0 is included in the Pivotal Greenplum Command Center 3.0.0 package. Download the Greenplum Command Center installer distribution from <http://network.pivotal.io>.

## About Pivotal Greenplum Workload Manager

Greenplum Workload Manager services collect query execution data and real-time system statistics on each segment host. The Workload Manager rules engine allows you to create rules that specify criteria that trigger an action, for example terminating a query that runs longer than a specified time or consumes too many resources on a segment host.

Real-time query performance can be viewed in the Workload Manager `gptop` curses-based GUI.

## Enhancements and Changes in Greenplum Workload Manager Release 1.6.0

The following are enhancements and changes in Greenplum Workload Manager 1.6.0.

### Improved Hostname Handling

During startup, the Kraken framework detects and ignores duplicate hostnames. Duplicate hostnames are hostnames that resolve to the same machine.

### Improved Response to Cancel Query

The amount of time Workload Manager takes to respond to a query cancellation request has been reduced to a minimum so that the request is delivered to Greenplum Database without delay.

## Enhancements and Changes in Greenplum Workload Manager Release 1.5.0

The following are enhancements and changes in Greenplum Workload Manager 1.5.0.

### Removed Option to Install Workload Manager with gpcmdr Command

The Greenplum Command Center 2.4.0 `gpcmdr --setup` utility no longer offers to install Greenplum Workload Manager. Workload Manager must be installed using its installer, `gp-wlm.bin`, which is located in the Command Center installation directory. See [Installing Greenplum Workload Manager](#) for installation instructions.

### Publishing Connections and Sessions

By default, Workload Manager now publishes information about idle Greenplum Database sessions. An idle session represents a client connection without an active or queued query.

To create a rule that is triggered by idle transactions, `session_id:host:pid:current_query = "<IDLE>"` in the when clause. For example, the following message records a message when an idle `psql` session is detected.

```
gpdb_record(message="Idle PSQL session")
when host:pid:current_query = "<IDLE>" and host:pid:name = "psql"
```

In Workload Manager 1.0 through 1.4, information about idle sessions was never published, so they could not be detected with a rule. With 1.5.0, idle sessions are published by default.

You can revert to the previous behavior by configuring the following settings to 'false'.

Module	Setting	Description
gpdb_stats	publish_idle_sessions	Publish information about idle Greenplum Database sessions
systemdata	publish_idle_processes	Publish information about idle GPDB processes

In addition to the new `publish_idle_sessions` settings in the table above, the following new configuration setting is available in the `gp-wlm` CLI.

Module	Setting	Description
systemdata	logging:log_level	Configure logging verbosity for the systemdata plugin

Module	Setting	Description
See <a href="#">Configuring Workload Manager Components</a> in the <i>Greenplum Workload Manager User Guide</i> for information about setting configuration values.		

## Including Additional Datums in Action Scope

Rules can now be created or modified to include datums in the action scope in addition to the datums that trigger the rule action. Previously, only values of datums present in the conditional expression that triggered the rule were captured when the rule was triggered.

In Workload Manager 1.5.0, additional datums specified using the `including` keyword are also captured. The context columns in the `gp_wlm_record` table or `gp_wlm_events` view will contain values for datums that triggered the rules as well as values for datums specified using the `including` keyword.

See [Adding Rules](#) in the *Greenplum Workload Manager User Guide* for information about this new feature.

## Application Name Field is Set for Workload Manager GPDB Sessions

Greenplum Database sessions initiated by Workload Manager components are now configured to set the `application_name` field to 'gp-wlm'. This field is available in the `pg_stat_activity` table.

## Greenplum Workload Manager Installation and Upgrade Instructions

The Greenplum Workload Manager installer is in the Greenplum Command Center home directory. See “Installing Greenplum Workload Manager” in the *Greenplum Workload Manager User Guide* for command syntax and usage instructions.

## Enhancements in Greenplum Workload Manager Release 1.4.0

The following are enhancements and changes in Greenplum Workload Manager 1.4.0:

### New Features and Improvements

- A `host:pg_cancel_backend` action is added. This action calls the PostgreSQL `pg_cancel_backend()` function, which sends a SIGINT signal to the backend process, cancelling the current query. This differs from the `pg_terminate_backend()` function, which sends a SIGTERM signal and terminates the session. `host:pg_cancel_backend` events are logged to the `wlm_event_log`.
- A new set of datums is added to provide Greenplum segment virtual memory (vmem) statics.
- The timing values that determine how frequently agents publish datums and rules are evaluated have been changed from integer to float values, allowing sub-second times to be specified.
- A new configuration manager allows viewing, describing, and modifying user-settable configuration values for Workload Manager components. In release 1.4.0, the configuration manager supports viewing, describing, and setting various configuration values for Workload Manager.

### Fixes

- Fixed a rare bug where some queries cannot be ruled upon if the the session id of the query is not present in the `list_backend_priorities()` recordset.
- In certain environments, environment variables were not being set correctly.

## Greenplum Workload Manager Known Issues

This section lists the known issues in Pivotal Greenplum Workload Manager. A work-around is provided where applicable.

Issue	Description
—	In rare cases it is possible for installations or upgrades to fail at the <code>cluster-health-check</code> stage. In the event that the cluster is not healthy, re-run the Workload Manager installer with the <code>--force</code> option. See “Installing Greenplum Workload Manager” in the Pivotal Greenplum Workload Manager User Guide for instructions to run the installer at the command line.