
Trellis™ Real-Time Infrastructure Optimization Platform Release Notes

Version 4.0

December 21, 2015

This document outlines:

1. New Features Overview
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4. Notes and Special Instructions

1. New Features Overview

Version 4.0 of the *Trellis™* platform brings a wealth of new insight to users through several major product additions and enhancements.

Trellis™ Thermal Systems Manager

The most notable new addition is the *Trellis™* Thermal Systems Manager, which introduces real-time thermal monitoring to the platform and adds support for both Emerson and third party thermal sensors. This new, licensed module provides thermal management for the dynamic and often complex data center environment. It provides monitoring, reporting and alarm management for the mechanical chain, from chillers and cooling towers to CRAC and CRAH cooling units. Ever changing thermal patterns can now be managed to optimize efficiency without sacrificing reliability. Use of this module helps prevent wasteful over cooling of the data center, and eliminates troublesome hot spots that consume support resources and increase the risk of downtime.

The *Trellis™* Thermal Systems Manager balances total cooling production with the actual heat load at the room and rack level, which allows facilities management to understand the true thermal capacity for planning and redundancy and reduce wasteful overcooling to lower energy cost. The following benefits are provided when this module is utilized:

- Alarm management, notification and thresholds for environmental sensors
- Improvement to sensor placement
- Listing of average racks inlet/exhaust temperatures
- Management of cooling units and optimization based on performance and efficiency
- Views of IT service processor information for added protection against downtime
- Cooling system monitoring and visibility on how it impacts day-to-day operations
- Net sensible capacity for cooling units and data center spaces

To support visualization of thermal conditions on the data center floor, *Trellis™* Thermal Systems Manager also provides a new 3D graphics rendering engine that allows users to represent spatiality throughout the data center. These 3D visualization features allow users to:

- Quickly identify thermal issues to improve response times and make corrective action plans
- Print and save thermal heat maps to track progress and help communicate the status of the data center
- Support a variety of temperature sensors to quickly pinpoint the exact location and scope of any thermal issues

Trellis™ Platform User Interface (UI) Enhancements

A new and improved user experience was introduced in this release. Users now have new launch pad, log in page, landing page and top navigation bar to ease navigation, as well as a persistent set of global indicators to allow users to always see important notifications on any and every screen they may be using.

Other Key Enhancements

- **API Updates-** Over 30 new APIs have also been added to version 4.0 in an effort to greatly simplify product integrations with third party applications and provide the ability to run queries and perform actions programmatically through the use of RESTful web services. More detailed information about these APIs is found in the *Trellis™* Platform External API Guide.
- **DSView™ Management Software Integration** - This version of the *Trellis™* platform now integrates with the DSView™ management software, an access and control software package also fielded by Emerson Network Power. With this integration, customers using both products can simply launch sessions to IT devices managed by the DSView™ software directly from their *Trellis™* platform application.
- ***Trellis™* Bulk Data Processing tool** - Another key enhancement is an all-new bulk data processor that eases data imports by enabling large quantities of data in the *Trellis™* platform to be added, updated and deleted. This data encompasses information about containers (buildings, floors, spaces and zones), devices (floor-mounted devices, devices placed inside a rack, or device slots such as blade servers) and connections (both power and data). Any number of user-defined properties can be processed with containers, devices and connections.

2. General Feature Overview

The following list details existing components of the *Trellis™* platform software:

- ***Trellis™* Management Console platform** - The console platform enables the unified management of the data center IT and facilities infrastructure. The platform of hardware, software and services provides the ability to collect and analyze real-time data from managed devices using a single user interface.
- ***Trellis™* Change Planner software module** - This module provides features that allow the data center manager to plan the data center for future additions through the use of detailed projects, GANTTS and tasking.
- ***Trellis™* Inventory Manager software module** - This module provides features to better utilize IT and critical infrastructure equipment by managing the inventory of all physical assets and determining used and available space in the data center.
- ***Trellis™* Site Manager software module** - This module reports the health of the infrastructure to data center personnel enabling them to recognize and resolve conditions that impact infrastructure availability and system performance.
- ***Trellis™* Energy Insight software module** - This module provides data center personnel with visibility into the data center's total consumption, energy costs, and PUE which enables them to measure the impact of decisions on the data center energy efficiency.
- ***Trellis™* Reports and BI feature** - Reports are created by opening a canned report and applying filters. Filters are used to select data and combine multiple values using logical connectors.
- ***Trellis™* Power System Manager software module** – This module provides data center personnel with the ability to monitor the power flow of their building through a one line diagram. The one line diagram also allows the data center personnel to see the current consumed and remaining capacity of devices at a glance and take action accordingly. Dashboards provide the ability to view the capacity trend and power status of devices.
- ***Trellis™* Integration API tool** - The integration API allow any third party software system to integrate with *Trellis™* platform .These APIs are available as secure web services.
- ***Trellis™* Process Manager software module** -Designed around industry best practices and input from our customers, *Trellis™* Process Manager includes four set processes as well as a better way to assign and track work and manage approvals through workflow. These four processes include installing, moving, decommissioning and renaming devices. Each of these is configurable to reflect the user's individual workflow. Through these capabilities, the user has the ability to initiate, analyze and report on core data center processes used to drive the business as well as helping them to more effectively manage their

environment. The value of *Trellis*TM Process Manager lies in its ability to reduce the risks associated with changes in the data center and at the same time, improve worker efficiency.

- ***Trellis*TM BMS Integration module** – With the BMS (Building Management System) Integration module, the device monitoring feature of the *Trellis*TM platform has been enhanced to support monitoring of BMS Devices. Features such as update monitoring configurations of monitored devices using Custom Element Libraries and Element Library synchronization have been introduced with BMS Integration.
- ***Trellis*TM Receptacle Monitoring and Control feature** – With the Receptacle Monitoring and Control feature, device views for selected rack Power Distribution Units (PDUs) in the *Trellis*TM platform have been enhanced to support the display of information. Features such as viewing the data points for the receptacle openings on a supported PDU on both the Dashboard & Additional data points tabs of the device view, as well as sending commands from the Control & Configuration tabs of device view have been added to the interface.
- ***Trellis*TM Audit Events feature** – Audit Events feature has been enhanced to cover more of the *Trellis*TM platform functionality to record Audit Events. Examples are Device Create & Place/Delete, Move, Enable/Disable Monitoring, Create/Delete Power Connection and Update Device/Container Properties. Event Description now contains more details such as device name, container name, username, and so on, to give better insight into the respective event. Event Viewer functionality has also been enhanced to support pagination to improve user experience.
- ***Trellis*TM Platform RFID Integration with Gen 2 support** - This feature allows real-time integration between an RFID supported rack and the *Trellis*TM platform. As part of this feature, all physical device movements are reflected automatically within the *Trellis*TM platform. The current release supports the integration via Gen 2 RFID tags from Methode.
- ***Trellis*TM Process Manager enhancement** - This enhancement is for devices to be placed within a rack only. The ability to define the specific placement within a rack when using *Trellis*TM Process Manager has been added. As part of this enhancement, the install and move processes have been extended to allow for the specific position within the rack to be defined.
- ***Trellis*TM Platform Fine Grained Authorization feature** – The Fine Grained Authorization (FGA) feature is used to provide another level of security where roles are granted View or Manage access rights to resources (enterprises, buildings, floors, spaces, zones, devices) that have been created in the *Trellis*TM platform. Users will only be able to view/manage resources based on roles assigned to them.

3. Platform Updates with the Avocent® Universal Management Gateway Appliance

When using the Avocent® Universal Management Gateway appliance with this version of the *Trellis*TM platform, apply firmware version 3.1.4.16.

Following an appliance firmware upgrade, either reboot the appliance or open a shell interface to the appliance and enter these commands in order:

```
/mss/engine/bin/mss-run mss-elf restart
```

```
/mss/engine/bin/mss-run mss-engine restart
```

4. Notes and Special Instructions

General Information

- For more information and detailed instructions on using the *Trellis*TM platform, visit <http://global.avocent.com/us/olh/trellis/> for accompanying user documentation.
- For Internet Explorer, only version 11 supports the 3D view graphical interface.

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- IE 8 is no longer supported
 - Red Hat version 5.x is no longer supported
 - The user “TrellisAdministrator” is case sensitive. **TrellisAdministrator** must be entered with initial caps as shown to get full and correct authorization permissions. All other users created using the *Trellis*[™] platform user interface (UI) need to be logged in as lower case to get full and correct authorization permissions.
 - The *Trellis*[™] platform software is accessible using secure connections (HTTPS) by default and non-secure connections (HTTP) are disabled.
 - The *Trellis*[™] platform software is accessible using the Fully Qualified Domain Name registered on the front server. Contact Professional Services or Technical Support to modify this default configuration if required.
 - The front and back machines need to be restarted after the Authentication Provider configuration is modified (added/updated/deleted) using the Authentication tab in the *Trellis*[™] platform software user interface. This enables the authentication code to use the updated Authentication Provider configuration.
 - When adding an External Authentication Provider for the user credentials, the username should have the full distinguished name.

For example: “cn=BrowseUser,cn=Users,dc=yourdomain,dc=com”.

NOTE: Without this, the added external Authentication Provider will not function as desired.

***Trellis*[™] Thermal Systems Manager**

- Temperature sensors are required to take full advantage of the *Trellis*[™] Thermal Systems Manager, including heat map generation. The *Trellis*[™] platform supports a variety of different types of sensors, including wired and wireless. Special consideration should be taken for the placement location of temperatures sensors in order to visualize the complete temperature profile.
- Net sensible cooling capacity provides greater accuracy for managing and planning thermal capacity. Calculations are dependent on Supply Air Temperature, Return Air Temperature, airflow and the data center altitude. Please manually add the nameplate airflow rating for all cooling units that do not provide the airflow (cfm) data point internally.

Element Library Support Summary

NOTE: *Trellis*[™] software version 4.0 and *Trellis*[™] Intelligence Engine version 4.0.0.46 are compatible with Element Library version 4.0.0.1 and lower versions.

For SNMPv3 support, please configure the SNMPv3 destination IP as the Avocent® Universal Management Gateway appliance IP in the Device Configuration page.

***Trellis*[™] Platform RESTful API Additions/Changes/Deprecated Methods**

- Deprecated Properties:
 - /zones – zoneUse
- Deprecated Methods:
 - /symbols/search/findByDeviceId
 - /devices/search/findFromDeviceByConnectionId
 - /devices/search/findToDeviceByConnectionId
- Alarm and Events:
 - Long description parameters are not replaced.

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- Events:
 - Unit of Measure not indicated for measurements in long description
 - Maintenance Mode:
 - Properties are read only for space, floor and device.

Pre-requisites

The *Trellis*[™] platform software version 4.0 can be applied on top of version 3.4 or 3.4.1 only. If you are upgrading from a previous version other than *Trellis*[™] platform software version 3.4 or 3.4.1, all sequential patches must be applied to move to version 3.4 before upgrading to the 4.0 patch. Do not try to apply 4.0 from any previous versions other than 3.4 or 3.4.1.

To update the Avocent® Universal Management Gateway appliance:

1. Upgrade the Avocent® Universal Management Gateway appliance firmware through the appliance via *Trellis*, Web UI or the *DSView*[™] 4 management software.
2. Within the *Trellis*[™] platform interface, install the latest available element libraries into the Avocent® Universal Management Gateway appliance (3.1.4.16) by selecting *Administration - System Configuration - Universal Management Gateway Status - Status - Element Library*.

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