

The background of the cover is a solid dark blue. On the right side, there are several overlapping triangles in various shades of blue, ranging from light to dark. The text is centered horizontally and positioned in the lower half of the page.

VMware Pulse IoT Center 1.0 Release Notes

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1. Purpose and Scope

VMware Pulse IoT Center is an end-to-end IoT infrastructure management solution that enables both OT and IT staff in organizations to have complete visibility and control of their IoT use cases. This involves the ability to:

- Onboard, manage, secure, and configure the IoT Edge System (gateways) and connected devices.
- Monitor operational efficiency from data collected from the IoT Edge System and connected devices.

This document captures the new feature and important known issues in VMware Pulse IoT Center 1.0 GA and workarounds for those known issues. The final section of this document captures the IoT gateways that are certified for use with Pulse IoT Center 1.0 GA.

Key abbreviations for the VMware Pulse IoT Center 1.0 GA components:

VMware Pulse Device Management Suite (Backend and Console)	AirWatch
EMQTT Broker	MQTT
VMware Pulse IoT Center Console (UI)	Pulse Console
VMware Pulse IoT Center API Server	Pulse API
Little IoT Agent	LIOTA

Visit <https://www.vmware.com/in/products/pulse.html> for more information.

2. Features

Feature	Description
Setup/onboard	<p>On premise support – Offered as an on-premise solution for deployment, flexibility, and security.</p> <p>Scalable – Supports thousands of IoT edge systems and connected devices such as sensors and actuators.</p>
Manage	<p>Edge Device Management – Ability to support heterogeneous objects and gateways with different hardware, operating systems, and communication protocols.</p> <p>Console – Monitoring and management for IoT infrastructure (across private networks comprising of edge systems and connected devices) for both IT and OT users.</p> <p>OTA updates – Ability to provide over-the-air, real-time updates to all things/gateways no matter how remote the location is.</p>
Monitor	<p>Infrastructure analytics – Ability to identify anomalies and perform infrastructure analytics.</p> <p>Visualize things and gateway relationships – Provides pictorial representation of the topology of the IoT infrastructure in a parent-child relationship diagram.</p> <p>LIOTA – A Python 2.7 based framework/SDK that can be extended to define, collect, and then report properties and metrics from IoT Edge systems and connected devices to the Pulse Monitoring services.</p>
Secure	<p>Security Across the IoT Value Chain – Provides end-to-end security from the gateway all the way to the servers.</p>

3. Known Issues

Some of the important known usability issues are as follows,

Issue #	Known Issues	Workaround
1	The Pulse Console UI does not automatically refresh the metric graphs of managed objects.	Refresh the page manually to check for the latest metrics.
2	IOT Agent: Reload of LIOTA packages in the IOT Agent can fail if you enter an incorrect checksum during the creation of the product for OTA in the Pulse Device Management UI.	Re-compute and update the product with the right checksum in the Pulse Device Management UI. Modify the File-Actions manifest to 'load' instead of 'reload'.
3	Pulse Console: If there are large numbers of connected devices of the same kind, exceeding 20, the child hierarchy UI gets overlaid on top of each other. This could be visually confusing.	When the hierarchy chart looks convoluted, you can use the search functionality if there is a need to narrow down to a specific child device rather than browsing the graph.
4	Pulse Console: Newly registered properties do not show up in the filter drop-down. [Filters → Resource Filters → Select "Edge Systems" → Select Property List]	New properties appear only when the backend sync completes. This by default is configured for every one-hour. At present there are no workarounds other than to wait and see if the properties appear in filters in the next one hour. The new properties however, do appear in the resource view for each managed object in the Pulse Console.
5	In rare scenarios, a device may not show up immediately on the Pulse Console, while it appears in the Device Management Console post on-boarding.	Occurs when the Pulse API is hosted with an SSL certificate signed by a private CA. The private CA cert which is also provisioned in the Windows Trusted Root Certificate in the Pulse Device Management Server can get deleted by the Window's Automatic Root Certificate update process. You can disable the Automatic Root Certificate update process when there are private CA certs. Once turned off, import the Pulse API CA cert into the Trusted Root Certificate Store. Refer to the section "Importing Pulse IoT API CA into VMware Pulse Device Management" in the Install Guide. Restart the following Windows System services in the Pulse Device Management Server. "AirWatch Interrogator Queue Monitor", "AirWatch Entity Change Queue Monitor ", "AirWatch MEG Queue Service". The device appears in the Pulse Console when the background sync is successful.

4. Pulse IoT Center Gateways Certified with 1.0 GA

Vendor	Model	Linux OS/Platform	Comments
Dell	Dell 5000	Ubuntu Core 15.04/x86_64	<p>To install the IoT center client on Dell gateways running Ubuntu core 15.04, you must complete the following pre-installation and post-installation steps.</p> <ol style="list-style-type: none"> 1. Make the file system writeable to install the Pulse IoT center client, using following command: <ul style="list-style-type: none"> a. <code>sudo mount -o remount,rw /</code> 2. Install the Pulse IoT centre client by following the instructions in this link. 3. Add the following directories to: <ul style="list-style-type: none"> <code>/etc/system-image/writable-paths:</code> <ol style="list-style-type: none"> a. <code>/opt/ice-client/</code> b. <code>/usr/lib/liota/</code> 4. Reboot the gateway to apply the changes completed in step 3. 5. Before unenrolling or uninstalling the IoT center client, ensure that the file system is writeable as mentioned in step 1.
Samsung	Artik 300	Linux artik 4.4.71-0530GC0F-44F-01Q5/armV7l	
Raspberry Pi	raspberrypi-2	Linux raspberrypi-2 4.9.41-v7+	
Harman	Harman IOT-Gateway03	Linux imx6slevk 4.1.15-1.2.0 armv7l	