

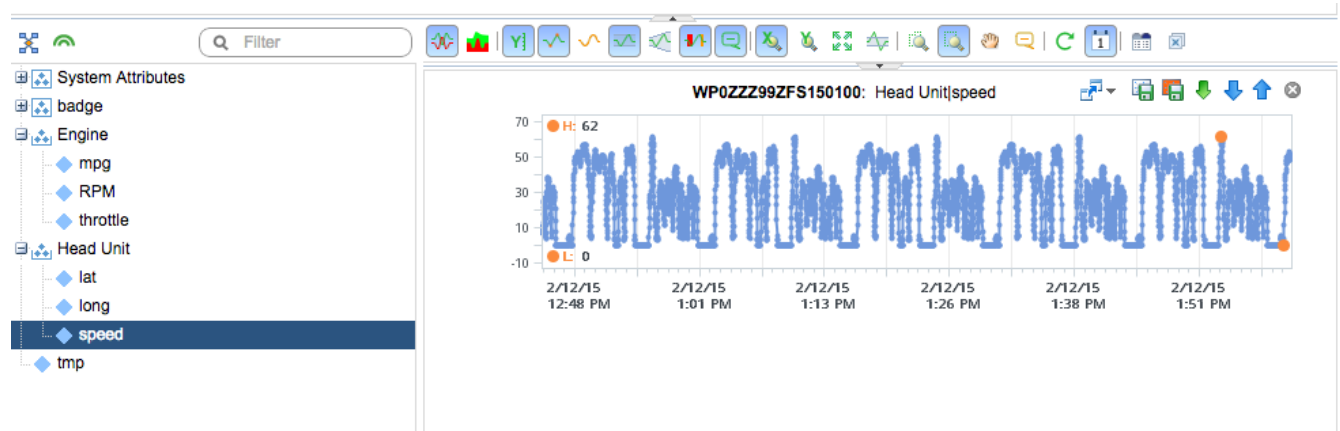
Project Helix comprises three major components:

- VMware software-defined data center and vCloud Air as scalable, highly resilient, and available infrastructure
- vRealize Operations Manager to collect telemetric data from devices, organize views of the devices and date, analyze incoming real time streams, issue user defined and commands, and raise alerts
- A device agent to aggregate data from sensors and execute commands from vRealize Operations Manager

Project Helix is building an IoT-specific adapter targeted at collection of high-volume streams of telemetry data from millions of devices, programmatic device-defined actions, IoT-specific organizational schemes, and secure communications channels.

One of the many advantages of using vRealize Operations Manager for IoT telemetry acquisition is the ability for devices to use up to eight fields to create a unique identifier representing itself in vRealize Operations Manager. The creation of this universally unique identifier (UUID) is a protocol between the device and an instance of vRealize Operations Manager that is driven completely by the device. During initial registration, the device receives error codes from vRealize Operations Manager if its choice of input values is not unique among all of the currently registered devices in this vRealize Operations Manager instance. The device can then add, modify, and experiment with values in the fields to become unique. For example, some of the fields might be year of manufacture, serial number, media access control (MAC) addresses, location coordinates, and so forth. After this UUID is created, all communication between the device and vRealize Operations Manager need only contain the UUID.

Figure 5. Historical Telemetry Data in vRealize Operations Manager



Most importantly, no pre-configuration of vRealize Operations Manager is necessary—devices essentially can configure themselves in vRealize Operations Manager. No global naming authority is necessary to give devices unique identifiers. All the uniqueness happens dynamically at runtime.

This feature will allow scaling and ease of device deployment potentially useful for the automotive industry. For example, vRealize Operations Manager can easily be configured to monitor the oil level in vehicles, notify the owner if the oil level falls below recommended values, notify the owner if the recommended interval for oil changes has been exceeded, and notify the warranty division when recommended intervals are ignored.

Key Takeaway 4: vRealize Operations Manager delivers self-learning tools, predictive analytics, and smart alerts enabling proactive identification and remediation of emerging issues. Project Helix is the vRealize Operations Manager extension to the IoT world and more specifically, to the automotive industry.