Key Requests for VOLTTRON™ Enhancements

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VOLTTRON™ 2016

VOLTTRON™ Feedback Mechanisms

► Technical Meeting

► VOLTTRON™ Office Hours

► Internal usage and deployments

► Stack Overflow

► Github Issues

► Email

Request Categories

► Demonstrate Flexibility

► Improve Usability

► Enhance Infrastructure

► Support Scalable Deployments

► Demonstrate and Enhance Security

► Demonstrate Interoperability

Demonstrate Flexibility

► Demonstrated numerous deployment strategies

- Cross firewall
- Star Topology

► Platform enhancements to make the platform more acceptable to facilities and building managers

- Revert device capability
- Flexible BACnet priorities for setting points

► Tested and deployed on numerous combinations of commodity hardware and Linux versions

- Raspberry Pi, BeagleBone Black, Banana Pi, NUC, etc.
- ArchLinux, Ubuntu, Debian, etc.

► Additional databases supported

- MongoDB

Improve Usability

► Improve usability of security components
  ■ No more manual editing configuration files
  ■ Platform update/reinstallation doesn't require redoing security setup
► User and Developer Documentation
► WebUI for device configuration (ongoing)
► Visual representation of platforms and devices in a deployment
► Simpler interface for generating charts from data points

Enhance Infrastructure (More usability)

► Repository structure changes closer to developer standards

► Code review process

► Publicly available continuous integration tests and results

► Integration test suite

  ■ Ability to write tests for third party agents

  ■ Validation of contributed services

► Versioned documentation now tracks with the source code

  ■ More dynamic than a static wiki

  ■ Single source of documentation (no more separate user guide)

  ■ http://volttron.readthedocs.io/

► Community driven FAQ via StackOverflow

  ■ Users submit questions and anyone can answer

  ■ Content shows up on Google searches

Support Scalability Deployments

► ForwardHistorian

  ■ Performance and reliability improvement

► Horizontally Scalable Deployments

► Scalable Database Historian

► Ongoing scalability testing

► Large scale actuation of points

Demonstrate and Enhance Security

► In-house penetration testing

► Added an authorization module to restrict agents' access to certain platform capabilities

► Containerization to limit Agent access to the underlying platform/OS (ongoing)

Demonstrate Interoperability

► Cloud based IoT solutions
  - Azure
  - AWS
► Interacting with other platforms
  - DDS
  - NodeRed
► Simulation integration
  - MATLAB
  - Energy+
  - GridLab-D/FNCS

► Additional Drivers
  - RadioThermostat
  - General HTTP
  - OpenEVSE (ongoing)
► Selected a data model enabling easier integration of applications and data sources

VOLTTRON™ Resources

► GitHub

■ https://github.com/VOLTTRON/volttron.git

► Stack Overflow

■ http://stackoverflow.com/questions/tagged/volttron

► External Continuous Build Integration

■ https://travis-ci.org/VOLTTRON/volttron/

► Email: volttron@pnnl.gov

► Bi-weekly office hours, email to be added

■ http://bgintegration.pnnl.gov/volttronofficehours.asp