

# OPEN POSSIBILITIES.

## Edgecore Device Manager



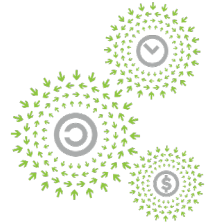
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NOVEMBER 9-10, 2021

# Edgecore Device Manager

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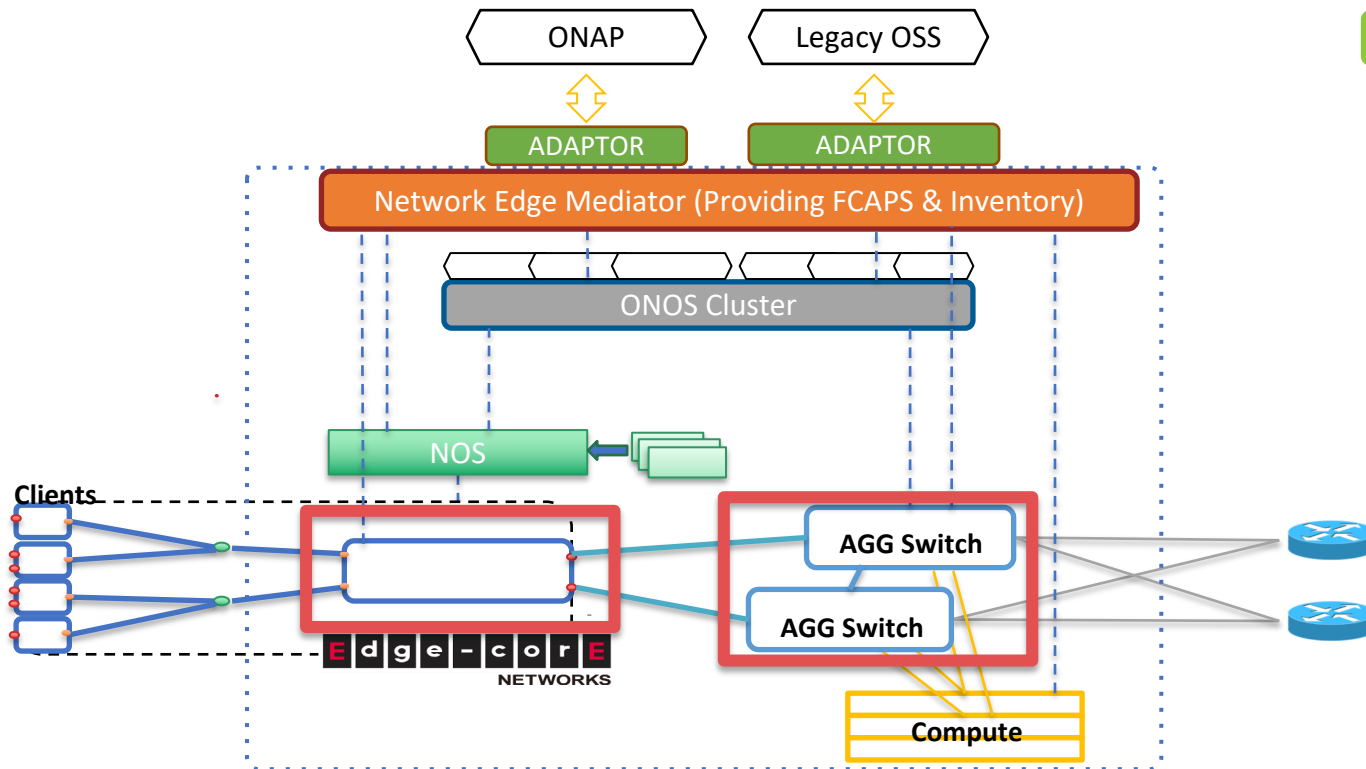
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PLATINUM™



# Complex Networks (ONF-SEBA)



HW MANAGEMENT



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# Vision



HW MANAGEMENT

- Help Customers, Partners, and the Community
- Implement Best-In-Class Tools and Practices for Deployment and Management of Networked Devices
  - Edgecore Partners
  - Telcos
  - Cloud Operators
  - Enterprises
- Enable Quick and Painless Deployment
- Reduce Development and Support Cost

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# Edgecore Device Manager



HW MANAGEMENT

## Functionality Provided:

- Asset management
- Monitor early warning signs
  - Component Status
  - Telemetry
- Help with Fault Isolation
- Take preventive actions
- Manage SW

## Components OpenSourced:

- Client-server architecture
- Device Manager
- Redfish® Service
- Not a Dashboard (Nagios sample)

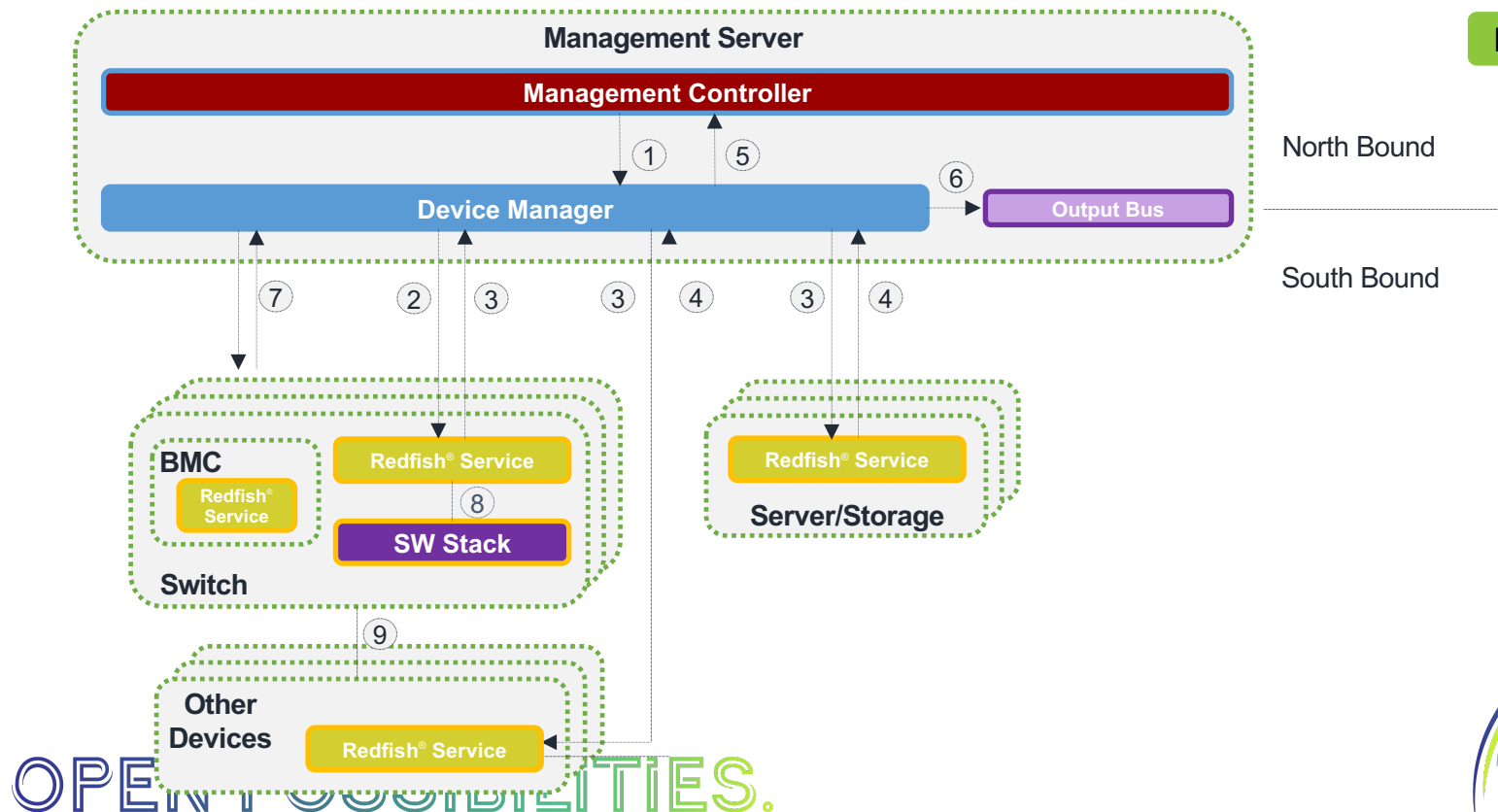
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# Overall Architecture



HW MANAGEMENT



# Edgecore's Device Manager



HW MANAGEMENT

## Fully Open Sourced Implementation

- Tracks devices
- Collects data (component and telemetry) from devices and publishes to consumers
  - On-demand
  - Periodically(Manages cached device data)
- Manages events from devices, and notifies listeners
- Updates FW/SW

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# Managing Devices with Redfish®



HW MANAGEMENT

## **BMC: OpenBMC 2.8**

## **NOS: Pooled System Management Engine (Intel RSD 2.1.3)**

- Implement Redfish® service (support Redfish® REST API)
- Query devices for Asset Management
- Monitor devices for alertable events
  - Component state changes
  - Telemetry
- Update SW (FirmWare, ONIE, Linux)
- Reboot Devices
  - Dual partition
  - Reboot target

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# Monitoring through Redfish<sup>®</sup>



HW MANAGEMENT

## Component List and States

- PSU Module Being Plugged In/Out
- FAN Module Being Plugged In/Out
- QSFP or XFP Transceiver Being Plugged In/Out
- FAN Module Stopped Spinning
- Thermal Sensor Exceeding High/Critical/Fatal Temp  
CPU, Main Board, Memory, Transceiver, ...

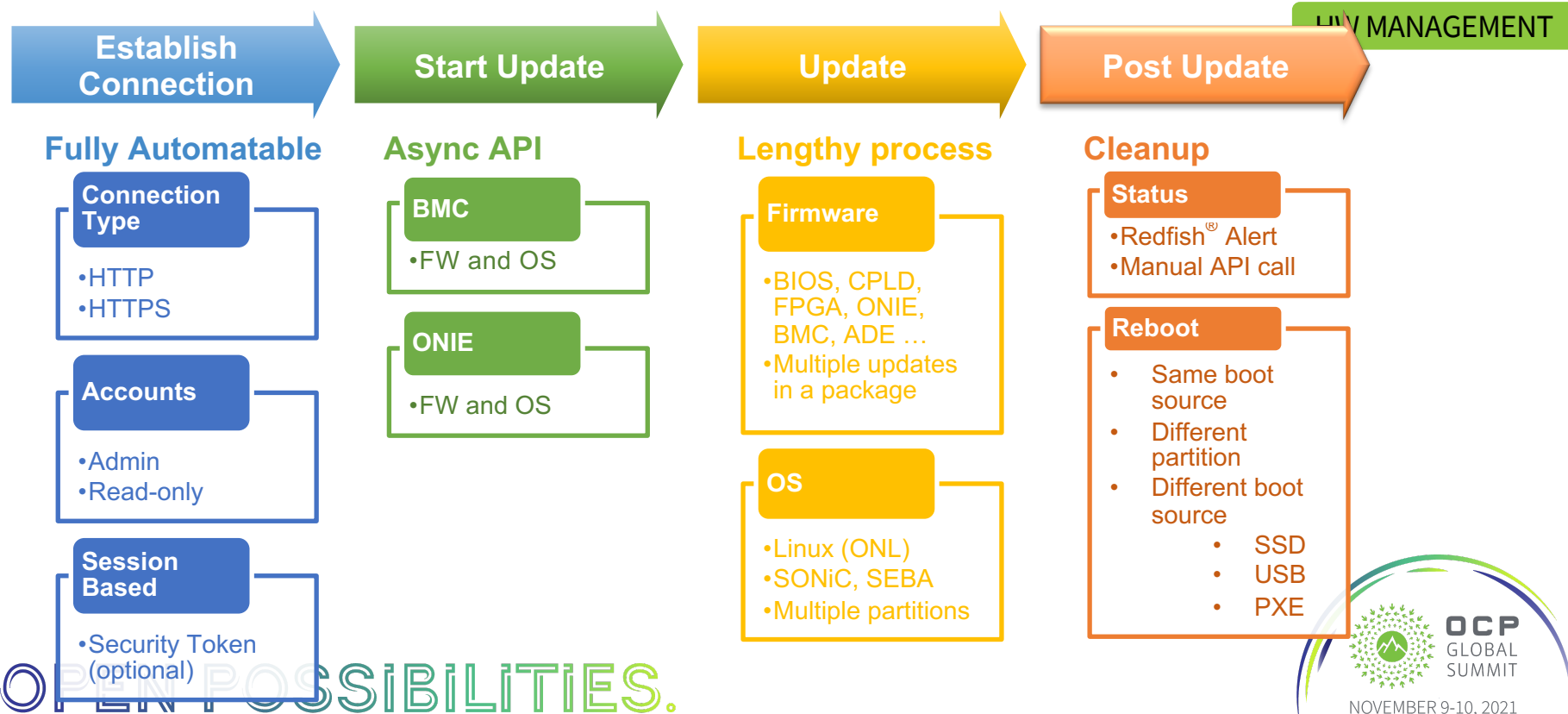
## Telemetry

- RX\_BPS, RX\_DRP, RX\_ERR, RX\_OK, RX\_OVR, RX\_UTIL, STATE, TX\_BPS, TX\_DRP, TX\_ERR, TX\_OK, TX\_OVR, TX\_UTIL
- CPU, Memory, SSD

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# FW/NOS Update, and Reboot



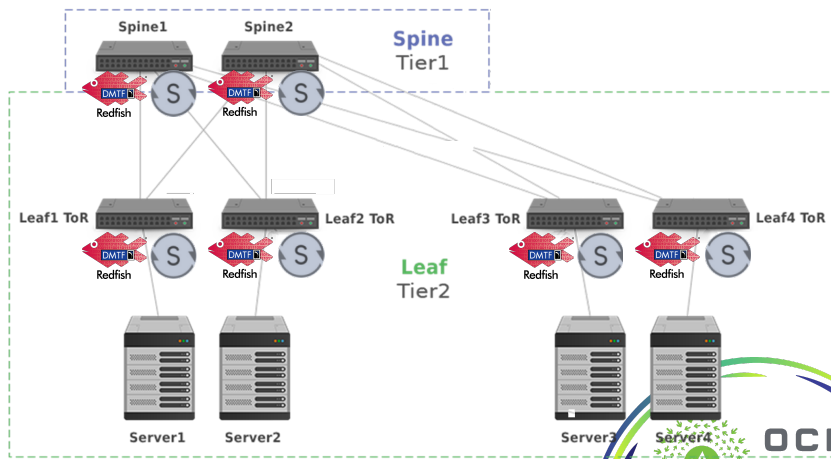
# Experience Center Demo



HW MANAGEMENT

Edge-core<sup>®</sup>  
NETWORKS

- **Device Manager** installed on server for monitoring, and communications
- **Redfish<sup>®</sup> Service** installed on all switches for collecting telemetry
- **Data Center Troubleshooter** installed on server to orchestrate testing
- **DCT Agent** installed but inactive on all switches (Activated when a problem is detected. Extremely low overhead.)
- **Demo DC** located in **Taiwan**

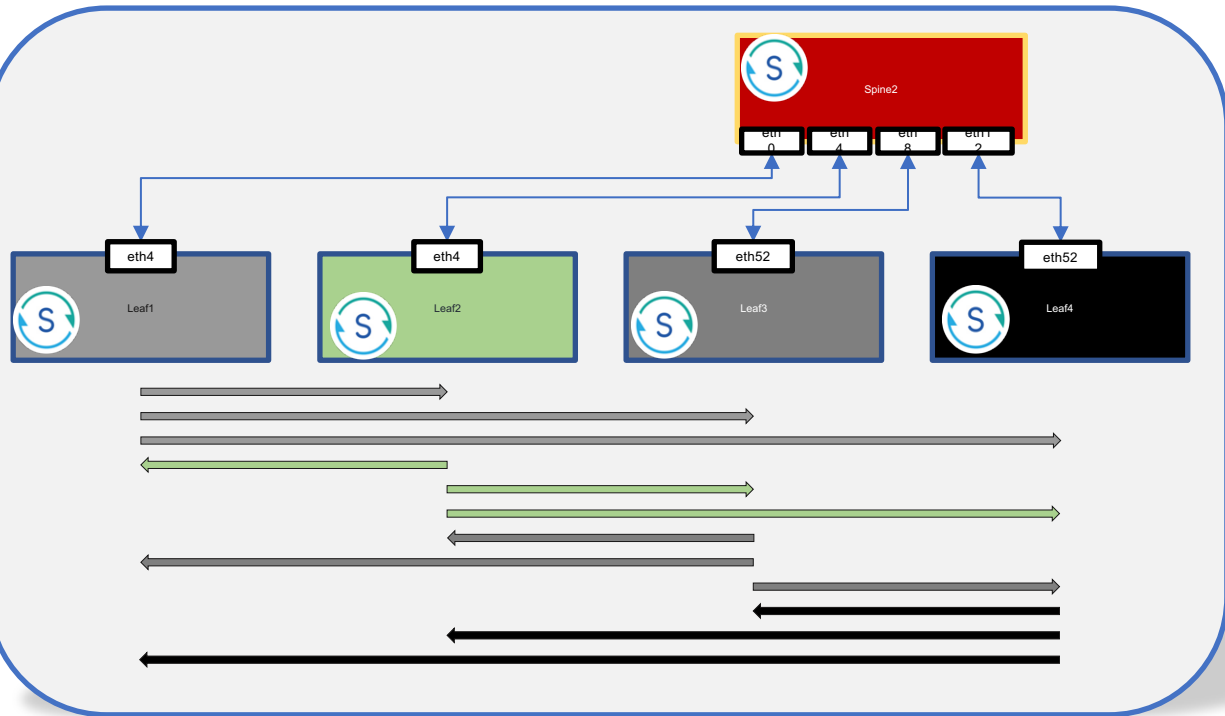


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# Real-Time Precision Troubleshooting



HW MANAGEMENT



- Switches remain in service
- Comprehensive coverage
- Realistic packet content
- Minimal resource impact

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# Edgecore Device Manager Support

- Integrated Solutions on 16 Platforms  
(10, 25, 50, 100, 400G Devices)



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Compute Project  
SOLUTION PROVIDER®

- Edgecore in [OCP Integrated Solutions](https://reurl.cc/Q6416M) (<https://reurl.cc/Q6416M>)
- Edgecore in [OCP Market Place](https://reurl.cc/95VdOd) (<https://reurl.cc/95VdOd>)

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- **Edgecore Trouble Shooting Demo**
  - **Booth C23**
  - **Experience Center**



# Call to Action

- OpenSource
  - Edgecore Device Manager
  - Edgecore's Redfish® Services; PSME & OpenBMC
  - OCP contribution started
- All vendors are invited to
  - Implement OCP Redfish® Services for their devices
  - Contribute to Device Manager
- When? **Now...**
- For additional information, please visit to
  - <https://github.com/opencomputeproject/DM-Redfish-PSME>
  - <https://github.com/opencomputeproject/Device-Manager>

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Thank you.



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