SDN Enabled Broadband Access (SEBA) for Network Cloud Blueprint

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## Blueprint: SEBA

<table>
<thead>
<tr>
<th>Case Attributes</th>
<th>Description</th>
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<tbody>
<tr>
<td><strong>Type</strong></td>
<td>New blueprint for fixed wireline access within Network Cloud Blueprint family</td>
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<tr>
<td><strong>Blueprint Family - Name</strong></td>
<td>Network Cloud</td>
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<tr>
<td><strong>Use Case</strong></td>
<td>Virtual broadband access (XGS-PON - Higher bandwidth, symmetric version of GPON)</td>
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<tr>
<td><strong>Blueprint Name</strong></td>
<td>SDN Enabled Broadband Access (SEBA)</td>
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<tr>
<td><strong>Scale &amp; Type</strong></td>
<td>3 servers per POD / x86 and ARM (with 8-16 cores each)</td>
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<td><strong>Applications</strong></td>
<td>Virtual broadband access – vOLT access &amp; aggregation (5000 edge locations)</td>
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<tr>
<td><strong>Power Restrictions</strong></td>
<td>Less than 1 kW. NEBS and 48V DC</td>
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| **Infrastructure orchestration** | OS - Ubuntu 16.x  
Docker 1.13.1 or above / K8 1.10.2 or above- Container Orchestration  
Under Cloud Orchestration - Airship v1.0  
Open Network Operating System (ONOS) and XOS  
VOLTHA (Virtual Optical Line Terminal Hardware Abstraction – CORD project)  
Network Edge Mediator (NEM)  
ONAP and OSAM  
EMS/NMS Adaptor |
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<tbody>
<tr>
<td><strong>SDN</strong></td>
<td>ONOS / OF &amp; Redfish</td>
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<tr>
<td><strong>Workload Type</strong></td>
<td>Containers</td>
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| **Additional Details**           | Akraino based community blueprint, Full Automation (Airship based + Tenant Container support)  
Cloud layer hardened for production  
Current SEBA POD contains network elements, compute nodes, and software components.  
Aggregation and management switches  
Three compute nodes required for K8 redundancy  
About forty containers running ONOS, XOS, VOLTHA, NEM, etc  
Supports up to 16 OLTs. |
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SEBA Overview

- Utilize Open Network Foundation’s developed SDN Enabled Broadband Access (SEBA) software
- Automate installation of a standardized set of hardware to expedite deployment
SEBA Site Overview

• Deployment model has to scale to thousands of locations
• Site is a self contained, pre-integrated solution
• Site contains network elements, compute nodes, and software components
  • Aggregation and management switches
  • Three compute nodes required for Kubernetes redundancy
  • Multiple containers running VOLTHA, ONOS, NEM, etc
  • **All SEBA software runs in containers**
  • Supports up to 16 OLT and 16,384 subscribers