

Vader Application Overview

CenturyLink

by Jeff Sheffel April 30, 2013

Vader is primarily a CenturyLink webservice that returns device diagnostic information and sends device commands. Vader is an acronym for **V**ideo **A**nd **D**ata **E**xt**R**action Interface, with an etymology tied to an infamous Star Wars character. Vader is maintained by the PRISM Server team within the IPTV/Video department, that is part of the Network Reliability and Operations Center (NROC) under Network Services.

The Vader capabilities can be summarized as follows:

1. FTTH GPON

Device Domain	Adtran TA5000/TA5006 & Calix E7
Vader Capabilities	Polls GPON devices, specified by the OLT CLI and ONT AID, to retrieve parameters (POTS, data, and video), reset ONTs, and bounce ports.
2013Q1 Usage	600 retrieves/week, 700 bounces/week

2. FTTH BPON

Device Domain	Alcatel-Lucent 7340 FTTU and General Bandwidth
Vader Capabilities	Polls BPON devices, specified by the OLT CLI and ONT AID, to retrieve parameters (POTS, data, and video), reset ONTs, and bounce ports.
2013Q1 Usage	25 retrieves/week, 5 bounces/week

3. VDSL

Device Domain	Motorola Next Level/CTDI
Vader Capabilities	Polls VDSL circuits, specified by the BDT CLI and AID, to retrieve parameters, and bounce ports.
2013Q1 Usage	200 retrieves/week, 10 bounces/week

4. ADSL

Device Domain	Motorola Next Level/CTDI
Vader Capabilities	Polls ADSL circuits, specified by the BDT CLI and AID, to retrieve parameters, bounce ports, and change speeds.
2013Q1 Usage	12,000 retrieves/week, 200 bounces/week, 30 speed-changes/week

5. Etherset Lookup Tool

Device Domain	MNLC Platform
Vader Capabilities	Polls the MNLC platform, specified by BDT CLI and ATM VPI/VCI value, to retrieve VDSL CPE MAC ID and customer information.
2013Q1 Usage	25 requests/week

Vader webservice requests are sent as HTTP GET requests to the Vader webserver. Vader then returns XML, in response to the device parameter requests or device commands.

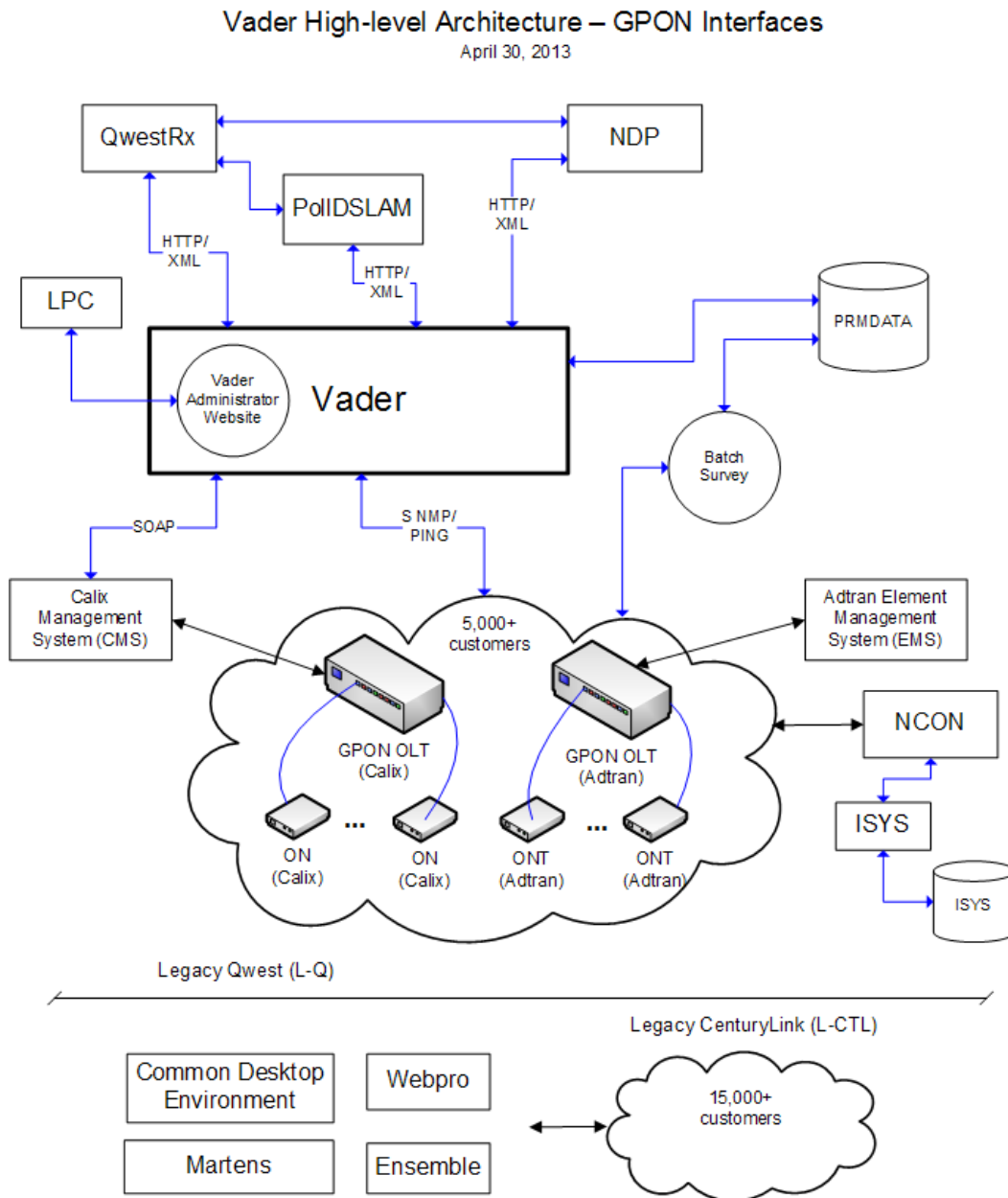
Currently (until 2013Q2), most of the Vader GPON use is for the production Adtran devices. The challenges for 2013 include: the integration of support for new GPON devices (Calix), building new service features, and adding Vader service fault tolerance.

Details about the Vader API can be found in the Vader Interface Specification:

- <https://vds1techsupp.uswc.uswest.com/vader-i/doc/list.php>

Architecture Overview

The following architecture diagram shows the high-level Vader GPON interfaces:



Vader User Interfaces

Vader supports two interfaces:

- an HTTP/XML webservice, and
- an administrative website GUI interface.

Vader does not currently support a SOAP service.

Vader Users

Vader is used by various support organizations in the company. Vader is used by customer support analysts and network engineers for deployment and configuration of network equipment.

Loop Provisioning Center (LPC)

The Loop Provisioning Center uses the Vader administrator website interface to verify new equipment installations.

Client Application Interfaces

Some of the CenturyLink applications, that are used by customer support analysts, connect to Vader in order to troubleshoot and remedy a customer's network equipment.

PolIDSLAM

PolIDSLAM makes HTTP requests to Vader, to get device status information and send device commands. PolIDSLAM also acts as a proxy, on behalf of the QwestRx application. PolIDSLAM is used by customer support analysts.

QwestRx

QwestRx uses PolIDSLAM to get device information and send device commands. Newer functionality (for Calix GPON) is being integrated, in which requests are sent directly to Vader. QwestRx is used by customer support analysts.

Network Diagnostics Portal (NDP)

NDP is an application that customer support analysts use to diagnose various CTL network equipment. NDP accesses Vader directly, and also through QwestRx. NDP is expected to be phased out, but currently (2013Q1) there are requirements to support recent CenturyLink (CTL) updates (for newer GPON equipment).