Sunrise upc

11 years of StableNet® at Sunrise

Marek Kulesza

About us

5M+

million customers in Switzerland

(mobile, broadband, tv)

Sunrise is the largest non state-controlled telecommunications company in Switzerland, offering its mobile, Internet, TV and landline services to private and business customers.

Our strategic positioning as the leading challenger, focusing on quality, has proven successful. Over the past years, Sunrise has been growing its market share and adjusted EBITDA through investments in network, product and service quality.

The success was based on the folowing factors:
Excellent mobile and fixed network infrastructure,
including demonstrated 5G leadership and a pioneering role as a provider of fixed wireless access over 5G

Multi-brand approach targeting clearly distinct customer segments
Successful market share gains in the Business segment, supported by a high quality network and superior service quality

Strong focus on customer centricity, service excellence, convergence, product innovations and promotions

StableNet® in Sunrise

850,000+

Metrics

16000+

Devices

600+

Custom configuration templates

1,000,000+

Monitoring Points

550+

Custom reports

100+

Daily users

Infosim® as a partner

100+

Change requests

300+

Resolved tickets

1000+

Joint calls

365+

Days of meetings

StableNet® in Sunrise

StableNet® FM - also known as unified EMS solution - provides **Network Configuration Management** capabilities for multi-vendor/multi-technology/multi-service management of the IP network resources and devices (Cisco, Juniper, Huawei, and others) in the Sunrise data network

In 2012, this solution replaced the legacy EMS systems HP OpenView, CiscoWorks, JunoScope, and RANCID

At the same time, it provides EMS capabilities for new equipment types being introduced from Huawei and Schmid Telecom and built the basis for future vendors or technologies.

StableNet® in Sunrise

The SPM StableNet® platform is used by Sunrise business customers, it is collecting and **presenting performance data** about services in Sunrise fixed network

It connects toward customer's PE devices and collects the relevant data like Bandwidth, Delay, Jitter, QoS, IP SLA

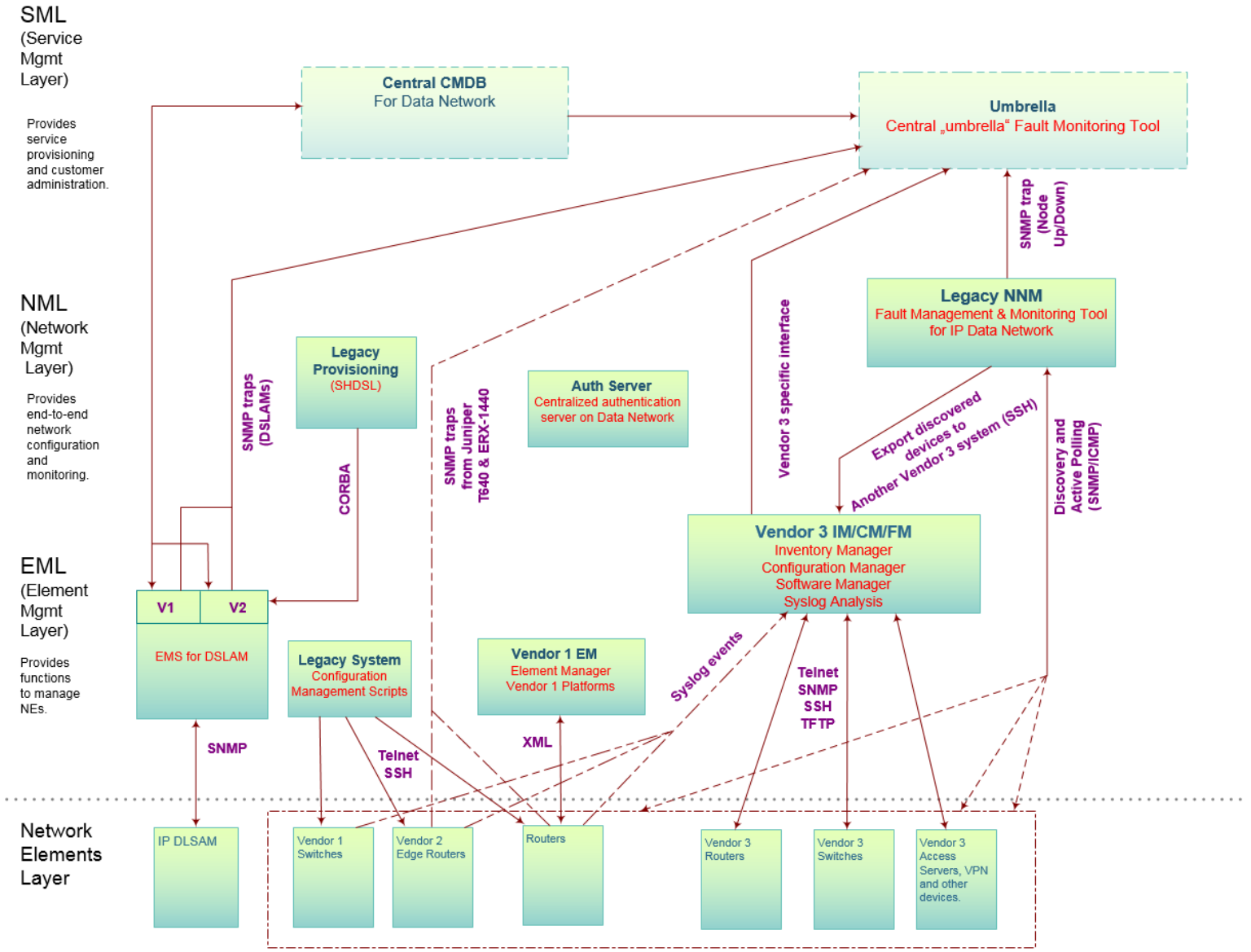
SPM StableNet® platform is currently integrated with Sunrise Business Account Portal, a front end for Sunrise business customers.

StableNet® in Sunrise

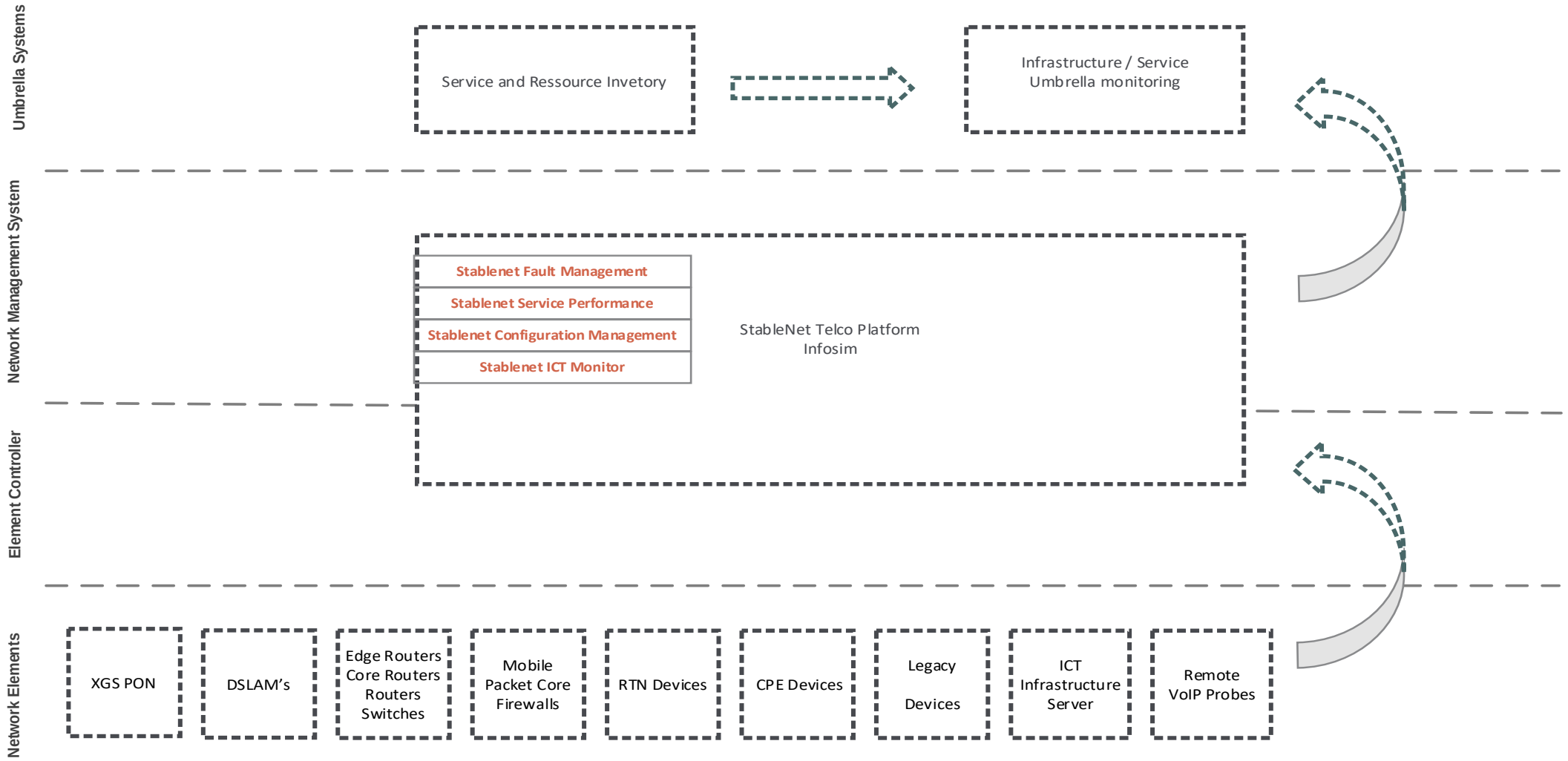
The CEMS and ZTP StableNet® platform is used by Sunrise business unit team, for automated services provisioning. Heavily used configuration template management combined with open REST/API of StableNet® makes this central point of managing and configuring devices.

In 2022 **Z**ero **T**ouch **P**rovisioning solution is expected to be deployed in production, reducing time needed for semi manual operations currently.

StableNet® in Sunrise (how we started)



StableNet® in Sunrise (how it's going)



StableNet® Customizations

- Configuration Portal
- SbbS Services Monitoring
- FilterPlot Servlets data extract
- Perl Library
- REST API Extension
- DHCP Service provisioning portal
- SIP-Trunk performance data collection
- ZTP solution*

*not yet in production

SIP-Trunk performance data collection

Infosim® uses the current StableNet® installation to measure the IMS devices and to handle the data by storing them directly in the database.

The handling of the data works in the following way:

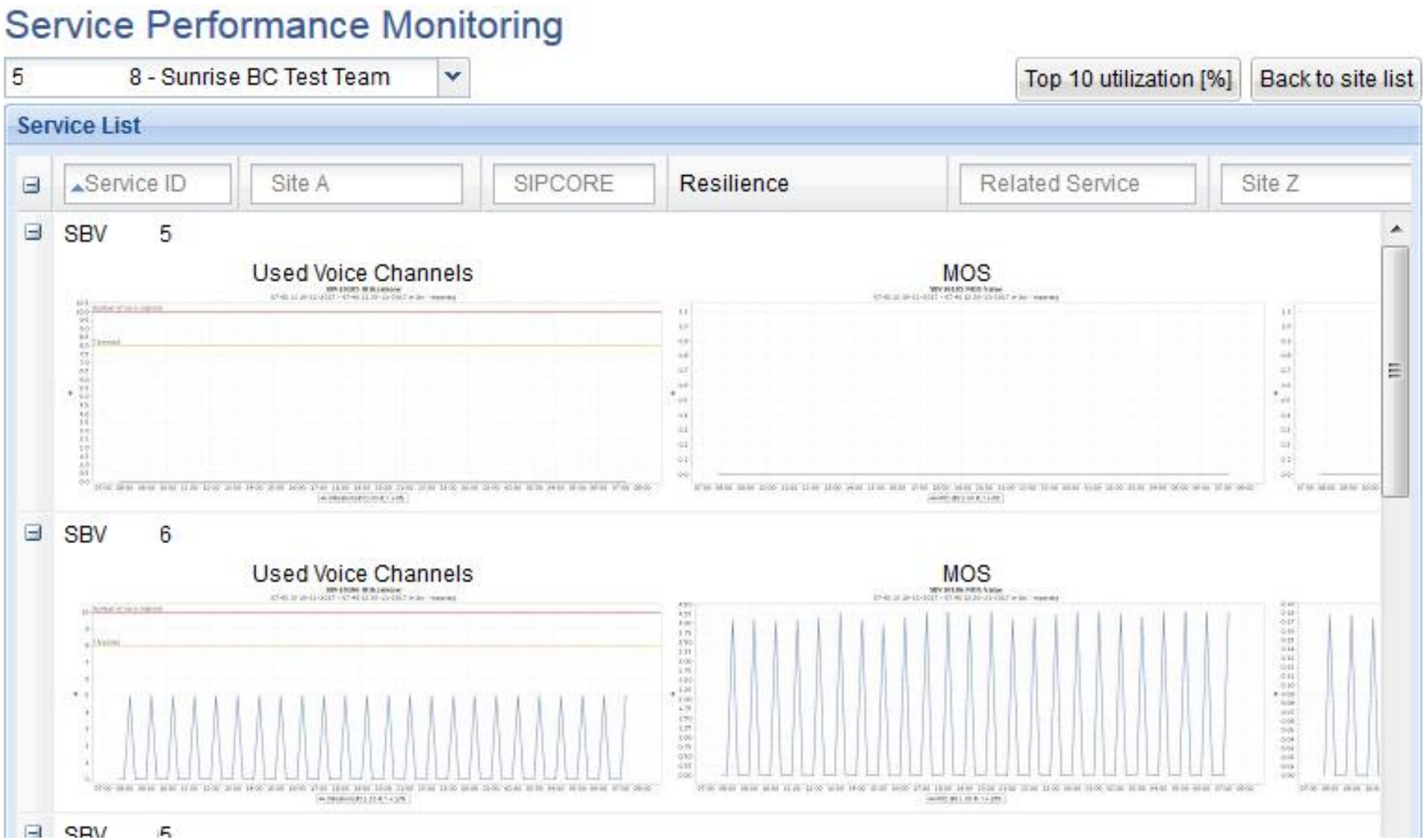
1. The active agent always opens a SFTP connection to the IMS device every 5 minutes.
2. The agent checks the file directory on the IMS device to find new data files.
3. The agent copies this files to a shared folder and closes the connection to the IMS device.
4. The agent opens the files on the shared folder and aggregates the file data.
5. The agent distributes the aggregated data to create external measurements in StableNet®.
6. The external web portal can use the servlet interface of StableNet® to get the received data as chart.

To ensure this procedure, StableNet® has to create external measurements, which is configured on the IMS devices, for each SIP trunk. The creation of the measurements is done during an XML discovery. For this discovery, an external measurement template is needed, as well as a CMDB data table.

SIP-Trunk performance data collection

KPI	Source	Measurement Ids	Formula	Column Name in PM File	Display UNIT	Value ID Stablenet
• Utilization (no. of used v. CH)	*SE2900_1907425351*	1907425351	Peak Number of Online Sessions Through BCF Trunks	• Peak Number of Online Sessions Through BCF Trunks	number	
• Call attempts per second	*SE2900_1907425341* *SE2900_1907425342*	1907425341, 1907425342	(Number of Session Attempts Originated Through IBCF Incoming Trunks + Number of Session Attempts Originated Through IBCF Outgoing Trunks) / measurement period	• Number of Session Attempts Originated Through IBCF Incoming Trunks • Number of Session Attempts Originated Through IBCF Outgoing Trunks	nb/second	i.e.: 1001

SIP-Trunk performance data collection



DHCP Service provisioning portal

The DHCP platform at Sunrise is based on the DHCP service software of Incognito Software Inc. (Canada), its serving IP addresses for about 100k xDSL and fiber users.

The platform spans two datacenters for the site redundancy. The system is designed to tolerate any single device outage, as well as complete site outage. The resulting system consists of multiple DHCP clusters, Multimedia Provisioning service (MPS) cluster, and a redundant Lease History database.

The DHCP clusters provide DHCP service to the end-user devices. The MPS cluster receives the provisioning data from CMDB and propagates it to the DHCP servers. The Internet IP address assignment information is stored in the Lease History database.

The DHCP platform is connected to the Sunrise MPLS backbone by means of multiple dedicated routers and firewalls, providing the necessary level of redundancy and high availability.

L3 VPN services have been built to provide the intra-cluster dedicated communication.

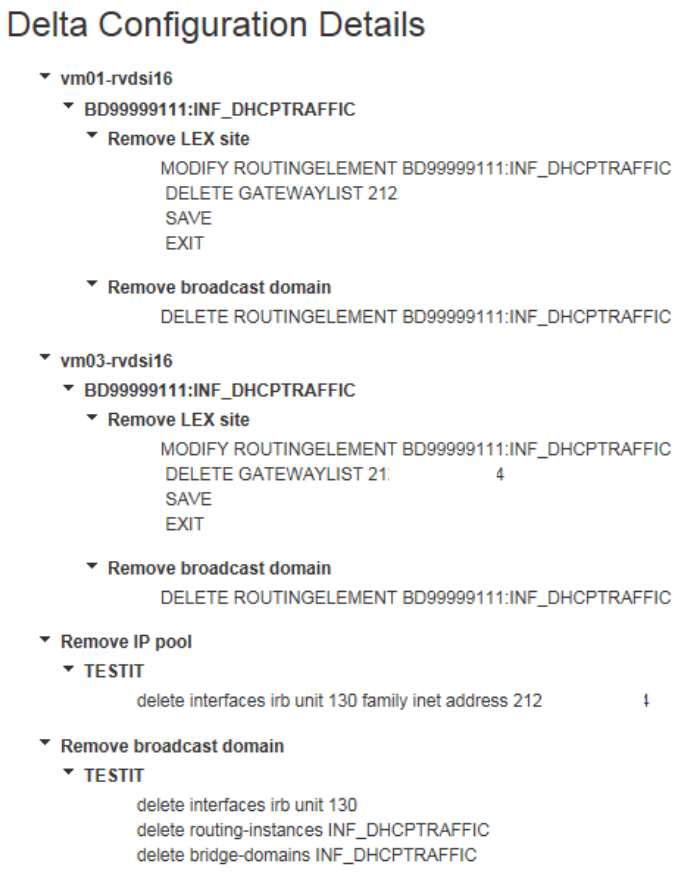
DHCP Service provisioning portal

Sunrise DHCP Portal based on StableNet® software supports users with more than 20 use cases.

All of them vary in terms of complexity and automation provided.

Starting from simple IP pool's management progressing trough dedicated delta mechanism.

Delta mechanism was introduced in order to discover inconsistency in provisioned services vs CMDB setup.



StableNet® Zero Touch Provisioning

Sunrise intends to use the StableNet®, Workflow Job based, Zero Touch Provisioning solution, in the Business Customer Premises Equipment (CPE) staging area.

The solution is expected to work as follows:

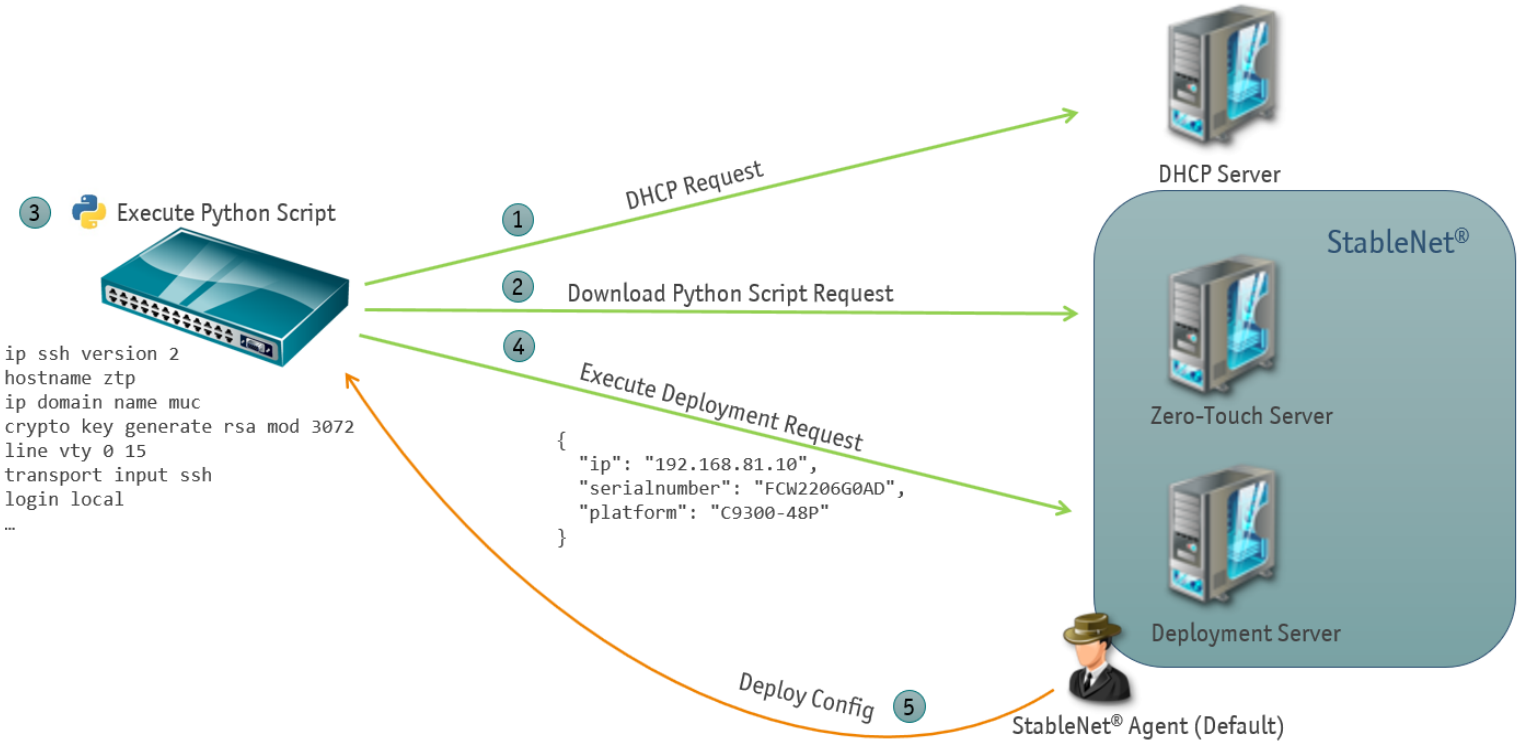
Zero Touch Provisioning requires three components: a DHCP server, a Zero Touch Server and a Deployment Server.

StableNet® acts as both the Zero Touch Server and the Deployment Server. If a device that supports Zero Touch Provisioning boots up and does not find the boot configuration, the device will enter the Zero Touch Provisioning mode. The device looks for a DHCP server, boots itself up with its assigned interface IP address, gateway, and DNS server IP address .

The device then retrieves the URL of the Zero Touch Server and downloads a Python script to configure the device to be accessible via SSH to the StableNet® Agent. The script also provides a StableNet® workflow job with information such as the IP address, manufacturer, device model, and serial number of the device.

The used workflow job uses the serial number and the manufacturer of the device to find the correct configuration of the device on the StableNet® server.

StableNet® Zero Touch Provisioning



Sunrise upc

Thank you

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