Broadband Playbooks

The Quick Start Guide for Rock Solid Access

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Get to Fast Faster 2025

Nokia Broadband SDAN playbook

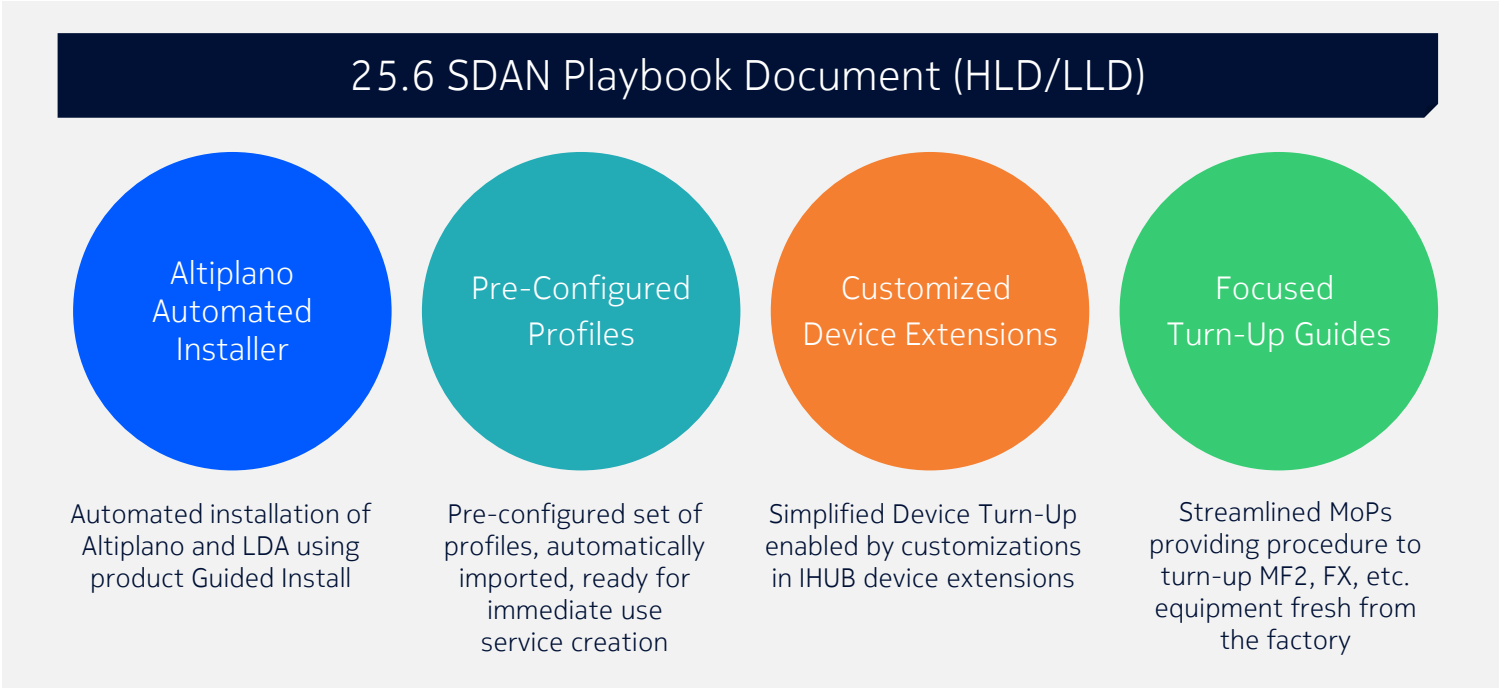
How easy can it be?

Quick start guide for **Greenfield deployments** using Nokia's Software Defined Access Network (SDAN) Solution.

Key benefits

- Leverages best practices using Altiplano and Lightspan.
  - Centralized SW management for OLT and ONTs
  - Centralized OLT password control via OAM Connectivity Profiles
  - Single point of configuration for upstream and downstream traffic rates
- Provides importable profiles to support Nokia Validated Design of common service types.
- Provides clear, validated procedures that can be followed step by step.
- Start to Finish package: Altiplano Installation, OLT Turn-Up, Subscriber Provisioning

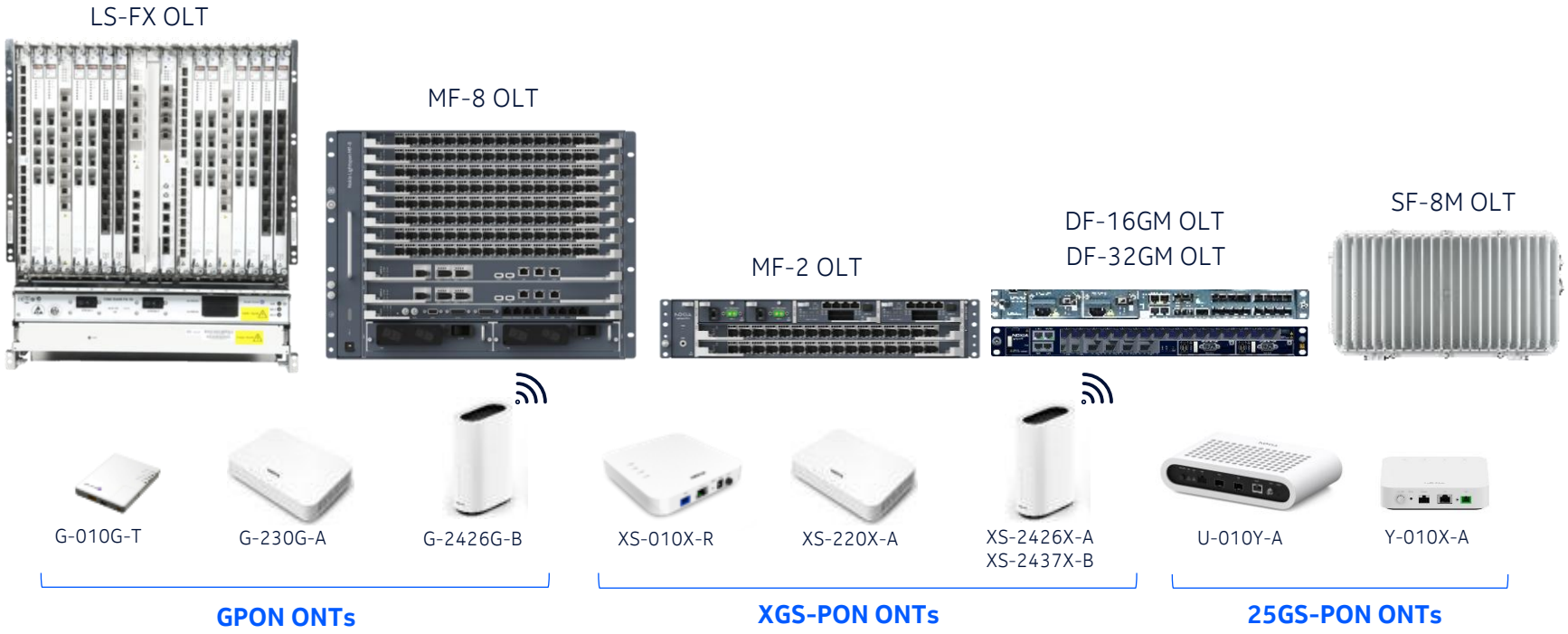
The SDAN quick start package



SDAN Playbook services are **validated** with each release via BATS Automated Test Suite

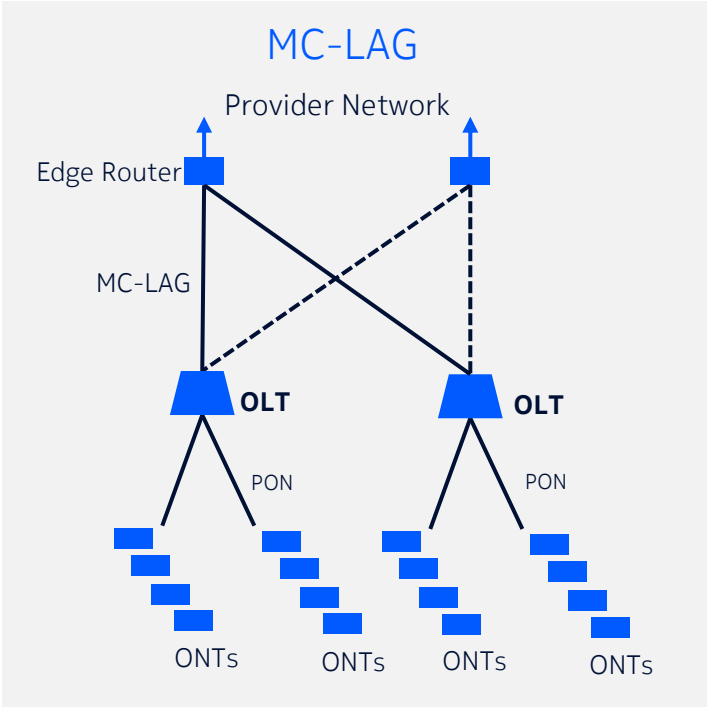
SDAN Playbook Solution overview

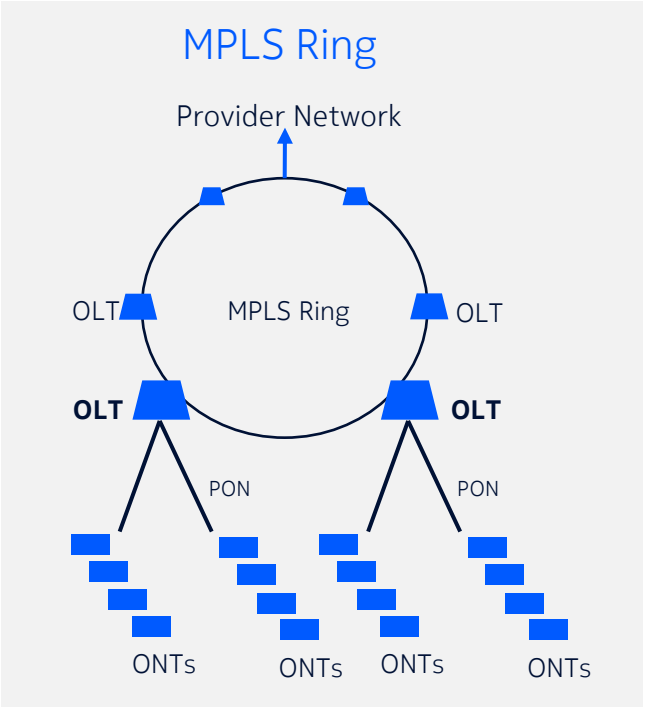
Altiplano Access Controller



Playbook variants: LAG and MPLS ring

Deployment topology options



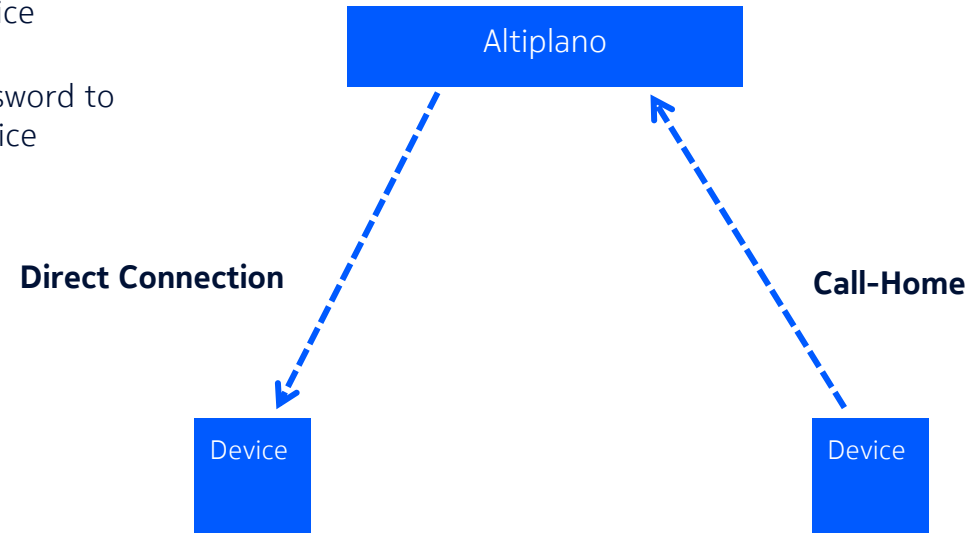


Playbook turn-up guide variants

Direct Connection and Call-Home

Direct Connection:

- Altiplano initiates connection
- Altiplano knows fixed IP address of device
- Altiplano uses username/password to connect to device



Call-Home:

- Device initiates connection
- Device learns Altiplano (PMA) address via DHCP typically
- Mutual certificate validation for authentication
- Devices loaded with required certificates via Configure To Order (factory) process

Subscriber service types

Importable profiles to deploy key service types

Residential HSI

- Best Effort
- Shared Residential Bridge VLAN, Pbit 0, Traffic Class 0

Business internet

- Shared Residential Bridge VLAN, Pbit 2, Traffic Class 2

IPTV video

- IGMP/Multicast Video
- Cross-VLAN Multicast, Pbit 4, Traffic Class 4

Transparent LAN Service

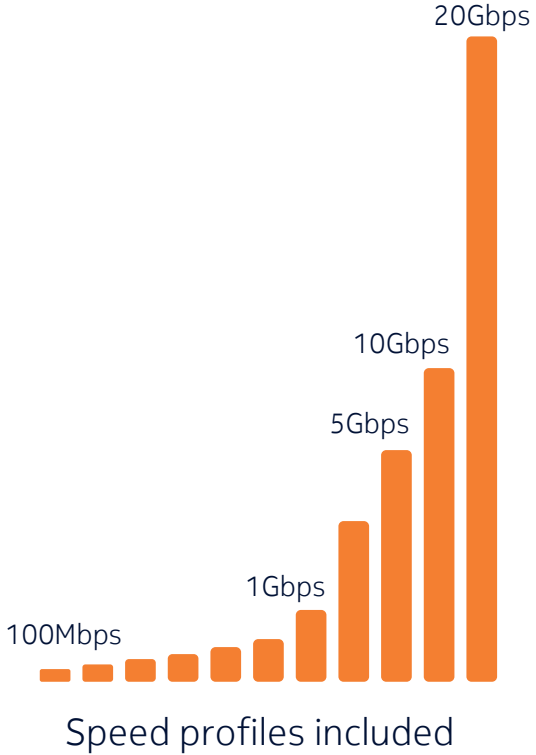
- E-LINE/E-LAN service with User-to-User and L2CP Transparency

Multiservice MSO

- DSCP delineated data, video, voice within one service

Voice

- ONT based voice service
- Shared Residential Bridge VLAN, Pbit 6, Traffic Class 6

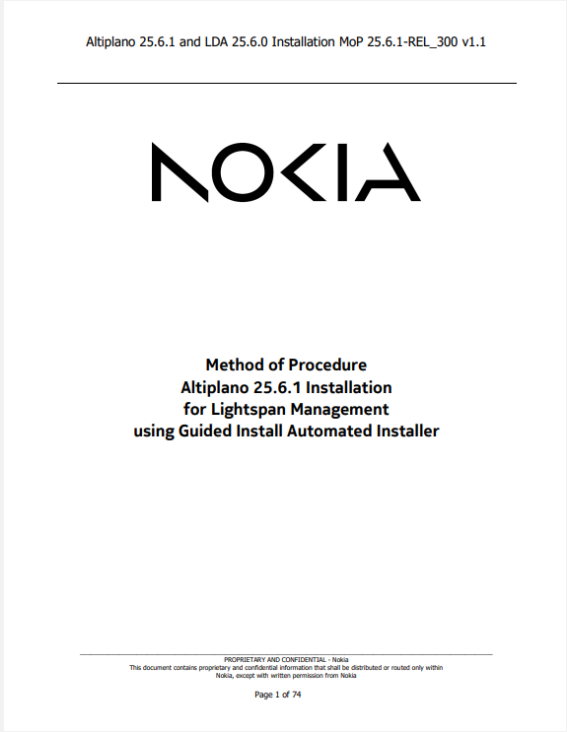


Altiplano installation

Installation process

Following the Automated Installer MOP:

- Obtain a license for Altiplano
- **Transfer** installer package file to target machine
- **Transfer** playbook extension files to target machine
- Install prerequisite linux packages (ansible, etc.)
- Obtain SWDP authentication token
- Run configuration script and **answer prompts**
- **Run installer**


Altiplano 25.6.1 and LDA 25.6.0 Installation MoP 25.6.1-REL_300 v1.1

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Method of Procedure
Altiplano 25.6.1 Installation
for Lightspan Management
using Guided Install Automated Installer

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Auto installer user input

Configuration script with playbook presets

Configuration script **(config.sh)** provides menu system to allow user to enter values with validation

```
nokia-installer@ap113:/data/delivery$
nokia-installer@ap113:/data/delivery$ ./config.sh
```

```
(Top)
                                Nokia/Altiplano 25.6 Configuration
    Deployment level (Production)  --->
    Expert level (Recommended)  --->
[*] Customize Altiplano usernames
[*] Proxy  --->
    Repository  --->
    Operating system  --->
    Kubernetes  --->
    Storage  --->
    Redundancy  --->
    Infrastructure  --->
    Altiplano  --->
    Security  --->
    Applications  --->

[Space/Enter] Toggle/enter  [ESC] Leave menu           [S] Save
[?] Symbol info             [/] Jump to symbol        [V] Validate configuration
[F] Toggle show-help mode   [C] Toggle show-name mode [A] Toggle show-all mode
[X] Toggle show-secret mode [Q] Quit (prompts for save)
```

Auto installer execution

install.sh

- Installation script (install.sh) executes the Ansible playbook to perform installation
- Typical installation time (Kubernetes, Altiplano and Debug Client together) is around 1h 15min
- Installation requires network access to Nokia public Artifactory or SWDP server to allow download of helm charts, packages and container images

```
nokia-installer@ap113:/data/delivery/24.6.2$ ./install.sh
```

Batteries included installer

Guided install

Immediately after the Automated Installer completes:

- Altiplano License is applied
- Debug Client and License Server (LDA) is installed
- Certificates Auto-configured
  - License Server certificates are configured to match CSWL
  - Altiplano certificates are configured to enable Lightspan software download
- Blueprints and Device Software Auto-Import (optional)
  - Playbook Extensions and Blueprints are loaded
  - OLT and ONT Software is imported

OLT Turn-Up

SDAN Playbook Simplified OLT Turn-Up

Benefits achieved in SDAN Playbook OLT Turnup process:

Simplicity

- Remove dependency on initial device active software version
- No need to load extra extensions in Altiplano for factory/initial software version

Flexibility

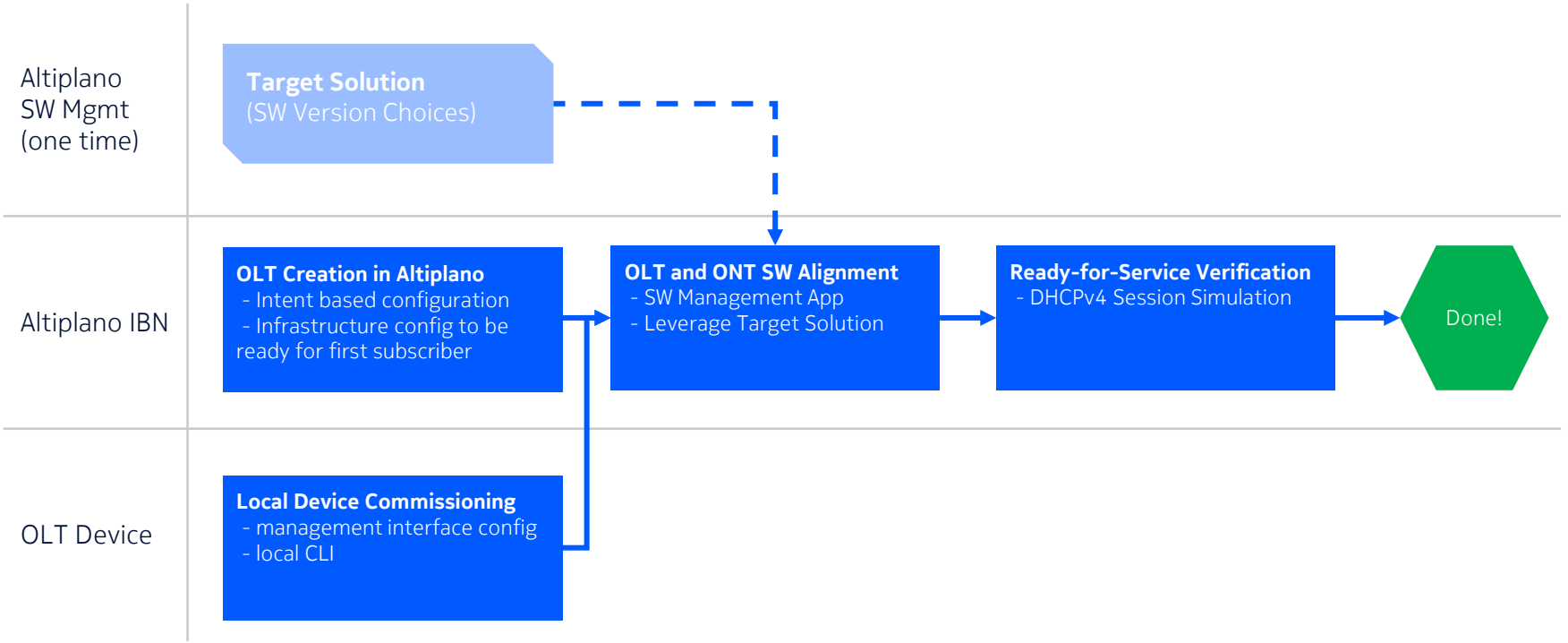
- Use any management VLAN, LAG configuration, and port configuration without having to create custom device configuration templates (direct connection)

Repeatability

- Leverage predefined “Target Solution” in Software Management Application to align OLT and ONT Software versions

OLT Turn-Up process

Overview

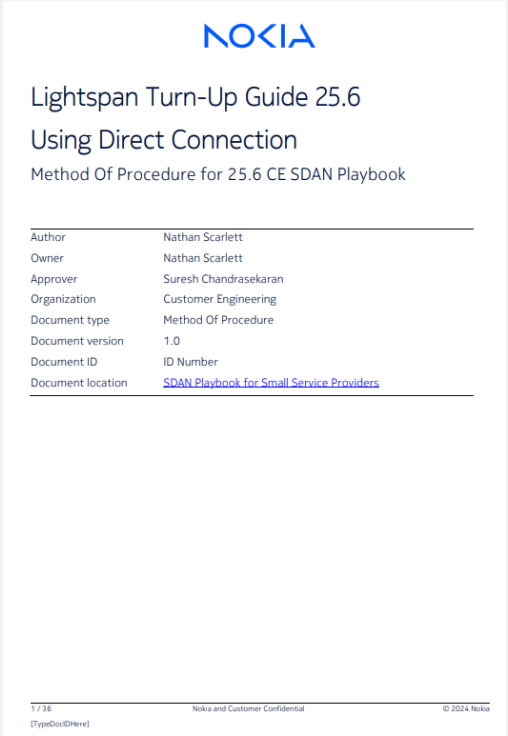


OLT Local CLI Commissioning

For Non Call-Home deployments

Configuration Required via **CLI for initial management connection:**

- **Port** Configuration
- **LAG** Configuration
- **Management VLAN** (VPLS) Configuration
- **IP Interface** (IES Service) Configuration
- Default Route
- NTP Time Server Configuration



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Lightspan Turn-Up Guide 25.6

Using Direct Connection

Method Of Procedure for 25.6 CE SDAN Playbook

Author	Nathan Scarlett
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Organization	Customer Engineering
Document type	Method Of Procedure
Document version	1.0
Document ID	ID Number
Document location	SDAN Playbook for Small Service Providers

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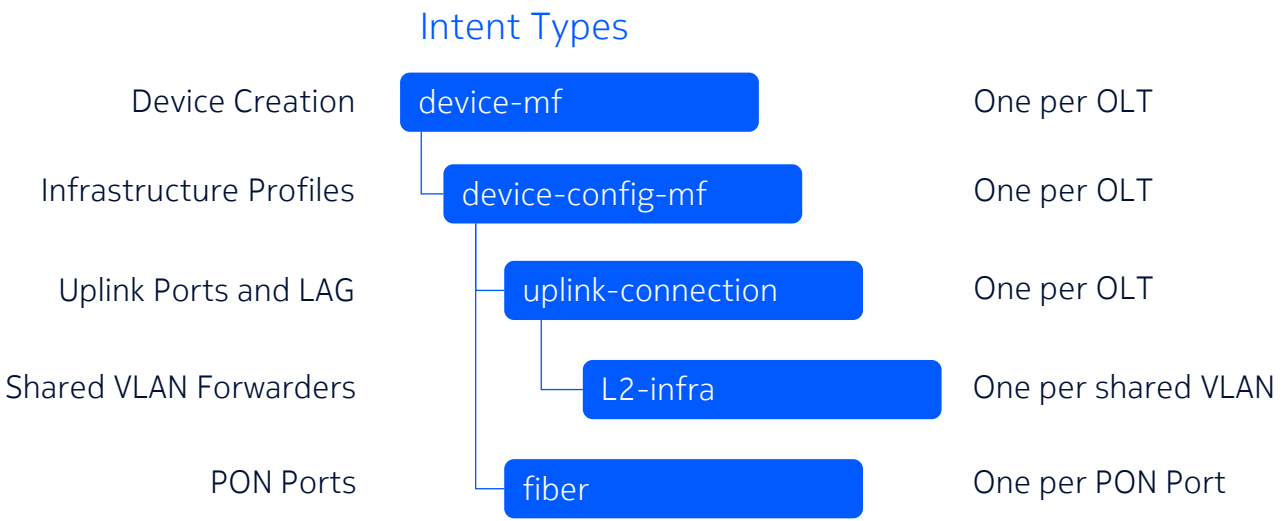
Procedure and CLI script templates are provided

OLT Creation in Altiplano

Get ready for the first subscriber

Simple, Repeatable Intent Provisioning configures everything needed for the first subscriber, from device creation to the PON ports.

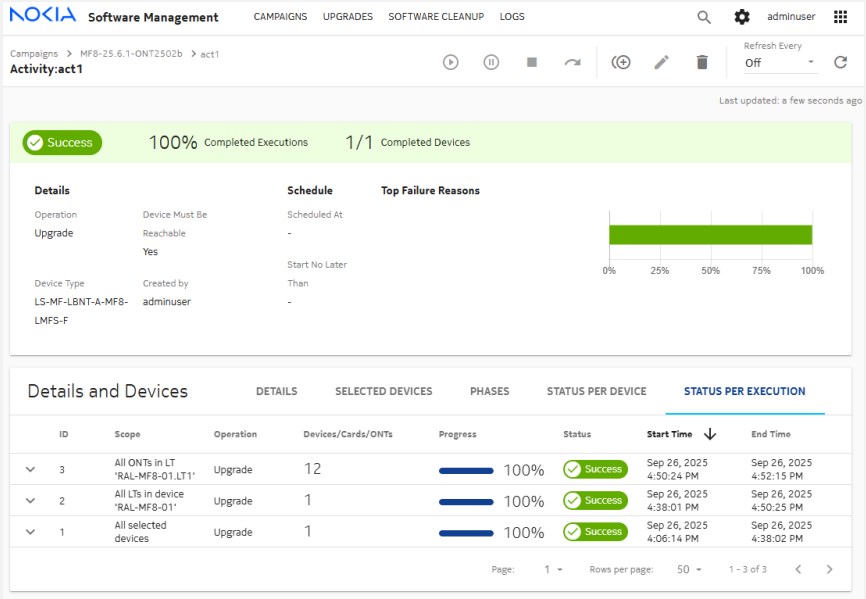


OLT and ONT software version alignment

Leveraging software management app

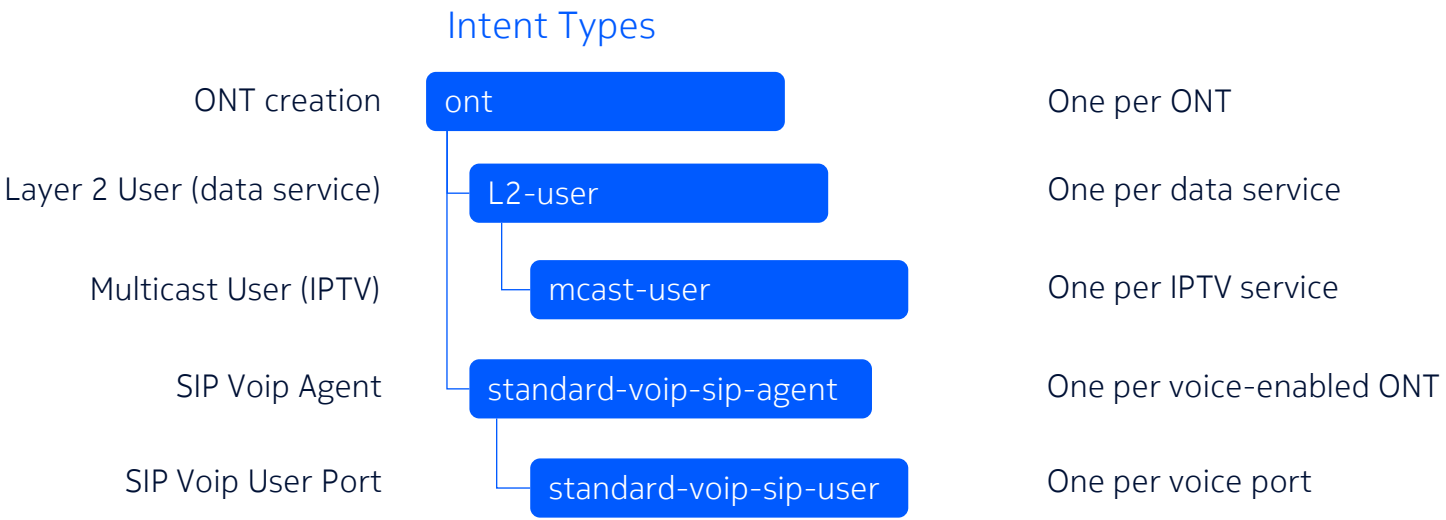
Altiplano Software Management App simplifies OLT Turn-Up

- Pre-defined Target Solution
  - Central definition of target software versions for OLTs and ONTs
  - Includes mapping of ONT hardware models to desired main software and config files
- Software activation is as simple as choosing OLT name and Target Solution name, click Start
- Ensures OLT target software is downloaded and activated
- Ensures ONT target software and config files are downloaded (staged) and mapping table is programmed
  - Existing ONTs will be upgraded
  - Future ONTs will be automatically upgraded upon installation



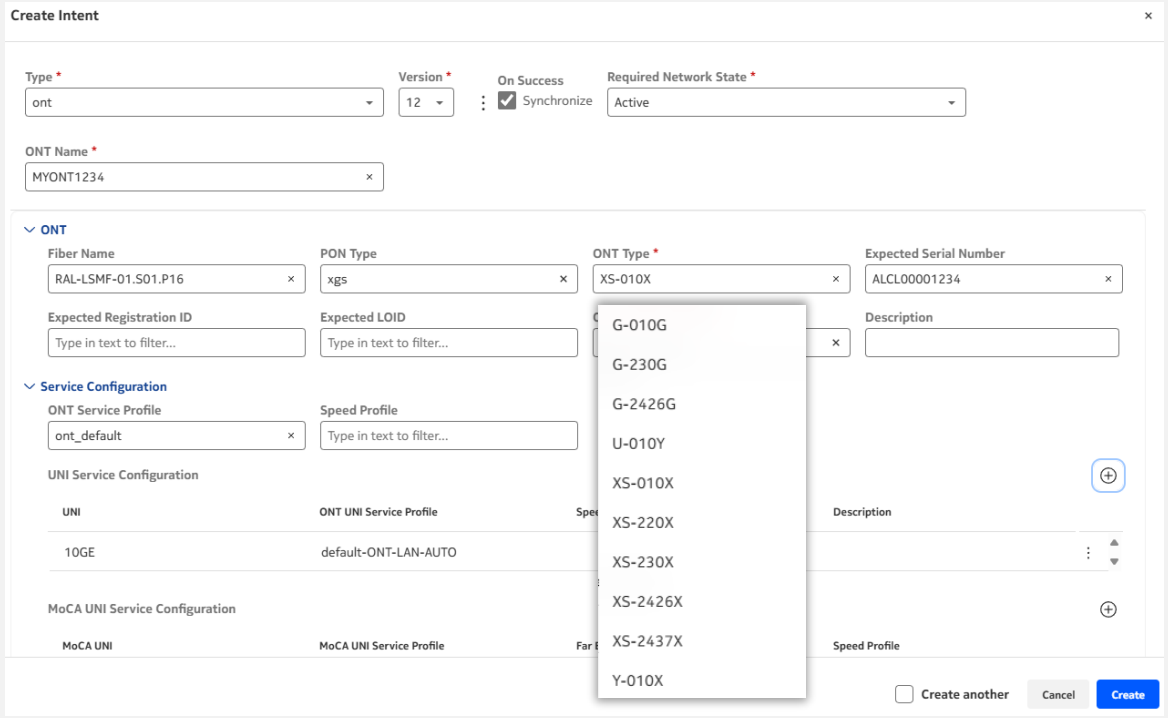
Subscriber provisioning

Simple, Repeatable Intent Provisioning used for subscriber activation, configuring ONTs and services.



ont Intent Creation

Create one per ONT



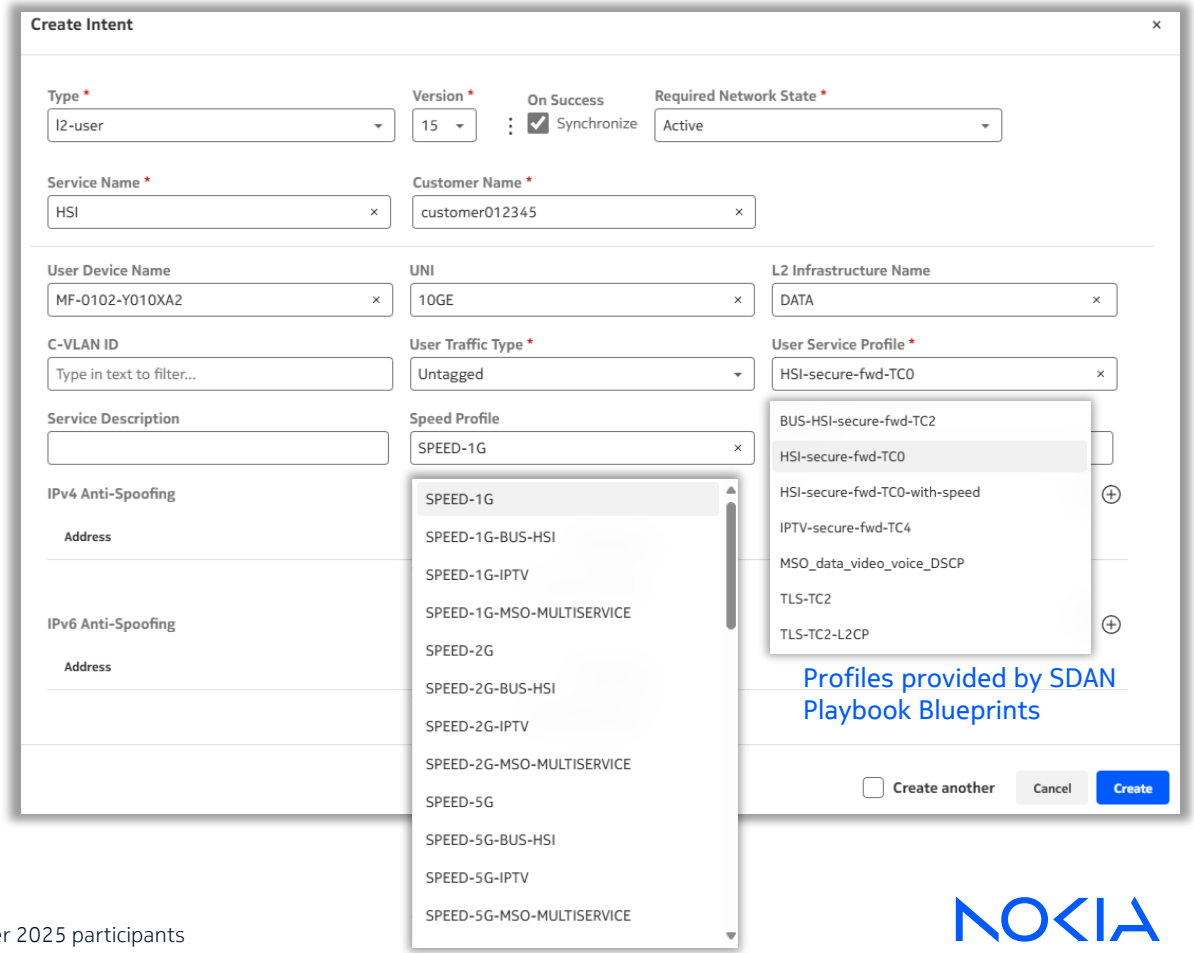
SDAN Playbook Choices

Data Service Creation

One per Data Service

Create the l2-user intent for each subscriber data service

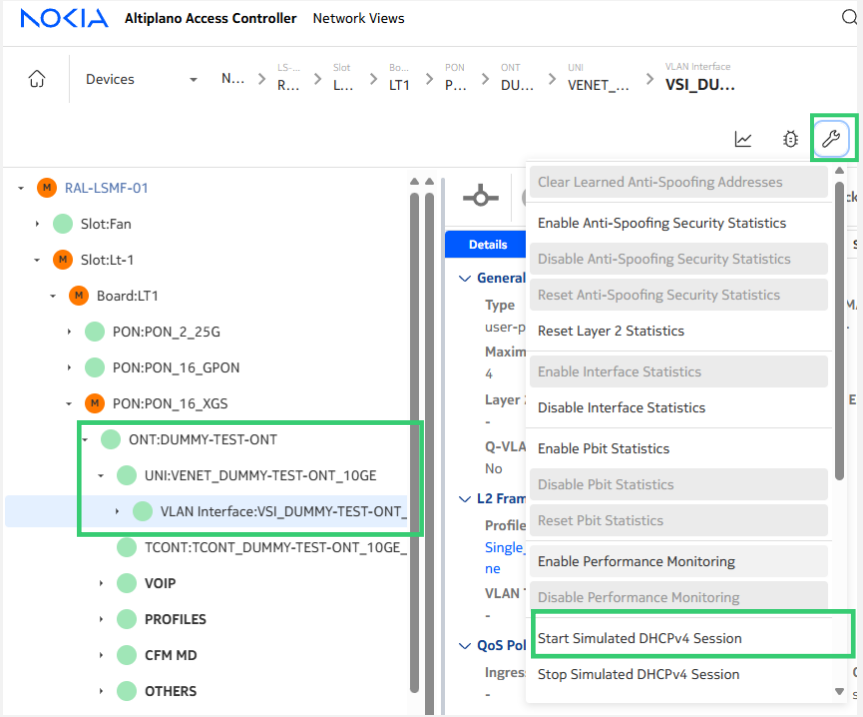
- SDAN Playbook document provides advice for each field.
- SDAN Playbook blueprints provide ready-to-deploy profiles.



OLT Turn-Up Validation
DHCPv4 Client Simulation

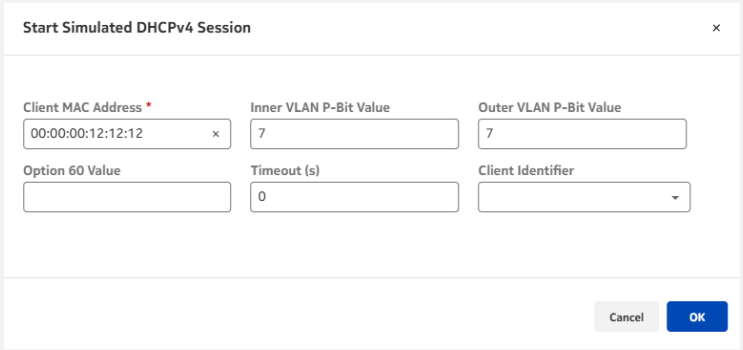
DHCPv4 Client Session Simulation

Verify Network Connectivity even before first ONT is installed



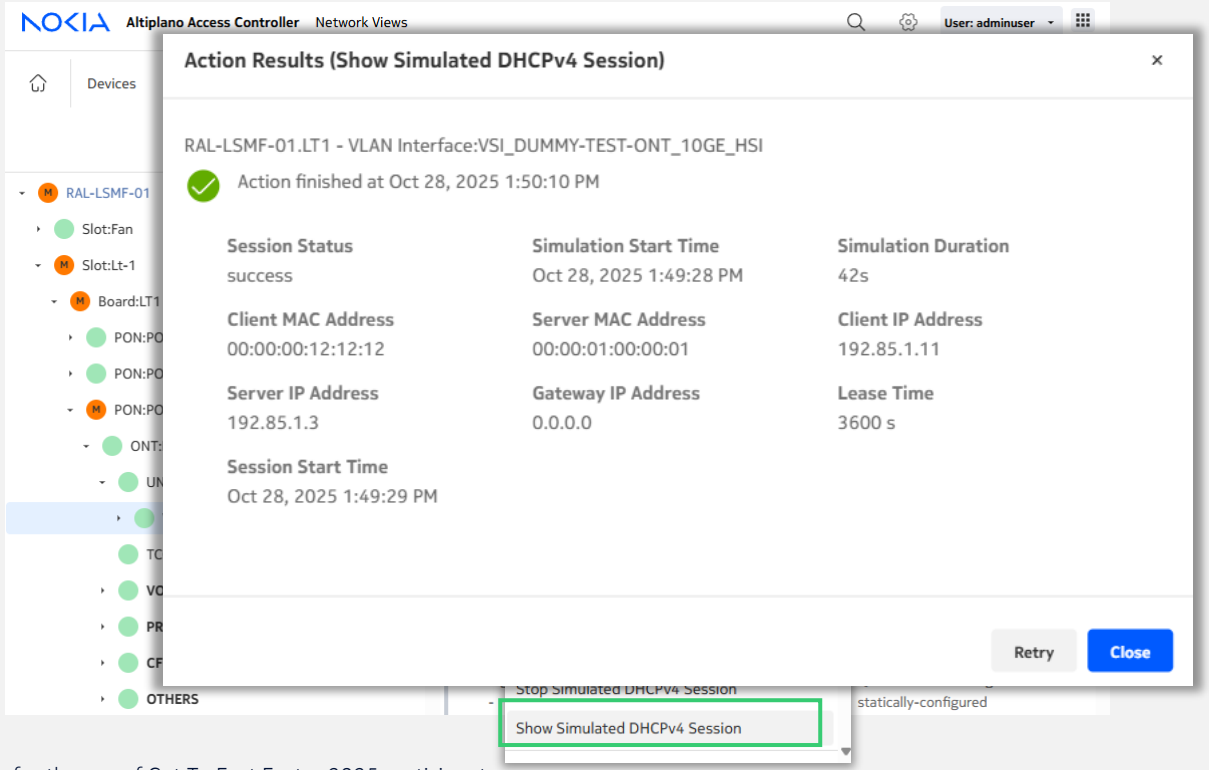
DHCP Client simulated in OLT LT board, to **verify ability to obtain DHCP lease through the OLT and network**.

Supported on MF2, MF8, DF-16



DHCPv4 Client Session Simulation

Verify Network Connectivity even before first ONT is installed



OSS Integration Support

OSS Integration Support

REST API Sample Requests – Postman Collection Files

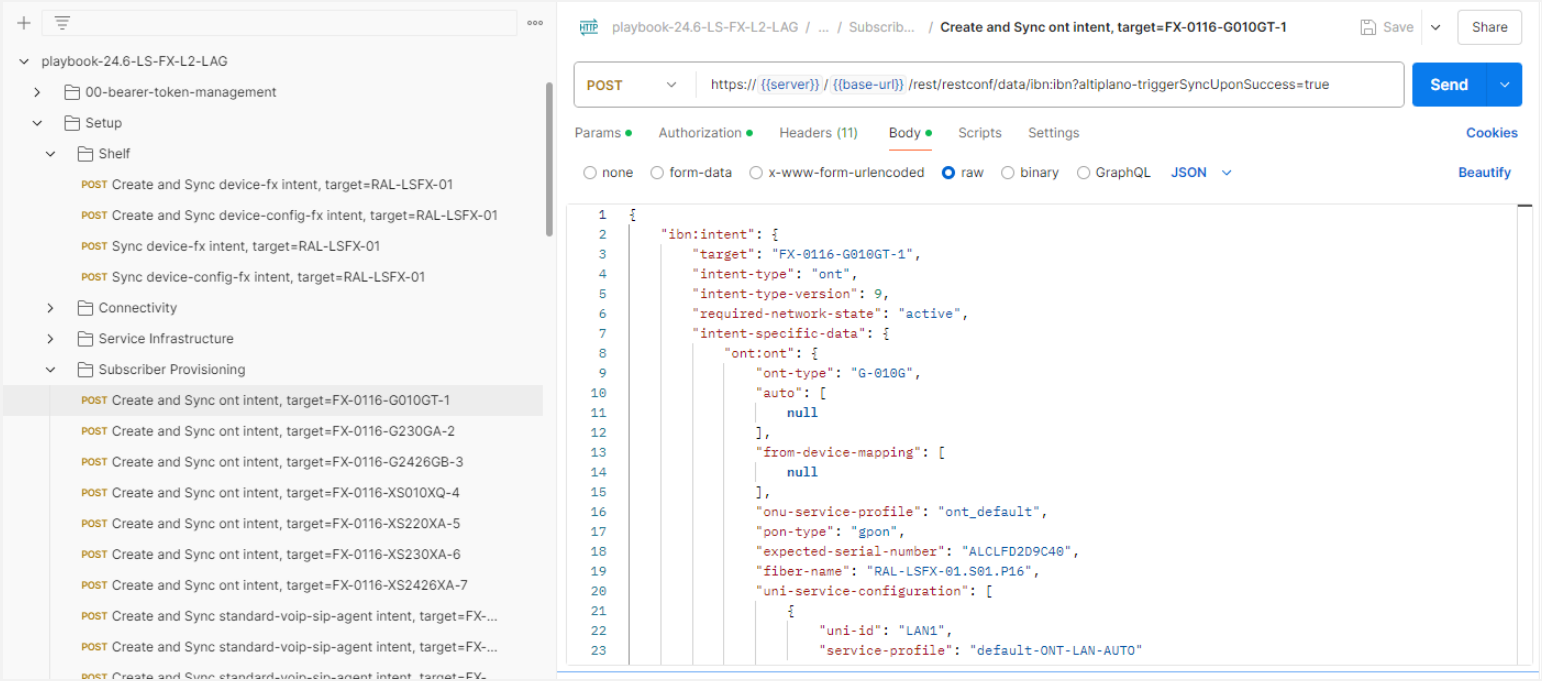
- The SDAN Playbook includes custom Postman collection files containing sample requests specific to the SDAN Playbook
- Helpful input to OSS or Tools teams to jumpstart integration

REST API Samples

- Concrete examples following Playbook Configuration
- Covers all intent types
- Operations
  - Creation
  - Synchronization
  - Get
  - Delete

REST API Samples for all Playbook Intents

Create, Delete, Get, Synchronize

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