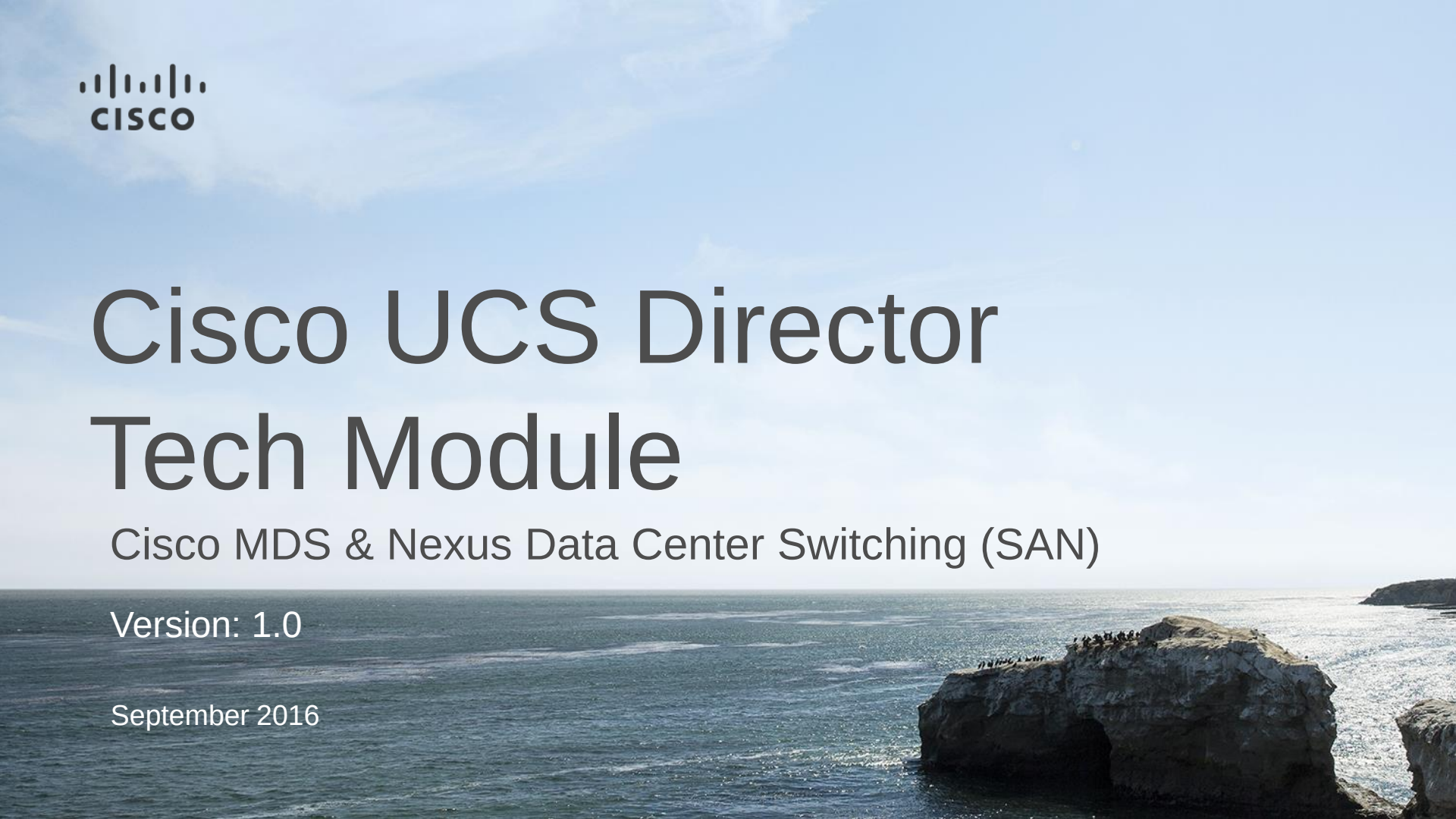


Cisco UCS Director Tech Module

Cisco MDS & Nexus Data Center Switching (SAN)

Version: 1.0

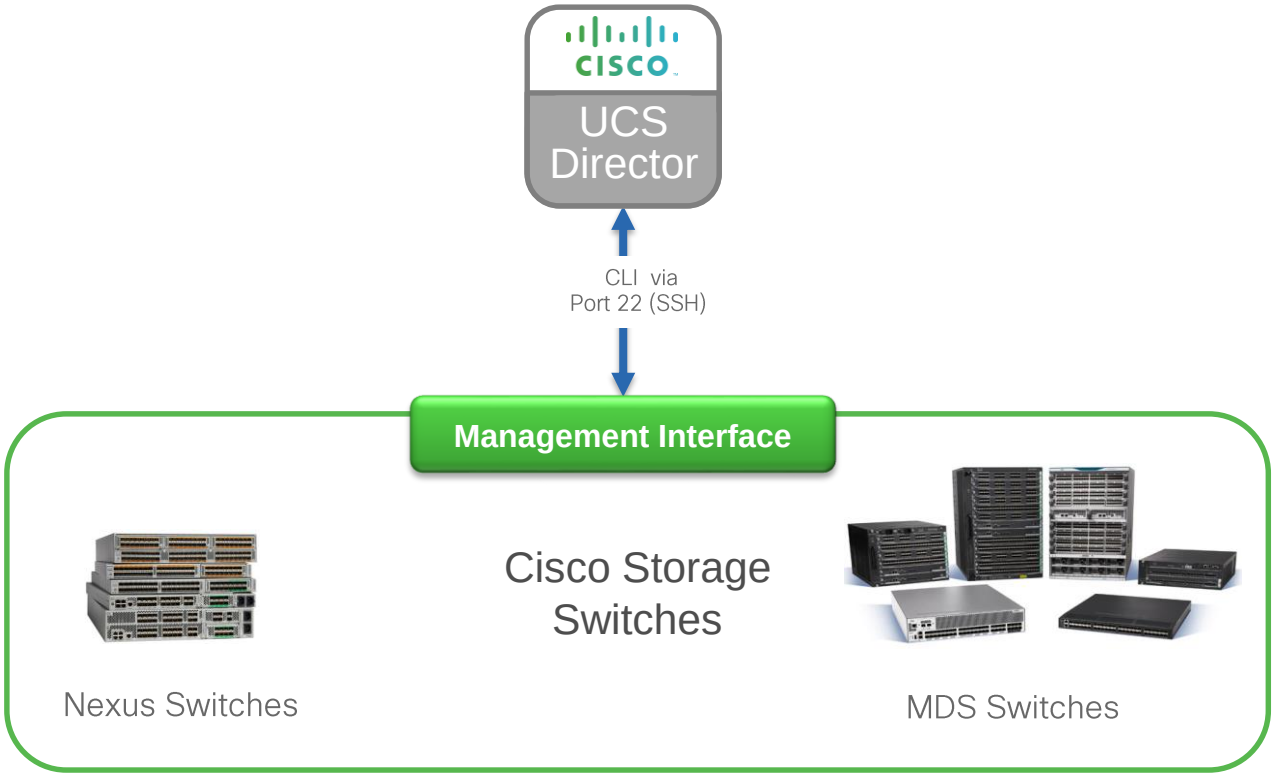
September 2016

Agenda

- Overview & Architecture
- Hardware & Software Compatibility
- Licensing
- Orchestration Capabilities
- Reports
- Example Use-Cases

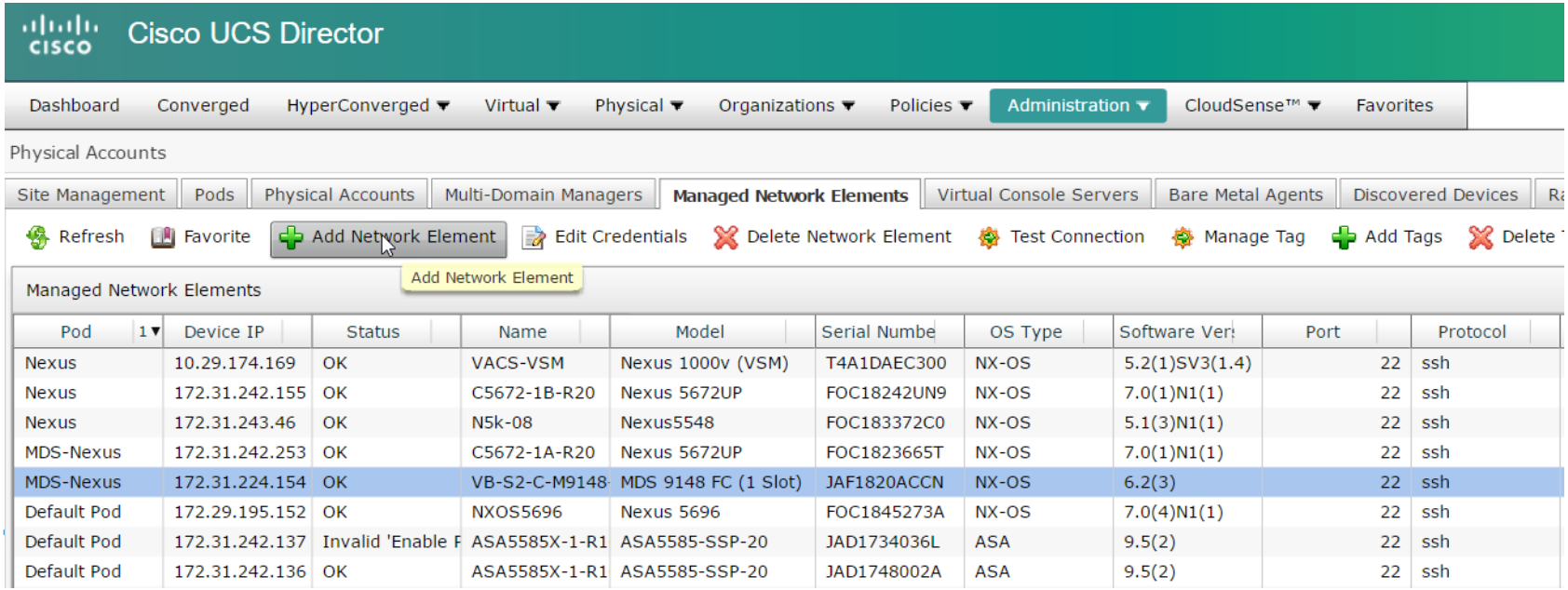
Architecture & Overview

UCS Director and SAN Switch Integration



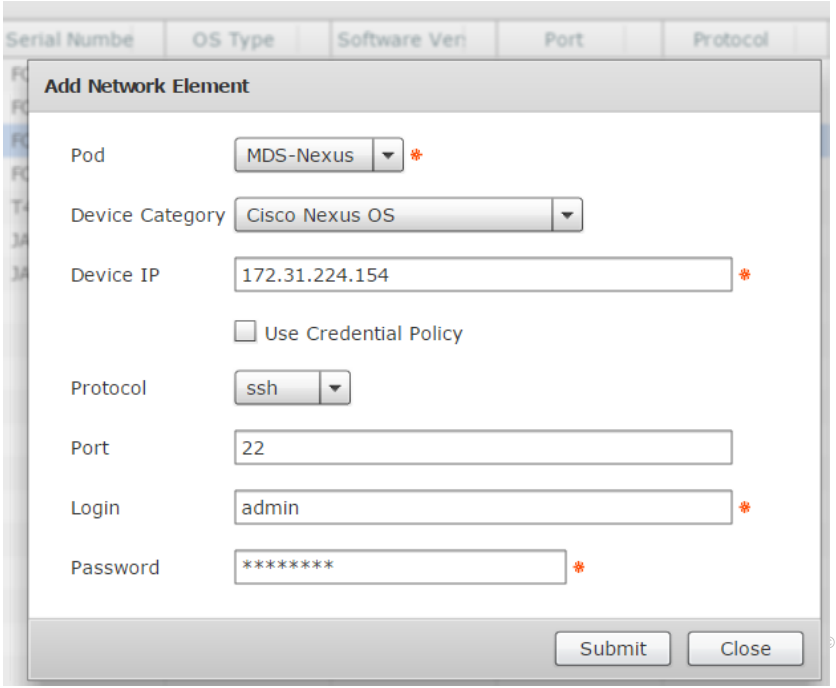
Adding a SAN Data Center Switch

- Navigate to **Administration → Physical Accounts**, choose the **Managed Network Elements** tab and click **Add Network Element**



Adding a SAN Switch

- Select the appropriate **Pod, Device Category and Protocol**



Hardware & Software Compatibility

IMPORTANT!!

- The following slide featuring support information may be out of date
- **ALWAYS** check the most up to date version of the UCS Director Compatibility Matrix
- The latest Compatibility Matrix and other supporting UCS Director documentation can be found at the following location:

  http://www.cisco.com/c/en/us/td/docs/unified_computing/ucs/ucs-director/doc-roadmap/b_UCSDirectorDocRoadmap.html

UCS Director MDS Switch Support

(as of UCS Director 6.0)

Supported Models	Platform	Supported Software
Cisco MDS 9100 Series Data Center Fabric Switches	MDS 9124	NX-OS, Release 5.2(6b)
	MDS 9148	NX-OS, Release: 6.2(1) 6.2(7) 6.2(13a)
	MDS 9148S	NX-OS, Release 6.2(13a)
Cisco MDS 9500 Series Data Center Fabric Switches (Module level support exists, but is not listed here.)	MDS 9506 MDS 9509 MDS 9513	NX-OS, Release 6.2(1)

UCS Director MDS Switch Support Cont.

(as of UCS Director 6.0)

Supported Models	Platform	Supported Software
Cisco MDS 9700 Series Data Center Fabric Switches	MDS 9706	NX-OS, Release: •6.2(9a) •6.2(13a)
	MDS 9710	NX-OS, Release 6.2(1)
	MDS 9706	NX-OS, Release: •6.2(9a) •6.2(13a)

UCS Director Nexus 5000 Series Data Center Switch Support *(as of UCS Director 6.0)*

Supported Models	Supported Software (NX-OS)
Nexus 5596Q	7.0(7)N1(1)
Nexus 5596UP Nexus 5596T	6.0(2)N2(5)
Nexus 5548UP	5.2(1)N1(4) 6.0(2)N2(5)
Nexus 5548P	5.2(1)N1(4) 5.2(1)N1(7) 5.2(1)N1(8b) 5.2(1)N1(9) 6.0(2)N2(5)
Nexus 5696Q	7.1(1)N1(1) 7.2(1)N1(1)

Supported Models	Supported Software (NX-OS)
Nexus 5672UP	7.0(1) 7.2(1)N1(1)
Nexus C5624Q	7.1(1)N1(1) 7.2(1)N1(1)
Nexus 5648Q	7.1(1)N1(1) 7.1(2)N1(1)
Nexus 56128P	7.1(1)N1(1)

UCS Director Nexus 6000 Series Data Center Switch Support *(as of UCS Director 6.0)*

Supported Models	Supported Software (NX-OS)
Nexus 6001-64P	6.0(2)N1(2) 7.0(1)N1(1)

UCS Director Nexus 7000 Series Data Center Switch Support *(as of UCS Director 6.0)*

Supported Models	Supported Software (NX-OS)
Nexus 7702 Nexus 7706 Nexus 7710 Nexus 7718	6.2(8a)
Nexus 7004 Nexus 7009 Nexus 7018	6.2(8a)
Nexus 7010	6.2(8a) 6.2(12) 6.2(14)
Supervisors	6.1(3)

Supported Models	Supported Software (NX-OS)
Supervisor 2E Supervisor 2	6.1(2)
Supervisor 1	6.2(2) 6.2(2a) 6.2(12) 6.2(14)

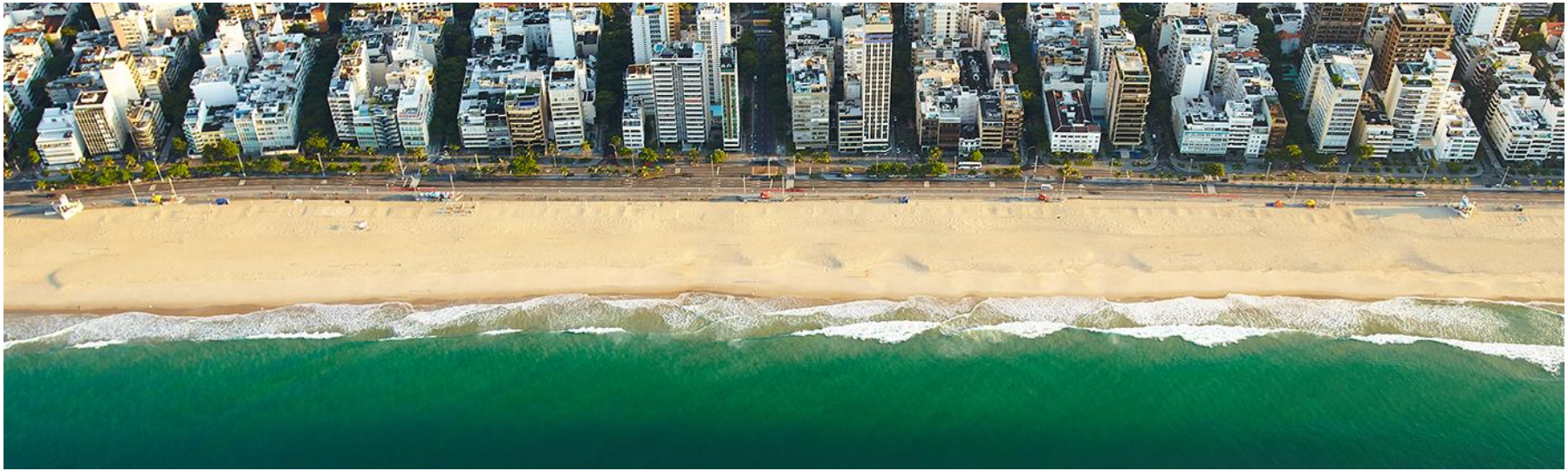
F-Series I/O Modules	
N7K-F132XP-15 N7K-F248XP-25	N7K-F248XP-25E N7K-F248XT-25E

UCS Director Nexus 9000 Series Data Center Switch Support *(as of UCS Director 6.0)*

Supported Models	Supported Software (NX-OS)
Nexus 9136PX	6.1(2)I2(1) 7.0(3)I2(2a)
Nexus 9508	6.1(2)I2(2)
Nexus 9504	7.0(3)I1(2) 7.0(3)I2(2a)
Nexus C9516	7.0(3)I1(1) 7.0(3)I2(2a)
Nexus 9372TX	6.1(2)I3(1)
Nexus 9396TX	6.1(2)I3(1) 7.0(3)I1(2)

Supported Models	Supported Software (NX-OS)
Nexus 9332PQ	7.0(3)I1(1)
Nexus 9372PX	6.1(2)I3(1) 7.0(3)I2(2a)
Nexus 93120	7.0(3)I2(2)
Nexus 93128	7.0(3)I2(1a) 7.0(3)I2(2d)

**All versions pertain to Nexus 9000 switches running in standalone (non-ACI) mode only



Licensing

Licensing Information

- UCS Director licensing is purchased solely in the form of physical server licenses
- Each physical server license includes a storage device license and a network device license as well
- UCS Director tracks the number of physical servers, storage and network devices being managed against the number of installed licenses
- If additional storage and/or network device licenses are required, you can purchase additional physical server licenses
- Each physical network device (switch) will consume a network device license
- Standalone VSM or VSM HA will require only 1 network device license for UCS Director to manage
- Enabling the VXLAN feature in UCS Director doesn’t need any license as base license includes all the features

Licensing Examples


Network Device


Physical Server


Storage Device

Example 1

Qty. to be managed

Total licenses available


X 6/50


X **50/50**


X 8/50

Total Physical Server Licenses Required: **50**

Example 2


X 0/8


X 0/8


X **8/8**

Total Physical Server Licenses Required: **8**

Storage Device License Included in Physical Server License

Example 3


X **10/10**


X 4/10


X 2/10

Total Physical Server Licenses Required: **10**

Network Device License Included in Physical Server License

Orchestration Capabilities

Orchestration Capabilities

VSAN Tasks:
Create VSAN
Associate VSAN to VLAN
UnAssociate VSAN from VLAN

Alias Tasks:
Delete Device Alias
Create Device FCAlias
Update Device FCAlias
Delete Device FCAlias
Create Device Alias

VFC Tasks:
Create VFC Interface
Associate VFC Interface
Delete VFC Interface

Zoning Tasks:
Configure SAN Zoning
Delete SAN Zone
Enable SmartZone
Assign FC Port to VSAN
Create SAN Zone
Convert To Smart Zone
Create SAN Zone Set
Delete SAN Zone Set
Add SAN Zone to Zone Set
Add Member To SAN Zone
Remove Member From SAN Zone
Activate SAN Zone Set
Remove San Zone From Zone Set
Generic Configure SAN Zoning

Note: Switch Storage tasks are embedded in Cisco Network tasks (in Task Library)

Reports

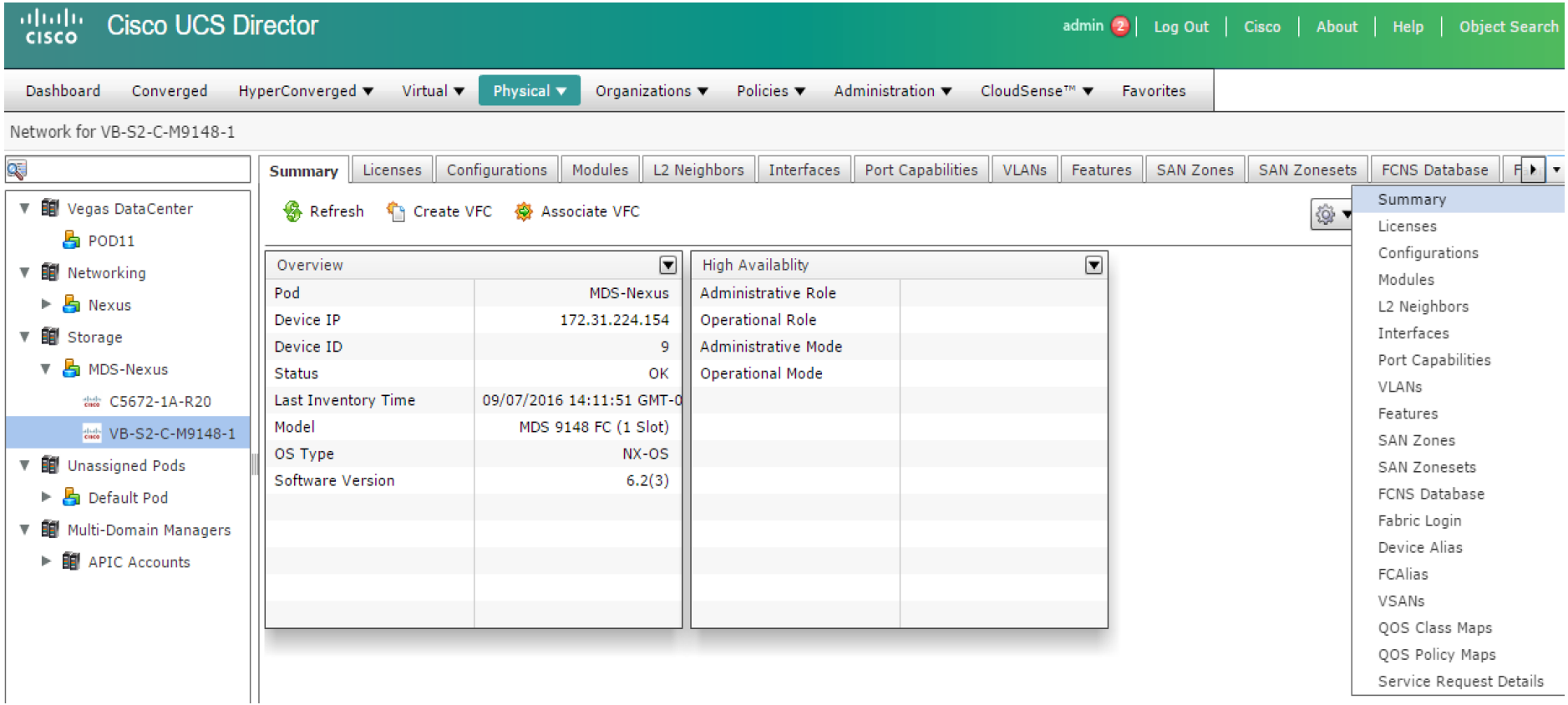
Tabular Reports and Information

- UCS Director discovers MDS/Nexus switches configuration through an inventory process and provides the below reports
- Depending upon the capability of the platform, UCSD will show specific parameters. Common storage parameters across platform are listed below:

  - Features
  - SAN Zones
  - SAN Zonesets
  - FCNS Database
  - Fabric Login
  - Device Alias
  - FCAlias
  - VSANs
  - Modules
  - Licenses
  - Interfaces
  - L2 Interfaces
  - VLANs
  - Configuration
  - Modules
  - Summary

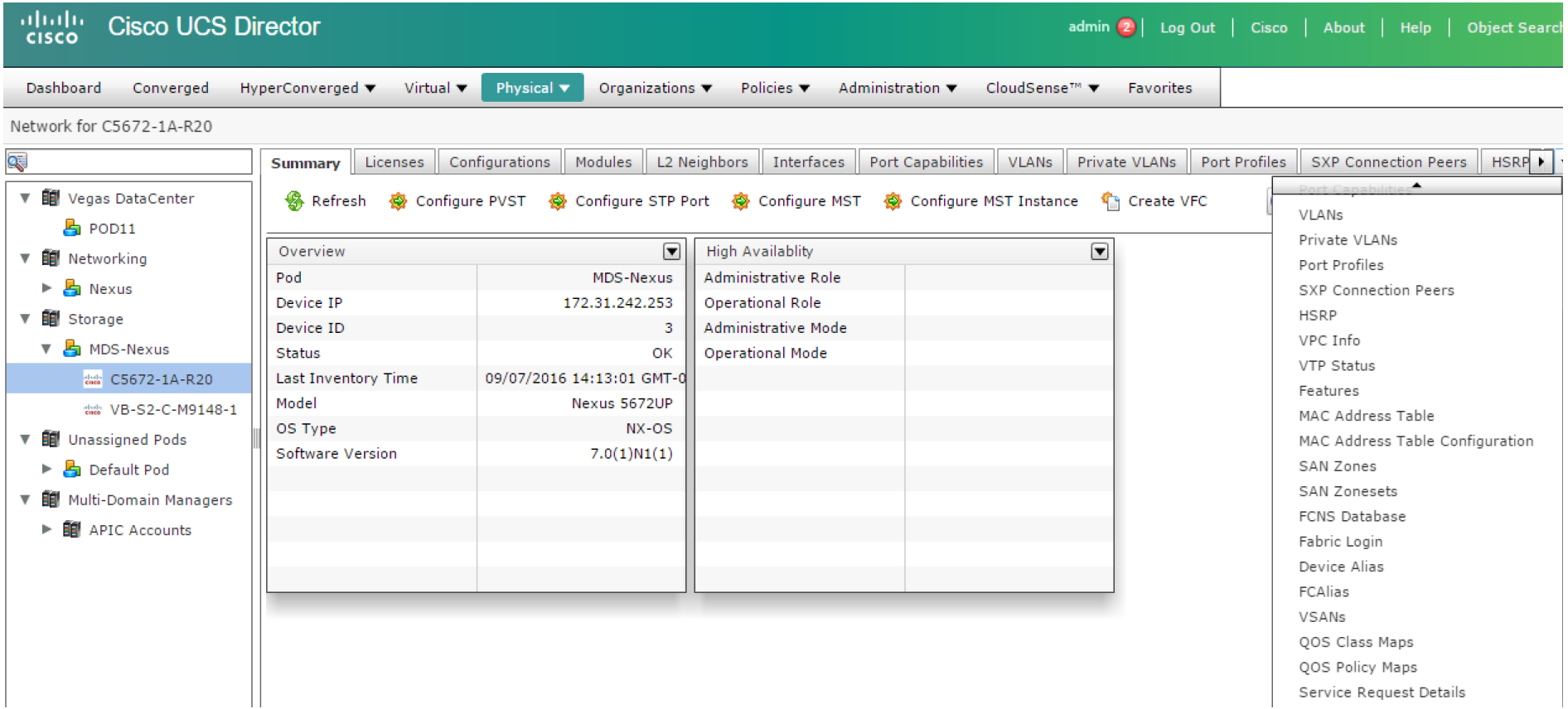
Tabular Reports and Information

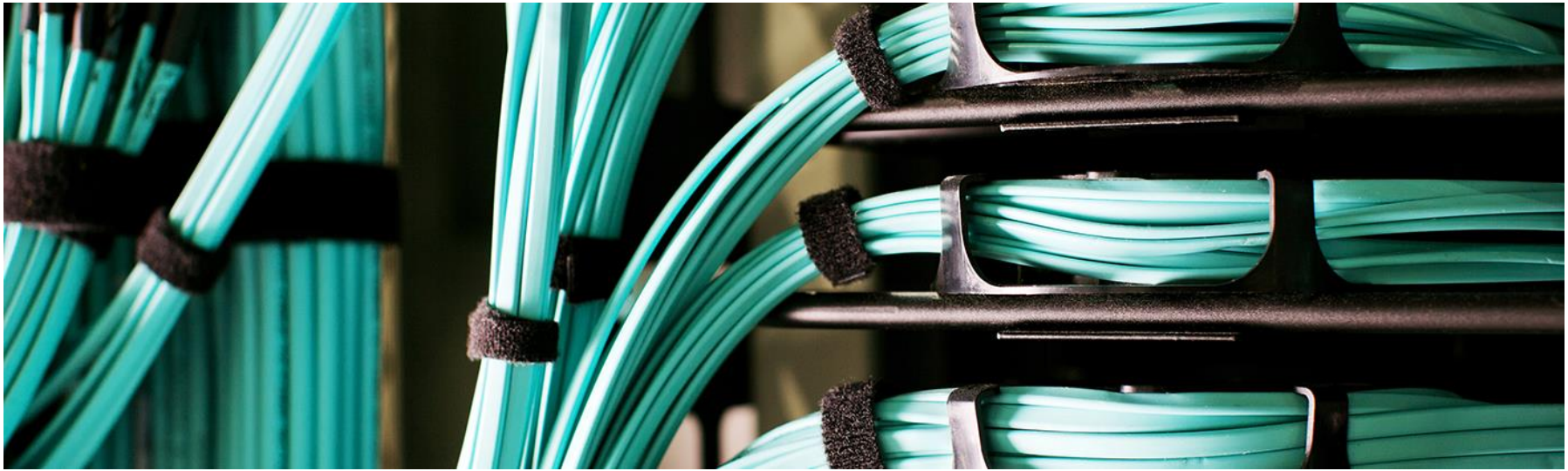
MDS



Tabular Reports and Information

Nexus 5000





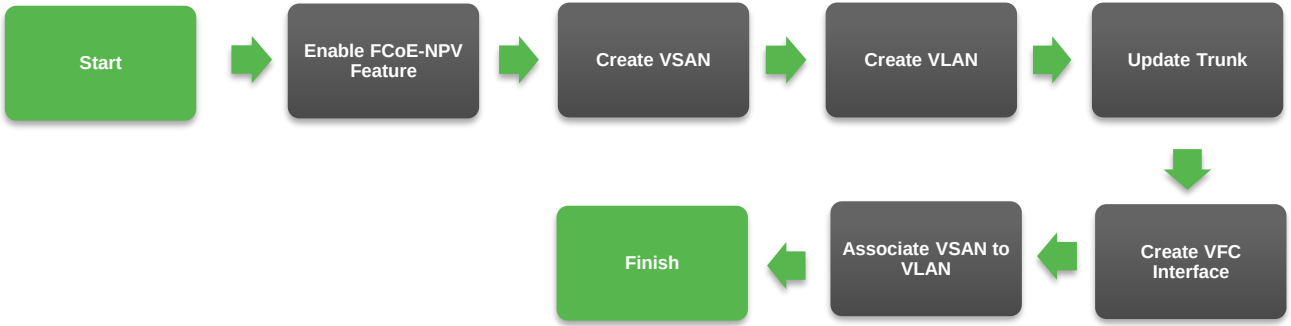
Example Use-Cases

Example Use-Cases

- Use-Case #1: Create VSAN, VFC Interface on Nexus 5000
- Use-Case #2: Create VSAN, and SAN Zoning on MDS Switch

Use Case # 1

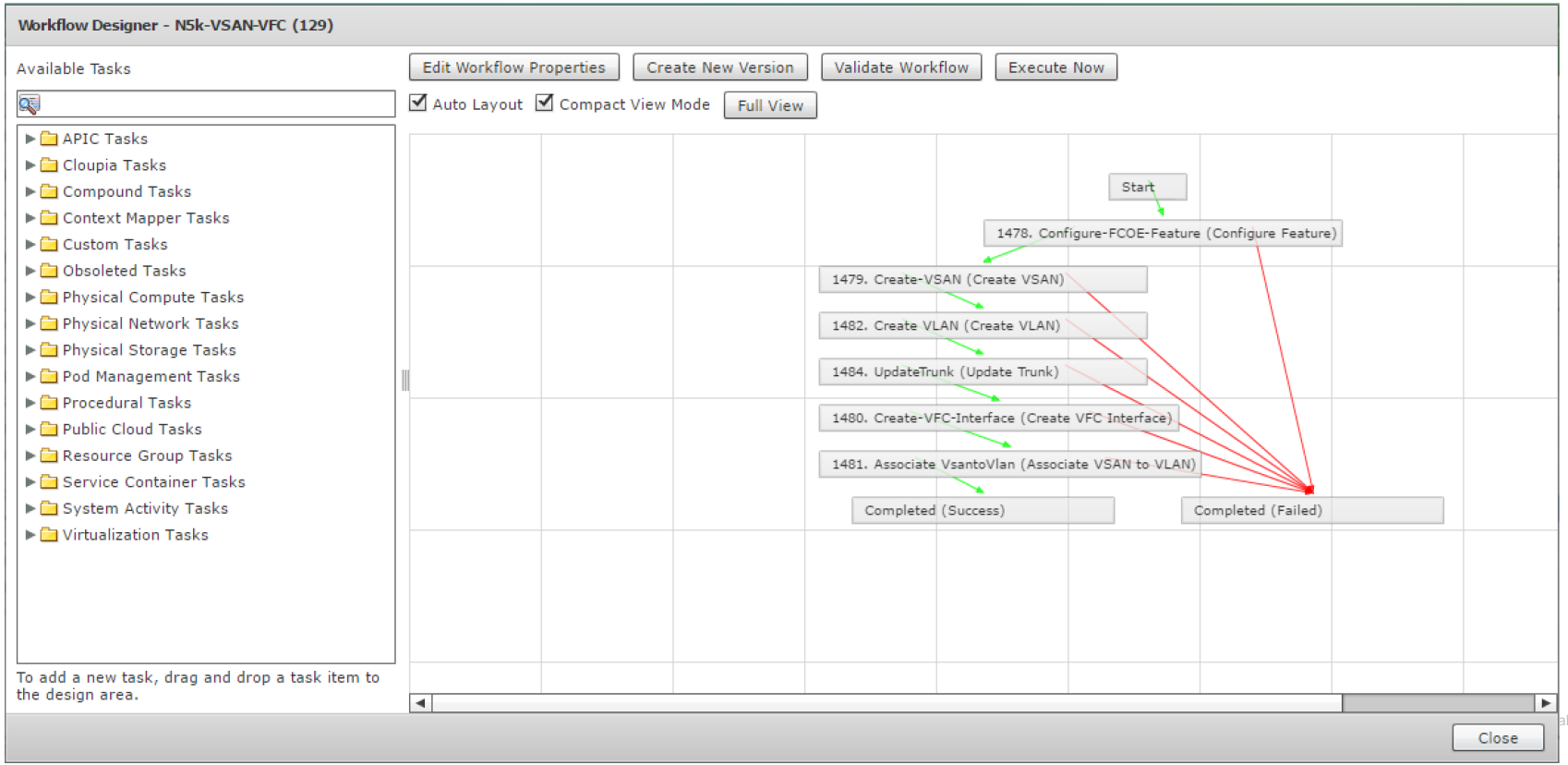
- UCSD configures FCoE NPV functionality on Nexus switches.
- In this workflows UCSD enables FCoE NPV Feature, configures VSAN, VLAN, maps VSAN to VLAN, Creates VFC interface and binds it to Ethernet Interface, and updates VLAN on Ethernet interface



- Workflow can be downloaded from the UCS Director community site https://communities.cisco.com/docs/DOC-69601

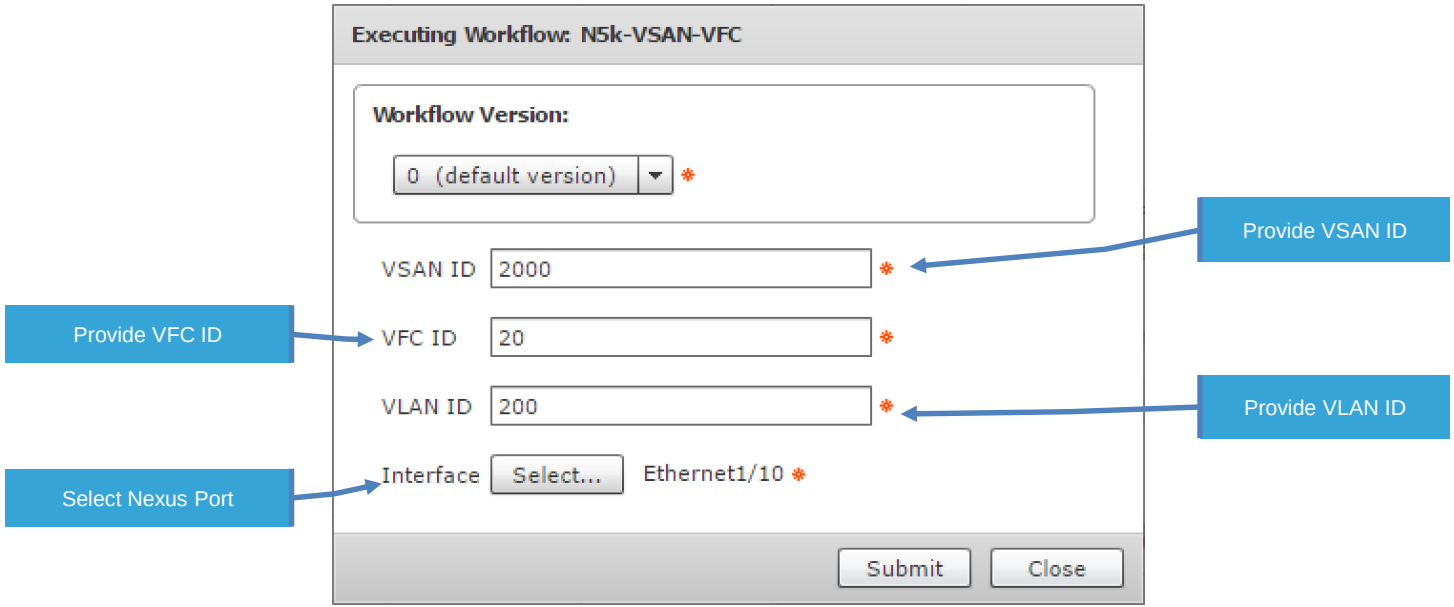
Use Case # 1

The actual workflow for this use case is as shown below:



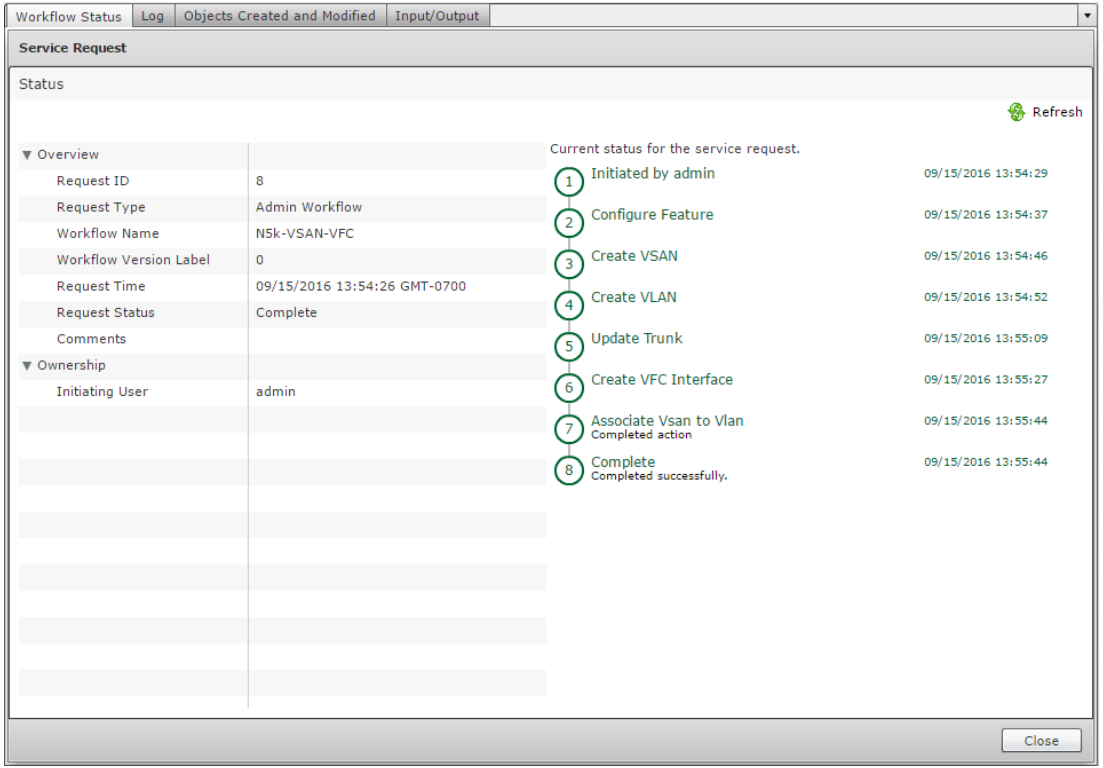
Use Case # 1

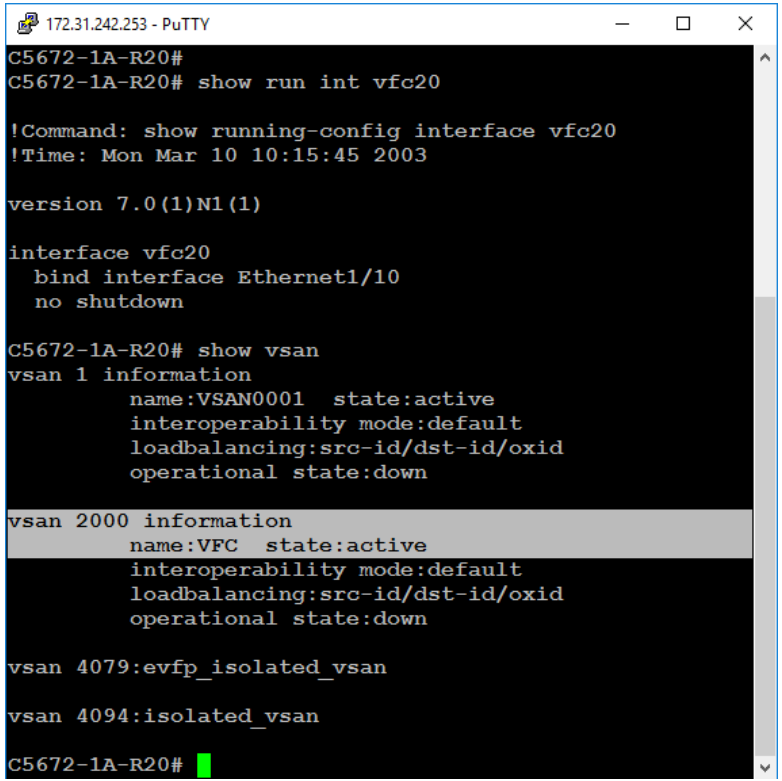
Execute the workflow and provide the requested user inputs



Use Case # 1

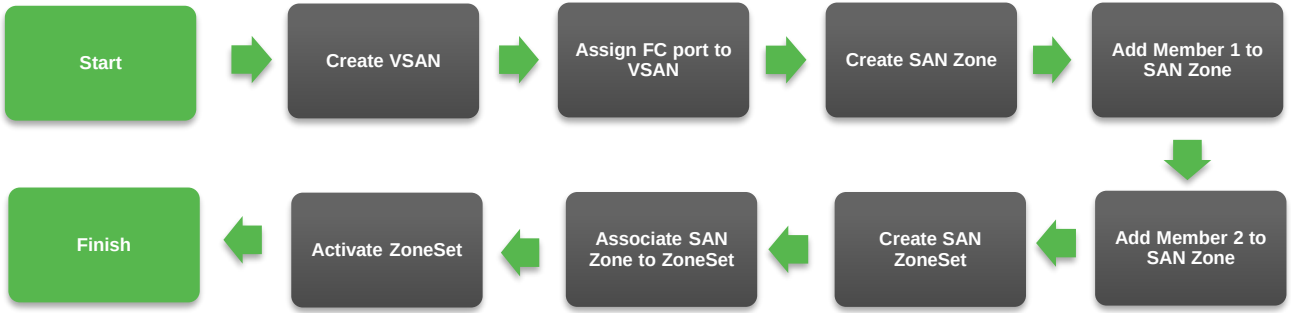
Service Request completion and Nexus Verification





Use Case # 2

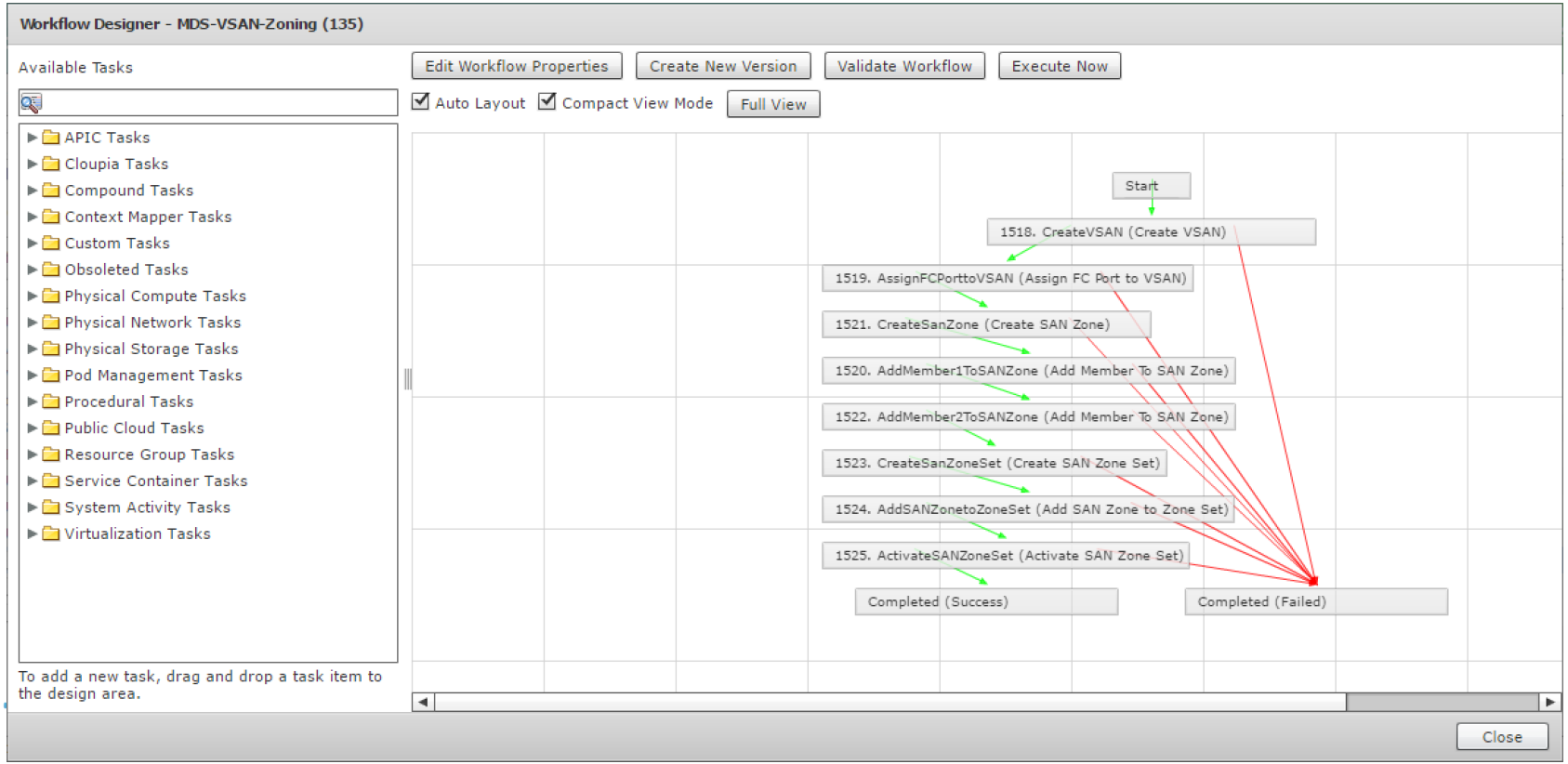
- UCSD can configure Enhanced zoning end-to-end on MDS Switch
- In this workflows UCSD creates VSAN, assigns FC port to VSAN, creates SAN Zone and add members to it, creates ZoneSet and adds Zone to it, finally activates the ZoneSet.



- Workflow can be downloaded from the UCS Director community site https://communities.cisco.com/docs/DOC-69602

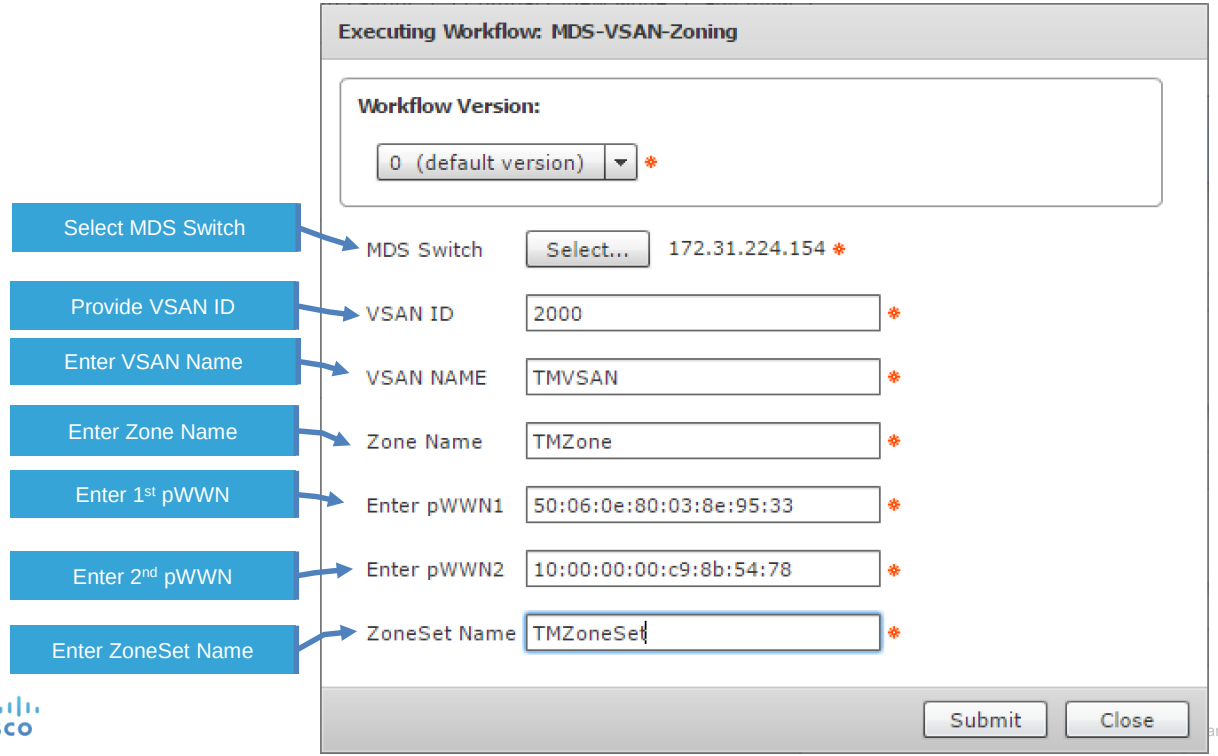
Use Case # 2

The actual workflows for this use case is as shown below:



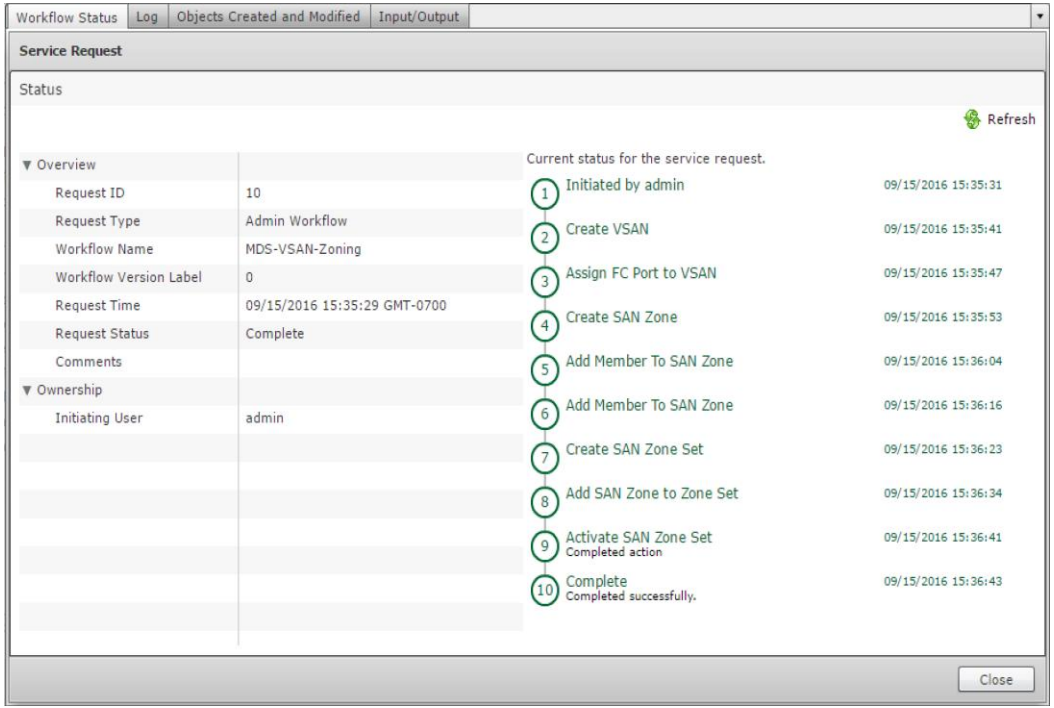
Use Case # 2

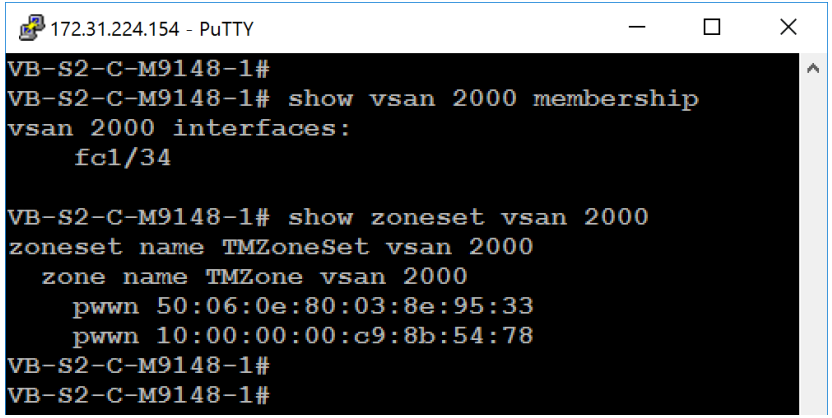
Execute the workflow and provide the requested user inputs



Use Case # 2

Service Request completion and MDS Verification






CISCO
TOMORROW starts here.