



Building NSO Services

On The Fly

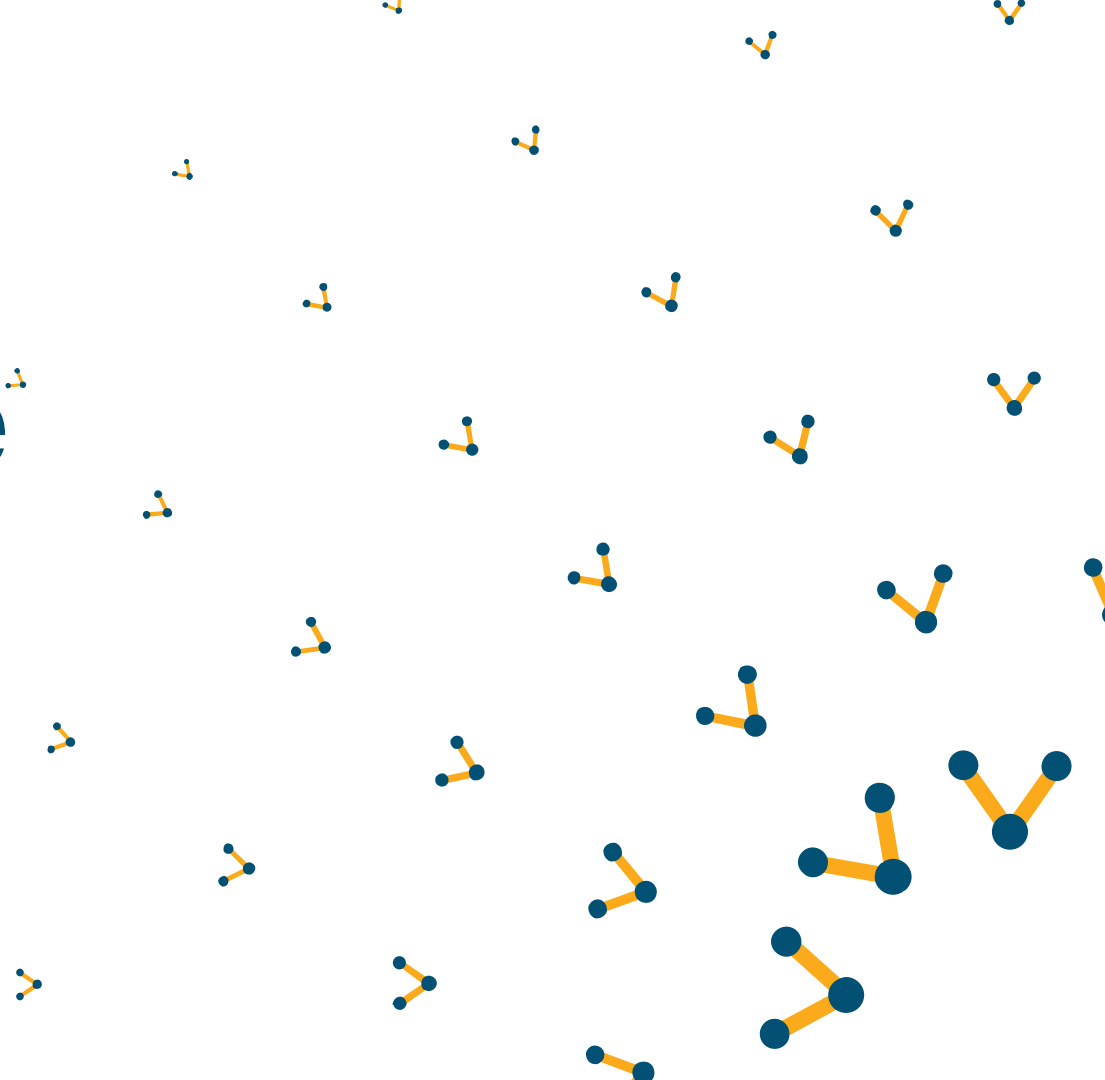
Imran Baig imrbaig@cisco.com
Imtiaz Ahmad ahmimtia@cisco.com
Solutions Architect - CX

June, 2020

Agenda

- 1 Service Packages
- 2 Use Case
- 3 Service Builder Overview
- 4 Demo

NSO Service Packages



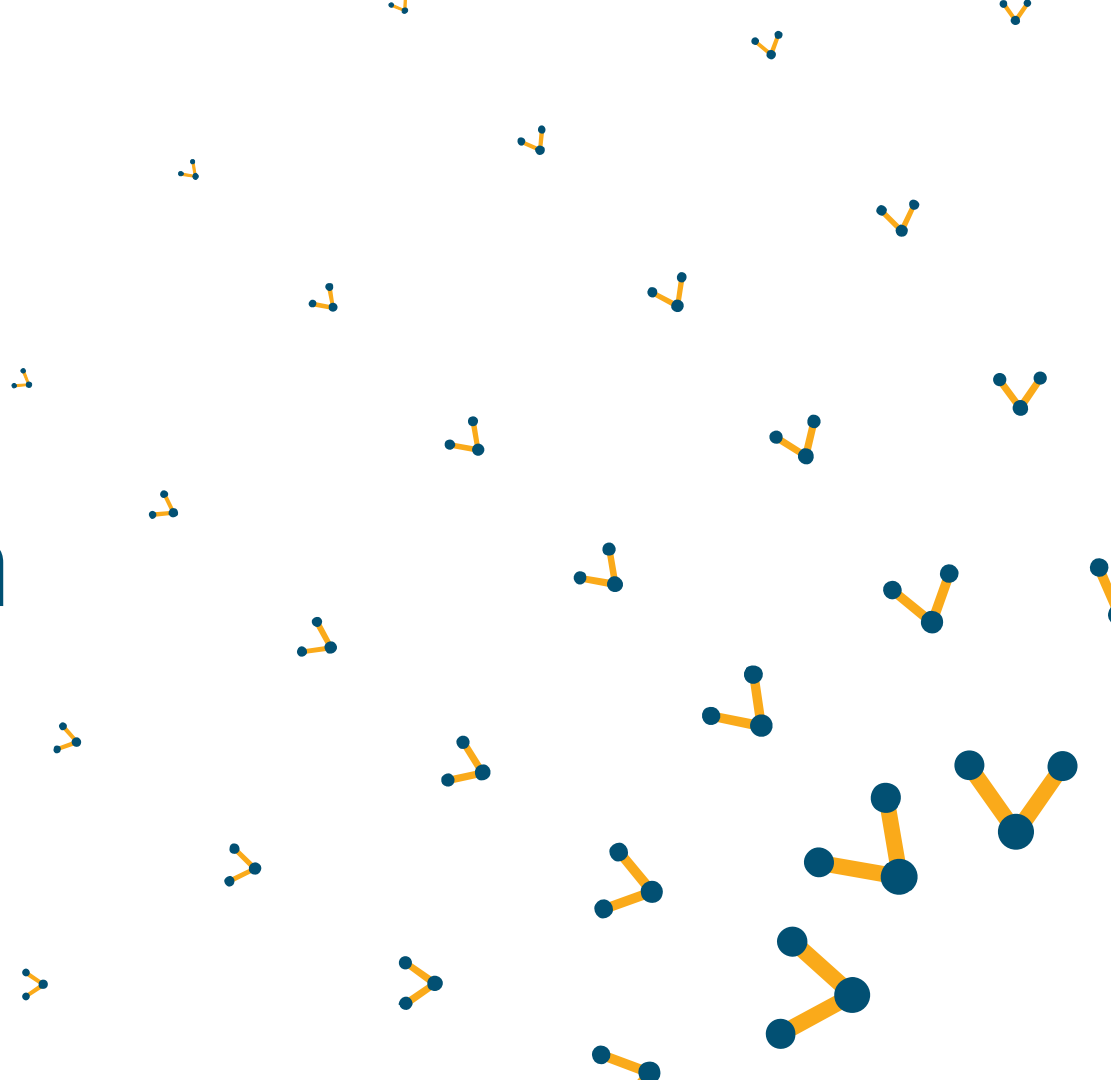
NSO Service Package Types

- Template Based Package
Required Skills: YANG, XML
- Java Based Package
Required Skills: YANG, XML, JAVA
- Python Based Package
Required Skills: YANG, XML, Python

Template Based Service Package Creation

- Command To Create Package
- Create/Edit YANG Model
- Create/Edit XML Template
- YANG to XML Template Mapping

Use Case – Interface Configuration



Use Case: Automate Interface Configuration

Interface Config - IOS

```
interface GigabitEthernet 0/0/0/1  
description RED1  
mtu 1514
```

YANG creation

Interface Config

```
interface GigabitEthernet 0/0/0/1
  description RED1
  mtu 1514
```

YANG Model

```
list GigabitEthernet {
  leaf name          {type string;}
  leaf description  {type string;}
  leaf mtu           {type string;}
}
```


XML Template Creation

Interface Config

```
interface GigabitEthernet 0/0/0/1
  description RED1
  mtu 1514
```

XML Template

```
<name>0/0/0/1</name>
<description>RED1</description>
<mtu>1514</mtu>
```

Service Mapping (YANG to XML)

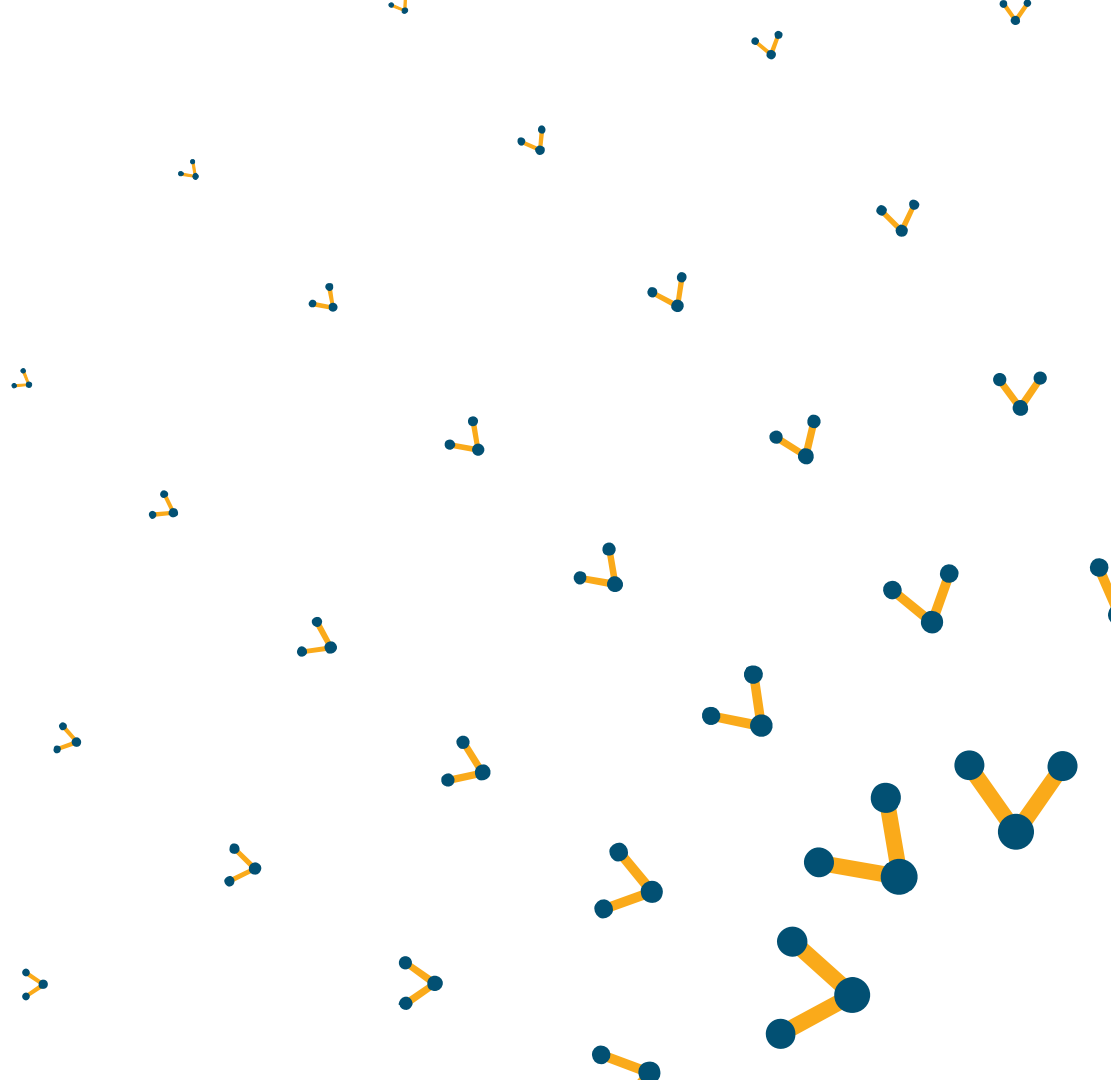
YANG Model

```
list GigabitEthernet {  
  leaf name      {type string;}  
  leaf description {type string;}  
  leaf mtu       {type string;}  
}
```

XML Template

```
<name>{/GigabitEthernet/name}</name>  
<description>  
  {/GigabitEthernet/description}  
</description>  
<mtu>{/GigabitEthernet/mtu}</mtu>
```

Service Builder Overview



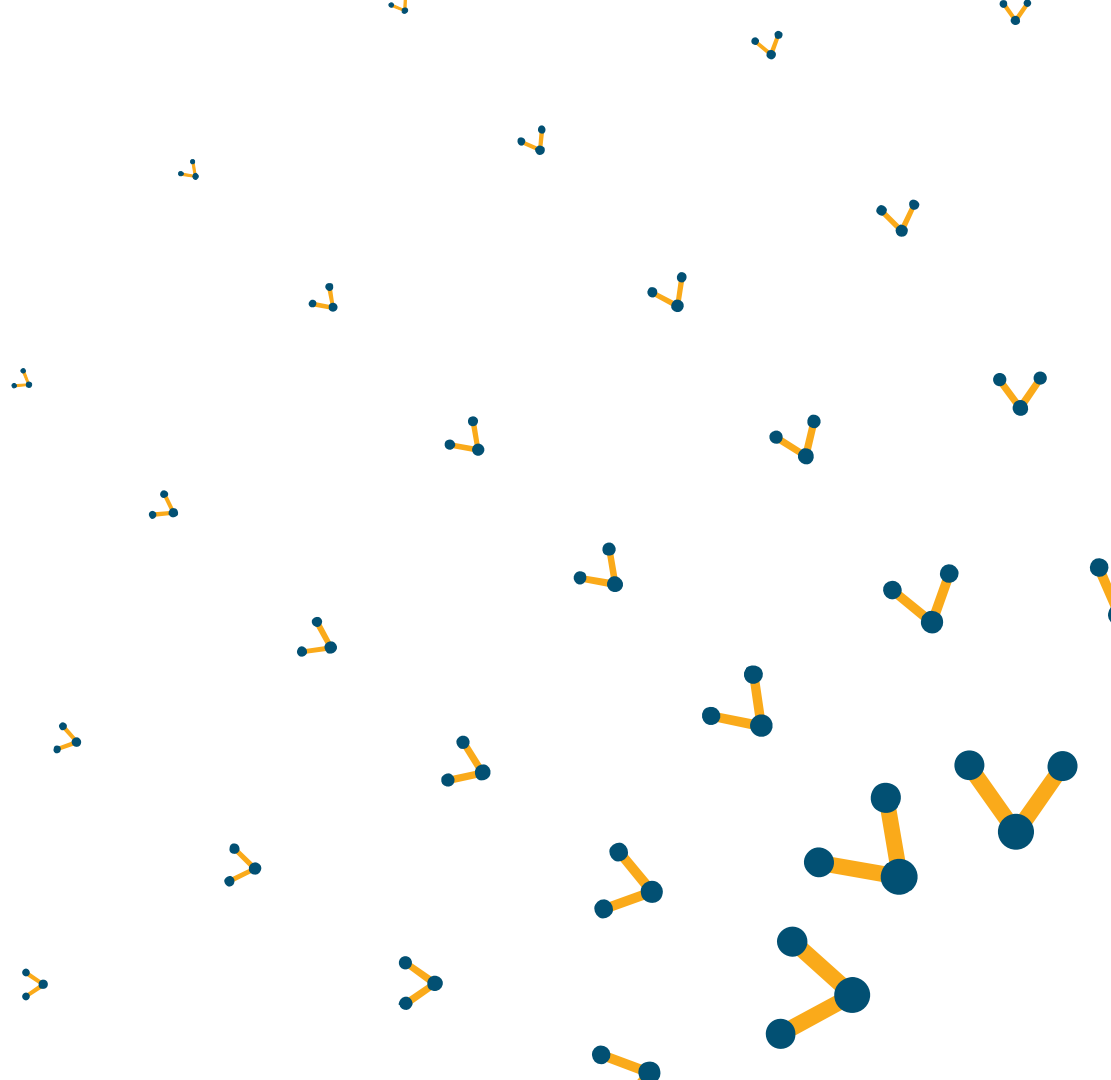
Service Builder Creation Methods

- Raw Device Configuration
- Existing Device Configuration
- Golden Templates

Service Builder Overview

- User Input – Accept Raw Device Configuration
- Create NSO Package on Fly
 - Create XML Template Based
 - Create YANG Model
 - Update YANG to XML Template Mapping
 - Create & Deploy Package in NSO
- Make Service Ready For Consumption

Service Builder Demo





This is a sample headline

- This is the standard bullet slide
- Keep bullet points brief
- Adjust font sizes as needed to fill the space
- Use line spacing to clearly separate each point
- Use the two-column layout for text-heavy slides