

>>> network.toCode()

Getting Started with Network Source of Truth and Data-Driven Network Automation with Nautobot

Learn Why Data is The Key to Unlocking Successful Enterprise Network Automation

Gabor Hadrevi - Senior Sales Engineer

>>> network.toCode()

Do you believe?





>>> Agenda

- Introductions
- Current State of Network Management & Automation
- Introduction of Source of Truth (Intent vs. Reality)
- Data - Driven Network Automation
- Nautobot Overview
- Q&A

>>> Introductions



Gabor Hadrevi

Senior Sales Engineer EMEA

Network to Code

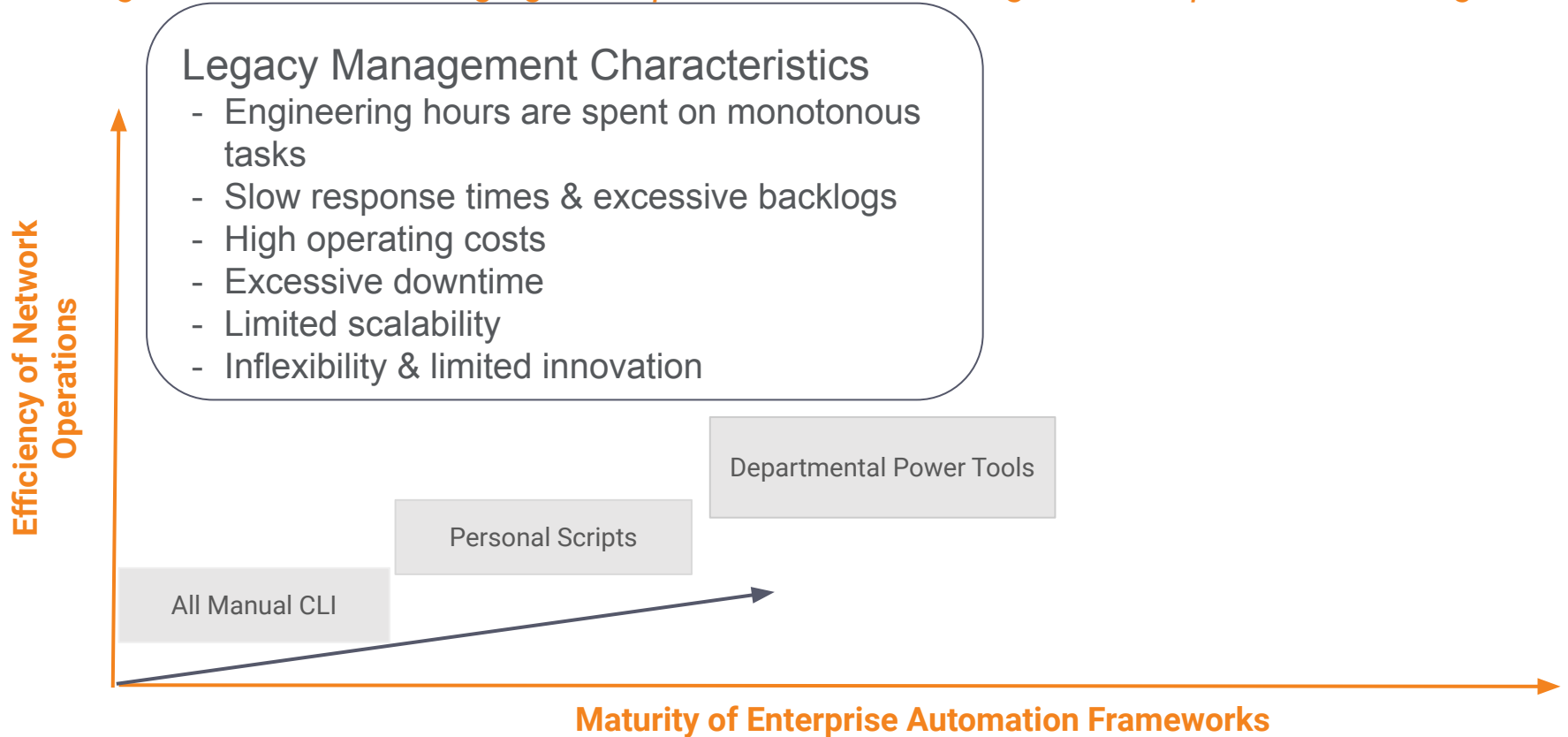
gabor.hadrevi@networktocode.com



Current & Possible State of Network Management

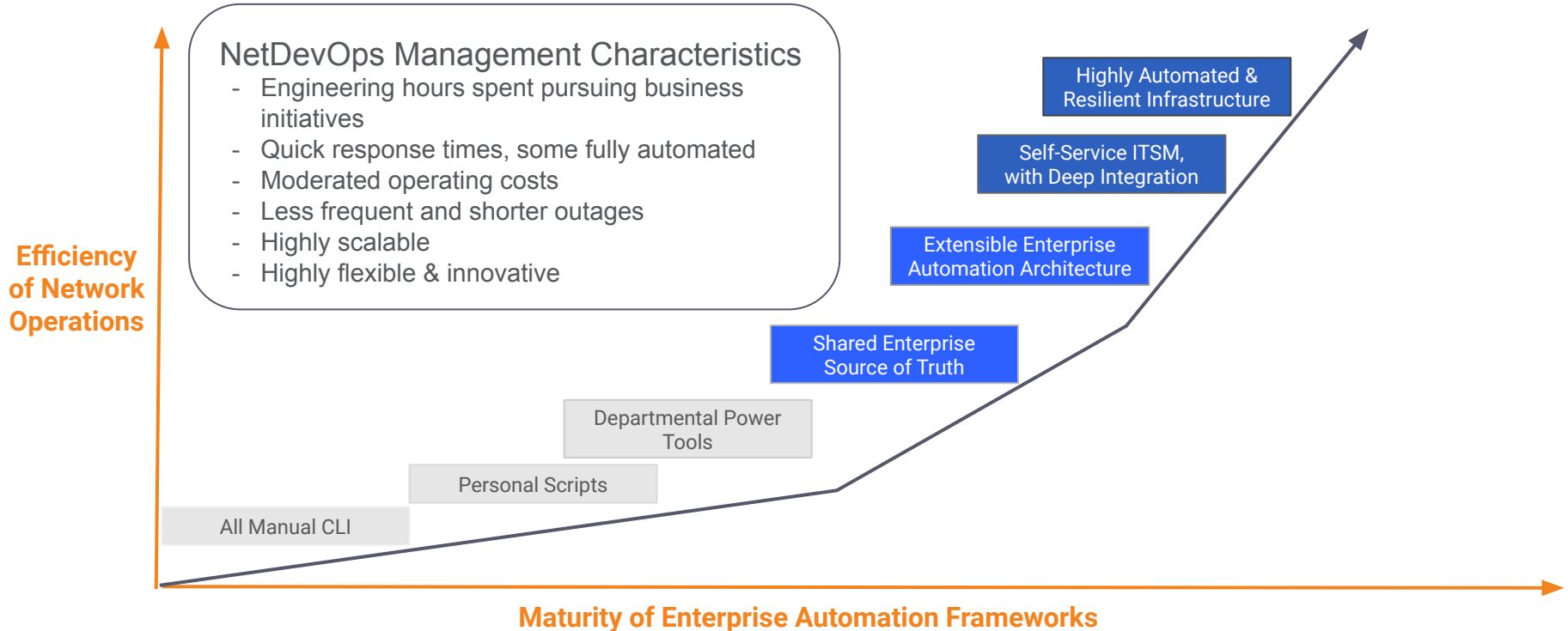
>>> The Current State of Network Management

Most organizations are leveraging tools, processes & technologies developed 20+ Years ago



>>> What's Possible with Automation Leveraging a Single Source of Truth

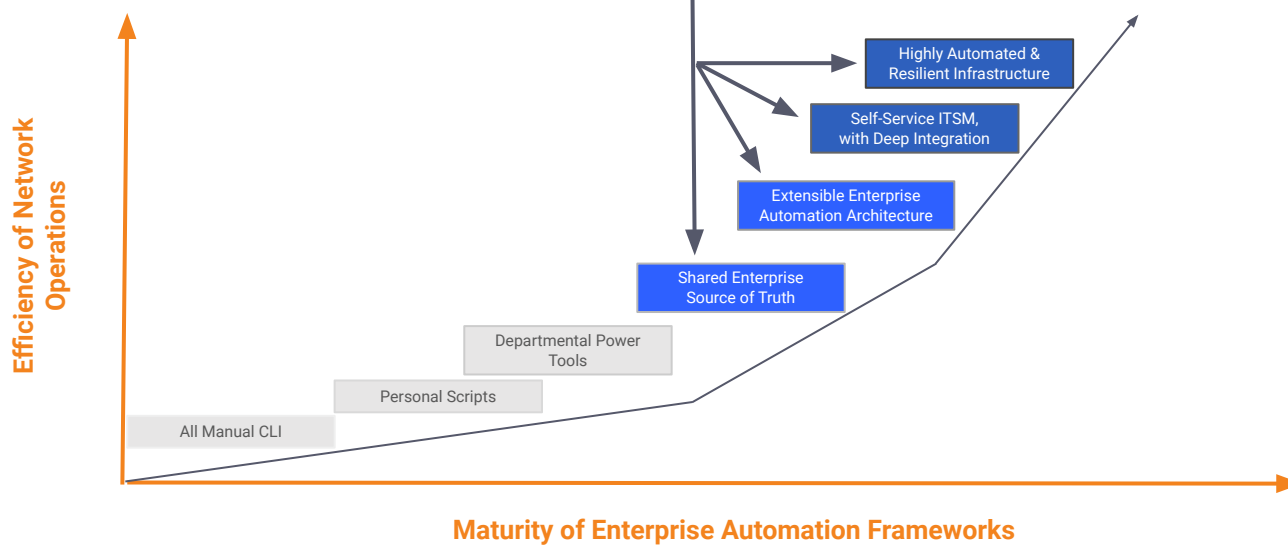
Adopting a new strategy unlocks new potential



>>> Where to start?

Data Unlocks Network Automation's Highest Potential

Inventory Management	IPAM	VLAN Management	Circuit Management	Security	Devices
<ul style="list-style-type: none"> - Tenants - Regions - Sites - Racks - Virtual Chassis - Virtual Chassis - Devices - Device Components 	<ul style="list-style-type: none"> - VRFs - Aggregates - Prefixes - IP Addresses 	<ul style="list-style-type: none"> - VLAN IDs - VLAN Groups 	<ul style="list-style-type: none"> - Circuits - Providers - Types 	<ul style="list-style-type: none"> - Policies - Capirca Policies - Policy Rules - NAT Policies - NAT Policy Rules 	<ul style="list-style-type: none"> - Role - Platform - Virtual Chassis - Console/Power - Interfaces - Front Ports - Rear Ports - Power Ports - Device Bays
		Cabling	Power		
		<ul style="list-style-type: none"> - vCabling Connections - Tracing Paths 	<ul style="list-style-type: none"> - Feeds - Panels 		

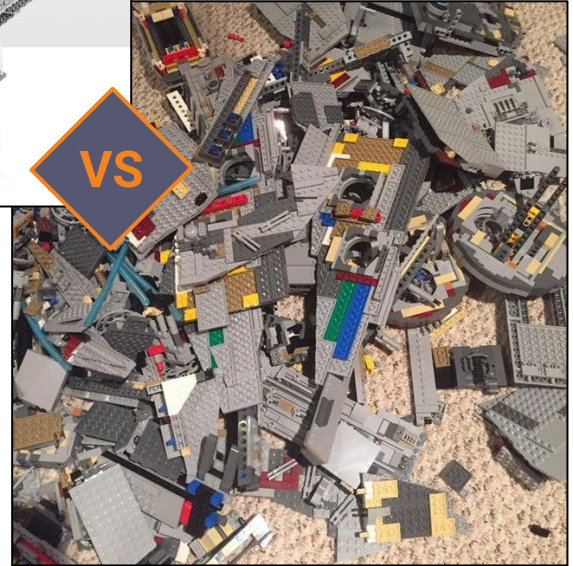
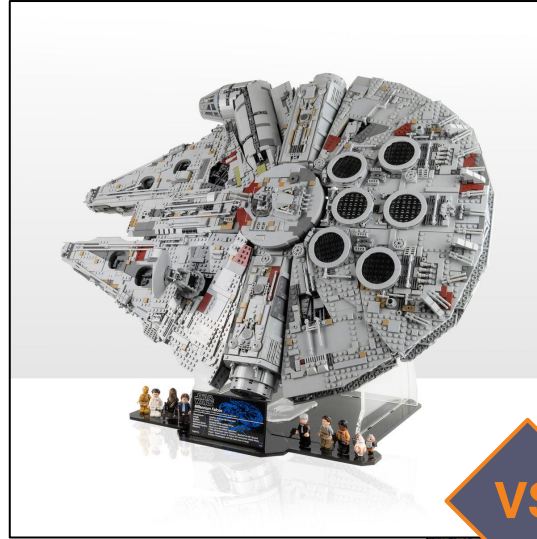




Introduction to Source of Truth (Intent vs. Reality)

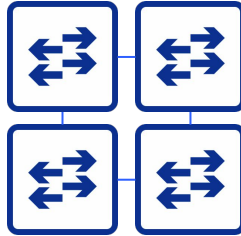
>>> Understanding Source of Truth

- Source of Truth is all about intentions and planning.
- It is about the expected state.
- Source of Truth data drives parts, labor, and configurability.



VS

>>> Understanding Network Configuration Data (cont'd)



interface **Ethernet1**
description **connects to WAP-HQ-Bldg-5-Floor-3-Closet-1**
switchport mode **access**
switch access vlan **5**

Data Point	Value
Interface	Ethernet1
Description	connects to WAP..
Mode	access
VLAN	5

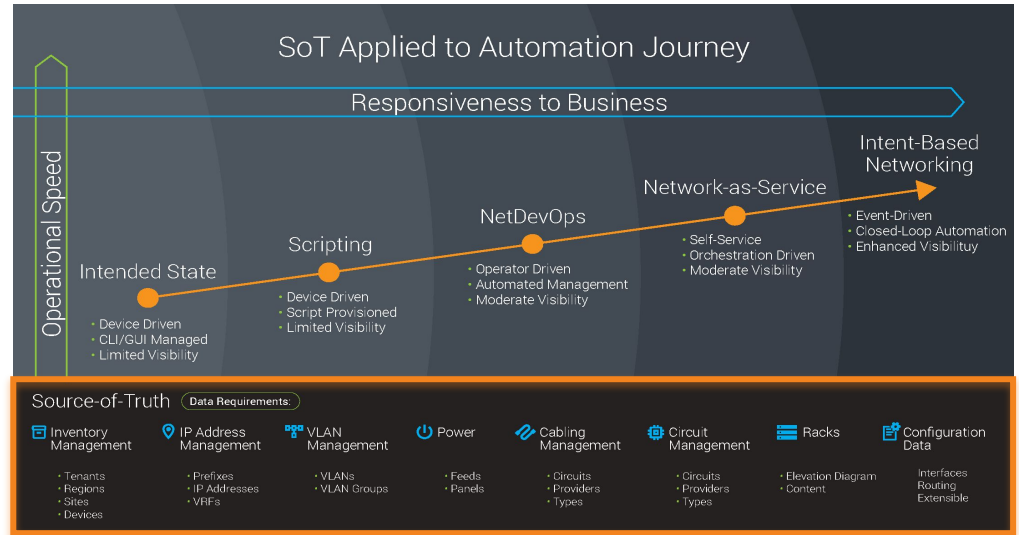
Designs should drive configuration

Data

>>> Source of Truth is the Foundation

- Enables data-driven network automation
- De-couples CLI syntax and API calls from data
- Enables vendor-agnostic network automation
- Allows architects and engineers to focus on network designs
- Provide traceability and history of the Source of Truth

More data, more insights.



>>> Intent vs. Reality

Intent - the **desired** state of the network.



VS.

Reality - the **discovered** state of the network.



Note: The Nautobot SSoT framework can be used to synchronize data from any tool (intended and reality) into Nautobot based on use case and desired outcomes.



>>> Nautobot Overview

>>> About Nautobot

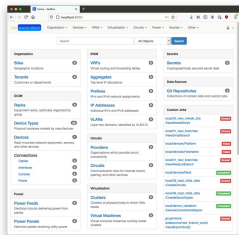
Source of Truth and Network Automation Platform

- Open source community project created in 2021
 - *Apache 2 License*
- Sponsored by Network to Code
- Purpose-built to drive network automation



>>> Nautobot Use Cases

Network Source of Truth



- Devices
 - IP Addresses
 - VLANs
 - ASN
 - ...
 - Custom
-
- User-Defined Relationships
 - Custom Fields
 - Data Validation
 - Git as a Data Source

Network Automation Platform

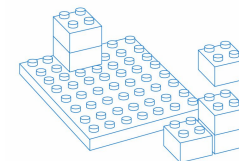
- Use Open Source Apps
- Build Custom Apps
- Save 70% development time using the platform



Powered by APIs and
NetDevOps extensibility &
integrations

{ REST }  GraphQL

 webhooks  git

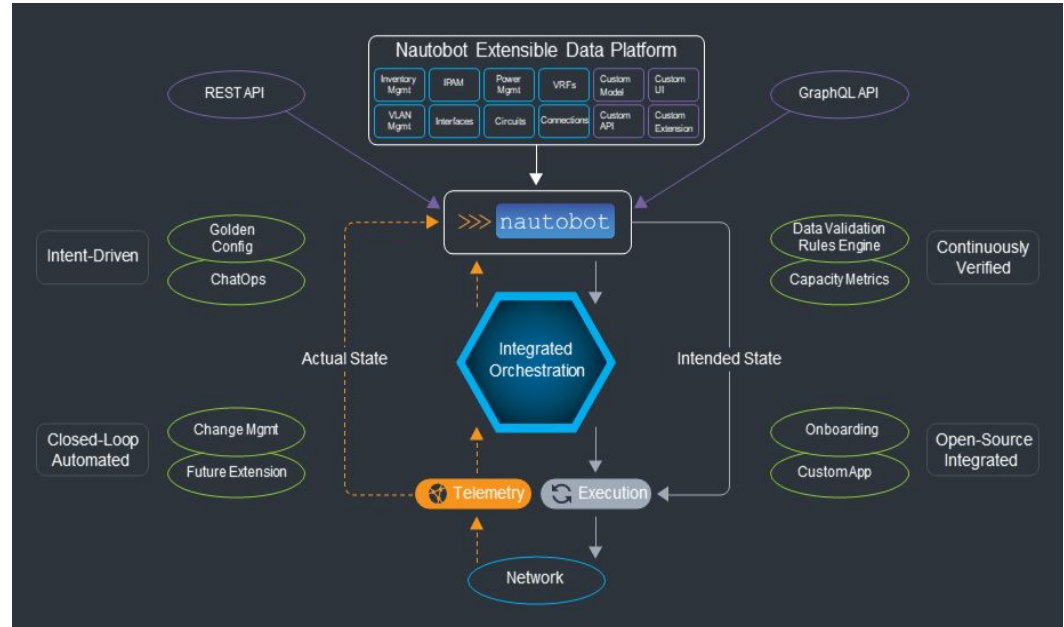


Extensible Plugin
System

>>> Intent-Based Networking with Nautobot

Creating a closed-loop automation system

- Nautobot focuses on the intended & desired state
- Nautobot unifies disparate data sources creating a Single Source of Truth
- Nautobot exposes all intended state data and systems through its REST and GraphQL
- Nautobot Apps are used to tailor designs and build integrations with external systems
- External systems are still often used for orchestration, execution, and telemetry



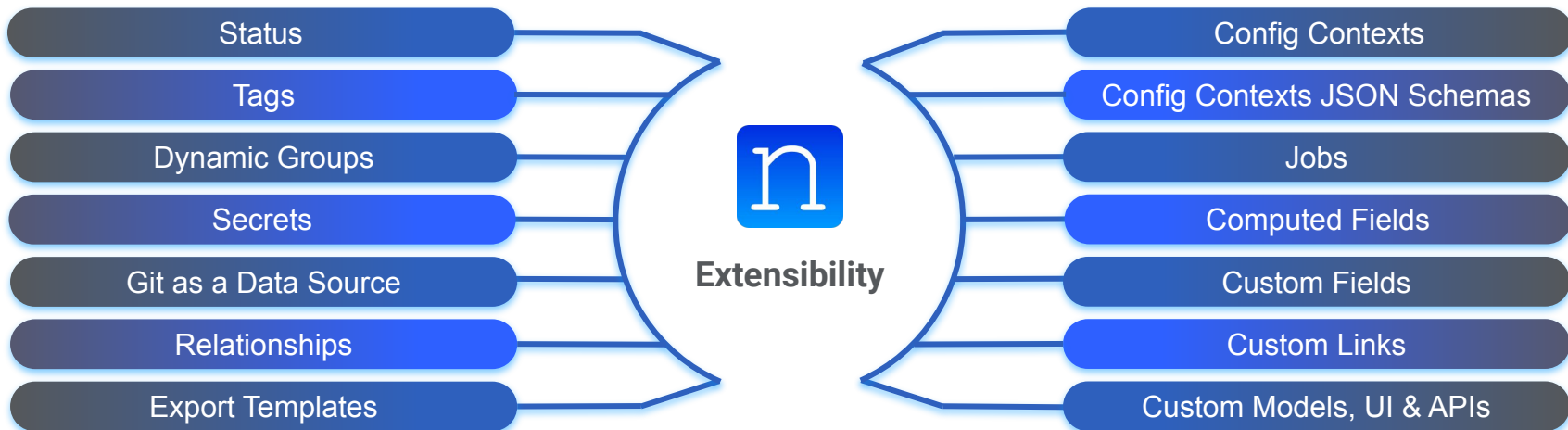


>>> Diving Deeper

Nautobot Overview

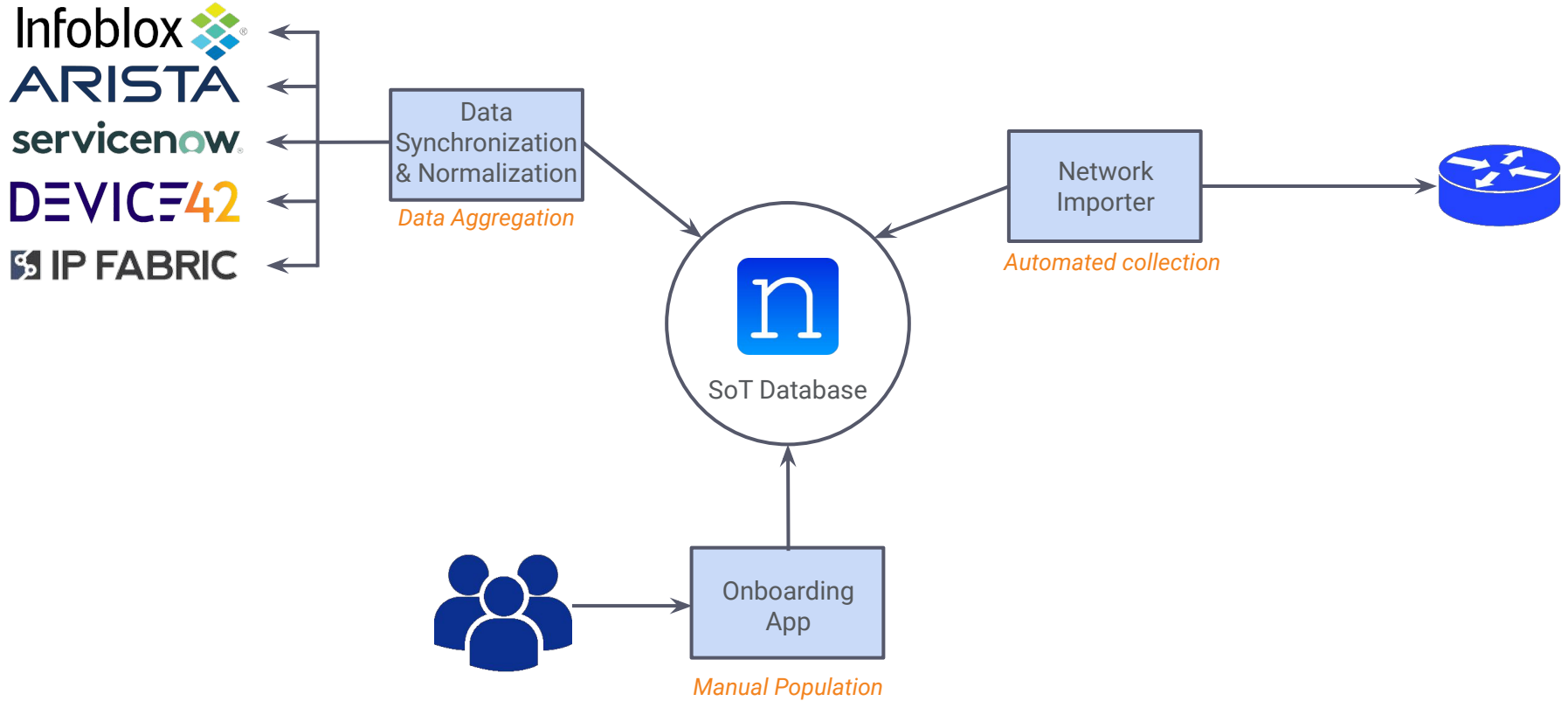
>>> Extensibility Features Summary

Tailor Nautobot to your network design requirements



>>> How is the SoT Populated?

Nautobot provides several methods to get you up and running quickly

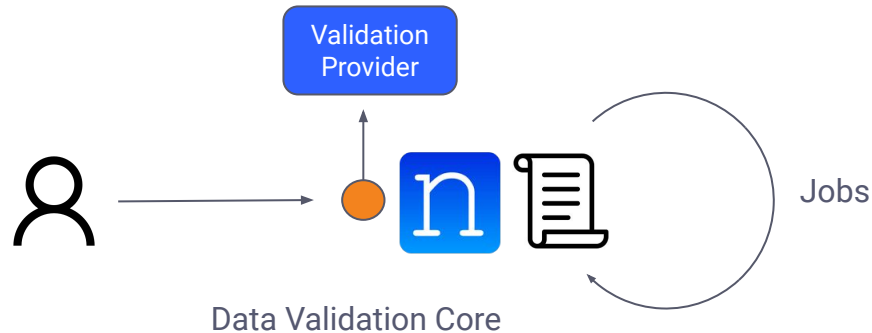


>>> Nautobot Data Validation & Integrity

Nautobot supports two main ways of enforcing data validation and integrity.

- Data Validation Core API
- User defined Jobs










These features go beyond the natural validation of the core network data model.





Integrating & Using Nautobot

>>> Nautobot's Growing App Ecosystem - Over 25 Apps to Date

 Ansible ChatOps Perform common Ansible AWX/Tower operations using ChatOps July 15, 2021 - 1.1.0	 Arista CloudVision ChatOps Perform common CloudVision operations using ChatOps August 3, 2021 - 1.1.0	 Arista CloudVision SSoT Synchronize data between Nautobot and CloudVision August 3, 2021 - 1.1.0	 IP Fabric ChatOps Perform common IPF operations using ChatOps December 15, 2021 - 1.1.0	 Capacity Metrics Expose key data in Nautobot as Prometheus endpoints February 24, 2021 - 1.0.0
 Circuit Maintenance Dynamically manage circuit maintenance notifications in Nautobot May 7, 2021 - 1.1.0	 Golden Configuration Automate backups, generate configs, and perform configuration compliance February 24, 2021 - 1.1.0	 Data Validation Add validation rules to ensure corporate standards and proper data hygiene August 3, 2021 - 1.1.0	 Device Onboarding Simplifies onboarding and re-onboarding devices into Nautobot February 24, 2021 - 1.1.0	 Grafana ChatOps Retrieve any Grafana panel directly from Chat October 27, 2021 - 1.0.0
 Device Lifecycle Management Track EOL, software versions, and contract data in Nautobot November 8, 2021 - 1.1.0	 Meraki ChatOps Perform common Meraki operations using ChatOps September 29, 2021 - 1.1.0	 Nautobot ChatOps Perform common Nautobot operations using ChatOps February 24, 2021 - 1.0.0	 Cisco ACI ChatOps Perform common ACI operations using ChatOps December 2, 2021 - 1.1.0	 Welcome Wizard UI wizard that simplifies getting started with Nautobot July 30, 2021 - 1.0.0
 Version Control Add Git concepts such as branch, merge, and PR directly into Nautobot December 7, 2021 - 1.2.0	 Single Source of Truth Pluggable framework that enables 3rd party data synchronization with Nautobot December 7, 2021 - 1.2.0	 IP Fabric Single Source of Truth Synchronize data between Nautobot and IP Fabric January 3, 2022 - 1.2.0	 Infoblox Single Source of Truth Synchronize data between Nautobot and Infoblox January 20, 2022 - 1.2.0	 ServiceNow SSoT Synchronize data between Nautobot and ServiceNow January 20, 2022 - 1.0.0



Partner Integrations | Standalone Solutions | Custom Development

Nautobot as a platform compliments any network automation strategy. networkcode.com/nautobot/nautobot-apps/

>>> Nautobot - Q&A

Nautobot's Growing App
Ecosystem



Contact details:

