

axians

From Brownfield to Automated Networks

Anga Com 2026

Steps to Automate the ISP Network

Agenda

- ▶ Status Quo: The Brownfield Challenge
- ▶ Phase 1: Assessment & Standardization
- ▶ Phase 2: Introducing the Single Source of Truth (SSoT)
- ▶ Phase 3: Infrastructure as Code (IaC) & Abstraction
- ▶ Phase 4: Intent-Based Networking (IBN)
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Status Quo: The Brownfield Challenge

Before we can automate, we must understand where we stand.

A typical ISP network today consists of:

- ▶ Mixed Infrastructure: A mix of classic MPLS (Core) and modern VXLAN/EVPN fabrics (Edge/Datacenter)
- ▶ Silos: Configurations reside locally on devices or within various collections of scripts
- ▶ Snowflake Configurations: Manually configured devices that deviate from the standard
- ▶ Risk: High error rates during manual changes and slow deployment of new services

Phase 1: Assessment & Standardization

The first step isn't the software; it's the structure.

- ▶ Inventory Audit: Recording all physical and logical resources
- ▶ Definition of Blueprints: Creating standardized configuration patterns for MPLS services (L3VPN, L2VPN) and VXLAN VTEPs
- ▶ Decommissioning Legacy Burdens: Cleaning up unused configurations to reduce complexity for automation

Phase 2: Introducing the Single Source of Truth (SSoT)

This is the heart of automation. Without a central, authoritative data source, AI-supported automation is impossible.

- ▶ Central IPAM & Inventory: Implementing tools like NetBox or Infrahub
- ▶ Data Modeling: Mapping the network as code (YAML/JSON) – The SSoT defines how the network should look (Intended State), not just how it currently looks
- ▶ Benefit: "Stale data" is eliminated; all automation scripts pull their information exclusively from this source

SSoT Tools in Practice: NetBox vs. Infracore

NetBox

- ▶ Mature IPAM & DCIM platform
- ▶ Strong ecosystem and community
- ▶ Widely adopted in network automation projects

Infracore

- ▶ Git-native, schema-driven SSoT
- ▶ Strong focus on data modeling and relationships
- ▶ Built for automation pipelines and CI/CD workflows

Phase 3–4: IaC & Intent-Based Networking — Powered by the SSoT

Infrastructure as Code (IaC)

- ▶ Configurations are generated from SSoT data
- ▶ No manual device configuration
- ▶ Abstraction via templates and models

Intent-Based Networking (IBN)

- ▶ Define what the network should achieve, not how
- ▶ SSoT represents the intended state
- ▶ Continuous validation against the live network

Phase 5: The Path to AI-Driven Operations (AIOps)

AI requires high-quality, structured, trusted data

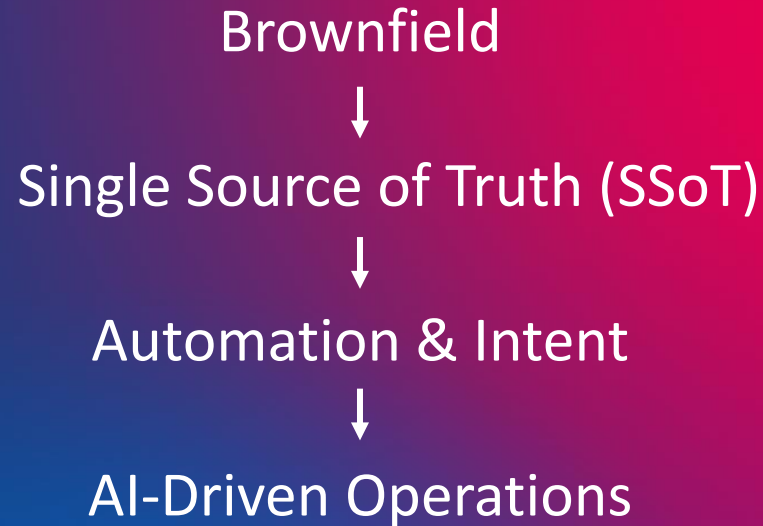
- ▶ The SSoT provides contextual network knowledge

Enables:

- ▶ Intelligent anomaly detection
- ▶ Predictive change impact analysis
- ▶ Assisted troubleshooting

→ Automation + SSoT = foundation for AIOps

Summary: The Roadmap



Closing Thought

- ▶ The path from brownfield to automated networks doesn't begin with a big transformation, but with a single, deliberate step — built on a trusted Single Source of Truth
- ▶ No SSoT → No reliable automation → No real AIOps

**Thank you very much for
your time and attention.**

I'm happy to take any questions.