



TURN IT UP

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The bridge to possible

Automation for Network Operations in 2021



Michael Mester, Product Manager, CX
BRKPRG-1162

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Agenda

- Intro
- What do you call automation?
- Why Automation
- How Cisco can help
- Demo

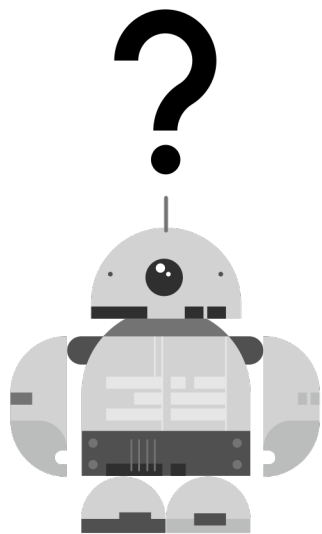
Introduction

- A little about me:
 - I am an automation fanatic!
 - Industry veteran with 20+ years' experience
 - CCIE & US Patent
 - Cisco CX Product Manager
 - And I drive fast cars!



What do you call automation?

- Is automation running a shell script?
- Perhaps it's a copy/paste of a block of code into a terminal.
- How about an ansible playbook?
- Maybe a terraform script?
- No matter what your flavor, you are undoubtedly spending quite a bit of time coding that automation. Time that reduces the ROI for the automation.



Getting from Dev to Production faster

1

Put the power of development in the hands of the network operators.

2

Reduce/Eliminate the need for tedious coding activities.

3

Enable reuse to enable faster time to production.

Why Automation



Why network automation

One of the biggest issues for network managers is the growth of IT costs for network operations. The growth of data and devices is starting to outpace IT capabilities, making manual approaches nearly impossible. Yet up to 95 percent of network changes are performed manually, resulting in operational costs 2 to 3 times higher than the cost of the network. Increased IT automation, centrally and remotely managed, is essential for businesses to keep pace in the digital world.*



Up to 95 percent of network changes today are done manually.



Manual changes lead to configuration errors and inconsistencies in the network.



Expanding network changes at scale can be problematic.



Network downtime and nonremote troubleshooting time are detrimental.

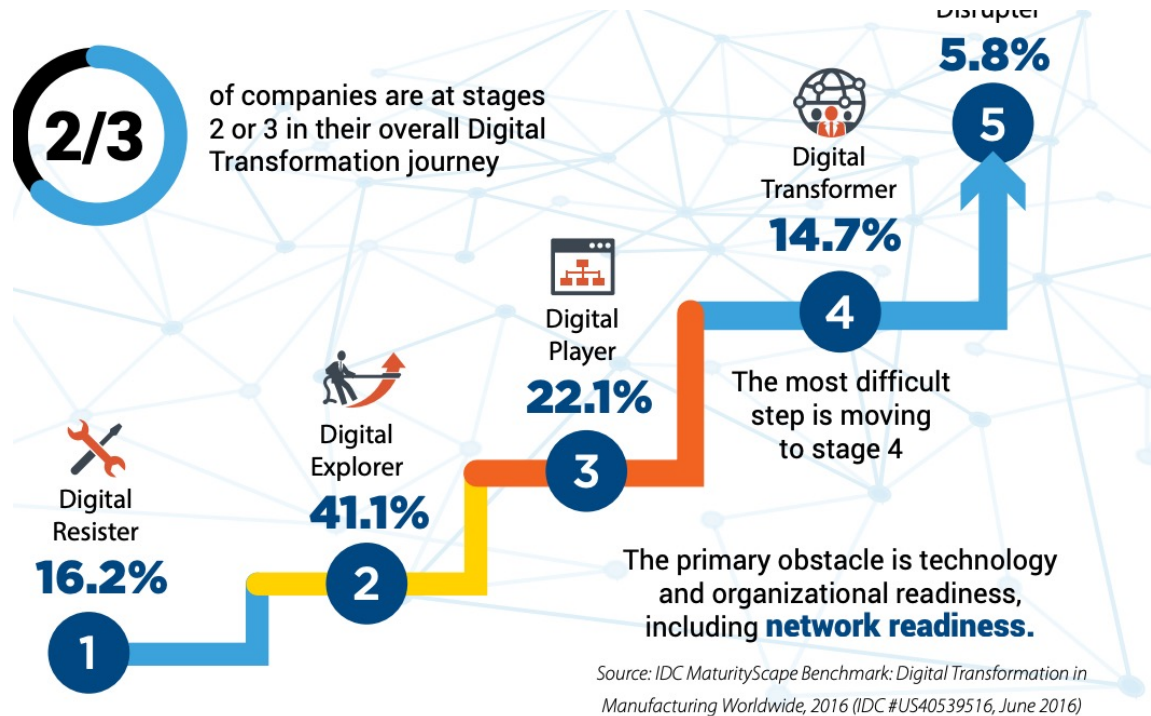
*<https://www.cisco.com/c/en/us/solutions/automation/network-automation.html>

Be a disruptor!

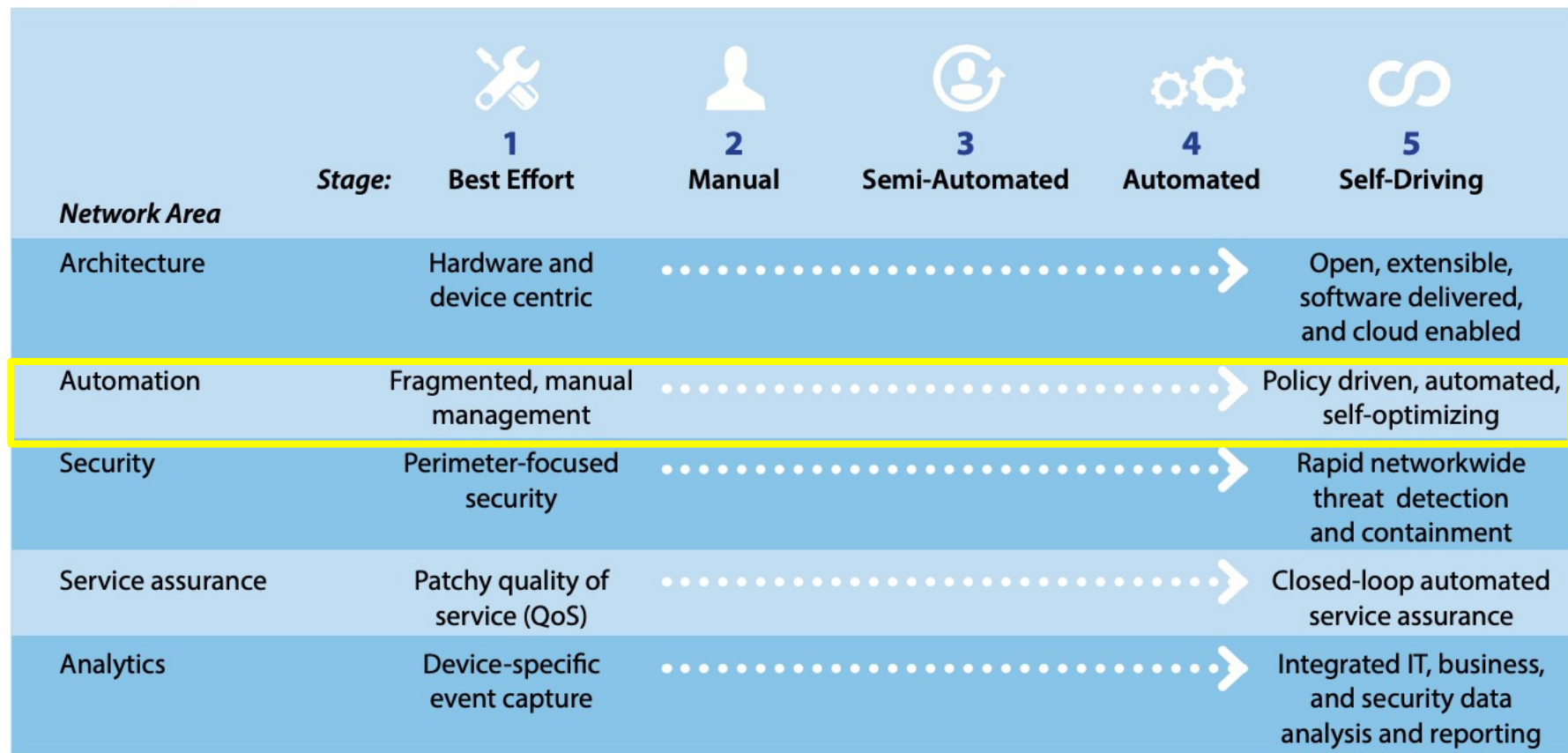
In 2016;
63% of companies were moving
towards step 4. network readiness

In 2020;
40% of IT buyers said they planned
to increase network infrastructure
spending in 2020, with specific
focus on network management and
UC, according to IDC. In the
network management bucket,
network automation, analytics,
remote management....

In 2021;
Cisco is prepared to help you make
those final steps.



Cisco Digital Network Readiness Model



How Cisco can help

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Cisco Automation-X Pipelines

Continuous Test

Take the software/configuration from the CI step and run tests to make sure it functions as expected. Tests should be run in a controlled environment that closely mimics production in order to provide a more conclusive result set.

Continuous Delivery

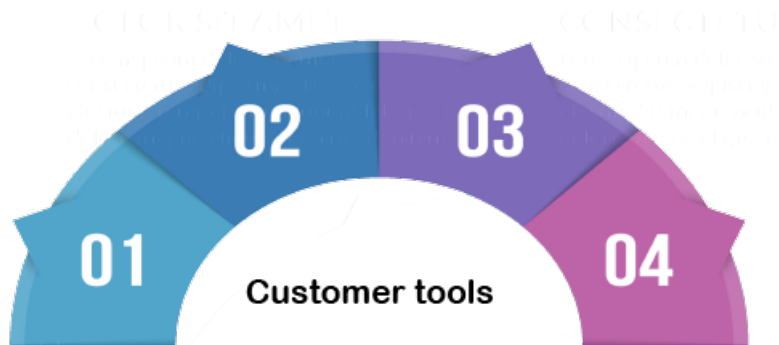
Provide a means to rapidly deploy code/software in an environment that is consistent with the methods used in test. This eliminates errors and improves predictability and increases speed at which code can be deployed in an environment

Continuous Integration

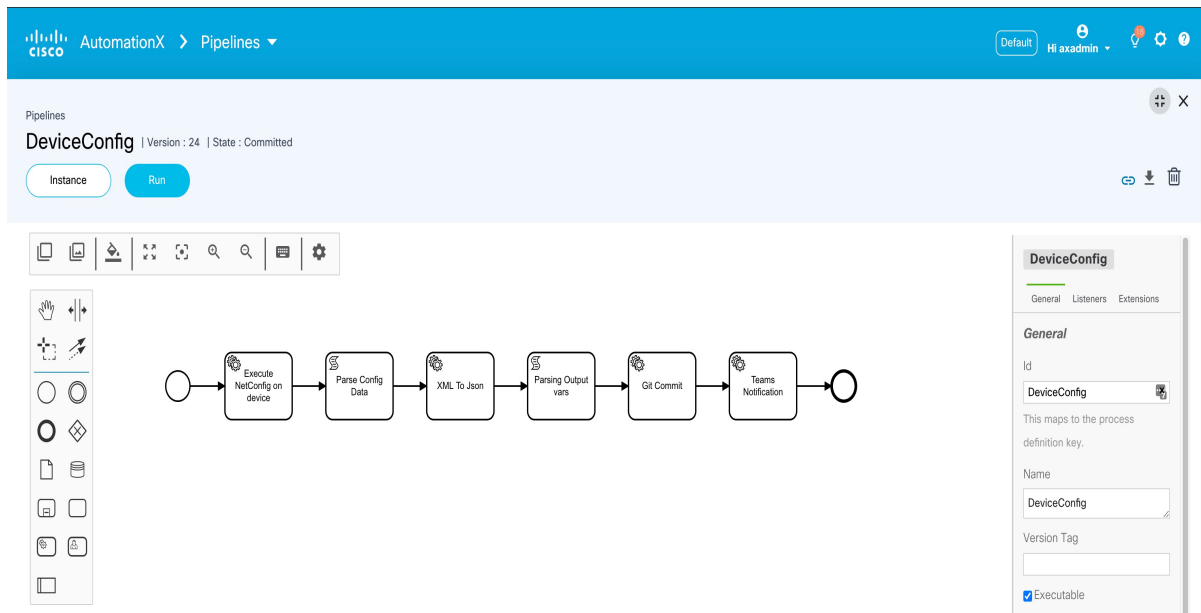
Provide a system that integrates with tools such as GIT, Artifactory Jenkins, Ansible, etc. To continually take checked in code/software and send it through a set of steps.

Compliance Verification

Verify code/software is in compliance with defined standards before deploy with pre and post checks. Code must conform to standards to be a certified release.

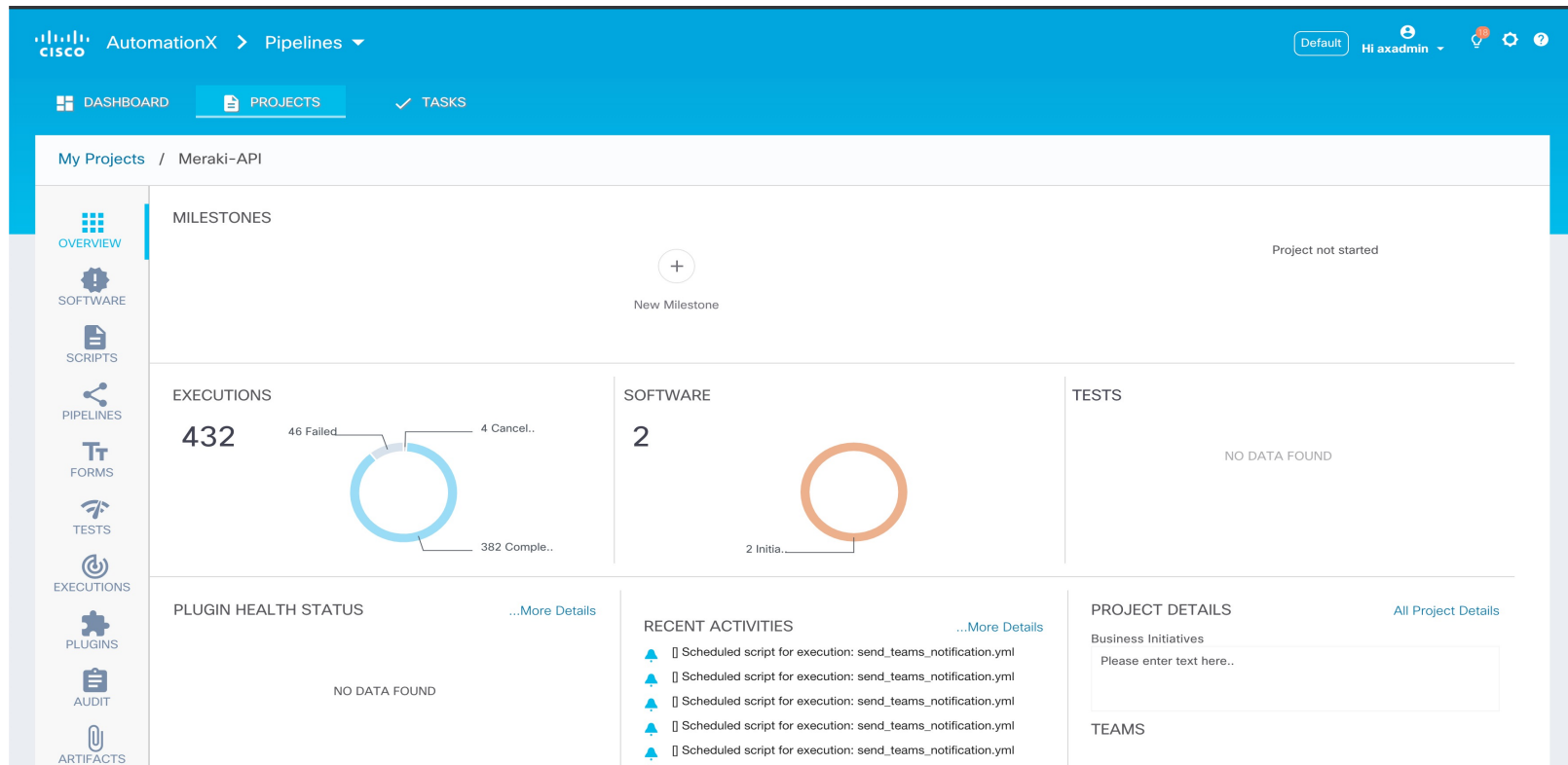


A new way to look at automation



- Drag and Drop
- Version Controlled
- Element Templates
- BPMN Compliant

The Solution



Extending Automation-X via Element Template

- The Application has pre-built extension templates
 - Follows plug and play based architecture
 - Provides the facility to add additional plugins
 - Allow code reduction while increasing re-use
 - The templates can be chained together to create a full end to end workflow
 - The templates are self-contained functions, which performs a single operation with minimal inputs and provide results to be consumed by next item in the workflow
 - We are on the look-out to add more templates

Generic - Ansible Deployer	Git - Create Repository
Generic - Terraform Deployer	Git - Clone Repository
Generic - Python Deployer	Git - Tag Release
Generic - Shell Deployer	NSO - Execute CLI command
Generic - User Notification	NSO - Execute CDB Backup
Generic - Kafka Notify	NSO - Execute CDB Restore
Generic - REST Client	NSO - Execute Packages Backup
Generic - Publish Facts	NSO - Execute Packages Restore
✓ Generic - Send Mail	NSO - NED/Service Pack - Install/Upgrade
Generic - YML to JSON convertor	NSO - RESTCONF Client
Generic - JSON to YML convertor	VNF - SOL001 YML to SOL006 JSON convertor
Generic - Netconf Client	VNF - Package Download & Onboarding
Teams - Send Notification	VNF - VIM Artifacts
Slack - Send Notification	VNF - Instantiate VNF
CXTM - Execute Batch	VNF Terminator
Jenkins - Create credentials	Netbox IPAM - Get IP
Jenkins - Create Job	Netbox IPAM - Get IP for Prefix
Jenkins - Trigger Build	Infoblox IPAM - Get IP
JFrog Artifactory - Create Repository	Infoblox IPAM - Get IP for Prefix
JFrog Artifactory - Download Artifact	
JFrog Artifactory - Upload Artifact	
JFrog Artifactory - Get Artifact Properties	
JFrog Artifactory - Set Artifact Properties	
JFrog Artifactory - Copy Artifact	
JFrog Artifactory - Move Artifact	
JFrog Artifactory - Sync Artifact	

Key Take Aways

- ✓ Today's disruptors require today's automation!
- ✓ You don't have to spend hours coding a pipeline to automate your network.
- ✓ Cisco Automation-X can support you throughout your journey.



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Thank you

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