

# ATOM Cloud Trial Guide

Anuta ATOM Overview Key Features of ATOM Platform	<b>4</b> 4
Scope of this Guide	6
Accessing the ATOM Cloud Instance	6
Anuta ATOM Cloud Walkthrough	8
Exercise 1: Resource and Configuration Management 1.1 View Device Inventory 1.2 View Archived Configurations 1.3 View Configuration Diffs 1.4 View Configuration Data 1.5 Summary & Next Steps	<b>10</b> 13 14 16 17 18
Exercise 2: Service Orchestration 2.1 Provisioning L3 Service on a Cisco Router 2.1.1 Create a new service 2.1.1 Entering Form Details 2.1.2 Importing a form template 2.1.2 View task progress 2.1.3 Verify the service creation 2.1.4 Modify existing service 2.1.5 Delete the service 2.2 Provisioning EVPN VXLAN Service on a Juniper Router 2.3 Summary & Next Steps Exercise 3: Workflow Automation 3.1 Juniper MX Upgrade Automation 3.1.1 Start a new workflow 3.1.2 Enter Workflow Form Details 3.2 Summary & Next Steps	<ul> <li>19</li> <li>19</li> <li>21</li> <li>21</li> <li>24</li> <li>25</li> <li>28</li> <li>29</li> <li>30</li> <li>31</li> <li>32</li> <li>32</li> <li>32</li> <li>33</li> <li>34</li> <li>36</li> <li>40</li> </ul>
Exercise 4: Compliance Enforcement	40
<ul> <li>4.1 Compliance policy for CLI based devices</li> <li>4.1.1 Simple Rules and Conditions</li> <li>4.1.2 Variables in Rules and Conditions</li> <li>4.1.3 Regex in Rules and Conditions</li> <li>4.2 Compliance policy for Yang-based devices</li> <li>4.3 Running Compliance Policies</li> <li>4.4 Analysing Compliance Reports</li> <li>4.5 Summary &amp; Next Steps</li> </ul>	41 42 45 47 50 52 54 58
Continue to Explore	58

# Anuta ATOM Overview

Anuta ATOM platform provides comprehensive end-to-end network automation, network monitoring, configuration and compliance management, network orchestration, and closed-loop automation for multi-domain and multi-vendor networks.

#### A Cloud-Native platform that delivers Analytics & Closed-Loop Automation through Assurance, Telemetry and Orchestration for Multi-Vendor & Multi-Domain Networks. Compliance & Configuration Management Monitoring & Analytics Centralized policy frame ork to enh enforce global standards Increase network visibility with in-depth harmonized analytics from disparate vendors Service & Workflow Event Correlation & Alert Routing Automation à' Simplify root cause analysis by grouping similar Drag & Drop, Collaborate and build alerts and routing events automation workflow atom Closed Loop Automation 45+ vendors Automated Device Onboarding healing network with automated Create a sel 150+ Platforms ZTP & Brownfield Device & Service detection and remediation of issues Multi-Domain Dis Cloud-Native

## Key Features of ATOM Platform

**Vendor Agnostic Platform**: Anuta ATOM supports 45+ vendors across 150+ platforms. All major vendors, including Cisco, Juniper, Arista, F5, and others, are supported. Anuta ATOM provides SDK, enabling customers and partners to develop device models not supported by ATOM currently.

**Automated Device onboarding**: Network devices can be onboarded on ATOM either manually or automatically through seed and sweep mechanisms. ATOM also provides zero-touch provisioning through DHCP or PnP. Once onboarded, ATOM provides a complete device lifecycle and inventory management.

**Configuration & Compliance management**: Upon onboarding the devices, ATOM provides configuration management and automated compliance enforcement. ATOM periodically archives and versions device configurations. Any out-of-band changes are detected, notified, and remediated on approval. ATOM's compliance policy builder enables the administrator to define and standardize configurations. Any violation of baseline behavior triggers automated remediation to fix non-compliance.

**Service Orchestration**: ATOM enables Service lifecycle management and service orchestration. L2VPN, L3VPN, Application delivery, or any custom service can be modeled and ordered using the ATOM platform.

**Low Code Workflow Automation**: ATOM provides an intuitive drag & drop framework to develop automation for even the most complex workflows such as software upgrades, Device RMA, network migration, troubleshooting, and diagnostic scenarios.

**Performance & Network Health Monitoring**: Anuta ATOM provides a single-pane-of-glass to monitor the entire network. ATOM can collect necessary device and network data through SNMP, SNMP Trap, Syslog, and streaming telemetry mechanisms. Operators can visualize the collected data through out-of-box and custom charts or share it with external databases.

Alert Routing & Suppression: ATOM supports alert deduplication, alert grouping, alert suppression, and alert routing. ATOM allows the grouping of similar alerts into a single notification. During significant outages, when many systems fail simultaneously, numerous alerts are triggered. Alert Manager in ATOM can be configured to group alerts by their cluster or alert name to send a single compact notification for similar alerts.

**Closed-Loop Automation**: ATOM enables closed-loop automation by relaying the monitoring platform's feedback to the automation platform. Network administrators can set thresholds and alerts for network events. The ATOM platform can automatically trigger remediation workflows based on the network administrator's approval on breach of thresholds.

**APIs and Integrations**: ATOM is an Open and API-driven platform. All operations in ATOM can be triggered through the ATOM's self-service portal or APIs by northbound solutions such as OSS/BSS, ITSM, Ticketing/Billing, etc. ATOM workflow automation can invoke APIs from external entities such as ServiceNow, Jira, IPAM, etc.

**RBAC & Multi-Tenancy**: ATOM Supports Role-based access control and multi-tenancy, which will allow customizing privileges to various functions in ATOM. Workflow automation also supports similar access control rules where the workflows created by one user will not be seen by another unless explicitly assigned to them. RBAC policies also offer control over the execution of workflows.

**Massively Scalable**: The ATOM platform is built on the latest technologies. It is a microservices-based stateless platform that can scale horizontally to support thousands of devices with high throughput and low-latency. ATOM is componentized and enables the deployment of selected components essential for desired functionality.

**HA & Full redundancy**: ATOM Software is microservices-based, containerized, and runs on the Kubernetes platform. All components of ATOM, except for databases, are stateless. Databases contain state information and are in HA. ATOM components support the active-active cluster model.

# Scope of this Guide

ATOM Trial Instance allows you to experience the following ATOM features.

- 1. Multi-Vendor Resource & Configuration Management
- 2. Service Orchestration
- 3. Workflow Automation
- 4. Compliance Management

# Accessing the ATOM Cloud Instance

Visit the Anuta Networks website and request an ATOM Cloud Instance.

	eporting Pre-Built Compliance Reporting	
		nce Bui
	Request A Free Trial	t Workf
		Box Sen
	Full Name*	ry Monit
	Phone	< CLA
		r SI
e Model SD	Email*	el S
	Company*	Juile
	l'm not a robot	Co
	Request Free Trial >	гом с
	Days Free Trial	

On requesting a free trial, you will receive a set of emails related to your account.

- 1. The first email provides instructions to set your password.
- 2. The second email provides instance URL and login details.

Access the instance URL and login with your credentials.

Username or email		
Password		
		Forgot Password?
Sign In		
G	Google	

In case of any issues, please contact <a href="mailto:support@anutanetworks.com">support@anutanetworks.com</a>.

# Anuta ATOM Cloud Walkthrough

Before we test drive Anuta ATOM, let's briefly examine the lay of the land.

On every login, you will be presented with an ATOM Cloud info page. The page provides you with all essential information related to ATOM Cloud instance and agent health, license details, support information, and documentation links.



The menu bar on the left helps you traverse through various ATOM features.



ATOM dashboard provides you with a quick summary of all essential metrics. You can add new widgets or create new dashboards as required.



See <u>here</u> to learn more about viewing and customizing the dashboard.

With this essential knowledge in place, let's try out a few ATOM features.

# Exercise 1: Resource and Configuration Management

ATOM can onboard network devices across 45+ vendors and 150+ platforms. (See the list of all <u>supported devices</u>). This trial instance has devices across Cisco, Juniper, Palo Alto, BigIP, Fortigate, and Infoblox.

Click on devices at the menu bar to see a list of all devices onboarded to your instance.



You can now see a list of all devices onboarded to your ATOM platform.



Click on the device grid icon on the bar at the bottom right corner to view device inventory in a tabular view.

•	itom 🔊 > Devices											<mark>ہ</mark> ا	Toshiba	ę
<b>a</b>	Network 🗘	¢	Summary Configuration	Monit	oring Alerts									
~	Search with device attributes $\  Q \  igodot \  \  \  \  \  \  \  \  \  \  \  \  \ $	Ŧ	Filter Group	Ŧ						t	• •	Value	Unit	•
ŝ	<ul> <li>AllDevices</li> </ul>	C									search			Q
al.	BigIP_172.16.4.60	-												
	BigIP_172.16.4.61		Alert Name		Device/NodeName	Device Name	Device FQDN	Resource	Severity	Ack	Status	Message		
0	Fortigate_172.16.4.207													
****	Infoblox_172.16.5.54													
-	Panorama_172.16.3.76													
•	vCSR_172.16.4.71													
	vCSR_172.16.4.72													
>	vMX_172.16.4.166													
	vMX_172.16.4.167													
	vMX_172.16.5.171													
	vQFX_172.16.5.169													
	Firewall													
	► 🖪 Host													
	Layer 2 switch													
	<ul> <li>Layer 2/3 switch</li> </ul>						Nothing to displ	aut						
	<ul> <li>Layer 3 Router</li> </ul>						Notifing to dispi	ay:						
	Loadbalancer													
	OfflineDevices													
	VPN													
													*	#)
?		-												_

•	atom 🔊 > Devic	es								🌲 🛄 🗮 🕛 🚨	iba 🤂
<b>2</b> 2	C +	A A	ntial Profiles Credential Map	s Discovery Discovered	d Devices					11.0f.11 Search	Q
D		Status	Mamt-Io-Address	Fodo-Name	Name	Device-Type	Credential-Set	Last-Extended-Inv-Time	Os-Version	Platform	
-1	BiolP 172 16 4 60		172 16 4 60		Itm01 anutanetworks com	bigip)(irtual			411	ALL bioin/virtual/BioIn/TMOSIES Networks	
<b>II</b> 1	BigIP 172 16 4 61		172.16.4.61		Itm02 anutanetworks.com	bigipVirtual			ALL	ALL bigip Virtual Dialo TMOSES Networks	
പ	Eortigate 172.16.4.207		172.16.4.207		fortinate anutanetworks.com	Eorticate 10000			ALL	ALL Extinate 1000/Extinate Eizewall/ExtinS/Extinat	
~	Infoblox 172.16.5.54		172.16.5.54		Infoblox@anutanetworks.com	INFORLOX			ALL	ALL INFORM OXINEORI OXINEORI OXOSINEORI OX	
*	Panorama_172.16.3.76		172.16.3.76		nan@anutanetworks.com	Paporama			ALL	ALL PanoramalPanoramalPANOSIPanorama Systems	
	vCSR_172.16.4.71		172.16.4.71		csr-4.71 anutanetworks.com	Cisco CSR 1000V		03/25/21.2:35:09 PM	17.1.1	17.1.1/Cisco CSR 1000V/Cisco CSR 1000V/IOSXE/Cisco	Systems
•	vCSR_172.16.4.72		172.16.4.72		csr-4.72.anutanetworks.com	Cisco CSR 1000V		03/25/21, 2:35:19 PM	17.1.1	17.1.1 Cisco CSR 1000V Cisco CSR 1000V IOSXE Cisco	Systems
、 、	vMX_172.16.4.166		172.16.4.166		mx5.anutanetworks.com	vMX		03/25/21, 2:34:17 PM	19.4R3.11	19.4R3.11 vMX Juniper MX JUNOS Juniper Networks	
	vMX_172.16.4.167		172.16.4.167		mx6.anutanetworks.com	vMX		03/25/21, 2:34:28 PM	19.4R3.11	19.4R3.11 vMX Juniper MX JUNOS Juniper Networks	
	vMX_172.16.5.171	•	172.16.5.171		mx.anutanetworks.com	vMX		03/25/21, 2:34:48 PM	20.2R1.10	20.2R1.10/vMX/Juniper MX/JUNOS/Juniper Networks	
	vQFX_172.16.5.169		172.16.5.169		vmx.anutanetworks.com	vMX		03/30/21, 10:19:47 PM	20.4R1.12	20.4R1.12 vMX Juniper MX JUNOS Juniper Networks	
?										* <b>t</b> %	•

## View Device Inventory

Let's take a look at one of the devices.

Click the first virtual CSR device.

•	atom 🕼 > Devices									<b>ب =</b> ب	toshiba ♥
<b>a</b>	Devices-Grid Credential Se	rts Creden	tial Profiles Credential Map	s Discovery Discovered	Devices						
~	C + 🛛 🗅	ê 🄺								11 Of 11 Search	۹
3	ld 🛧	Status	Mgmt-Ip-Address	Fqdn-Name	Name	Device-Type	Credential-Set	Last-Extended-Inv-Time	Os-Version	Platform	
ıl.	BigIP_172.16.4.60	•	172.16.4.60		Itm01.anutanetworks.com	bigipVirtual			ALL	ALL bigipVirtual BigIp TMOS F5 Networks	
	BigIP_172.16.4.61	•	172.16.4.61		ltm02.anutanetworks.com	bigipVirtual			ALL	ALL blgipVirtual BigIp TMOS F5 Networks	
<u>ې</u>	Fortigate_172.16.4.207	•	172.16.4.207		fortigate.anutanetworks.com	Fortigate 1000C				ALL Fortigate 1000C Fortigate Firewall FortiOS Fo	ortinet
	Infoblox_172.16.5.54	•	172.16.5.54		Infoblox@anutanetworks.com	INFOBLOX			ALL	ALLINFOBLOXINFOBLOXINFOBLOXOSINFOBLO	x
*	Panorama_172.16.3.76	•	172.16.3.76		pan@anutanetworks.com	Panorama			ALL	ALL Panorama Panorama PANOS Panorama Syst	lems
<b>n</b>	vcsr_172.16.4.71	•	172.16.4.71		csr-4.71.anutanetworks.com	Cisco CSR 1000V		03/25/21, 2:35:09 PM	17.1.1	17.1.1 Cisco CSR 1000V Cisco CSR 1000V IOSXE	Cisco Systems
	vCSR_172.16.4.72	•	172.16.4.72		csr-4.72.anutanetworks.com	Cisco CSR 1000V		03/25/21, 2:35:19 PM	17.1.1	17.1.1 Cisco CSR 1000V Cisco CSR 1000V IOSXE	Cisco Systems
>_	VMX_172.16.4.166	•	172.16.4.166		mx5.anutanetworks.com	vMX		03/25/21, 2:34:17 PM	19.4R3.11	19.4R3.11 vMX Juniper MX JUNOS Juniper Netw	orks
	VMX_172.16.4.167	•	172.16.4.167		mx6.anutanetworks.com	VMX		03/25/21, 2:34:28 PM	19.4R3.11	19.4R3.11 vMX Juniper MX JUNOS Juniper Netw	orks
	VMX_172.16.5.171	•	172.16.5.171		mx.anutanetworks.com	VMX		03/25/21, 2:34:48 PM	20.2R1.10	20.2R1.10 vMX Juniper MX JUNOS Juniper Netw	orks
	VQFX_172.16.5.169	•	172.16.5.169		vmx.anutanetworks.com	vMX		03/30/21, 10:19:47 PM	20.4R1.12	20.4R1.12 vMX Juniper MX JUNOS Juniper Netw	orks
?										**	۶ 🔳

Click on the summary tab to view device inventory including, device type, OS version and interface, and compliance status.

•	tom		1						ې ט 🚍 🎑	shiba 😌
æ	Network	\$	Configuration Monitoring Alerts							
5	vCSR_172.16.4.71	сÐ	Details   csr-4.71.anutanetworks.com	Device-Details-Summa	ry-Dashboard					¢ -
1	• vCSR_172.16.4.71		collector-id	III Alerts			Interface Status		LII Config Compliance St	tatus
ılı –			agent1_toshiba							
۵			config-parse-status SUCCESSFUL				0	0	No Data	
*			vendor-string Cisco Systems			Down	Violation Count			
۵			device-family-string Cisco CSR 1000V		No data avail:	able	0		No Data	
<b>&gt;_</b>			sys-descr Cisco IOS Software [Amsterdam], Virtual XE Software (X86_64_LINUX_IOSD-UNIVERSALK9-M), Version 17.1.1, RELEASE SOFTWARE (fc3) Technical Support:				Others		Severity	_
			http://www.cisco.com/techsupport Copyright (c) 1986- 2019 by Cisco Systems, Inc. Compiled Fri 22-Nov-19 03:3	Actions						
			device-type Cisco CSR 1000V	Run Device Inventory	Run Extended Invent	ory   Run Topology Inventory	No Data	No Data	No Data	
			id vCSR_172.16.4.71	Reneve Comigs 1 Ro	r blagnosinca		CPU Utilisation (%)	Memory Utilisation	n ( Temperature (C)	
			ostype-string IOSXE	Recent Activity						
			priv-status	Retrieval Status	Parse Status	Operation Name	Retrieval Id	Parsing Id	Tags	
			OFFLINE	FAILED		Job:config pull	NuqID3q9KkTZaGYscy3axc_w			
			name	RETRIEVED	SUCCESSFUL	Job:config pull	LDPb3jwZTtSJ2VL0ffNBNT1g	OuGmfiZ_3rSGelekUIFI	KClUw	
			csr-4.71.anutanetworks.com	RETRIEVED	SUCCESSFUL	Job:config pull	GC39rQYyoARJWLRy81Cg2KdA	M182OpN_6pSsS0qM>	(AqqzYtA	
			mgmt-ip-address	RETRIEVED	SUCCESSFUL	Base config	0	IEdnW7CIPwQbmsrZW	JYh-ZVA	
			172.16.4.71	RETRIEVED		SERVMODEL:network_access	LBzkCQF4zMQ1qi_SudcFZhCA			
			manage-by-management-station	RETRIEVED	SUCCESSFUL	Job:config pull	BqhF1u70DrRFqvCr33TCb_mQ	A1fyOmHuuFQ9-ACNIV	/o3257g	
			laise	RETRIEVED	SUCCESSFUL	Job:config pull	GG7NTt9aqQQ9yMOnaGSbzSgA	MBjm8jsDolTSWLv00l	S10Gvg	
			Status ONLINE	RETRIEVED	SUCCESSFUL	Job:config pull	EoTkXUO387TRaUWgghKseQ0Q	P848eJQDtiSPGm70-W	Vpr_pmg	
				RETRIEVED	SUCCESSFUL	Job:config pull	OxC3eelw-kRROwwm4M-1VAcq	NZBLGKTs9_QKKsbTFc	p7-K63g	
?			sys-object-id						<b>*</b>	

## View Archived Configurations

The next tab will display a list of archived configurations. ATOM periodically archives device configurations. The status of each retrieval is also displayed.

•	atom												<b>.</b> .	ს 🚊 🤤
æ	Network	\$	€*	Summary Co	onfiguration	Monitoring	Alerts							
-	vCSR_172.16.4.71	×GĢ			Q					Archive Change Log	Config Data			
131	• vCSR_172.16.4.71		c									11 Of 11 Keyword		٩
ıl.				Device-Id	Device-Ip		Host-Name	Retrieval-Status	Parse-Status	Operation-Name		Parsing-Id	Retrieval-Id	Retrieval-Time 👃
				vCSR_172.16.4	172.16.4.71		csr-4.71.anutanetw	•		Job:config pull		BexByoL0eqaW_CsmKSMMboqQAAARNwgBBMqw	NuqID3q9Kk	03/29/21, 3:25:05 Pt
0				vCSR_172.16.	172.16.4.71		csr-4.71.anutanetw	•	•	Job:config pull		Be3Ycrw6fNv1EtP-6Cg883igAAARNwgBBMqw	GC39rQYyoA	03/29/21, 3:11:33 Pf
***				vCSR_172.16.4	172.16.4.71		csr-4.71.anutanetw	•	•	Job:config pull		BexTYdjNsfBEICI9Upwa3V9wAAARNwgBBMqw	GGIrl1QMcU	03/29/21, 3:10:01 Pt
				vCSR_172.16.4	172.16.4.71		csr-4.71.anutanetw	•	•	Job:config pull		BepSsi_IIccC-chhVepBrBYQAAARNwgBBMqw	OxC3eelw-k	03/29/21, 3:09:01 Pt
\$				vCSR_172.16.4	172.16.4.71		csr-4.71.anutanetw	•	•	Job:config pull		BedHbA8TezfaKmaRATt6gNFQAAARNwgBBMqw	EoTkXU038	03/29/21, 12:34:33 F
				vCSR_172.16	172.16.4.71		csr-4.71.anutanetw	•	•	Job:config pull		Be01cSX-fSG4qVMeM13lcBGAAAARNwgBBMqw	LDPb3jwZTt	03/29/21, 12:04:00 F
>_				vCSR_172.16.4	172.16.4.71		csr-4.71.anutanetw	•	•	Job:config pull		Bew9bYrSpHRtMNQA0fB5vKPAAAARNwgBBMqw	EXDeLYng_0	03/29/21, 12:00:31 F
				vCSR_172.16.4	172.16.4.71		csr-4.71.anutanetw	•	•	Job:config pull		BeN52CaLdpGwfPjP21yv1rxAAAARNwgBBMqw	BqhF1u70Dr	03/29/21, 10:49:47 #
				vCSR_172.16.4	172.16.4.71		csr-4.71.anutanetw	•		Job:config pull		BePbXK0a09nXJl2S5j7H59TAAAARNwgBBMqw	GG7NTt9aq	03/26/21, 1:56:58 Pt
				vCSR_172.16.4	172.16.4.71		csr-4.71.anutanetw	•		SERVMODEL:network_a	access	BeBTMHHEeYpsFwdMXwj5_TMwAAARNwgBBMqw	LBzkCQF4z	03/25/21, 3:09:18 Pf
				vCSR_172.16	172.16.4.71		csr-4.71.anutanetw	•	•	Base config		Be8kMk0JLA0r3cD3sHQsBvxQAAARNwgBBMqw	0	03/25/21, 2:36:48 Pf
?														* =

Select any configuration to view.

💽 atom					🏚 🔳 🔠 🔔 🔮
Network	Summary Configuration Monito	ring Alerts			× configuration-details
vCSR_172.16.4.71 × C	5		Archive Change Log Config Data		
vCSR_172.16.4.71	C 👔 🛨 🌾 Selected 🚺	l i i i i i i i i i i i i i i i i i i i			1 Current Configuration -
al.	Device-Id Device-Ip	Host-Name Retrieval-Status Parse-Stat	us Operation-Name	Parsing-Id	2 show running-config
	VCSR_172.16 172.16.4.71	csr-4.71.anutanetw	Job:config pull	BexByoL0eqaW_CsmK	<sup>3</sup> Building configuration 4 Current configuration : 6470 bytes
<b>₽</b>	vCSR_172.16.4 172.16.4.71	csr-4.71.anutanetw 🔴	Job:config pull	Be3Ycrw6fNv1EtP-6Cg	5 ]
*	vCSR_172.16.4.71	csr-4.71.anutanetw 🔴	Job:config pull	BexTYdjNsfBEICI9Upw	b ! Last configuration change at 00:09:34 UTC Fri Mar 26 2021 by admin
***	vCSR_172.16.4.71	csr-4.71.anutanetw	Job:config pull	BepSsi_IlccC-chhVepB	7 1
*	VCSR_172.16.4.71	csr-4.71.anutanetw 🕒 🔵	Job:config pull	BedHbA8TezfaKmaRA'	<sup>8</sup> version 17.1 <sup>9</sup> service timestamps debug datetime msec
	vCSR_172.16.4.71	csr-4.71.anutanetw	Job:config pull	Be01cSX-fSG4qVMeM	10 service timestamps log datetime msec
>	VCSR_172.16.4.71	csr-4.71.anutanetw	Job:config pull	Bew9bYrSpHRtMNQAC	11 ! Call-home is enabled by Smart-Licensing. 12 service call-home
	VCSR_172.16.4.71	csr-4.71.anutanetw 🔴	Job:config pull	BeN52CaLdpGwfPjP21	13 platform qfp utilization monitor load 80
	VCSR_172.16.4.71	csr-4.71.anutanetw	Job:config pull	BePbXK0a09nXJl2S5j	<sup>14</sup> platform punt-keepalive disable-kernel-core <sup>15</sup> platform console virtual
	VCSR_172.16.4 172.16.4.71	csr-4.71.anutanetw	SERVMODEL:network_access	BeBTMHHEeYpsFwdM	16
2					<pre>11 1 12 1 13 bot-tart-marker 14 bot-tart-marker 15 bot-tart-marker 15 1 12 1 15 nona an e-model 16 call-home 17 1 ff contast meanl address in call-home is 17 configured as sch-mmart-licensingGitsco.com 18 configured as sch-mmart-licensingGitsco.com 19 confist-tmail-addre sch-mmart-licensingGitsco.com 19 confist-ticsoff2-01* 13 cattive 14 cattive 15 cattive 16 cattive 17 cattive 18 cattive 19 confist-ticsoff2-01* 19 cattive 19 catti</pre>

You can tag every archived configuration. You can use this tag to restore configuration at a later point in time. Provide a tag name at the right bottom corner and then save the changes.

Summary         Configuration           C         Image: Configuration           Device-lp         Orsce-lp           VCSR.172.16         172.16.4.71           VCSR.172.16         172.16.4.71	Monitoring         Alerts           HostName         1           Car-4.71.anutanetw         7	Retrieval-Status Parse-Stat	Archive Change Log Config Data Job config pull Job config pull Base config	Parsing-id BesByoL0eq4VL/SmX Be3Yorv6NV1EP-CG BesTYdNrBEICHUpw Beg6sLIIceCchWypB Bed1c5X-f504qVMeM Bev69r5pHRNNQAC Beh55C_d0pVMPP1 Bef5XN03007x2[25] Bef5XN03007x2[25] Bef5XN03007x2[25]	configuration-details      configuration-details      configuration-details      configuration
Device-4d         Device-1p           Device-1p         Device-1p           vCSR,172.16.         172.16.4.71	Host-Name           Host-Name           Car-4.71.anutanetw           71         Car-4.71.anutanetw	Retrieval-Status Parse-Stat	Arabins         Change Log         Config Data           Job config pull         Job config pull         Job config pull           Job config pull         Job config pull         Job config pull           Job config pull         Job config pull         Job config pull           Job config pull         Job config pull         Job config pull           Job config pull         Job config pull         Job config pull           Job config pull         Job config pull         Job config pull           Job config pull         Job config pull         Job config pull           Job config pull         Job config pull         Job config pull           Job config pull         Job config pull         Job config pull	Parsing-Id BexByoLDeqaW_Comk BeSYcry6fNv1EIP-60g BexTrv6fNv1EIP-60g BedHbASTezfaKmaRA Bed1:5x/50c4/MeM Bew96Vr6pHRIMN0AC Beh52caLdpowFiPj31 BeH5XcaLdpowFiPj31 BeH5XcaLdpowFiPj31 BeH5XcaLdpowFiPj31 BeH5XcaLdpowFiPj31	Current Configuration characteristic Configuration building configuration Current configuration : 6478 bytes 51 6 Last configuration change at 08:09:34 UTC I Mar 26 2021 of 04 7 I 6 version 17.1 7 service timestamps log datetime mace 19 lati-home is emabled by Smart-Licensing. 15 service timestamps log datetime mace 10 platform protection should able-kernel-core 10 platform console virtual 10 I
C         Select         Device-4         Device-1p           Device-4         Device-1p         T2:16.47           VCSR:172:16         172:16.47	HostName           FlostName           Csr-4,71 anutanetw           71         Csr-4,71 anutanetw	Retrieval Status Parse-Stat	Job Config pull Jobconfig pull Jobconfig pull Jobconfig pull Jobconfig pull Jobconfig pull Jobconfig pull Jobconfig pull Jobconfig pull Base config	Parsing-Id BestgvLDeqaW_Comk BestYcneftNv1EIP-60g BestYclj4rfBEICI5Upw BepSiLlicC-chthVepB BedHbASTezfaKmaRA Berl:SX-S04dyMeM BewSbYSpHRIMNOAC BehSSCaLdpowFiPJ2 BeHSXCaLdpowFiPJ2 BeFIXHHEerysFwdM BeHXHU J 4204073	Current Configuration     Shullding configuration     Shullding configuration     Gurent configuration     Gurent configuration is 6478 bytes     Si
Device4d         Device4p           VCSR.172.16         172.16.4.71	Host-Name           71         csr-4.71 anutanetw	Retrieval Status Parce-Stat	Is Operation-Name Job.config.pull Job.config.pull Job.config.pull Job.config.pull Job.config.pull Job.config.pull Job.config.pull Job.config.pull Base.config.pull Base.config.pull	Parsing-Id BexByoLDegaW_Com/ BesYtrojN1EIP-6Cg BexTrojN1EIP-6Cg BesTrojN1EIP-6Cg BedH:bASTezfaKmaRA Bed1:5X7504QMMMA BehS2CaLdportPip21 Ber95Yt5pHRIMN0AC BehS2CaLdportPip21 Ber95XK0309tX,II255 Be8TMH-HerpsFredM BeHMK018,I2020139	<pre>2 hour running-config 3 Building configuration : 6470 bytes 4 Current configuration : 6470 bytes 5   6   Last configuration change at 00:00:14 UTC f Mar 26 2021 by admin 7   8 version 17.1 8 version 17.1 8 version 17.1 9 service timestamps debug datetime msec 19 service timestamps dabug datetime msec 19 service call-home 10 jatefrom un-texepalive disable-kernel-core 19 jatefrom un-texepalive disable-kernel-core</pre>
vCSR_172.16.         172.16.47	71         csr-4,71 anutanetw           72         csr-4,71 anutanetw           73         csr-4,71 anutanetw           74         csr-4,71 anutanetw           75         csr-4,71 anutanetw           76         csr-4,71 anutanetw           77         csr-4,71 anutanetw           78         csr-4,71 anutanetw           79         csr-4,71 anutanetw           71         csr-4,71 anutanetw           72         csr-4,71 anutanetw           73         csr-4,71 anutanetw           74         csr-4,71 anutanetw           75         csr-4,71 anutanetw           76         csr-4,71 anutanetw		Jobiconfig pull Jobiconfig pull Jobiconfig pull Jobiconfig pull Jobiconfig pull Jobiconfig pull Jobiconfig pull Jobiconfig pull Bioloconfig pull Bioloconfig pull Bioloconfig pull	BexByoL0eqWL_Csmk Be3YzweRNi IEP-SCg BexTYdjisfBE(ISU)pw BepSisLicoCchWegB BedHbA8TezfakmaRA Bed1csXr58q4/MeM BerSyr5pHRMNQAC BeHS2Ca.dg/owfPj=1 BeFXK0a09nX.J255j Be6TMHHEvpsFwdM BeRMK01.8.20420.55	3 Building configuration :.678 bytes 5 (current configuration :678 bytes 5 ) 6 (Last configuration change at 00:00:34 UTC I Nar 26 2021 by admin 7 ) 6 vervice timestamps debug datetime msec 10 service timestamps debug datetime msec 11 (call-home is enabled by Smart-Licensing. 11 service call-home 13 platform unre-keepalive disable-kernel-core 14 platform pur-keepalive disable-kernel-core 15 [16]
vCSR_172.16         172.16.47	21         csr-4.71 anutanetw           71         csr-4.71 anutanetw		Jobiconfig pull Jobiconfig pull Jobiconfig pull Jobiconfig pull Jobiconfig pull Jobiconfig pull Jobiconfig pull SERMADGELnetwork_access Base config	BeSYCW6INV1EIP-6Cg BexTVghtrBEICSUlpw BepSaLlicoCchNvgb Bed1EbASTezfakmaRA Bed1ESX/S5G4Q/MeAl BehS2Ca.dg/ord/Pj2 BehS2Ca.dg/ord/Pj2 BeFXK0a09nX.4285 BeBTMHHErysFwdM BeRMMH18.429cf3	51 41 Last configuration change at 00:00:14 UTC 1 Nar 26 2021 by admin 71 4 version 37.1 8 service timestamps debug datetime macc 14 (Call-home 15 emblode by Smort-Liceming. 13 service call-home 14 platform purt-Leopalt 16 platform purt-Leopal
VCSR,172.16.         172.164.71	71         csr-4.71 anutanetw		Jobconfig pull Jobconfig pull Jobconfig pull Jobconfig pull Jobconfig pull Jobconfig pull Jobconfig pull Base config pull Base config	BesTYdjNsfBEICHUpw BepSaLlicoC-hWhypB BedHbASTcafakmaRA Beo1cSX/504qVMeM Bev69V5pHRtNNDAC Beh52CaLdp0wfPjP21 Beh52CaLdp0wfPjP21 BeFDXKKa09xX/I2S5j Be6TMHHEvppSwdM BesKMKNI JADrch30	6   Last configuration change at 08:09:14 UTC / Mar 26 2021 by admin 7   8 version 17.1 8 service timestamps log datetime masc 11   Call-home is enabled by Smart-Licensing. 12 service call-home 13 platform and utilization monitor load 80 4 platform purt-Leepalive disable-kernel-core 13 platform console virtual 16
VGSR,172.16         172.16.47	71         csr-4.71 anutanetw		Jobzconfig pull Jobzconfig pull Jobzconfig pull Jobzconfig pull Jobzconfig pull Babaconfig pull BBabaconfig	BepSaLlicC-chNvpB BedHbASTezfaKmaRA Bed1c5X-/SG4QVMeM Bew9bYSpHRtINNAC BeN52CaLdpGwfPjP21 BeFbXNCa09nx/12SSj Be6TMHHEeYp5FwdM Be8HMAN II ADnc7n3	7   8 version 17.1 9 service timestamps debug datetime msec 10 service timestamps log datetime msec 11 (call-home is enabled by Smart-Licensing. 12 service call-home 14 platform for dutilization monitor load 80 14 platform for dutilization monitor load 80 14 platform console virtual 16
VCSR,172.16.         172.164.71	71         csr-4.71 anutanetw		Job.config.pull Job.config.pull Job.config.pull Job.config.pull SERVMODEL.network_access Base config	BedHbASTezfaKmaRA' Be01c5X-fSG4qVMeM Bew9bYr5pHRtMNQAC BeN52CaLdpGwfPjP21 BePbXK0a09nXJi2S5j Be8TMHHEeYp5FwdM Be8tMkHEB4Yp3FwdM	<pre>% verion 07.1 % service timestamps debug datetime msec 10 service timestamps log datetime msec 11 ( call-home is enabled by Smart-Licensing. 12 service call-home 13 platform qfp utilization monitor load 80 H platform purt-keepallve disable-kernel-core 13 platform console virtual 16 [</pre>
vCSR_172.16.         172.16.471	71         csr-4.71.anutanetw           71         csr-4.71.anutanetw           71         csr-4.71.anutanetw           71         csr-4.71.anutanetw           71         csr-4.71.anutanetw           71         csr-4.71.anutanetw		Job.config.pull Job.config.pull Job.config.pull Job.config.pull SERVMODEL.network_access Base config	Be01cSXrfSB4qVMeM Bew9bYrSpHRtMNQAC BeN52CaLdpGwfPjP21 BePbXK0aO9nXJI2S5j Be8TMHHEYpsFwdM Be8tMHHEYpsFwdM	10 service timestamps log datetime mscc 11 [ Call-home is enabled by Saart-Licensing. 12 service call-home 13 platform qrp utilization monitor load 80 14 platform gunt-keepalive disable-kernel-core 15 platform console virtual 16 [
vCSR_172.16.         172.16.471           vCSR_172.16.         172.16.471           vCSR_172.16.         172.16.471           vCSR_172.16.         172.16.471           vCSR_172.16.         172.16.471           vCSR_172.16.         172.16.471	71         csr-4.71.anutanetw           71         csr-4.71.anutanetw           71         csr-4.71.anutanetw           71         csr-4.71.anutanetw           71         csr-4.71.anutanetw		Jobiconfig pull Jobiconfig pull Jobiconfig pull SERVMODEL:network_access Base config	Bew9bYrSpHRtMNQAC BeN52CaLdpGwfPjP21 BePbXK0a09nXJI2S5j BeBTMHHEeYpsFwdM BeBTMHHEeYpsFwdM	11 [ call-home is enabled by Smart-Licensing. 12 service call-home 13 platform qfp utilization monitor load 80 14 platform punt-keepalive disable-kernel-core 15 platform console virtual 16 [
vCSR_172.16.         172.16.4.71           vCSR_172.16.         172.16.4.71           vCSR_172.16.         172.16.4.71           vCSR_172.16.         172.16.4.71           vCSR_172.16.         172.16.4.71	csr-4.71.anutanetw           71         csr-4.71.anutanetw           71         csr-4.71.anutanetw           71         csr-4.71.anutanetw	• •	Job:config pull Job:config pull SERVMODEL:network_access Base config	BeN52CaLdpGwfPjP21 BePbXK0a09nXJl2S5j BeBTMHHEeYpsFwdM Be8KMK0 II A013cD3st	<sup>12</sup> service call-nome <sup>13</sup> platform qfp utilization monitor load 88 <sup>14</sup> platform punt-keepalive disable-kernel-core <sup>15</sup> platform console virtual <sup>16</sup> [
vCSR_172.16.         172.16.4.71           vCSR_172.16.         172.16.4.71           vCSR_172.16.         172.16.4.71	71         csr-4.71.anutanetw           71         csr-4.71.anutanetw           71         csr-4.71.anutanetw	• •	Job:config pull SERVMODEL:network_access Base config	BePbXKOaO9nXJl2S5j BeBTMHHEeYpsFwdM Be8kMkO II AOr3cD3si	<sup>14</sup> platform punt-keepalive disable-kernel-core <sup>15</sup> platform console virtual <sup>16</sup> 1
vCSR_172.16.         172.16.4.71           vCSR_172.16.         172.16.4.71	71 csr-4.71.anutanetw 71 csr-4.71.anutanetw	•	SERVMODEL:network_access Base config	BeBTMHHEeYpsFwdM Be8kMk0 II A0r3cD3cl	15 platform console virtual 16 !
vCSR_172.16.4 172.16.4.71	71 csr-4.71.anutanetw	• •	Base config	BeskMk0 II A0r3cD3sI	
				Deckinkoobhorocood	17 hostname csr-4.71
					<pre>210 boto-med-marker 21   22   23 enable passord elastic 24   26 enable passord elastic 24   27   17 contact enail address in call-home is configured as cch-sart-licensingBitsco.com 21   the enail address configured in Cisco Sara License Portal will be used as contact enail address to send Sch noffications. 210 contact-email-addr sch-sart-licensingBitsco 211   destination transport-method http 21   distinution transport-method http 21   di</pre>

## View Configuration Diffs

Select the following two configurations from the timeline and click on compare icon on the toolbar to view the difference between them.

Summary Contract	onfiguration Monitorin	ig Alerts							
	/			Ar	chive Change Log Config Data				
С і 🗗	Selected	2				11 Of 11	Keyword		٩
Device-Id	Device-Ip	Host-Name	Retrieval-Status	Parse-Status	Operation-Name	Parsing-Id		Retrieval-Id	Retrieval-Time 🗸
vCSR_172.16.4.7	172.16.4.71	csr-4.71.anutanetw	•		Job:config pull	BexByoL0eqaW_CsmKSMMboqQAAARNwgB	BMqw	NuqID3q9Kk	03/29/21, 3:25:05 Pt
vCSR_172.16.4.7	172.16.4.71	csr-4.71.anutanetw	•	•	Job:config pull	Be3Ycrw6fNv1EtP-6Cg883igAAARNwgBBMq	w	GC39rQYyoA	03/29/21, 3:11:33 Pt
VCSR_172.16.4.7	172.16.4.71	csr-4.71.anutanetw			Job:config pull	BexTYdjNsfBEICI9Upwa3V9wAAARNwgBBM	qw	GGIrl1QMcU	03/29/21, 3:10:01 Pt
vCSR_172.16.4.7	172.16.4.71	csr-4.71.anutanetw	•		Job:config pull	BepSsi_IIccC-chhVepBrBYQAAARNwgBBMqv	/	OxC3eelw-k	03/29/21, 3:09:01 Pt
VCSR_172.16.4.7	172.16.4.71	csr-4.71.anutanetw	•	•	Job:config pull	BedHbA8TezfaKmaRATt6gNFQAAARNwgBBI	Mqw	EoTkXUO38	03/29/21, 12:34:33 F
VCSR_172.16.4.7	172.16.4.71	csr-4.71.anutanetw			Job:config pull	Be01cSX-fSG4qVMeM13lcBGAAAARNwgBBM	Mqw	LDPb3jwZTt	03/29/21, 12:04:00 F
VCSR_172.16.4.7	172.16.4.71	csr-4.71.anutanetw	•	•	Job:config pull	Bew9bYrSpHRtMNQA0fB5vKPAAAARNwgBB	Mqw	EXDeLYng_0	03/29/21, 12:00:31 F
VCSR_172.16.4.7	172.16.4.71	csr-4.71.anutanetw			Job:config pull	BeN52CaLdpGwfPjP21yv1rxAAAARNwgBBM	qw	BqhF1u70Dr	03/29/21, 10:49:47 /
vcsr_172.16.4.7	172.16.4.71	csr-4.71.anutanetw	•	•	Job:config pull	BePbXKOaO9nXJl2S5j7H59TAAAARNwgBBN	lqw	GG7NTt9aq	03/26/21, 1:56:58 Pt
VCSR_172.16.4.7	172.16.4.71	csr-4.71.anutanetw	•		SERVMODEL:network_access	BeBTMHHEeYpsFwdMXwj5_TMwAAARNwgB	BMqw	LBzkCQF4z	03/25/21, 3:09:18 Pt
VCSR_172.16.4.7	172.16.4.71	csr-4.71.anutanetw	•	•	Base config	Be8kMkOJLAOr3cD3sHQsBvxQAAARNwgBB	Mqw	0	03/25/21, 2:36:48 Pt

•	atom 📣 > Devices		<b>.</b>	U	Toshiba	Ø
<b>æ</b>	Comparing Configurations				×	Т
۲. ۱	✓ Ignore Spaces ✓ Show changes only vCSR_172.16.4.71 25/03/2021 14:35	V58[_172.16.4.71 35/01/021.15:00			6 Of 6	م • ب
 **	1 Current configuration : 0353 byte 2 ! Last configuration change at 00 3 4 5	s L2 Current configuration : 8449 bytes 0:18:849 UTC Thu Har 25 2021 by admin I Last configuration change at 01:17:18 UTC Thu Har 25 2021 by admin Interface Gigabitthemetal.425 encapsulation doity 425 ip address 172.16:15:1 255.255.26				.5:05 P 1:33 P 0:01 P 9:01 P
<b>*</b> >_	6	,				34:33   04:00   00:31   49:47
						6:58 P 9:18 P 6:48 P
?				٣	≁	

## View Configuration Data

The config data button in the configuration tab provides you with a simplified view of the device configuration. The entire configuration of the device is modeled into related items. This view is available for CLI and Yang/NetConf based devices.

Let's check for all VLANs configured in this device. To view all VLANs in the current device, click on the "Config Data" button. Scroll down in "Config Elements" and click on "VLANs."



## Summary & Next Steps

Through this exercise, you learned ATOM's resource and configuration management capabilities.

Some of the key capabilities are listed below.

Resource Management	Configuration Management
<ol> <li>Automatically onboard Greenfield networks through ZTP</li> <li>Automatically discover brownfield network and services.</li> <li>Automatically group devices based on custom rules (such as type, location, etc.)</li> <li>View L2 Topology</li> </ol>	<ol> <li>Archival</li> <li>Versioning</li> <li>Restoration</li> <li>RMA</li> <li>Diff</li> <li>Config Data Model</li> </ol>

Check out the configuration compliance section in the user guide to learn more on these topics

# **Exercise 2: Service Orchestration**

ATOM provides service lifecycle management for multi-vendor devices. ATOM provides numerous out-of-box services. Custom services specific to business interests can also be developed using ATOM SDK.

In this exercise, we will be provisioning, modifying, and deleting L3 and EVPN services.

## Provisioning L3 Service on a Cisco Router

Please refer to the <u>L3 service automation use-case guide</u> to get a detailed understanding of the L3 service capabilities.

In the menu, Click on automation and then services.



Go to the service catalog and click on the L3 service card.

•	tom	🛟 > Services									• <b>•</b> •	U 🔔
æ	Cor	npliance-Dashboard Catalog	Reconciliation Ap	provals								
_	Ξ¢	Catalog										=
(E)	Service		Vendor	Ŧ	OS-Type	- DeviceFamily	-	DeviceType	•			Apply Cle
ւհ							Collapse	Expand C				
٥	ſ	Migration-informatio	on y	• • •	Evpn-vx-lan Version 8.0.0.1		* = 0	L2vpn-svc Version 8.0.0.0	* = 0	L3-services +	-	* = 0
*		Service Standard			Service Standard			Service Standard		Service Standard		
\$		Service Status			Service Status			Service Status		Service Status		
		0 Deployments	0 Compliant		0 Deployments	0 Compliant		2 Deployments	2 Compliant	1 Deployments	1 Complia	nt
>		0 Non-Compliant			0 Non-Compliant			0 Non-Compliant		0 Non-Compliant		
			s	how More			Show More		Show More			Show More

This page displays all L3 service instances. You can see an existing L3 service.

L3-services instances									
C + 🗉 🗅 🏕							1 Of 1 Search		٩
Name 🛧	Service-Status	Device-Id	Interface-Mode	Interface	Description	Vrf	Vlan-Id	Ip-Address	Net
L3 Services_toshiba	AVAILABLE	vCSR_172.16.4.71	sub_interface	GigabitEthernet3			425	172.16.15.1	255

#### Create a new service

Let's create another L3 Service. Click on "+" to create a new I3 service.

L3-services instances						
C + 🗐 🛯 🕁 🖈						
□ Name ↑	Service-Status	Device-Id				
L3 Services_toshiba	AVAILABLE	vCSR_172.16.4.71				

#### **Entering Form Details**

You are now provided with a form. ATOM will provision a new L3 service based on the details provided in this form. Enter the details as below and submit.

You can also import a template with prefilled form values(see below)

Field	Value
Name	Trial L3 Service
Device ID	Select a vCSR from the dropdown
Interface-mode	Sub-Interface
Interface	GigabitEthernet3
Description	TrialService
Vrf	TrialVRF
Vlan-Id	522
Ip-Address	172.1.16.24
Netmask	255.255.255.0
Ipv6-Address	Leave it blank
Ipv6-Prefix-Length	Leave it blank

	atom 🛟 > Services
2	Create L3-Service 🔕
\	-mandatory information Name string Trial L3 Service
	Device-Id • device-id vCSR_172.16.4.71 × -
-	Interface-Mode • sub-interface l3-interface vlan       Sub-Interface     L3-Interface     Vlan
	Interface GigabitEthernet3 × •
	Description string description
	Vrf <sup>string</sup> TrialVRF
	Vlan-Id • 14096 522
	Ip-Address Must be a valid IP Address. Ex :172.16.1.24.
	Netmask Must be a valid IP Address. Ex :172.16.1.24.

Importing a form template

ATOM allows operators to import an existing template. Download the L3 service template from <u>here</u> and import it.

Create L3-Service	Ô	Templates	
	•	Import	
Interface		Export	
interface	Load		
		 Save	

Most of the form values are prefilled. Enter device and interface configuration and submit.

atom 🛟 > Services		
Create L3-Service 🔯 🚉		
-mandatory information		
Name •		
Trial L3 Service		
Device-Id • device-Id		
	×	Ť
sub-interface I3-interface vlan		
Sub-Interface L3-Interface Vlan		
Interface		
	×	Ŧ
Description		
TrialService		
Vrf string		
TrialVRF		
Vlan-Id •		
522		
Ip-Address Must be a valid IP Address. Ex :172.16.1.24.		
172.1.16.24		
Netmask Must be a valid IP Address. Ex :172.16.1.24.		
255.255.255.0		

## View task progress

Open the tasks view to monitor the progress.



We can see our service is being provisioned. The progress bar shows that it's 50% done.

•	atom 🛟 > Service:	S							<b>*</b>	<u>ا</u> ا	. <b>≜</b> ₽
<b>a</b>	L3-services instances							× Tasks	375 c		
5	C + 🗉 🗅 🎓							Search			×
3	Name 🛧	Service-Status	Device-Id	Interface-Mode	Interface	Description	Vrf	0	342		1
ılı	L3 Services_toshiba	AVAILABLE	vCSR_172.16.4.71	sub_interface	GigabitEthernet3			Awaiting	Complete	Errors	Running
் **								Create: I3-servi Provisioning © 2021-03-31	ice Trial L3 Service gresources started 13:00:24 50%	-	50%
*								Server-side-con Operation of 2021-03-31	nfig-diff ompleted successfully 12:22:42		100%
>_								Server-side-con Operation of 2021-03-31	nfig-diff ompleted successfully 12:22:42		100%

To view the details of the task, click on the three dots and then select details.



In the task details pane, you can view the logs and the commands that are yet to be provisioned.

Create: I3-service Trial L3 Service	×
Task ID 02sLV0#/155/2844uyd5je@r	
User Name toshiba	
Time Taken 31/02/021 12023 - Universit	
Logs Summary Commands	
Nar 31, 2021, 1:03:43 PM Posted on kafka: ("taskId": "DzaLVDWF195V2W4Wyq5jaQw", "timestamp": 1617176023929, "commit": true, "avtoRollback": true, "force": false, "skipNotify": false, "verbose": false, "skipNniqueConstraintValidation": f "payload": "	alse, "stacktrace": "",
<pre>cinput&gt;transaction-policy&gt;tfail-fast&gt;true(/fail-fast&gt;tvaildation-scope&gt;COWITITO_DATA(/vaildation-scope&gt;ccommand-sequence-policy)20EPBDENCY_BASEC/command-sequence-policy&gt;20erost-send-commands-to-devices&gt;failse/do-not-send-commands-to-devices</pre>	evices≻(service-discover
", "gerration" ", "systematic", false, "taskistanulmaged": (alse, "scaling state"; "default", "default", "taskistanulmaged"; (alse, "taskistanulmaged"; "default", "default", "taskistanulmaged"; "default", "default", "taskistanulmaged"; "default", "default, "defaul	a"}
Nm 31, 2021, 1:83:43 PM ("taskId": "DrakVOWFI95V20K40y65j0Q", "taskState": "COMPIT_REQUESTED", "timestamp": 1631726023997, "description": "", "serviceTemplate": "13-service", "serviceTemplate": "Trial L3 Service", "operation "CommondementationDisabled": false, "serviceDestationType": "CREATE", "pertoss": false, "processDelation": false, "applyDateReferences": false) ("No. 1) 2021. doi:10.1016/file.0016/fi	nName": "",
nar 31, 2021, lissiwa na kakate bavula isotekula isotekula isotekula isotekula kakatekula kakate	
Mar 31, 2021, 1:03:44 PM entity-exists://controller:devices/device=vCSR_172.16.4.71/13features:vvrfs (duration = 9 msec)	
Mar 31, 2021, 1:03:44 PM create-data:/app/restconf/data/controller:devices/devices/devices/devices/vfs (duration = 41 msec). Params:	
<ul> <li>[6] (restings - //ap/retsof/ski/cottyline/scie/sec/scie/scie/scie/scie/scie/scie</li></ul>	
Mar 31, 2021, 1:03:44 PM entity-exists://controller:device=vCSR_172.16.4.71/12/features:vlams (duration = 11 msec)	
Nar 31, 2021, 1:03144 PM create-data:/app/restconf/data/controller/devices/dev	
<ul> <li>II (realisting : / / / / / / / / / / / / / / / / / /</li></ul>	
Mar 31, 2021, 1:03:44 PM entity-exists://controller:device=vCsR_172.16.4.73/interface:interfaces (duration = 13 msec)	
Nar 31, 2021, 1:03144 PM create-data:/app/restconf/data/controller/idev/cosf8_172.1.6.4.7/interface:interfaces (duration = 76 msec). Parama:	
(a) Protocode : / approximation/university/induc	0 bytes)
Mar 31, 2021, 1:03:44 PM No commands generated for: toshiba:DzaLVOWFi95v2MK4uyq5jaQw,/controller:device=vCSR_172.16.4.71/12features:vlans/vlan=522{DzAV84xsLwQtq2_AKr3Q4HMw.T}flags[csc-owner,csc-shwith] (evaluated commands: [])	
Mar 31, 2022, 1:03:44 PM Saving commands	
Nar 31, 2021, 1193144 MY Résulting Commit Nar 31, 2011 1193146 MY Résulting Commit	
Mar 31, 2021, 1103/44 M. Executing on sent: default sent	
Mar 31, 2021, 1:03:44 PM Processing on agent: default_agent	
	Download as Config
server-side-confie-diff	100%

Taki D       Dat/Wid 59:20k/keye55ger         User Name       totalsa         Time Taken       Totalsa         Operation       Oresafetrif         Device Name/P       Commands         Operation       Oresafetrif         Device Name/P       Commands         Operation       Oresafetrif         Device Name/P       Commands         Veride Name/P       Cond / 172.16.471	
User Name : stallate         Time Talker : installate         Logs : summary : commands         Operation : Creativity : creat-71 anutametworks.com / 172:16:471         Stalus : TO EE PROVSIONED         Commands : vir defaultion Trial/VSF address family vet executions family executi	
Time Take       Time Take       Connueds         Logs       Summary       Connueds         Operation       Createvit         Device Name/P       creat-71 and underworks.com / 172.16.471         Status       TO EF ROV/SIONED         Commands       vit defention Triat/Vit* address family         address family       createvit         Operation       Createvit         Vite Rov/SIONED       vite defention Triat/Vit* address family         Status       TO EF ROV/SIONED         Commands       informations.com / 172.16.471         Status       TO EF ROV/SIONED         Commands       informations.com /	
Log       Summary       Commands         Operation       Creativef         Device Nummer/P       cext-31         Status       To EF PROVISIONED         Commands       vir definition Trial/VF         ext-address family       ext-address family         Commands       To EF PROVISIONED         Commands       Creativef face         Device Name/P       cext-AT anutaetworks.com / 172.16.471         Status       To EF PROVISIONED         Commands       interface (signalifithmend1.szz)         device face       cexterprovide (signalifithmend1.szz)         device formaling       interface	
Operation       Creativif         Device Numming       cxe4-71 autotentendos.com / 172.16.471         Status       To EP PROVISIONED         Commands       vir distribution TrialWFF         extraderes family       extraderes family         Operation       Creativiteface         Operation       Creativiteface         Device Numming       cse4-71 autotentendos.com / 122.16.471         Status       To EP PROVISIONED         Commands       interface         Device Numming       cse4-71 autotentendos.com / 122.16.471         Status       To EP PROVISIONED         Commands       interface         Device Numming       cse4-71 autotentendos.com / 122.16.471         Status       To EP PROVISIONED         Commands       interface (stabilithmend15.222)         desception TrialWFF       extraduction data 522         interface (stabilithmend15.222)       interface (stabilithmend15.222)         interface (stabilithmend15.222)	
Device Name/IP csr-47.1 actuatesteedo.1.com / 172.16.471         Statua       To EF PROVISIONED         Commandag       vir dedication Triat/VF earth address family         extra address family       extra address family         Device Name/IP csr-47.1 anctatesteedo.1.com / 122.16.471         Statua       To EF PROVISIONED         Device Name/IP csr-47.1 anctatesteedo.1.com / 122.16.471         Statua       To EF PROVISIONED         Commandag       isterface (signalt/Hamed1.522)         description Triat/VF       extra address family	
Statu     To EF PROVISIONED       Commands     virl definition Trial/VFF       address family     address family       Portes Name //P     cesteinterface       Device Name //P     cesteinterface       Device Name //P     cesteinterface       Device Name //P     cesteinterface       Commands     interface (giaphtt: theread. 3.022)       decorption TrialBervice     virl definition of 1.022       interface (giaphtt: theread. 3.022)     ereagueduit on definition of 1.222       interface (giaphtt: theread. 3.022)     ereagueduit on definition of 1.222       interface (giaphtt: theread. 3.022)     ereagueduit on definition of 1.222       interface (giaphtt: theread. 3.022)     ereagueduit on definition of 1.222       interface (giaphtt: theread. 3.022)     ereagueduit on definition of 1.222       interface (giaphtt: theread. 3.022)     ereagueduit on definition of 1.222       interface (giaphtt: theread. 3.022)     ereagueduit on definition of 1.222       interface (giaphtt: theread. 3.022)     ereagueduit on definition of 1.222       interface (giaphtt: theread. 3.022)     ereagueduit on definition of 1.222       interface (giaphtt: theread. 3.022)     ereagueduit on definition of 1.222       interface (giaphtt: theread. 3.022)     eread. 3.022	
Commands     vrl defeation Trail/Visi addeess family edecess family provide Stamultip       Operation     Oreateinteface       Derice Namultip     cre 471, andtanetworks.com / 172.16.471       Status     To EF PROVISIONED       Commands     inteface (gluphitthemati.szz) edeception Trailewide vrl forwarding Trail/Viei encaputation dott a 282 encaputation dott	
Operation     Oreateinterface       Device Name/IP     cs4-71, and/anetworks.com / 172.18.471       Status     T0 EF Profixe OligabitIShemotils.com       Commande     interface OligabitIShemotils.com       Georgion Trillservice     execrption Trillservice       execrption Trillservice     endergibitIShemotilservice       endergibitIshemotilservice     endergibitIshemotilservice       endergibitIshemotilservice     endergibitIshemotilservice       endergibitIshemotilservice     endergibitIshemotilservice	
Device Name/IP csr4-71 and/tatastendords.com /172.16.47 Status TO BE PROVISIONED Commanda decorpton TialBerrice interface GigabitEthemet3.552 decorpton TialBerrice wf forwarding TialBerrice encapsulation dott q.522 encapsulation dott q.522 encapsulation dott q.522.558.0	
Statu TO GE FROVISIONED Commanda interface GlaphattShemal.5x2 decicption ThatBenrice wrf forwarding ThatWr8f ereappeduation dot q 522 ereappeduati	
Commands interface GigubitEtherred.522 description TriaBervice wr frowarding TriaVRF encapsulation dott q 522 inderfass 127.1.16.42.455.256.256.0	
description TrialBervice vr fforwarding TrialWHF encapsulation diott q 522 ip address 172-11.24 285.255.25.0	
vri frowarding Trialvite" encapsulation dott q 522 ip address 172-11.42 485.258.258.0	
encapsulation doi 10 522 ip address 172.1.16.24 255.255.0	
ip address 172.1.16.24 255.255.0	
no snutown	
Download at	Config
server-side-config-diff	

Refresh the task list to retrieve the latest status of the task.

× Tasks	381 c 🖊	-	
Search			×
0 Awaiting	348 Complete	32 Errors	1 Running

Once the task is completed, close the task panel and refresh the service view.

× Tasks	<b>383</b> c		
Search			×
0 Awaiting	351 Complete	<b>32</b> Errors	<b>0</b> Running
Create: I3-ser Operation © 2021-03-3	vice Trial L3 Service completed successfully 1 13:03:43	V	100% :

L3-services instances				
C + 🗉 🗅 🏕				
□ Name ↑	Service-Status	Device-Id	Interface-Mode	Interface
L3 Services_toshiba	AVAILABLE	vCSR_172.16.4.71	sub_interface	GigabitEthernet3
Trial L3 Service	AVAILABLE	vCSR_172.16.4.71	sub_interface	GigabitEthernet3

To view provisioned commands, follow the steps as described in this section.

Verify the service creation

ATOM automatically pulls configuration from the device after provisioning the service. To verify the service has been provisioned successfully, go to the archived configuration tab described in this <u>section</u>.

In this archive, you can see that the last entry is related to the operation "Create: L3 Service".

€	Summary (	Configuration Mon	itoring Alerts								
					A	rchive Change Log Config Data					
G							11 Of 11	Keyword			٩
	Device-Id	Device-Ip	Host-Name	Retrieval-Status	Parse-Status	Operation-Name	Parsing-Id		Retrieval-Id	Retrieval-Tim	ne 🗸
	vCSR_172.16.4.7	172.16.4.71	csr-4.71.anutanetw	•		Create: I3-service Trial L3 Service	BenUCgMj2Lq3nPZNkW2uTYTAAAARNwgBB	Mqw	DzaLVOWFi9	03/31/21, 1:	04:28 Pł
	vCSR_172.16.4.7	172.16.4.71	csr-4.71.anutanetw	•	•	Job:config pull	Be3Ycrw6fNv1EtP-6Cg883igAAARNwgBBMq	w	GC39rQYyoA	03/29/21, 3:	11:33 PI
	vCSR_172.16.4.7	172.16.4.71	csr-4.71.anutanetw	•		Job:config pull	BexTYdjNsfBEICI9Upwa3V9wAAARNwgBBM	qw	GGIrl1QMcU	03/29/21, 3:	10:01 Pł
	vCSR_172.16.4.7	172.16.4.71	csr-4.71.anutanetw	•	•	Job:config pull	BepSsi_IIccC-chhVepBrBYQAAARNwgBBMqv	v	OxC3eelw-k	03/29/21, 3:	09:01 Pł
	vCSR_172.16.4.7	172.16.4.71	csr-4.71.anutanetw	•	•	Job:config pull	BedHbA8TezfaKmaRATt6gNFQAAARNwgBB	Mqw	EoTkXU038	03/29/21, 12	2:34:33 F
	vCSR_172.16.4.7	172.16.4.71	csr-4.71.anutanetw	•		Job:config pull	Be01cSX-fSG4qVMeM13lcBGAAAARNwgBBI	wpN	LDPb3jwZTt	03/29/21, 12	2:04:00 F
	vCSR_172.16.4.7	172.16.4.71	csr-4.71.anutanetw	•		Job:config pull	Bew9bYrSpHRtMNQA0fB5vKPAAAARNwgBB	Mqw	EXDeLYng_0	03/29/21, 12	2:00:31 F
	vCSR_172.16.4.7	172.16.4.71	csr-4.71.anutanetw	•	•	Job:config pull	BeN52CaLdpGwfPjP21yv1rxAAAARNwgBBM	qw	BqhF1u70Dr	03/29/21, 10	0:49:47 🖌
	vCSR_172.16.4.7	172.16.4.71	csr-4.71.anutanetw	•	•	Job:config pull	BePbXKOaO9nXJl2S5j7H59TAAAARNwgBBM	/lqw	GG7NTt9aq	03/26/21, 1:	56:58 Pł
	vCSR_172.16.4.7	172.16.4.71	csr-4.71.anutanetw	•		SERVMODEL:network_access	BeBTMHHEeYpsFwdMXwj5_TMwAAARNwgl	BMqw	LBzkCQF4z	03/25/21, 3	09:18 Pł
	vCSR_172.16.4.7	172.16.4.71	csr-4.71.anutanetw	•	•	Base config	Be8kMkOJLAOr3cD3sHQsBvxQAAARNwgBB	Mqw	0	03/25/21, 2:	36:48 Pł

Compare the last two configurations to verify if the correct configurations were provisioned in the device.

Archive Change Log	Config Data
C 🖹 🗗 🗞 🛃 Selected 🔼	
E Device-Id Device-Ip Host-Name Retrieval-Status Parse-Status Operation-Name	
VCSR_172.16.4.7 172.16.4.71 csr-4.71.anutanetw  Create: I3-service Trial L	3 Service
✓ vCSR_172.16.4.7'         172.16.4.71         csr-4.71.anutanetw         ●         Job:config pull	
atom	🔳 🕛 🔔 🤁

•	ator	n 🕼 > Devices	ب 🚍 🗳	Toohiba	0
<b>8</b> 3	Com	paring Configurations		×	
(L)		gnore Spaces 🗹 Show changes only		13 Of 13	٩
цĿ		¥ vCSR_172.16.4.71	vCSR_172.16.4.71 31/03/2021 13:04		• ↓
		1 Current configuration : 6470 bytes	Current configuration : 6688 bytes		4:28 8
୍ଦ		2 ! Last configuration change at 00:09:34 UTC Fri Mar 26 2021 by admin	! Last configuration change at 23:12:21 UTC Twe Mar 30 2021 by admin		1:33 8
		3	vrf definition TrialVRF		0:01 8
*		4	1		0.01 8
		5	address-family ipv4		0.000
-\$		5	exit-address-family		34:33
					04:00
			Interface Gigabitthernet3.522		00:31
	1		accordition dation dation 522		49:47
	1		ver forwarding TrialVRF		6:58
	1	2	ip address 172.1.16.24 255.255.0		9:18 6
	1	3			6:48 8

#### Modify existing service

Let's try modifying the service configuration. Follow the steps described in this <u>section</u> to return to the L3 service summary view. Here we can now see an entry for the previously provisioned service.

To modify the service, select the row and click on edit.

C       ✓       Selected 1         Image: Name ↑       Service-Status       Device-Id	
■ Name         Service-Status         Device-Id         Interface-Mode	
	Ir
L3 Services_toshiba AVAILABLE vCSR_172.16.4.71 sub_interface	G
Trial L3 Service AVAILABLE vCSR_172.16.4.71 sub_interface	G

In the displayed form, modify VLAN from 522 to 600 and submit the form.



This triggers a modification request, and ATOM modifies the VLAN on the device.

Monitor the task as described in this <u>section</u>. Validate service configuration as described in this <u>section</u>.

#### Delete the service

Now let's proceed to the final step of a service lifecycle - Service Deletion.

To delete the service, select the row and click on delete.

L3-services instances				
C 🖍 🖬 🕶 🔂 🛨	Selected 1			
Name 🛧	Service-Status	Device-Id	Interface-Mode	Ir
L3 Services_toshiba	AVAILABLE	vCSR_172.16.4.71	sub_interface	G
Trial L3 Service	AVAILABLE	vCSR_172.16.4.71	sub_interface	G

This triggers a deletion request, and ATOM deletes the selected L3 service.

Monitor the task as described in this <u>section</u>. Validate service configuration as described in this <u>section</u>.

#### Provisioning EVPN VXLAN Service on a Juniper Router

Please refer to the <u>EVPN VXLAN service automation use-case guide</u> to get a detailed understanding of the EVPN VXLAN service capabilities.

Go to the service catalog as described in this <u>section</u> and click on EVPN VXLAN service.



Click on "+" to create a new service.

Evpn-vx-lan instances			
ᢗ+∎ ❹ ᠿ ≁			
Vlan-Id 🛧	Description	Resource-Pool	Create-Vrf

Fill the form with details as shown below and submit.

Field	Value
Vlan-ID	202
Description	S_EDU_NAT_202
Resource-Pool	Select rp
create-vrf	Select the checkbox

Rd	65301:101219
Rt	65301:101219
Vrf	OVERLAY_DC_202
Cidr	Select Evpn-vxlan-pool
Virtual-Gateway-Address	172.16.2.4

You can also import this template as defined in this section.

Monitor the task as described in this <u>section</u>. Validate service configuration as described in this <u>section</u>.

#### Summary & Next Steps

Through this exercise, you learned ATOM's service automation and orchestration capabilities.

Some of the key service orchestration capabilities are listed below.

#### Service Orchestration

- 1. Stateful automation
- 2. Dry Run before production
- 3. Atomic transactions
- 4. Approvals
- 5. Service Compliance

Check out the user guide to learn more on these topics.

# **Exercise 3: Workflow Automation**

ATOM Workflow Automation allows you to automate simple and complex method-of-procedures. The entire end-to-end procedure, including pre-checks, post-checks, and approvals, can be automated using this feature. ATOM provides a Workflow Builder to design and develop workflows. Workflow Builder is out-of-scope of this trial.

In this lesson, we'll execute a workflow that automatically upgrades a Juniper MX device.

#### Juniper MX Upgrade Automation

Please refer to the <u>Juniper vMX Workflow Automation use-case guide</u> to get a detailed understanding of the upgrade capabilities.

In the menu, Click on automation and then Workflows.



Go to the Workflow catalog and click on the Juniper MX Upgrade Workflow.

talog							
	Vendor	OS-Type	DeviceFamily	- DeviceType	<ul> <li>WorkflowType</li> </ul>	*	
			Collapse	Expand C			
Juniper Mx Diskspac	ce Checks 🛛 📌 🖿 🛛	Juniper Mx Pre Post C	checks 📌 🖿 🛈	Internal Atom P	ackage Wf 🛛 📌 🖿	Juniper Mx Upgra     Version 1	ade 💉 🖈 🖿
Workflow Id	Workflow Type	Workflow Id	Workflow Type	Workflow Id	Workflow Type	Workflow Id	Workflow Type
Juniper_MX_Diskspace	Unknown	Juniper_MX_Pre_Post_C	Unknown	InternalAtomPackag	eWfUnknown	Juniper_MX_Upgrade:1	unknown
Workflow Status		Workflow Status		Workflow Status		Workflow Status	
No Data Available		No Data Available		No Data Available		No Data Available	
L3service_workflow	Show More	External Worker Cron	Show More Process		Show J	More	Show
Workflow Id	Workflow Type	Workflow Id	Workflow Type				
L3service_workflow:1:10	Operational,Config	External-Worker-Cron-Pr_	Unknown				
Workflow Status		Workflow Status					
No Data Available		No Data Available					

You will now enter the workflow summary page. Here you can visualize the entire workflow, all instances of the workflow and their corresponding statuses, and the workflow version.



#### Start a new workflow

Execute this workflow by clicking the "start" button on the toolbar



Enter a name for this workflow instance and click on "start."

	Start Workflow	×
-	Workflow Instance Name•	_
	TrialUpgrade	
		Close Start
		_
		Back 'request

You can now see an active instance in the instances section.

C Instances				
Workflow Instance Name	Id			
TrialUpgrade	Juniper_MX_Upgrade:1:408022	410090		

Click on the instance to see more details about the instance.

The workflow task that is currently being executed is highlighted in yellow. The upgrade workflow is waiting for input from the user (see the little human icon in the box?).



#### Enter Workflow Form Details

Click on Actions (present at the bottom of the page) to view all claimed and unclaimed tasks.s

Variables Actions Errors		
Un Claimed 🗹 ×		
G		
Workflow Instance Id	Workflow Instance Name	Name
1600315	TrialUpgrade	User Inputs

#### Select the tasks and click on "claim."

Variables Actions Errors	
Un Claimed 🗹 ×	
C the Selected 1	
Workflow Instance Id	Workflow Instance Name
1600315	TrialUpgrade

#### Unselect "Un Claimed" to view all claimed tasks

Variab	es Actions Errors					
Un Cla	Un Claimed Lx					
с						
	Workflow Instance Id	Workflow Instance Name	Name			
	1600315	TrialUpgrade	User Inputs			

Select the claimed task and complete it

Variables Actions Errors				
Un Claimed 🔲 ×				
C > Selected				
Workflow Instance Id	Workflow Instance Name	Name		
1600315	TrialUpgrade	User Inputs		

You will now be presented with a form to collect all relevant data for the workflow. Most of the details are prefilled for this trial instance. Select the "vMX" device in the Device-Id and submit the form.

	User Inputs	<b>₽</b>	
Device •			
Select a device	67		
vMX_SMU_172.16.5.92			×
Ungrade-OS-Version			
Enter OS version that needs to be u	ıpgraded		
18.1R1.9			
Protocol •			
Provide protocol Ex : scp			
son			
scp			
Image-Server-Location •			
Provide Server IP or Name			
172.16.19.184			
home/anuta/ftp/files			
home/anuta/ftp/files			
Image-File-Name •			
Provide image file name. starting '/	' is not required		
junos-vmx-x86-64-18.1R1.	9.tgz		
Destination-Path •			
Provide destination path. starting '/	' is not required		
tmp			
tmp			
tmp Username •			
Username • Provide server username			
tmp Username • Provide server username anuta			
tmp Username • Provide server username anuta Password			
tmp Username • Provide server username anuta Password Provide server password			

Follow the instance summary, and the workflow moves from 1 task to the next. This process should take few minutes.



The workflow will pause once again just before rebooting the vMX device to seek reboot approval.

Claim the task and open the approval form as described in this section.

Variab	les Actions Errors			
Un Cla	imed 🗌 ×			
C	>I Selected 1			
	Workflow Instance Id	Workflow Instance Name	Name	Id
	2512027	TrialUpgrade	RebootApprovalForm	2512519
	2512027	TrialUpgrade	Juniper MX Upgrade User Inputs	2512042

Approve the request and submit the form.



Once approved, the workflow will proceed and upgrade the vMX router.

#### Summary & Next Steps

Through this exercise, you learned ATOM's Workflow Automation capabilities.

Some of the key workflow automation capabilities are listed below.

Workflow Automation

- 1. Automate the entire Method of procedures
- 2. Introduce Prechecks, post checks
- 3. Approvals
- 4. Sequential and Parallel automation
- 5. Integrate with service orchestration
- 6. Integrate with external elements such as ITSM solutions, IPAM, Ticketing/Billing, etc.

Check out the user guide to learn more on these topics.

# **Exercise 4: Compliance Enforcement**

ATOM enables operators to design global compliance policies. ATOM provides several out-of-box compliance policies that you can readily utilize in their network. ATOM also enables you to develop any custom use-cases specific to your business.

Go to the menu and select "config compliance" to view a list of all compliance policies.



This instance has three out-of-box policies.

- 1. Clock Synchronization
- 2. Disable CDP LLDP on Public IP Interfaces
- 3. Interface Configuration

Compliance policies are a collection of rules and conditions on the success or failure of rules. Let's look at a few policies to understand them better.

#### Compliance policy for CLI based devices

Select "Clock Synchronization" policy and click on edit

C 🎢 🗊 🛨 🔂 Selected 🔳	
Name Name	Description
Clock Synchronization	Configure Clock and NTP based on Region

The policy has two rules.

💽 atom 🛛 💫 Config Compliance			<b>*</b> • = (	ს <mark>≜</mark> ę
Edit Policy   Clock Synchronization				
mandatory information	Rules			×
Policy Name•	с +			2 Of 2
Policy name, can contain Aphanumerica, underscore, space and hyphen characters only. Ma.     Clock Synchronization	Rule Name 🛧	Description		
C Description	Clock template	Configure the time zone		
Description of the policy	NTP Template	Verify NTP configuration w.r.t Golden template		
Configure Clock and NTP based on Region				
Owner•			D2	
ibm 👻				
Shared-With	(			
× ibm -				
û û due roby				

Let us examine each rule. Select Clock template and click on edit.

Rules

C 🖍 🗊 🛨 Selected 💶	
Rule Name	Description
Clock template	Configure the time zone
NTP Template	Verify NTP configuration w.r.t Golden template

#### Simple Rules and Conditions

Any Rule has four sections. The first section, "Basic Information," contains the rule description.

•	atom 📣 > Config Compliance	•	ሳ	ibm	Ð
<b>B</b>	Edit Policy   Clock Synchronization				
R	Edit Rule   Clock Template				
~	Rask Information Platform Selection Rule Variables Conditions and Actions				
⊪ ≎ *	Rule Name •       Buk trans, an entropy Alphanametra, underston, upper and types theasters only Max length is 64       Clock template       Description       Configure the time zone				
*					
	Impact > The clock will be different on each device. It makes logging and troubleshooting cumbersome.				
			ß		
	Suggested fix				
	Make sure clock will same across the topology.				
	Update Rule				
?					

Next, select all platforms applicable to this rule. We have selected this rule to apply to all cisco devices.

ibm 😌
٩

We have no rules variables for this rule. We'll come back to it soon.

In the last tab, we will add conditions and corresponding actions. We have added a single condition. Select the condition and click on edit.

) at	tom 📣 > Config Compliance	پ 💌 🚍 🖖 🌲 🕈
	Edit Policy   Clock Synchronization	
Ľ	Edit Rule   Clock Template	×
	Basic Information Platform Selection Rule Variables Conditions and Actions	
	Conditions and Actions •	
L	c +	1 Of 1 Enter a keyword Q
Ł	Condition Name Sequence Number	
L	Check Summer Time 1	

Here we have entered the condition to check in the "value" field.

	itom 🛷 > Config Co	mpliance						🏚 📰 🔳 🖞 🍰 🕈
6	Edit Policy   Clock Synchron	nization						
~	Edit Rule   Clock Template							
	Basic Information	Pla	tform Selection	Rule Variables	Conditions and Actions			
հ	Conditions and Actions•				Condition Details Action Details		•	
Ċ.	C 🖍 🖡 Selected 💶	1 Of 1	Enter a keyword	٩		/		(×) (~)
	Condition Name		Sequence Number		Condition Name•	Value		
\$	Check Summer Time		1		Condition Name, can contain Alphanumerica, underscore, space and hypen cha	clock timezone BST 0	0 27 networking last Sup May 1-00 last Sup Oct 2:00	
¢					Sequence Number Sequence Number Sequence Number Sequence Number Condition acope details Configuration	service timestamps de service timestamps lo	sbug datetime mese: localitime	
					Operator			
					MATCHES_THE_EXPRESSION			Launch Test Config
					Rule-pass-criteria			
					All_SubBlocks		De .	
2								

This condition is matched, and appropriate action is taken on success (condition match) or failure (condition not-matched). In case of a match, we do not take action for this condition. For a non-match, we have described the corrective action to be taken.



#### Variables in Rules and Conditions

Let's now review NTP Template Rule. The rule structure is the same as the "Clock Template" for the most part. You will see a difference in the condition & action section. Let's go to the "Condition & Actions" tab.

You will see that the "NTP Template" rule has three conditions. Select the "Check NTP ACL" condition and click on edit.

The "Value" field has 2 variables - ntp\_primary\_server & ntp\_secondary\_server. Variables are covered in double brackets like *"{{ variable name }}"*. In our condition, ntp\_primary\_server & ntp\_secondary\_server are variables whose values will be substituted at run time.

tom 📣 > Config Complian	ce				🏚 🗖 🗮 🕛 🎍 🕈
Edit Policy   Clock Synchronization					
Edit Rule   NTP Template					
Basic Information	Platform Selection	Rule Variables	Conditions and Actions		
Conditions and Actions•			Condition Details Action Details		
C 🖌 🔋 Selected 💶	3 Of 3 Enter a keyword	٩			$\sim$ $\sim$
Condition Name	Sequence Number		Condition Name•	Value•	0 0
Check NTP ACL	1		Condition Name, can contain Alphanumerics, underscore, space and hypen cha	access-list 50 remark NTP access restrictions	
Check NTP Associations	1		Check NTP ACL	access-list 50 permit {{ ntp_primary_server }} access-list 50 permit {{ ntp_secondary_server }}	
Check NTP Server	1		Sequence Number•	access-list 50 deny any log	
			Sequence Number controls the order of execution of the Conditions.		
			1		
			Scope Details		
•			Or addition and a data the		
			Configuration		
			*		
			Block Options		
			Start Expression		
			de la		
			The second secon		
			Condition Match Criteria		
			Operator		
			MATCHES_THE_EXPRESSION ~		Launch Test Config
			Rule-pass-criteria		
			All_SubBlocks		
				ß	

Actions can also have variables, as you can see below.

2 di Poly (Cock Synchronization          20       5000000000000000000000000000000000000	● atom 📣 > Config Compliance				🏚 💷 🙂 🏯 😌
Vertical biological control        Vertical biological control	Edit Policy   Clock Synchronization				
Image: Section of the image: Sectio	Edit Rule   NTP Template				
Image: Control balance       Control balance       Sect Action       Se	Basic Information Platform Selection	Rule Variables Conditions and Actions			
Image: Section Section   Image: Section Section Section   Image: Section Section Section   Image: Section Section Section   Image: Section S	II. Conditions and Actions•	Condition Details Action Details			$\sim$
Image: Control Name       Description Name       Sale of Non-Mark Action         Image: Control Name       1       Image: Sale Action Sale Action       Image: Sale Action Action       Image: Sale Action Action       Image: Sale Action Action Action       Image: Sale Action Action Action       Image: Sale Action Action Action       Im	C / Selected 1 3 Of 3 Enter a keyword	٩	-		$(\times) (\checkmark)$
Image: See to MTP Alue     1     Select action     Select action     Select action     Image: Notation, nuclear select action     Image: Notation, nuclear select action       Image: Notation Select action     1     Image: Notation, nuclear select action     Image: Notation, nuclear select action     Image: Notation, nuclear select action       Image: Notation, nuclear select action     1     Image: Notation, nuclear select action     Image: Notation, nuclear select action     Image: Notation, nuclear select action       Image: Notation, nuclear select action     Image: Notation, nuclear select action     Image: Notation, nuclear select action     Image: Notation, nuclear select action       Image: Notation, nuclear select action     Image: Notation, nuclear select action     Image: Notation, nuclear select action     Image: Notation, nuclear select action       Image: Notation, nuclear select action     Image: Notation, nuclear select action, nuclear select	Condition Name Sequence Number	Select Match Action		Select Non-Match Action	
Check NTP Bowe       1       Control       Number       Number <td>Check NTP ACL 1</td> <td>Select action</td> <td></td> <td>Select action</td> <td></td>	Check NTP ACL 1	Select action		Select action	
Check KP Berrer       1       Cettor At P Berrer       Cettor At P Berrer       Cettor At P Berrer       Cettor At P Berrer       Volation message type         Check KP Berrer       Fit CLI       Cettor At P Berrer       Fit CLI       Cettor At P Berrer       Cettor At P Berrer <t< td=""><td>Check NTP Associations 1</td><td>conunue</td><td>•</td><td>Raise_violation_and_continue</td><td>•</td></t<>	Check NTP Associations 1	conunue	•	Raise_violation_and_continue	•
Image: Source of the second process of the second	Check NTP Server 1			Violation severity	
Image: Second				CRITICAL	Ť
Image: Second				Violation message type	
Image: Second	►			Default_violation_message	*
Image: Second				Fix CLI	
Image: Second systems of the system syste				access-list 50 remark NTP access restrictions access-list 50 permit ({ ntp_primary_server }}	
2				access-list 50 permit {{ ntp_secondary_server }}	
2			13	access not ob deny any log	1.
Select ~				Derive fix cli commands	
2				Select	*
2					
2					
2					
2					
2					
2					
2					
?					
?					
?					
?					
	?				

Default values of these variables are defined in the "Rule variables tab."

•	tom 40 > Config Compliance			🔎 = U 🛔	e
<b>B</b>	Edit Policy   Clock Synchronization				
5	Edit Rule   NTP Template				×
~	Basic Information Pla	atform Selection Rule Variables	Conditions and Actions		
ւե	Rule Variables				
$\sim$	C +			3 Of 3 Enter a keyword	٩
~	Кеу	Description	Default Value		
*	ntp_associations		8		
	ntp_primary_server		157.83.224.1		
<b>*</b>	ntp_secondary_server		157.83.224.65		
?					

#### Regex in Rules and Conditions

You can also use regex to match conditions. Go back to the compliance policy list and select "Disable CDP LLDP on Public IP Interfaces.". This policy removes CDP/LLDP configuration from any interface with a public IP address.

•	tom 📣 > Config Compliance			<b>*</b>	ى 🔳	Ibm	Ø
-	Edit Policy   Disable CDP LLDP On Public IP Interfaces						
E	mandatory information	Rules					×
ару -	Policy Name•	G +				10	of 1
ili I	Disable CDP LLDP on Public IP Interfaces	Rule Name 🛧	Description				
$\odot$	Description	Check Public IP Interfaces					
*	Description						
		la la					
*							
	Owner•						
	ibm 🗸						
	Shared-With	•					
	Update Policy						
?							

Select the rule "Check Public IP Interfaces" and click on the edit

•	tom 📣 > Config Compliance			🏚 🔚 🔱 🎽 🤤
-	Edit Policy   Disable CDP LLDP On Public IP Interfaces			
5	mandatory information	Rules		×
~	Policy Name•	C +		1 Of 1
ih	Policy name, can contain Aphanumerica, underscore, space and hyphen characters only. Ma Disable CDP LLDP on Public IP Interfaces	Rule Name 🛧	Description	
$\circ$	Description	Check Public IP Interfaces		
	Description of the policy			
*		6		
•		ed.		
	owner•			
	Shared-With			
	× ibm ···································			
	Update Policy			
1				

Next select, the "Verify CDP on Public IP Interface" condition

Bit Policy   Disable CDP LLDP On Public IP Interfaces     Bit Rule   Check Public IP Interfaces     Continues and Actions	a a a a a a a a a a a a a a a a a a a	<b>i</b> 🗉 🛡	÷ e
Cli Rule   Check Public  P Interfaces   In Interfaces   Image: Control on and Actions                                       <			
All       Batter information       Pathorm Selection       Rule Variables       Conditions and Actions         Coditions and Actions       C       +       - </th <th></th> <th></th> <th>6</th>			6
Conditions and Actions C C + Conditions and Actions C C + Condition Name Bequetice Number Verify CDP on Public IP Interface 1 Verify_LLDP_on_Public_IP_Interface 2			
C + Condition Name Sequence Number Verify CEP on Public P Interface 1 Verify_LLDP_on_Public_P.Interface 2			
Condition Name Sequence Number Very CDP on Public IP Interface 1 Very_LDP_or_Public IP_Interface 2	2 Of 2 Enter a keyword		٩
• Verlý CDP on Public IP Interface       1         • Wrlý_LLDP_on_Public_IP_Unterface       2			
Verfy_LLDP_on_Public,IP_isterface 2			

Here in the Value field, you would see a regex expression. The regex checks if the IP address of the interface is not private, i.e., it doesn't fall in 10.0.0.0/24, 172.16.0.0/20, or 192.168.0.0/16 block of IP addresses.

🕽 atom 🕼 > Config Compliance		پانچ 🖄 🚍 🖖 🛔
B Edit Policy   Disable CDP LLDP On Public IP Interfaces		
Edit Rule   Check Public IP Interfaces		
Basic Information Platform Selection Rule Variables	Conditions and Actions	
Conditions and Actions•	Condition Details Action Details	
C 🖍 🖡 Selected 💶 2 Of 2 Enter a keyword 🔍		$(\times)$
Condition Name Sequence Number	Condition Name•	Value•
Verify CDP on Public IP Interface 1	Condition Name, can contain Alphanumerics, underscore, space and hypen cha	interface (?!Loopback* Port-channel*)(.*)
Verify_LLDP_on_Public_IP_Interface 2	Verify CDP on Public IP Interface	ip address (?!10.(?:[0-9] [1-9] 0-9] 1[0-9](2)[2]0-4] 0-9][25](0-5]).(?:[0-9] [1-9] 0-9](1[0-9](2)[2[0-4]](0-9][25[0-5]).(?:[0-9] 1[0-9](2)](2[0-4]](0-9](25[0-5]).(?:[0-9] 1-9](0-9](2))[2[0-4][0-9](25[0-5]).(?:[0-9] 1-9](0-9](2))[2[0-4](0-9](25[0-5]).(?:[0-9](1-9](0-9)(25[0-5]).(?:[0-9](1-9)(0-9)(25[0-5]).(?:[0-9](1-9)(0-9)(25[0-5]).(?:[0-9](1-9)(0-9)(25[0-5]).(?:[0-9](1-9)(0-9)(25[0-5]).(?:[0-9](1-9)(0-9)(25[0-5]).(?:[0-9](1-9)(0-9)(25[0-5]).(?:[0-9](1-9)(0-9)(25[0-5]).(?:[0-9](1-9)(0-9)(25[0-5]).(?:[0-9](1-9)(0-9)(25[0-5]).(?:[0-9](1-9)(0-9)(25[0-5]).(?:[0-9](1-9)(0-9)(25[0-5]).(?:[0-9](1-9)(0-9)(25[0-5]).(?:[0-9](1-9)(0-9)(25[0-5]).(?:[0-9](1-9)(0-9)(25[0-5]).(?:[0-9](1-9)(0-9)(25[0-5]).(?:[0-9](1-9)(0-9)(25[0-5]).(?:[0-9](1-9)(0-9)(25[0-5]).(?:[0-9](1-9)(0-9)(25[0-5]).(?:[0-9](1-9)(0-9)(25[0-5]).(?:[0-9](1-9)(25[0-5]).(?:[0-9](1-9)(25[0-5]).(?:[0-9](1-9)(25[0-5]).(?:[0-9](1-9)(25[0-5]).(?:[0-9](1-9)(25[0-5]).(?:[0-9](1-9)(25[0-5]).(?:[0-9](1-9)(1-9)(25[0-5]).(?:[0-9](1-9)(1-9)(25[0-5]).(?:[0-9](1-9)(1-9)(1-9)(25[0-5]).(?:[0-9](1-9)(1-9)(1-9)(1-9)(1-9)(1-9)(1-9)(1-9)
*	Sequence Number•	[0-9]][1-9][0-9]]1[0-9][2][0-4][0-9][25[0-5]].(7:[0-9]][1-9][0-9]]1[0-9][2][0-4][0-9][25[0-5]])(\d+.\d+.\d+.\d+.\d+.\d+.\d+.\d+.\d+.\d+.
	Sequence Number controls the order of execution of the Conditions.	
	Scope Details	
	Condition scope details	
	Configuration	
	*	
	Plack Options	
	block options	
	Start Expression	
	*	
	Condition Match Criteria	
	Operator	C C
	CONTAINS_STRING ~	
	Rule-pass-criteria	Launch Test Comig
	All_SubBlocks ~	
2		

In case the IP address is public, then we raise a violation and disable CDP for all those interfaces.

•	atom 📣 > Config Compliance					🏓 🔳 U 🛓 😌
<b>a</b>	Edit Policy   Disable CDP LLDP On Public	IP Interfaces				
5	Edit Rule   Check Public IP Interfaces					
3	Basic Information Plat	tform Selection	Rule Variables	Conditions and Actions		
ıh	Conditions and Actions•			Condition Details Action Details		
Ċ	C / Selected 1 2 0f 2	Enter a keyword	٩			$(\times)$
	Condition Name	Sequence Number		Select Match Action	Select Non-Match Action	
*	Verify CDP on Public IP Interface	1		Select action	Select action	
~	Verify_LLDP_on_Public_IP_Interface	2		Raise_violation_and_continue	✓ continue	~
*				Violation severity		
				CRITICAL	~	
				Violation message type		
				Default_violation_message	~	
	•			Fix CI I		
				(% for content in matched_contents -%)		
				interface {{ content["groups"][0]['grep_content"] }}	N	
				(% endfor %)	La <sup>1</sup>	
					tê.	
				Derive fix cli commands		
				Select	~	
?	P					

## Compliance policy for Yang-based devices

Compliance policy definition and enforcement can be done for CLI or YANG-based devices. All principles that we learned in the previous section are applicable for YANG devices as well. Variables and regex are supported for both CLI and YANG devices.

Edit "Interface Configuration" compliance policy and open the "XML interfaces" condition under the "Check Interfaces" Rule.

atom 🔊	<ul> <li>Config Complianc</li> <li>Interface Configuration</li> </ul>	e			<b>پالې 🖆 🔤 او او</b>	<b>₽</b> <del>0</del>
Edit Rule   C	neck Interface					×
Basic	Information	Platform Selection	Rule Variables	Conditions and Actions		
Conditions an	d Actions•					
C / 1	Selected 1				1 Of 1 Enter a keyword	Q
Cond	ition Name	Sequence Number				
🔽 xml inte	face	1				
	₽.					

The interface configuration that we expect to be present in every device is defined in XML (YANG/NetConf device).

atom 📣 Config Compliance		🏚 💷 🗮 🙂 🍰 😌
Edit Policy   Interface Configuration		
Edit Rule   Check Interface		
Basic Information Platform Selection Rule Variables	Conditions and Actions	
Conditions and Actions•	Condition Details Action Details	$\sim$
C V Selected 1 1 Of 1 Enter a keyword		$(\times) (\checkmark)$
Condition Name Sequence Number Co	ondition Name     Template Payload	
xml interface 1	Indition Name, can contain Alphanumerics, underscore, space and hypen chs Device Payload Can be given xml Interface xml Interface xml second secon	
2	<configuration> <ir> </ir></configuration>	
Seq	quence Number controls the order of execution of the Conditions.	
1	1 ¢ (amily>	
Sco	ppe Details <address></address>	
Co	ondition scope details	
	Inventory_Data	
Con	ndition Match Criteria c/interface>	
Inv	ventory Operator	
	MATCHES_THE_TEMPLATE_PAYLOAD	
		h
	C <sub>2</sub>	Launch Test Config

The fix CLI is also in XML format.

Edit Policy   Interface Configurati	ion			· ·
Edit Rule   Check Interface				
Basic Information	> Platform Selection	Rule Variables	Conditions and Actions	
Conditions and Actions•			Condition Details Action Details	
C 🖌 🔋 Selected 🔲	1 Of 1 Enter a keyword	٩		$\otimes$ (
Condition Name	Sequence Number		Select Match Action	Select Non-Match Action
🗸 xml interface	1		Select action	Select action
			continue	✓ Raise_violation
				Violation severity
				CRITICAL
				Violation message type
				Default_violation_message
				Fix Mutation Payload
			b <sub>2</sub>	<pre><cordig> </cordig></pre> <devices miniss<sup="">1+http://mutanetworks.com/controller'&gt;  <devices <="" p=""> <id> <devices <="" p=""> <devices <="" p=""></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></devices></id></devices></devices>

#### **Running Compliance Policies**

Close all conditions, rules, and policies. Let's check the profile section. We have two profiles Cisco and Juniper.

Dashboard Poli	icies Profiles	Report	Remediation	Archive	
C + 🖯	0				
Name			Description		Policies
Cisco profile					2
Juniper profile					Interface Configuration

Select the cisco profile and click on "edit" Two policies are added to this profile. You can also observe that the default values for "NTP Template" are already populated. We can modify the default values for this profile as needed.

Edit Profile											🛛 🕗
Select policies	Select devi	ces and schedule									
Profile name•		Select policies•						Enter rule variable			
Profile name. Can contain Alphanumerics, underscore, space and hyphe	n characters only. Ma	C Selected 2		3 Of 3	Enter a keyword		۹	Clock Synchronization			^
Cisco profile		Name		Description		Owner		NTP Template	ntp_associations	8	
Description		Clock Synchronizatio	n	Configure Clock and NTP bas	sed on Region	ibm			ntp_primary_server	157.83.224.1	
Description		Disable CDP LLDP or	Public IP Interfaces			ibm			ntp_secondary_se	157.83.224.65	
		Interface Configurati	on			ibm					
	(i)										
Owner•	6										

We then select the devices on which the compliance policies have to be validated in the next tab. We can either choose to schedule the compliance run at a later point in time or choose to run now.

Edit Profile					
Select policies	Select devices and schedule				
Devices Device Groups	$\bigcirc$				
C Selected 2		25 Of	25 Enter a keyword	٩	Select Configuration
D	Status	Name	Device Type	Ver	O Current Config
172.16.3.30	•	wnacrp-dtss-0-gw.anutanetworks.com	Cisco CSR 1000V	Cis	Latest From Config Archive
172.16.3.34	•	ana-cd-1-gw.anutacorp.com	Cisco CSR 1000V	Cis	Skip when config older than
172.16.3.42	•	n7-cbb-0-gw.anutanetworks.com	Cisco CSR 1000V	Cis	Hours
172.16.3.45	•	ana-buf-1-gw.anutanetworks.com	Cisco CSR 1000V	Cis	
172.16.3.46	•	test567.anutanetworks.com	Cisco CSR 1000V	Cis	Schedule
172.16.3.76	•	172.16.3.76	Panorama	Par	Frequency
172.16.3.77	•	172.16.3.77	Palo Alto	Pal	0 • 0 •
172.16.3.78	•	172.16.3.78	Palo Alto	Pal	Hours Minutes
172.16.4.156	•	gre01-vMX-4.156	vMX	Jur	Start now

Select "Start Now" and then submit. This will request ATOM to validate compliance on the selected devices.

elect Configura	ation			
Current Co	onfia			
Latest Fro	m Config Archive	9		
Skip when	n config older tl	nan		
0	\$			
н	lours			
chedule				
requency				
D	\$ 0	\$		
Hours	Mi	nutes		
Otrack many				

× 🗸

Let's execute the Juniper Profile. Select the "Juniper Profile" and select "Run Profile."

Dashboard	Policies	Profiles	Report	Remediation	Archive			
C 🖌	<u>í</u> 1	Ŧ	🔒 Se	ected 1				
Name	0			Description		Policies	Owner	Shared
Cisco profi	le					2	ibm	ibm
Juniper pro	file					Interface Configuration	ibm	ibm

ATOM will now validate all the selected Cisco and Juniper devices for compliance violations.

## Analysing Compliance Reports

Go to the Reports tab to analyze the reports for all our runs. Here, you can see all policies and rules that have been validated on all cisco and juniper devices.

Dashboard Policies Profiles	Report Remediation	Archive					
CRV = = Filter	🔍 👻 🕒 0 Skip	ped Condi	itions 🛛 🔵 15 Compliant	😑 0 Non Comp	liant 15 Total		
Device Id 👻	Device Type	~	Vendor	<del>、</del> (	Compliance Status	~	Conditio
Device groups 👻	Severity	~	Execution Status	<b>~</b> [	Policy	~	Rule Na
C :							
Host Name	Device Type	Severit	ty Device (	Compliance Status	s Execution	Condition Sta	atus
ana-buf-1-gw.anutanetworks.com	Cisco CSR 1000V	NA		•	٠	٠	
ana-buf-1-gw.anutanetworks.com	Cisco CSR 1000V	NA		٠	٠	۲	
ana-buf-1-gw.anutanetworks.com	Cisco CSR 1000V	NA		٠	٠	۲	
ana-buf-1-gw.anutanetworks.com	Cisco CSR 1000V	NA		٠	۲	۲	
ana-buf-1-gw.anutanetworks.com	Cisco CSR 1000V	NA		•	۲	۲	
ana-buf-1-gw.anutanetworks.com	Cisco CSR 1000V	NA		•	٠	•	
test567.anutanetworks.com	Cisco CSR 1000V	NA		٠	•	٠	
test567.anutanetworks.com	Cisco CSR 1000V	NA		٠	•	•	
test567.anutanetworks.com	Cisco CSR 1000V	NA		٠	•	٠	
test567.anutanetworks.com	Cisco CSR 1000V	NA		٠	•	٠	
test567.anutanetworks.com	Cisco CSR 1000V	NA		٠	٠	۲	
test567.anutanetworks.com	Cisco CSR 1000V	NA		٠	٠	۲	
gre01-vMX-4.156	vMX	NA		٠	٠	۲	
mx2.anutanetworks.com	vMX	NA		٠	٠	۲	
sr01.rp-redirect	vMX	NA		٠	٠	۲	

To view by device, go to the filter tab and pivot by "Device."

CRV		Filter
Dev	Pivot By	
Dev	Device	
С	Device Type	
Host	Policy	
	Location	we
	Device Group	we

PV = Device × =	Filte	er	Ŧ	• 0	Skipped Conditions 🛛 🔴	12 Compliant	😑 3 Non Compliant	15 Total	
Device Id	~	Device Type		Ŧ	Vendor	~	Compliance Status	Ŧ	Conditio
Device groups	~	Severity		Ŧ	Execution Status	~	Policy	Ŧ	Rule Na
c :									
Device Compliance Status	Sever	ity	Execution	Host	Name	Device ID		Device Type	
	NA		•	ana-	buf-1-gw.anutanetworks	<u>172.16.3.4</u>	ž	Cisco CSR 1000V	
	NA		٠	test	567.anutanetworks.com	172.16.3.40	2	Cisco CSR 1000V	
	Critica		٠	gre0	1-vMX-4.156	<u>172.16.4.1</u>	56	VMX	
	Critica		٠	mx2	.anutanetworks.com	<u>172.16.5.1</u> 7	<u>70</u>	VMX	
	Critica	0	٠	sr01	.rp-redirect	172.16.5.19	98	vMX	

Here, you can visualize device-level reports.

ATOM provides a comprehensive filtering capability to view and generate granular reports. Try out the pivots and filters to see how the data changes.

Remove the device filter and go back to the unfiltered view.



In our run, we see that all cisco devices are compliant with the policies. However, 1 Juniper device is noncompliant.

Select the noncompliant juniper device and click on "Fix-CLI."

Dashboard Policies Profiles	Report Remediation A	Archive											
📼 = = Filter • O Skipped Conditions • 14 Compliant • 1 Non Compliant 112 Total													
Device Id 👻	Device Type	▼ Vendor	- Com	pliance Status	▼ Conditi	on Status	<ul> <li>Locations</li> </ul>	Ŧ					
Device groups 👻	Severity	✓ Execution State	rs 👻 Polic	cy .	▼ Rule N	ame	▼ Condition Name	Ŧ					
c o f:													
Host Name	Device Type	Severity	Device Compliance Status	Execution	Condition Status	Device Id	Vendor	Policy Name					
ana-buf-1-gw.anutanetworks.com	Cisco CSR 1000V	NA	٠	۲	۲	172.16.3.45	Cisco Systems	Clock Synchr					
ana-buf-1-gw.anutanetworks.com	Cisco CSR 1000V	NA	۲	۲	۲	172.16.3.45	Cisco Systems	Clock Synchr					
ana-buf-1-gw.anutanetworks.com	Cisco CSR 1000V	NA	٠	٠	۲	172.16.3.45	Cisco Systems	Clock Synchr					
ana-buf-1-gw.anutanetworks.com	Cisco CSR 1000V	NA	٠	٠	٠	172.16.3.45	Cisco Systems	Clock Synchr					
ana-buf-1-gw.anutanetworks.com	Cisco CSR 1000V	NA	٠	٠	٠	172.16.3.45	Cisco Systems	Disable CDP L					
ana-buf-1-gw.anutanetworks.com	Cisco CSR 1000V	NA	٠	۲	٠	172.16.3.45	Cisco Systems	Disable CDP L					
test567.anutanetworks.com	Cisco CSR 1000V	NA	٠	٠	٠	172.16.3.46	Cisco Systems	Clock Synchr					
test567.anutanetworks.com	Cisco CSR 1000V	NA	۲	٠	٠	172.16.3.46	Cisco Systems	Clock Synchr					
test567.anutanetworks.com	Cisco CSR 1000V	NA	٠	•	٠	172.16.3.46	Cisco Systems	Clock Synchr					
test567.anutanetworks.com	Cisco CSR 1000V	NA	٠	٠	٠	172.16.3.46	Cisco Systems	Clock Synchr					
test567.anutanetworks.com	Cisco CSR 1000V	NA	٠	٠	٠	172.16.3.46	Cisco Systems	Disable CDP L					
test567.anutanetworks.com	Cisco CSR 1000V	NA	•	٠	•	172.16.3.46	Cisco Systems	Disable CDP L					
mx2.anutanetworks.com	VMX	Critical	•	•	•	172.16.5.170	Juniper Networks	Interface Con					
or01 m_redirect	vMX	812	-	-	-	172 16 5 198	Juniner Networks	Interface Con					

This window displays all non-compliant policies and the configuration needed to be provisioned to rectify non-compliance. Enter a compliance job name, select "shared with," select "start now" and submit it to start the remediation process.



Monitor the remediation task as described in this section.

## Summary & Next Steps

Through this exercise, you learned ATOM's Compliance Enforcement capabilities.

Some of the key compliance enforcement capabilities are listed below.

Compliance Enforcement

- 1. Enforcement for CLI and Yang/NetConf based devices
- 2. Comprehensive report generation
- 3. Automated Remediation
- 4. Service, Configuration and Software compliance capabilities

Check out the user guide to learn more on these topics.

Execute the Juniper profile again to verify.

# Continue to Explore

The above exercises give you a good insight into ATOM features and capabilities. The below resources will help you to learn more about ATOM's capabilities.

- 1. <u>Anuta ATOM deep-dive videos</u>
- 2. ATOM Solution Briefs
- 3. <u>Use Cases enabled by ATOM</u>
- 4. ATOM User Guide