

Natroy Test-Driven Automation: Proactive Infrastructure Validation at Scale

Executive Summary

Natroy's Test-Driven Automation capability brings proactive, continuous infrastructure testing into the Natroy O automation engine. Instead of waiting for problems to emerge in production, users can define automated tests that continuously validate the network, device states, compliance posture, and service availability all from the same platform used to remediate and orchestrate.

This module helps identify issues before they impact business operations, verifies that previous automations succeeded as expected, and supports use cases like golden config validation, SLA testing, policy simulation, and rollback assurance.

Module Description

Test-Driven Automation in Natroy O allows you to define structured, reusable test workflows built using the same no-code or hybrid automation engine used across the platform. These tests can run on a schedule, after changes, or in response to detected events.

The system can compare live state against intended state, validate protocol behavior, confirm interface or service reachability, and even simulate planned changes to anticipate downstream impacts.

By embedding tests directly into the automation lifecycle, organizations reduce outages, improve visibility, and deliver more reliable infrastructure without extra tools or scripting frameworks.

Core Capabilities

1. Automated Infrastructure Testing
 - Define and execute pre- and post-change tests
 - Validate golden configs, VLAN assignments, BGP/OSPF reachability
 - Check SNMP, SSH, or HTTP accessibility automatically
2. Scheduled or Triggered Test Workflows
 - Run tests daily, hourly, or after a policy change or deployment
 - Tie to ServiceNow or Natroy I ticket actions
 - Tag workflows by use case (SLA check, protocol validation, compliance readiness)
3. Rollback & Assurance Checks
 - Confirm if remediation actions resolved original violation
 - Test rollback effectiveness if triggered
 - Alert or block future automations if test fails
4. Dashboard & Reporting Integration
 - View pass/fail history and last known good state
 - Map tests to device, site, or workflow context
 - Export test logs for audit and RCA

Architecture & Security

- Fully integrated with Natroy O, I, and T modules
- Runs containerized microservices across distributed environments
- Role-based test creation and approval workflows
- Secured test output and sensitive data logging

Uses Cases

- Pre-change validation in network operations centers (NOC)
- SLA conformance testing for high-value paths or services
- Post-remediation confirmation of vulnerability closure
- Scheduled compliance simulations
- Proactive health checks across core and edge networks

AI-Enhanced with Natroy X

- Recommend new tests based on recent failures or config drift
- Auto-suggest validations tied to newly applied automations
- Prioritize tests for high-risk assets or change windows

Before vs. After Natroy Test-Driven Automation

| Capability | Before Natroy Test-Driven Automation | After Natroy Test-Driven Automation |
|-------------------------|---|---|
| Issue Detection | After incident occurs | Proactive validation prevents outages |
| Test Execution | Manual checks or ad hoc scripting | Automated, scheduled, or triggered testing |
| Change Validation | Risky changes without assurance | Pre/post-change tests ensure service integrity |
| Rollback Confidence | No validation after rollback | Automated rollback testing and verification |
| SLA & Policy Simulation | Rare, manual simulation | Continuous SLA/path/policy validation |
| Tool Fragmentation | Separate testing and automation platforms | Unified under Natroy O with full lifecycle integration |
| Skill Requirements | Expert-only testing with CLI/regex | No-code/hybrid test creation accessible to operations teams |

Conclusion

Natroy Test-Driven Automation empowers organizations to shift from reactive troubleshooting to proactive validation. By integrating testing into every phase of the automation lifecycle, teams increase service reliability, improve change safety, and dramatically reduce mean time to detection and resolution.

Call to Action

Let's transform your IT services.

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