

Automating a telco service provider's infrastructure

Predictive workflows take control of telecommunication (telco) processes that share similar characteristics, including expressing an intent or desired state in a declarative, versioned, and immutable manner.

1 Increase velocity and enhance reliability

Achieve continuous innovation by accelerating the deployment and life cycle management of applications and software consistently and reliably within your network.

Use pipelines to achieve greater automation, improved consistency, and enhanced reliability for various processes, including:

- ▶ Infrastructure-as-code (IaC).
- ▶ Development and operations (DevOps).
- ▶ Development, security, and operations (DevSecOps).
- ▶ Network operations (NetOps).
- ▶ GitOps.

2 Efficiently onboard applications

Onboarding new applications into your environment is often a time-consuming process. A collection of pipelines streamlines this onboarding experience.

Integrate a comprehensive testing process as part of the onboarding experience to ensure the long-term stability and usability of the onboarded applications. The testing process will:

- ▶ Transfer a vendor's software artifacts, configuration, and software bill of material to your environment.

- ▶ Scan the received items to ensure compliance and adherence to relevant policies.
- ▶ Create a [digital twin environment \(DTE\)](#) to check compatibility with the existing environment and applications and to perform testing without affecting the live environment.
- ▶ Execute compliance checks and load testing against a defined baseline.

3 Streamline platform life cycle management

Handle frequent updates of your infrastructure and platforms with the needed reliability to ensure new software does not compromise the existing environment and its applications.

In the era of continuous integration and continuous delivery (CI/CD), vendors are providing greater access to updated software than ever before.

Using an automated process with pipelines to access new and updated software, and making it available within a service provider's environment, will accelerate adoption. Automated processes can allow you to:

- ▶ Scan recently obtained software, and check its security to generate a baseline for comparison.
- ▶ Deploy software to an ephemeral cluster running a previous version, and execute validation tests to ensure compatibility and reliability.
- ▶ Move validated software to your internal repositories for it to be consumed by other processes and pipelines.

4 Achieve consistent and reliable operations

Maintain the stability of deployed services and applications with the use of new platform release integration pipelines.

Achieving consistent and reliable Day 2 operations at scale is a challenge which is further exacerbated by new platform releases. Use an end-to-end testing regime to generate a baseline assessment of the performance of existing onboarded applications with a new platform version.

This will allow you to:

- ▶ Easily onboard applications into a DTE in which software and hardware is used to simulate an entire system.
- ▶ Use an ephemeral cluster to test onboarded applications with each other and with a new platform release.
- ▶ Generate a baseline for the new platform release with the selected applications to be used to observe any degradation in performance compared to the previous version.

Work with Red Hat to automate your telco infrastructure

Efficiently adopt pipelines into your environment with Red Hat® OpenShift® Pipelines, a Kubernetes-native CI/CD solution based on Tekton. Tight integration with Red Hat OpenShift and Red Hat developer tools will help develop independently scalable pipelines for each step of your CI/CD process.

Use pipelines to mitigate configuration conflicts by taking advantage of cloud-native, source-centric applications that use custom resource definitions and Kubernetes controllers with the use of Red Hat OpenShift Severless.

Reduce your operational risk and increase developer productivity using built-in controls for security and policy enforcement across the entire software development cycle with Red Hat Advanced Cluster Security.

Learn more

Read how [Red Hat OpenShift](#), [Red Hat OpenShift Pipelines](#), [Red Hat OpenShift Severless](#), and [Red Hat Advanced Cluster Security](#) can help you achieve greater automation, consistency, and reliability.

Learn more from our three-part pipelines for cloud-native network functions (CNFs) blog series: [Part 1 - Pipelines for onboarding CNFs](#), [Part 2 - Pipelines for life cycle management](#), and [Part 3 - Pipelines for multitenant end-to-end integrations](#).



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