Upgrade in a flash with automated configuration and customization

Use case

The huge potential of 5G will only be realized when frequent new product versions and updates can be rapidly and accurately deployed into Communications Service Provider (CSP) networks. This calls for automation that configures and adapts network software for each CSP's environment. Adopting webscale cloud infrastructure combined with the Nokia DelOps approach helps CSPs to reduce effort, speed up deployment and improve customer satisfaction.

Challenge

With the advent of 5G, CSPs face an accelerated environment in which radically new and highly capable services are demanded at ever faster rates. At the same time, technology is advancing swiftly, leading to a boom in the number of product updates CSPs receive from vendors. These updates must be configured and adapted each time they are deployed into the network.

This has conventionally entailed substantial manual work that can lead to errors. The growing frequency of releases in the 5G era means this effort to configure network functions must be reduced to keep pace with changing market demands. This aim is best met by automating the configuration of product updates, enabling CSPs to reduce overall effort and achieve faster deployment.

Such automation benefits CSPs most if they have also adopted a container cloud infrastructure approach like that used by webscale players. This makes it simpler to coordinate automation in concert with their vendors.

Solution

Nokia Delivery Operations (DelOps) is an innovative way forward, extending DevOps methodologies to account for all the complexities, customizations and configuration needs inherent in the CSP's environment. This set of products, tools and services implements a Continuous Integration/Continuous Delivery (CI/CD) pipeline that delivers automated updates, all the way from the Nokia R&D function right into network operations. Part of the CI process includes automated tools that configure each update and apply customizations specific to the CSP environment.

Like DevOps, DelOps uses agile processes to reduce time to market for new products but also streamlines the delivery and operational phases of network deployment. It adapts to the evolving nature of CSP environments while enhancing network reliability.

Nokia's DelOps approach updates products automatically across all phases – from delivery to network design, integration and testing, to operations. The capability adapts to each CSP's implementation of CI/CD, whether Nokia's fully-featured framework, the CSP's own framework, or a third-party CI/CD solution.

CSPs can offer a superior customer experience by automating the configuration and adaptation of network upgrades

Benefit

Nokia CI/CD services with automated configuration and adaptation provide valuable benefits for CSPs:

- **Faster deployment** – new features and capabilities can be deployed in minutes rather than months.
- **Reduced effort**
  - manual configuration processes that consume time and resources are automated.
  - customizations to suit the CSP's needs are automated and reapplied for each release by the CI/CD framework itself.
- **More reliable services** – automated customization and configuration are more reliable, reducing service outages caused by human error.
- **Better customer experience** – end users get new services enabled by quick deployment of new features, while also enjoying more reliable services with fewer outages.

Result

The automated configuration and adaptation that Nokia has built into its CI/CD framework ensures that a CSP can gain all these benefits of reduced complexity, lower effort and higher reliability of features and services.

CSPs using ETSI Network Functions Virtualization (NFV) Management and Orchestration (MANO) will benefit strongly from this approach. However, CSPs will gain even more value if they are using a cloud based on containers and stateless, dataless microservices, which is how major webscale companies manage their software – taking advantage of true closed-loop automation that reacts to business intent.

Each updated Virtualized Network Function (VNF), Cloud-native Network Function (CNF) or microservice is automatically customized for the CSP as well as being configured to fit the network. The automation extends to putting the updated software into operation, for rapid, smooth and trouble-free deployment.

Discover more about how Nokia DelOps, enabled by CI/CD services, automates core network configuration to achieve rapid upgrades. Visit the Nokia website or read our brochure.

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