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Oracle Communications Automated Test Tools & Scripts (ATS)

As legacy telecommunications networks undergo rapid transformation, communications service providers require the capability to quickly rollout new services. Amid this period of change, telecom operators are faced with an array of challenges when it comes to deploying and testing new functionalities and network elements. Oracle Communications Automated Test Tools and Scripts (ATS) helps communications service providers to automate the complete testing lifecycle of 5G network functions, thereby significantly reducing OpEx, and the timeframe required to successfully launch new competitive offers.

Overview

The highly dynamic 5G architecture allows operators to launch and manage Enhanced Mobile Broadband (EMBB), Ultra-Reliable and Low Latency Communication (URLLC), and Massive IoT. This will require a flexible and agile core that allows for the rapid introduction of new features without impacting other services. The new 5G core services-based architecture (SBA) allows for the adoption of web-scale technologies and software into telecom networks to bring in significant automation and to also prepare the network for the massive wave of traffic and use cases that 5G will need to support. Today, operators are required to quickly roll out new services, to remain competitive, and to ensure a steady flow of the return on their investment. Many of the tier 1 operators are looking into a DevOps model of software delivery wherein development and operation teams are tightly integrated to enable rapid deployment of the new release in the production environment and to leverage the benefits of continuous integration and continuous delivery (CI/CD). We have seen that this new DevOps model has increased the number of software releases delivered per year from two to six. With so many builds every year, manual testing is a considerable challenge. Also, it is important to note that while DevOps enables CI/CD, you cannot have continuous delivery without continuous testing. With organizations shifting testing to the left, hence closer to development, it is critical to incorporate a robust and flexible automated testing framework to realize the true benefits of DevOps in telecom.
Oracle Communications Automated Test Tools and Scripts (ATS) helps CSPs to automate the complete testing lifecycle of 5G NFs while leveraging the benefits of DevOps and significantly boosting the innovation and agility that comes with the 5G core.

Operators can leverage Oracle ATS to perform the following functions:

- Verify newer versions of software more efficiently
- Rollout new platforms faster
- Apply configuration changes more easily
- Expand and grow the network according to business requirements
- Ensure more resiliency in the core network
- Perform accurate benchmarking and capacity planning
- Adopt a testing framework that can deliver services faster, simpler, and in a more cost-effective manner

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Product description

Oracle Communications ATS is designed for the DevOps delivery model. Using the intuitive GUI of Oracle Communications ATS, operators can perform functionality, regression, and performance testing of 5G network functions (NFs) easily, thereby enabling a more agile and robust deployment of 5G NFs in their production environment. Oracle Communications ATS "automates" the end-to-end testing lifecycle of 5G NFs, with the option to schedule runs of specific and failed test cases, generate historical test reports, and receive email notifications of such reports. Oracle Communications ATS leverages Oracle's reliable testing framework. With more than 900 test cases pre-packaged for 5G NFs, Oracle Communications ATS is built to address the complexities and requirements of the 5G core NF testing. Operators can test either a single NF or multiple NFs independently in the same environment. Oracle Communications ATS is highly flexible and can be seamlessly combined with any other CI pipeline with minimal changes. It also takes care of documentation and uses Doxygen to generate documentation automatically out of the code comments. Built on behave framework, Oracle Communications ATS uses Jenkins for GUI and Python library to write complex codes.

Features	Description
Multiscenario	4G/5G scenarios Interworking test cases NFs emulation
Multiplatform Solution	Subscriber/subscription lifecycle
Multienvironment Architecture	Bare metal/VNF/CNF deployments Master/Agent architecture
Cloud Native Environment (CNE) Seamless Integration	CNE tools integration NFs lifecycle management CD Pipelines for NFs and CNE

Table 1: Oracle Communications ATS solution highlights

Figure 1: Oracle Communications ATS user journey

Automated testing with Oracle Communications

Oracle Communications has been designing and implementing testing solutions for more than a decade. With the reliable and easy to use behave framework at its core, Oracle Communication ATS reduces the complexity and time required to test cloud native 5G core network functions. The service-based architecture of 5G brings the added advantage of IT service mesh, DevOps, and CI/CD with much faster deployment of new releases, which makes manual testing a struggle for most operators. Oracle Communications ATS design principles are centered around automation, quality, and security, to help operators differentiate their core network. Oracle Communications is reimagining communications to connect the world by leveraging its cloud and security DNA and telecom heritage, to be the most trusted partner for its services provider and enterprise customers.

The Oracle Communications ATS is a part of the Oracle Communications 5G Automation platform, a portfolio designed to be flexible enough to support the network journey of a CSP while providing the foundational capabilities needed to drive other core functions. Oracle 5G Automation provides secure and data-driven automation solutions addressing multiple use cases across network functions.

Related products

Oracle Communications Cloud Native Core, Binding Support Function (BSF)

Oracle Communications Network Analytics Suite

Oracle Communications Cloud Native Core, Service Communication Proxy (SCP)

Oracle Communications Cloud Native Core, Policy Control Function (PCF)

Oracle Communications Cloud Native Core, Policy, and Charging Rules Function (cnPCRF)

Oracle Communications Cloud Native Core, Cloud Native Environment (CNE)

Oracle Communications Cloud Native Core, Network Exposure Function (NEF)

Oracle Communications Cloud Native Core, Security and Edge Protection Proxy (SEPP)

Summary

Oracle Communications solutions enable service providers to securely manage and monetize the incremental growth in mobile data traffic and multimedia applications. They help service providers protect their network and customer data, analyze subscribers' quality of service, and set policies to improve customer experience, and optimize network performance. The solution ultimately empowers CSPs to utilize analytics to future-proof their business and proves an integral source to a cloud native 5G core product portfolio, supporting carriers as they transform from purveyors of connectivity to providers of digital services.

Oracle Communications helps billions of people, devices, and machines intelligently connect and engage over any network. With proven capabilities, scalable solutions, network security, cloud services, common intelligent signaling platform, Oracle Communications solutions guarantee security, high availability, and continued support.

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