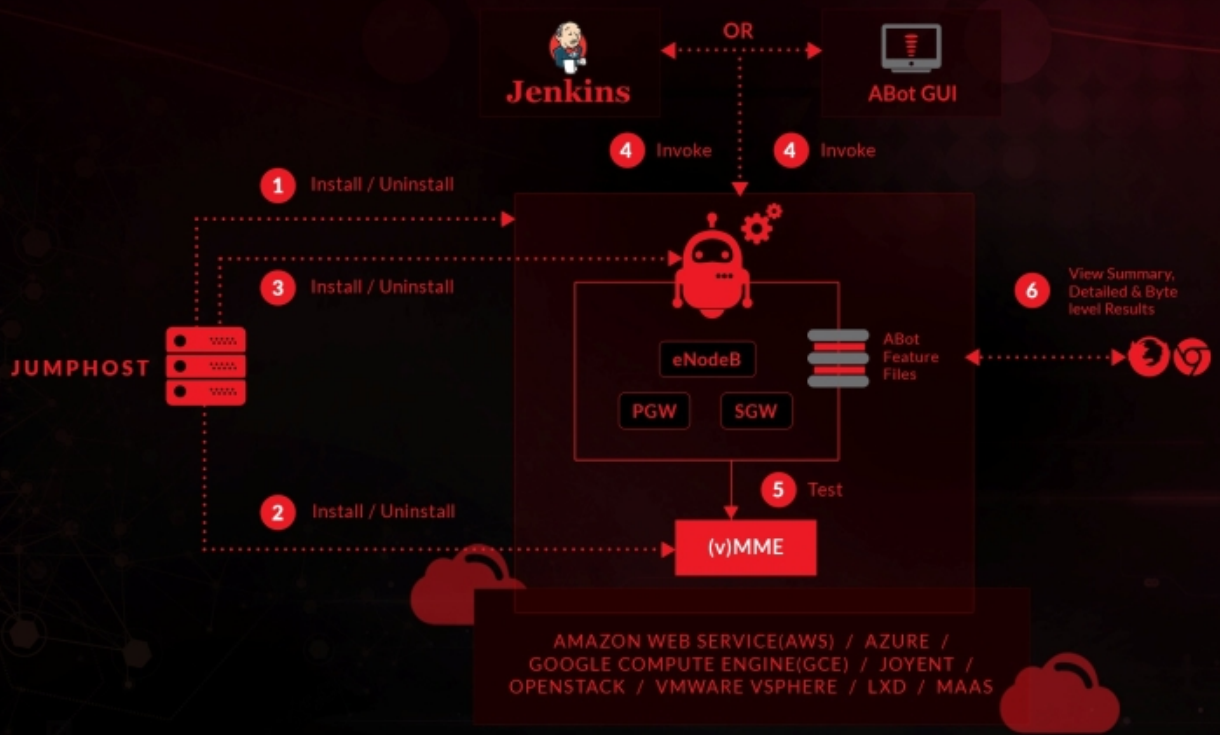
ABot for Validation of any Mobility Solution



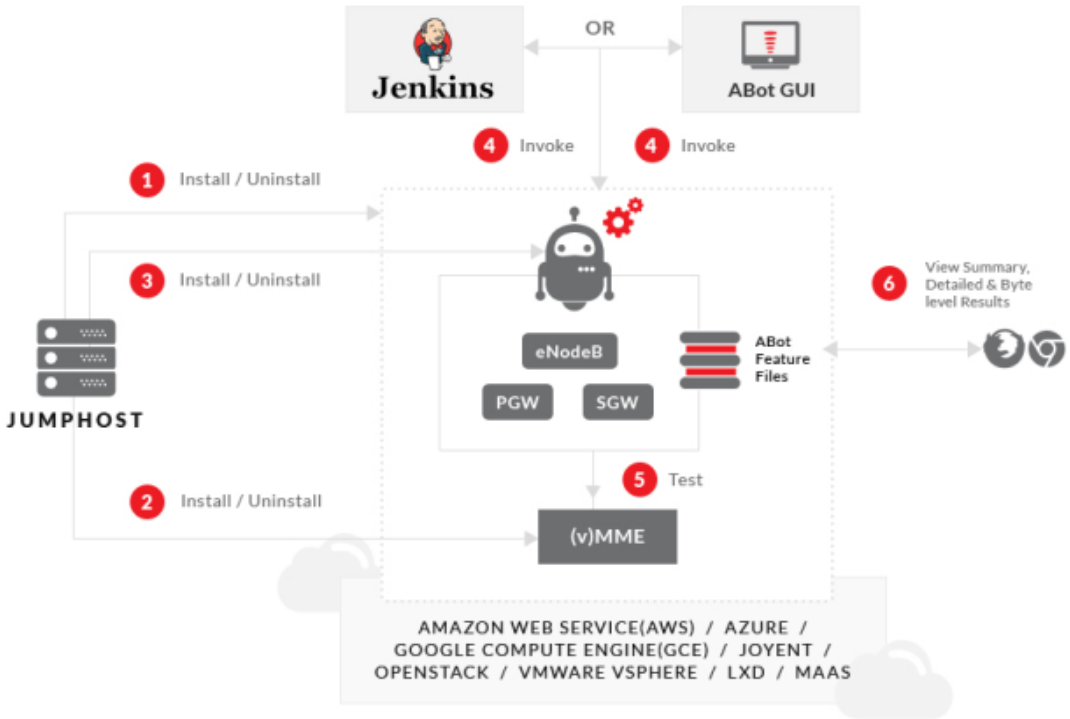
Challenges: Service Complexity, variant network functions & platforms

As the industry redefines digital communication, a need for a reliable network comes in to play. The mobility network finds application beyond Telecom services like IoT, M2M & AI. Managing these complex mobility services, requires seamless interoperability between different network functions. VoLTE network is a popular use case involving the EPC and IMS components. Application and service complexity demands intricate setup, configuration and test scripts. It is necessary to emulate a call flow for validation purposes with ease for faster roll-outs. Test automation and deployment of products on both physical and virtualized platforms involves complex orchestration

Solution: A BDD & CICD supported Test Orchestration

ABot is a framework for functional and performance validation of any Mobile Network Function on a physical or virtualized platform. This solution allows easy emulation of any network component. It also verifies complex protocol specs using DSL based service-level test scenarios. The English like syntax of ABot enables dynamic modification and enhancement of call flows. ABot has the ability to harness any 3rd party test tool and abstract it's complexity through the DSL syntax test template. This solution can run repeated test scenarios, defined in a high-level language, enabling collaboration across locations & different stakeholders. ABot can integrate with different CI engines and orchestration solutions for CD on the target platform.

ABot Emulation Environment



Key Features

- ABot uses behavior driven development to define DSL based service-level test scenarios. It derives these test cases using spec-driven acceptance criteria.

- ABot uses protocol adapter(plugins) to communicate with VNFs. It generates traffic over multiple protocols and verifies the results.

- ABot provides an easy yet inexpensive means to emulate any mobile network component. This eliminates costly test tools at initial stages of the product development.

- ABot is currently available bundled with the following adapters:

  - SSH/SFTP
  - HTTP(SOAP/REST)
  - SIP
  - Diameter(extensible across different interfaces)
  - S1AP
  - X2AP
  - GTPV2C, GTPU

- 3rd party test tools like load generators can plug into the ABot framework without trouble. This allows customers to use their existing test harness and develop BDD-based adaptors around it.

- ABot can function in the NFV eco-system as cloud-native and work with any NFV Orchestrator.

- ABot invokes test cases for Network function's lifecycle management, functional and performance validation.

- The test scenarios executes in a scheduled manner through a CI engine, ready for CD based on execution results.

- ABot executes functional and performance tests on the deployed VNF. It uses relevant protocol adapter(s) (native or 3rd party) to communicate with VNFs for emulating other network components.

- ABot can verify NFV field deployments for VNFs like vIMS and vEPC. It also performs system tests on deployed VNFs for service -level validation like VoLTE.

- The DSL syntax of ABot test cases helps create any specification based call flow procedure on the fly.

- DSL based test cases generated during lab testing helps stakeholders collaborate during deployment. The process of defining and modifying test cases enables easy usage by deployment personnel and facilitates a higher test coverage.

- The web-based ABot UI publishes detailed test execution and validation results for certification. One can automate the tests through an external or internal CI engine like Jenkins. Test execution artifacts like logs and packet captures are available for enhanced debugging and troubleshooting.