Modern subscription management and provisioning solution deployed at major US telecom operator

Case study

R SYSTEMS

Business challenge

Our customer, a major US telecom operator with 50 million subscribers, was using a subscription management and provisioning solution built on an old specific AAA platform which was hard to maintain and extend/integrate with new technologies.

For the operator to keep track of the subscriptions and propagate changes to other systems, while meeting its specific requirements for 3xN geographical redundancy and 30 third party systems to be notified for various events related to the subscribers' profiles, R Systems proposed a modern solution using the latest technologies and future proof features.

R Systems contribution and solution

R Systems designed a solution which brought a series of innovations in terms of architecture, technologies and components, and also significant benefits for the customer.

The new architecture is more simple but reliable, developed purely in Java, using:

- Spring and Apache Camel technologies

- industry standard technologies such as: log4j, SNMP and/or JMX, for the implementation of alarms, statistics and logging

This architecture is also easy to integrate due to available connectors, has reduced hardware requirements, separates code from configuration, makes it easier to profile and tune performance and is no longer dependent on specific operating systems or hardware (ported already to Red Hat Enterprise Linux).

Another important advantage is that it allows up to 3 times faster development of future change requests due to:

- pure Java, object oriented, strong typing

- local deployment and running on developer machines

- access to third party libraries

- standard build system (Jenkins)

- significant investment in continuous integration

The solution included the following additional components for better debugging and rapid deployment:

- centralized logging, using Elasticsearch, Logstash, Kibana, ELK code name

- centralized statistics, using Graphite

- centralized deployment and configuration, using Chef

- automated testing and regression

The project for the development and implementation of the solution involved 1,600 mandays delivered by R Systems over the duration of 6 months.

Benefits

After its successful deployment, the US telecom operator acknowledged the value added and following benefits of the solution:

- easier deployment, where a **new node can be deployed in 10 minutes** with no opportunity for user error

- **50% less time** needed to add new features

- **3 times faster development** of future change requests

- automated testing where **1,800 end-to-end test cases are run in only 12 minutes**

- **increased performance**, successfully achieving 10000 TPS per geographical site, while the previous system had been dimensioned for only 3000 TPS per each geographical site distributed across various SOAP/HTTP APIs

- the migration of network access points (NAP) to non-durable virtual machines and **readiness for the migration to cloud** infrastructure