Active and Available Inventory (AAI)

R1 Artifacts

from https://lists.onap.org/pipermail/onap-discuss/2017-October/005356.html

Titan sits on top of a HBase storage backend - http://s3.thinkaurelius.com/docs/titan/1.0.0/hbase.html

Older Artifacts (Early 2017)

Active and Available Inventory (AAI) is the ONAP subsystem that provides real-time views of available Resources and Services and their relationships. AAI (sometimes referred to as A&AI) not only forms a registry of active, available, and assigned assets, it also maintains up-to-date views of the multidimensional relationships among these assets, including their relevance to different components of ONAP.

In addition to inventory and topology management, AAI provides the ability to do inventory administration. Data in AAI is continually updated in real-time as changes are made within the cloud. Because AAI is metadata-driven, new resources and services can be added quickly with Service Design and Creation (SDC) catalog definitions, using the AAI model loader, thus eliminating the need for lengthy development cycles. In addition, new inventory item types can be added quickly through schema configuration files.

The AAI subsystem uses graph data technology to store relationships between inventory items. Graph traversals can then be used to identify chains of dependencies between items. Relationships captured by AAI include "top-to-bottom" relationships such as those defined in SDC when products are composed of services, and services are composed of resources. It also includes “side-to-side” relationships such as end-to-end connectivity of virtualized functions to form service chains.

AAI data views can be used by homing logic during real-time service delivery, root cause analysis of problems, impact analysis, and many other functions.

The AAI API provides programmatic access to AAI.

Figure 1 provides a functional view of AAI.

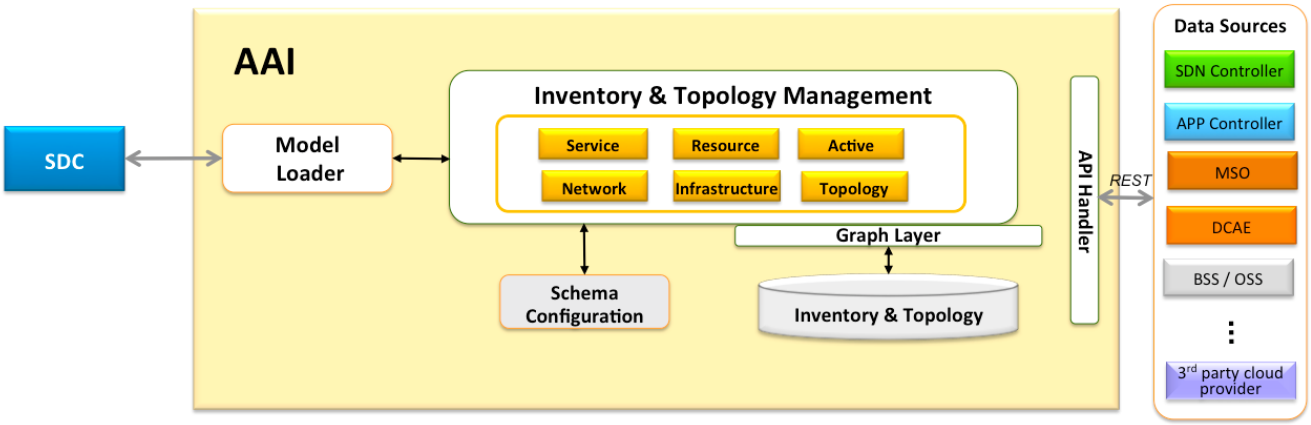

Figure 1. Active and Available Inventory (AAI) functional diagram

Inventory and topology management

AAI uses a central registry to create a global view of inventory and network topology. AAI receives updates from various inventory masters distributed throughout the ONAP infrastructure, and persists just enough to maintain the global view. As transactions occur, AAI persists asset attributes and relationships into the federated view based on configurable metadata definitions for each activity that determine what is relevant to the AAI inventory. AAI provides standard APIs to enable queries from various clients regarding inventory and topology. Queries can be supported for a specific asset or a collection of assets. The AAI global view of relationships is necessary for forming aggregate views of detailed inventory across the distributed master data sources.

Administration

AAI also performs a number of administrative functions. Metadata models for the various assets are stored, updated, applied and versioned dynamically as needed without requiring a system shutdown for maintenance.