



TECHNICAL
OVERVIEW

The Visionael OSS Suite

Architecture and Scope Suite Version 10

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Vision

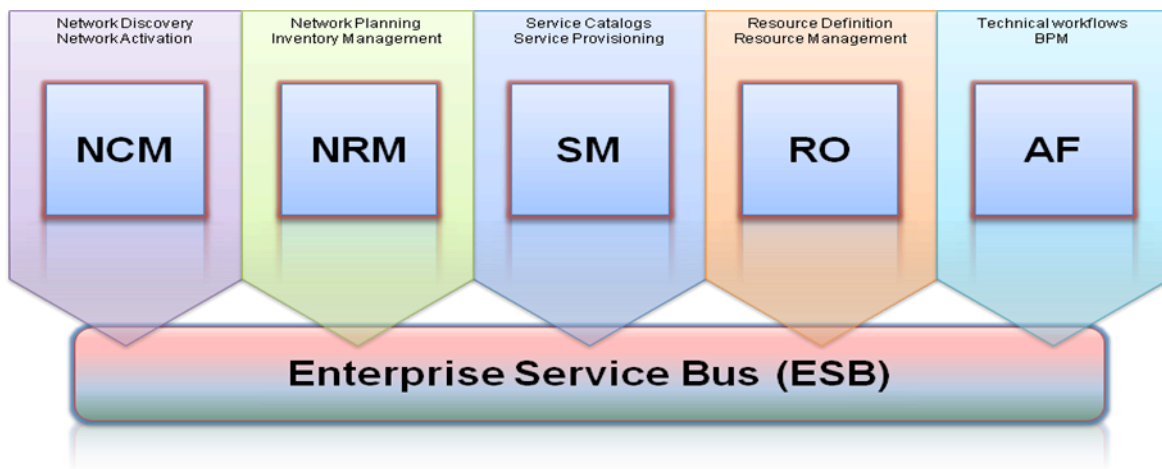
With the Visionael OSS Suite, Visionael has created a set of independent and loosely coupled OSS applications, yet integrated through a common architectural foundation. The products within the Visionael OSS suite all have strict scopes influenced from the functional areas of TMF NGOSS, allowing them to be deployed in conjunction with other Visionael product, or 3rd party applications.

Realizing both the complex OSS environments of today’s service providers as well as their desire to manage networks more efficiently, decrease their time-to-market and increase the quality of their services, Visionael focused on creating a suite which is string within the field of adaption and customization, while also being prepared for out-of-the-box-integration with 3rd party systems. The Visionael OSS products are intended to work with other applications in achieving the overall business goals by solving challenges within their functional domains allowing service providers to adopt a step-by-step implementation process where individual challenges and shortcomings are solved incrementally, providing quick ROI feedback.

The Visionael Suite may work independently, together or as part of a larger OSS environment. A clear focus from the start has been to design and develop a modular suite, where applications and their modules have crisp scopes allowing them to fit in true SOA environments. One of the first directions with the next generation Visionael Suite was to eliminate the concept of “internal and external integration” and give every application a strict contract to the rest of the world, including any other products within our own suite. This philosophy has proven very successful as it gives our teams clearer goals and visions, and provides our customers with better possibilities to build true best-of-breed environments. All this being said – The Visionael Suite is a true COTS application suite, which out of the box has a tremendous amount of knowledge about all aspects of modern network management.

Product Family Overview

The new generation Visionael OSS Suite consists of five product families with different scopes within Enterprise and Service Provider network and service management. The suite is deployed in a Java EE (Glassfish) environment and all API’s are exposed over an Enterprise Service Bus providing a common suite API known as the Visionael Composite Application.

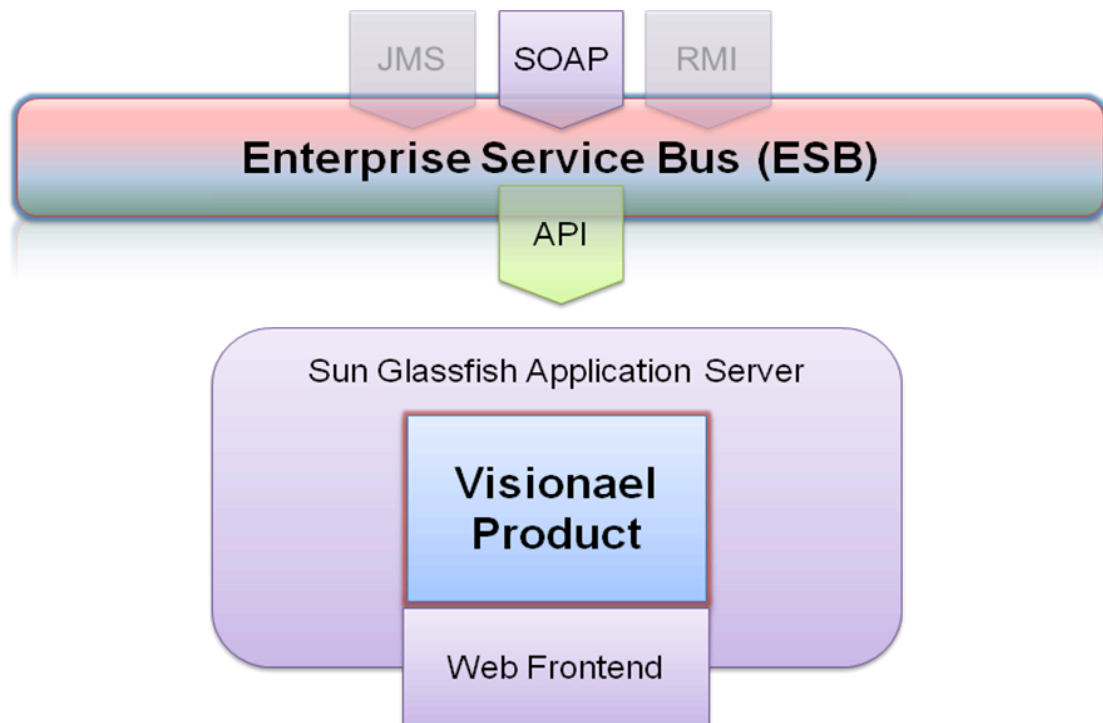




Technical Architecture

The Visionael OSS Suite is based on the Java EE paradigm and all products are deployed as Enterprise Applications in Java EE applications servers. Visionael has chosen to design and develop against the Sun Glassfish application server, as it constitutes the reference server for the Java EE standard. As all the Visionael products are independent, there is not “internal” integration and all products expose their API’s on an external bus, the Enterprise Service Bus (ESB). The ESB provides capabilities for third parties, such as a Systems Integrator, or the customer, to carry out customization, and integration. The ESB also allows for API exposure using legacy protocols allowing third-party applications to participate in the SOA environment. All applications expose their own web based Graphical frontends (GUI’s) allowing the Suite products to be deployed and used independently.

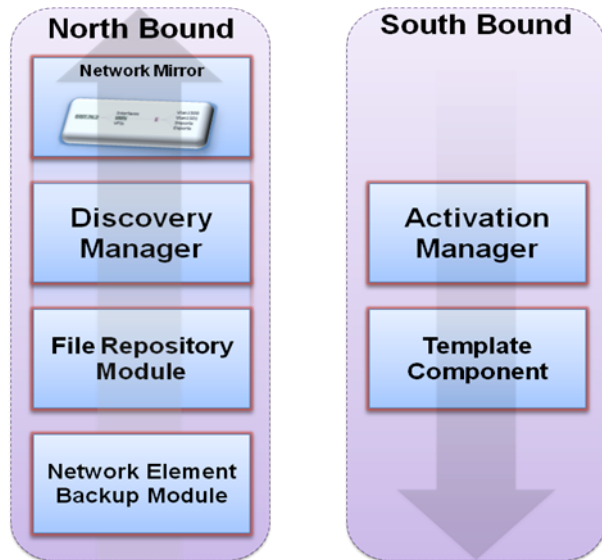
The Visionael OSS Suite is delivered with the Apache Service Mix ESB implementation.



Product Scope

Network Communications Manager – Discovery and activation of networks

The NCM product family consists of products providing abstracted, synchronized and secure communication with legacy and next generation Enterprise and Service Provider networks. This involves both northbound oriented operations – i.e. discovery, and southbound oriented operations – i.e. activation. A conceptual overview of the NCM product family can be seen in the diagram to the right. It is worth noting that reconciliation of north bound network data (i.e. discovered network information) is not within the NCM scope, but rather stakeholders such as NRM. The NCM framework deploys a completely distributed architecture allowing responsibility of different network segments to be federated across multiple NCM agents reducing load and increasing availability.



Network Resource Manager – Physical and logical management of networks

NRM is the heart of the Visionael Suite. It contains the network repository with physical and logical resources and the complete meta-layer on top of it providing utilization claims, planned work, historic changes and much more. NRM is the application where you define sites, racks, devices and logical paths and circuits. NRM is also the application where you see your network from a network management perspective, rather than a service perspective.

Service Manager – Provisioning and visualization of products and services

The Visionael Automation Suite enables the automation of services across multiple types of networks, linking the three interlocking dimensions of next-generation offerings: customers, networks and services. SM is a critical component to the suite. It offers an unprecedented level of automation for manual processes and repetitive tasks associated with the definition, creation, provisioning and activation of next generation services rolled out in both legacy and NGN networks. SM is designed for Service Providers, Managed Service Providers and large Enterprises that market and operate virtualized services to the corporate and residential market, and who want to get ahead of their competition in regards to service time-to-market, provisioning and activation efficiency and accuracy. SM significantly reduces the complexity in defining, instantiating, provisioning and activating configuration-heavy next generation services, and, if integrated with the appropriate databases for customer and contract management, simultaneously associating customers with the consumption of physical and logical resources through a contract and a service by:



- Relying on an accurate representation of the network and its logical resources supplied by NRM and Resource Orchestrator (described later)
- Instantiating defined product families and products with minimal or no manual interaction
- Sharing unified discovery and reconciliation with other parts of the suite, enabling Service Discovery and Service Audit capabilities
- Dynamically relating administrative data with technical data, allowing a detailed representation of physical and logical resource consumption and availability.
- Accurately provisioning of services by using next available resource of the various relevant entities to be reserved for the service instance, and release of resources at service termination
- Availing a unique combination of web administered workflow, task management, configuration modeling and product management

Automation Framework – Workflow management and business processes

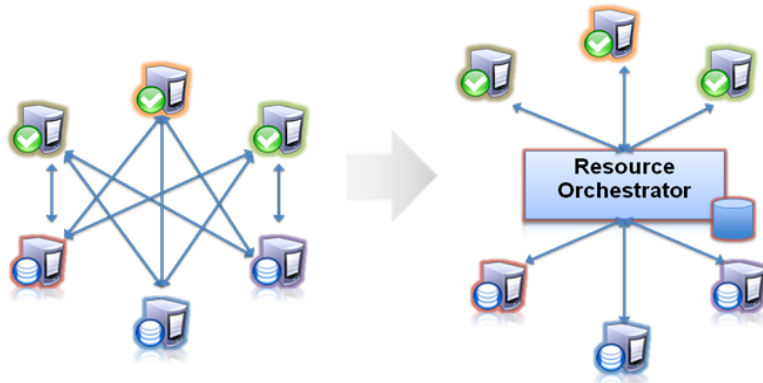
The AM contains two main products, Systems Orchestrator, SO, and Workflow Automation Manager, WAM. SO is a workflow engine allowing PSO and the end-customer to define custom behavior and integration with other systems on top of the native applications. SO adds tremendous value in its secure workflow management.

WAM is high level project oriented BPM engine used to orchestrate and drive long and complex business processes often with many complex dependencies. WAM can be used to orchestrate and manage all the operations involved in rolling out a new platform in the network, including getting racks in place, order connections to all sites etc.

Resource Orchestrator – Resource definition and allocation

Visionael Resource Orchestrator (RO) is an application in the Visionael Suite providing secure and flexible resource maintenance and allocation for other applications. RO was designed to house definitions, technical allocation rules and workflows for all aspects of physical and logical network resource lifecycles. RO can be responsible for allocation rules of resources that are tracked in other systems, such as ports in a network inventory, or resources that only are allocated from within a specified address space, such as VLAN's or IP addresses.

The key motivation in designing a standalone application for resource allocation has been to provide a central place where technical allocation rules can be customized, regardless of the source of the resources. This provides for a much more flexible OSS environment where different applications dependant on resources spread across different inventories only need to work against a single integration point, where all logic is defined. It also provides resource allocation semantics to legacy systems that very well may track resources, but lack the technical definitions to carry out life cycle operations required to fulfill resource allocation.





- Provides a central repository of customizable resource allocation logics defined in rules and workflows
- Integrates with other systems through Visionael Systems Orchestrator (SO) to allocate and de-allocate resource as well as update inventories of resource states
- Provides a common integration point for other applications allowing them to allocate resources from different sources using unified semantics and API calls
- Supports stakeholder applications with convenience API methods that ease the creation of end-user GUIs and input forms
- Allows resources to be expressed in merged form in the normalized VisION language providing one-step activation with Visionael Activation Manager as well as immediate reconciliation in the Visionael Network Mirror
- Allows local tracking of resources with simple data models (such as address space allocation)



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Corporate Headquarters

Visionael Corporation
201 San Antonio Circle, Suite 235
Mountain View, CA 94040
Phone: +1-650-963-0960
Fax: +1-650-941-4456

Technical Support / Training Center

Visionael Corporation
9717 East 42nd Street, Suite 200
Tulsa, OK 74146-3618
Phone: +1-918-770-4452
Fax: +1-918-663-1456

R&D Branch office Sweden

Visionael Sweden AB
Forsta Langgatan 22
SE-413 28 Goteborg
Phone: +46 31 360 99 00
Fax: +46 31 144 288

For more information
Go to

<http://www.visionael.com/>

