



Enterprise Design Patterns: Enterprise Cloud Services Broker

Design Pattern Scope: This document establishes the requirement for an Enterprise Cloud Services Broker (ECSB) based on the National Institute of Standards and Technology (NIST) Cloud Computing Reference Architecture, and aligns to all VA governance, policy documents, and mandated federal requirements. The document focuses on the ECSB required to provide a cloud-based hosting environment for applications. It defines the ECSB program for LOBs to leverage cloud services, and outlines the standards and capabilities for an ECSB to act as a liaison between VA (Cloud Consumer) and Cloud Providers.

Current State: VA has invested in numerous enterprise-wide cloud capabilities to facilitate developing and supporting new applications for each VA LOB. These capabilities include the Enterprise Development Environment at the Austin Information Technology Center, which provides a hosting environment that has virtualization capabilities associated with Infrastructure -as-a-Service. VA also uses an outsourced private hosting environment provided by Terremark for key services including Veterans Relationship Management, Customer Relationship Management, Identity and Access Management, and VA Mobile Framework. These hosting environments have satisfied functional requirements for many projects in the past, but they do not completely provide the rapid elasticity and on-demand self-service found in commercial Cloud Service Providers (CSP).

Design Pattern Solution: VA needs to establish an ECSB with both technical and business functions to manage the use, performance, and synchronized delivery of cloud service offerings within VA, from other federal providers, and from commercial providers to sustain an integrated and controlled multi-cloud provider environment. The ECSB enables VA to tailor the availability and delivery of cloud services based on technical and business requirements. The ECSB also provides the single point for integrating this information from each of the CSPs, making it available to various VA and Government stakeholders – eliminating the need for each Administration to monitor CSP performance and security controls.

The technical concept for the ECSB “To-be” vision will enable business process automation and a cloud service management capability. The operational vision of the ECSB is similar to an application-programming interface gateway for CSPs.

The guiding principles for the “To-be” ECSB are:

- Consider open source platform to facilitate innovative solutions and mitigate risks of vendor lock-in. Standards based approaches are recommended when open source is not feasible.
- Support transition of a largely on-premises IT infrastructure into a unified cloud environment with IaaS, Platform as a Service (PaaS), and Software as a Service (SaaS) capabilities managed and delivered through a single store front
- Provide VA users choice and self-service in a rapid fashion reducing provisioning time to market
- Ensure a foundation to scale beyond IaaS and PaaS to a broader catalog of SaaS

What are Enterprise Design Patterns?

Reusable templates that guide the enterprise to implement a set of technologies in standard ways

How do Enterprise Design Patterns relate to the Enterprise?

Enterprise Design Patterns translate OI&T's strategic goals, as documented in the Enterprise Technology Strategic Plan (ETSP), into “real world” direction to guide system design

How can I learn more?

To learn more about Cloud Computing Enterprise Design Patterns, contact Joseph Brooks (Joseph.Brooks2@va.gov)

To read the full document, see the TS website: www.techstrategies.oit.va.gov

To ask questions about Design Patterns in general, reach out to AskTS@va.gov