



What are Design Patterns?

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

How do Design Patterns relate to the 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?

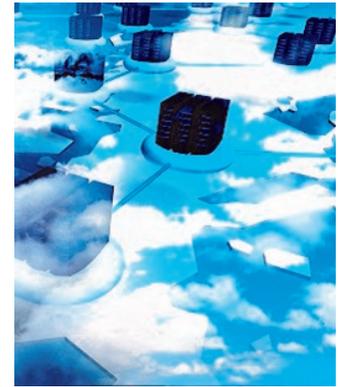
To learn more about this Design Pattern, contact Jacqueline Meadows-Stokes

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 askCTS@va.gov

Enterprise Design Patterns: Data-as-a-Service (DaaS)

- **Design Pattern Scope:** Directs the VA to establish a capability for standardized access to enterprise data stores that are shared across multiple applications
- **Current State:** Instead of enterprise-wide data sharing, VA's IT architecture contains multiple, sometimes redundant, databases and data access services
- **Design Pattern Solution:** Developers should build the application on the front-end so that data can be accessed simply by making data requests through the Enterprise Messaging Infrastructure (eMI) and the data aggregator



The DaaS Design Pattern focuses on underlying data layer across the entire VA enterprise environment

This is to say that the document takes the original concept of a data layer from the first set of Service Oriented Architecture (SOA) Design Patterns for VistA evolution, and extends that concept to the **enterprise level**. Like the previous increments, this document draws on VA's Enterprise Shared Services (ESS) and the eMI. In this case, DaaS as an ESS will **support virtual data access** that will be available for **all applications**.

This first increment presents high-level constraints for enabling enterprise data access within the VA. It is important to note that implementing DaaS as an enterprise shared service will require additional architecture and policy work. Future design pattern increments will be specific to key architectural attributes.

Currently, data access services and data storage are highly fragmented across VA

This fragmented approach is evidenced by **data stovepipes and silos** in VA's IT infrastructure. One contributing factor is that data access services are often tightly linked to specific applications. Another issue is the duplication of databases, which occurs when teams develop back-ends (databases) for each specific application.

DaaS implementation would mean that applications simply connect to enterprise-wide data access services to pull the required information from enterprise data stores

Specifically, DaaS implementation will involve **access to federated database platforms**, meaning access to data that is joined across various sources without regard to the specifics of the back-end systems. For storage and retrieval of VA enterprise data, this will include:

- A standard, integrated interface to the enterprise's share data stores
- Reusable data access services

DaaS will help VA address challenges with respect to **linking various types of customer data** into a single view (e.g., Health, Benefits, Corporate, and Memorials). Another key benefit is **simplified and accelerated application development** through access to underlying data stores. More generally speaking, these gains will reduce performance risks, improve interoperability/consistency, and reduce development and support costs.