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Primavera Unifier Integration Overview: A Web Services Integration Approach

Introduction

Oracle's Primavera Unifier offers an extensible interface platform based on XML Web services to fully support interfacing with other customer systems. The interface provides the ability of Primavera Unifier to communicate with virtually any existing customer system. As a result, information, business processes, workflows, budgets, internal transactions, user data—any information customers want to exchange—can be imported to, or exported from, Primavera Unifier via industry-standard Web services.

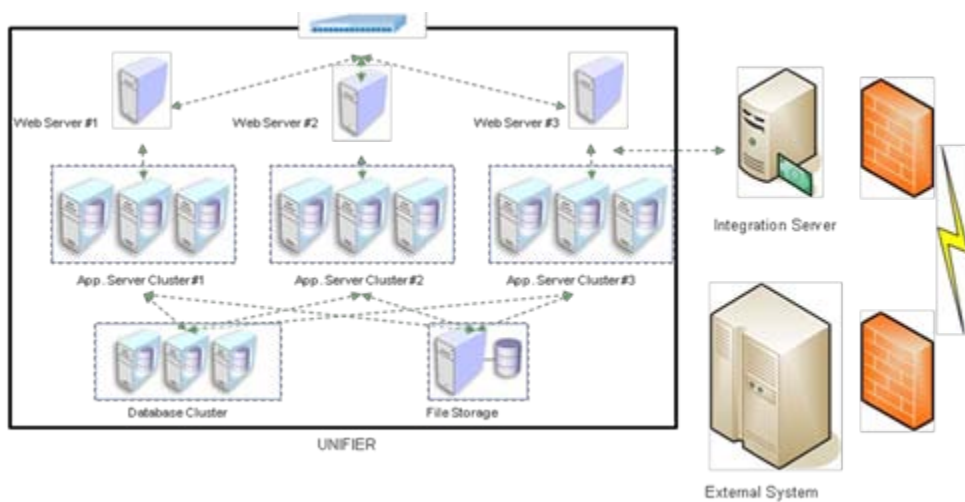


Figure 1. Primavera Unifier infrastructure

Web Services Overview

Here are some details about Web services:

- **Web services.** To manage their valuable information, businesses often rely on a variety of standalone systems that may or may not be designed to exchange information with other systems, even within the same organization. Using Web services is a standard way for disparate corporate systems to exchange and update information, and these services function much like simple Web servers. Clients send requests, and the Web service sends responses—just as a Website would do by sending a Web page when a user clicks a link. However, unlike a simple Web server, a Web service communicates only through precisely defined XML documents for requests and responses.
- **Simple Object Access Protocol (SOAP) standard.** SOAP refers to the communications protocol for XML-based Web services and is a specification that defines the XML format for messages. SOAP describes what is in the message and who should deal with it, enabling systems to talk to each other and make requests.
- **Web Services Description Language (WSDL).** A WSDL file is an XML document that describes how to interact with a Web service. Specifically, it describes a set of SOAP messages and how the messages are exchanged, specifying what a request message must contain and what the response message will look like.

If the system interfacing with Primavera Unifier has the ability to call Web services, a direct integration can be built. Otherwise, a custom-developed Primavera Unifier client or enterprise application integration (EAI) with an enterprise service bus (ESB) can be used as an intermediary. To aid in the design of an interface, Primavera Unifier provides

- A publicized WSDL file that describes how to interact with Primavera Unifier Web services.
- XML schemas that contain data mapping to Primavera Unifier data. This is automatically available after design has been completed in Primavera Unifier.



Figure 2. Web services architecture

Benefits of a Web Services Integration Approach

The benefits of Primavera Unifier's interface approach to integration are

- A fully extensible, standards-based XML Web services interface
- Secure and reliable data transfer
- A customizable data transfer process
- Support for both data import and export
- A flexible three-tier architecture
- Dynamic report generation

Flexible

The Primavera Unifier solution is built upon a highly flexible three-tier architecture designed to support integration with a variety of external systems, using industry-standard Web services. More importantly, Primavera Unifier's Web services support newly defined business processes and forms without the need for any programming.

Secure

Web services utilize the same types of security measures used by many commercial Websites to protect sensitive customer data exchanges, such as online banking or credit card transactions. The most important security feature is Secure Sockets Layer (SSL). When a client connects to a secure server with a URL beginning with "https" rather than "http," SSL is automatically used. From the time the connection is made, all information entered and received from the Website is encrypted. The Primavera Unifier Web service interface requires that all connections be secured in the same way so that sensitive company data is protected.

Dynamic

Primavera Unifier's Web services are also dynamic, because XML schemas are generated according to the client data fields to be integrated. Primavera Unifier also enables users to define reports that can be run via a Web service, and the results are returned in the response. This feature can be leveraged to get report-based business intelligence from the system.

Development Process and Methodology for Web Services Application Integration

The following table lists the key phases for integration development:

PROCESS STEP	DESCRIPTION
Detailed Requirements	In this phase, specific requirements for each integration are developed in the business requirements documentation and signed off by the customer. Key components of this documentation include data mapping, transformations, and error handling. Change control is implemented after this sign-off, because any changes will have significant implications. The integration process manual will serve as the production manual outlining factors such as timing of integrations, expected runtimes, and dependencies. This is a living document that may change during the integration effort.
Designing	Design of the integration is completed per the business requirements documentation signed off on in the previous phase. In addition, the unit test plan for each integration is documented. This design is also signed off on by the client, and change control is employed.
Building	During this process step, the building and testing of the integration are completed. Sign-off on the test plan is the final deliverable that moves the integration formally into the implementation testing phase.
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Conclusion

Primavera Unifier customers must integrate capital project and program management information with back-office ERP systems. The extensible interface platform in Primavera Unifier is based on XML Web services to fully support information exchange with other systems via a variety of integration methods.



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Hardware and Software, Engineered to Work Together

