



STANFORD UNIVERSITY

Rapidigm - A Fujitsu Consulting Company (Subsidiary of Fujitsu Limited)

Profile

Type: System Integrator (SI)

Founded: Fujitsu was founded in 1935 (Rapidigm was founded in 1968)

Location: Multiple Locations across North America (Fujitsu Consulting is headquartered in Edison, NJ)

Public/Private: Public

Size: 6200 employees; Part of \$40.6 billion Fujitsu Group

Geography: USA, Canada, India & Costa Rica

Key Verticals: High Tech Manufacturing, Industrial Manufacturing, Consumer Product Goods, Engineering & Construction, Professional Services, Automotive, Life Sciences, Retail, HealthCare, Higher Education, Utilities, Public Sector (State & Local Govt.)

Expertise:

Oracle E-business suite, Oracle Database, Oracle Fusion Middleware, PeopleSoft, Siebel, JDEdwards, Business Intelligence, Business Transformation, Application Development & Management Outsourcing, Technologies & BPO Services

URL:

<http://www.rapidigm.com>

<http://www.fujitsu.com/us>

Solution Details:

Stanford University has an existing infrastructure of Oracle Interconnect integrating a custom Student dining and housing application (SAM), a Reference Data Hub and Student Registry Module (LDAP-like) application in a Hub-and-Spoke integration model. It wanted to transition to a standards based Service Oriented Architecture (SOA) to integrate with Tririga Momentum (Facility Management System) while leveraging its existing investment in Oracle Interconnect. Rapidigm's experience in both the integration technologies – Oracle Interconnect and Oracle BPEL Process Manager – was leveraged to meet the current integration needs while laying the foundation for a Service Oriented Architecture at Stanford.

The business process flow is shown in the diagram on the next page. The diagram is color coded to differentiate between the existing infrastructure at Stanford with Interconnect and the BPEL PM based SOA interfaces that were implemented as a part of this project to integrate with the Tririga application. Stanford students create or update the Housing Contract information in the SAM Application (existing infrastructure). Using Oracle Interconnect this message is published (existing infrastructure). The Reference Data Hub Application subscribes to the message and

Rapidigm/Fujitsu Consulting (SI) solution built with Oracle BPEL Process Manager for Stanford University

Student Provisioning in Higher Education integrating Tririga and Oracle Interconnect

Stanford University, established in 1891, is one of the world's leading research and teaching institutions.

Rapidigm, a Fujitsu Consulting Company, implemented a real time integration between Tririga Momentum (Facility Management System) and Stanford's housing and dining application (Student Accounting Module 'SAM') and Student Registry Module using Oracle BPEL Process Manager. Rapidigm/Fujitsu Consulting deployed the project in 8 weeks. The project included Oracle BPEL PM development, testing, and deployment. It is in production as of December 2006, it initially processes about 10,000 Student Housing Contract records per day and will expand to 15,000 records per day in six months. The project consists of 3 BPEL process flows with about 100 activities with message payload sizes of 1-2Kb.

Technology

Stack:

Oracle 10g database, Oracle Interconnect 10.1.2, Oracle Application Server 10.1.2, BPEL Process Manager 10.1.2, JDeveloper 10.1.2

Integration components:

Oracle BPEL PM 10.1.2.0.2 (Oracle SOA Suite)

Endpoints:

Student Accounting Module, Student Registry Module, Oracle Interconnect 10.1.2.0.2, Oracle database, Tririga Momentum (outside firewall)

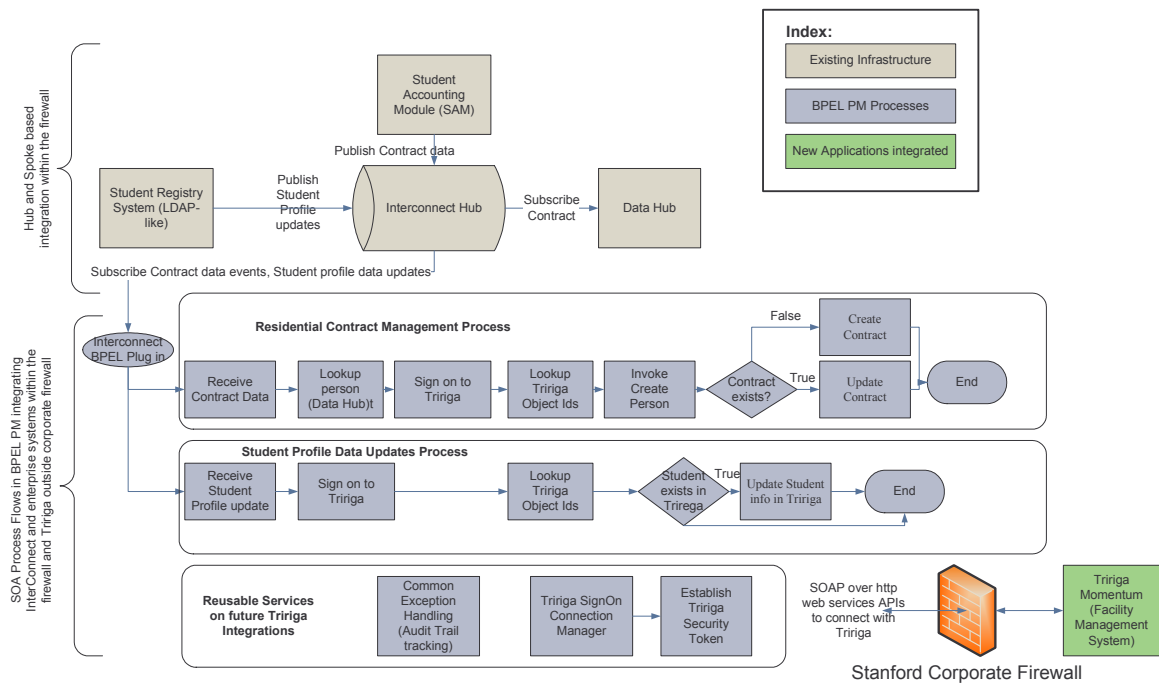
Oracle BPEL PM Deployment:

4 CPU RedHat Linux 4.0 for BPEL PM (one BPEL PM Server interacting with one Interconnect Hub)

Oracle 10g Database for Dehydration store



stores it into the schema (existing infrastructure). Oracle BPEL PM subscribes to the same message processed through the Oracle Interconnect Hub. When the Oracle BPEL PM-Interconnect plug in receives a message from the InterConnect hub, it translates the received message into the XMLRecord object and delivers it to the BPEL process that subscribes to the message. The BPEL PM process that is instantiated then retrieves student information from the Data Hub. The process then invokes a SignOn BPEL process that manages connections to the Tririga system and returns a valid Security Token. This centralized “Connection manager” service can be reused in future integrations with Tririga. The security Token and the student information is sent to Tririga via a SOAP web services API. Tririga uses SOAP APIs that format input and output messages in XML string type but contain XML documents. A schema was defined to handle the processing within BPEL Process Manager in XML format and a transformation step before and after the Tririga call handled the conversion between XML and string type. If the student record does not exist, a new student record is created in Tririga. Then the Student contract information is created/updated in Tririga – also by SOAP APIs. A similar BPEL PM process updates information for students that are tracked in the Tririga system when the information is updated in the Student Registry module. A third BPEL PM process updates the data hub with the Tririga facility information as housing is assigned (not shown in the diagram). Reusable exception flows capture all exceptions in a central Audit trail table.



Integration architecture and Process flow diagram

“Fujitsu Consulting aims to increase business performance and flexibility through agile business solutions and services. By leveraging our technical expertise across Integration technologies we helped Stanford University lay the foundation to transition from a traditional hub-and-spoke model to a modern Service Oriented Architecture. Oracle worked with us every step of the way from training our consultants on Oracle SOA Suite, pre-sale assistance during the proof of concept and through the lifecycle of the project to ensure a smooth roll out.”

Kevin Sullivan, Managing Director – Oracle Practice – Rapidigm – A Fujitsu Consulting Company