Oracle Application Server 10*g* Adapters for Mainframes

KEY FEATURES

- Leverage and capitalize on existing legacy data
- Accelerate Mainframe integration projects
- Incorporate Mainframe into a service oriented architecture (SOA)
- Real-time event integration with legacy applications
- Comprehensive connectivity to legacy and mainframes
  – Tuxedo
  – VSAM
  – CICS
  – IMS/TM
  – IMS/DB

- Standards based support
  – JCA 1.5
  – XML
  – WSDL
  – WSIF

- Easy-to-use, Rich Design-Time
  – Browse and Search EIS metadata
  – Generate XSD, WSDL schemas

- Easy to set-up, configure and administer

- Support for OS/390, Z/OS UNIX, HP NonStop, OpenVMS and AS/400 platforms.

- Robust Proven Technology
  – Guaranteed exactly once message delivery
  – Scalable and highly available
  – Sophisticated error management capabilities
  – Robust transaction management
  – Integration with mainframe security mechanisms

Overview

Analysts estimate that enterprises spend as much as 40% of their IT budgets annually on integration and, that as much as 80% of operational data resides in 'legacy' environments. While new web and composite applications are built to enhance customer service, streamline business operations and build competitive edge, the core IT value in many enterprises remains locked within these legacy systems. Leveraging the huge investments in capital, human resources and business knowledge put into these legacy systems, and integrating them with new technologies and business initiatives is the key for competitive advantage and successful eBusiness. Oracle AS Integration Adapters provide an easy-to-use, scalable, flexible, standards based SOA platform to enable rapid and real-time access to mainframe applications. Using the Oracle Adapters for mainframes, companies can quickly incorporate their mainframe systems into a service-oriented and event-driven architecture, increasing the total value of their existing IT investments. The mainframe solution offers pre-built native Adapter for connecting to a wide range of legacy applications (eg: Tuxedo, CICS, IMS/TM) and data sources (eg: VSAM and IMS/DB).
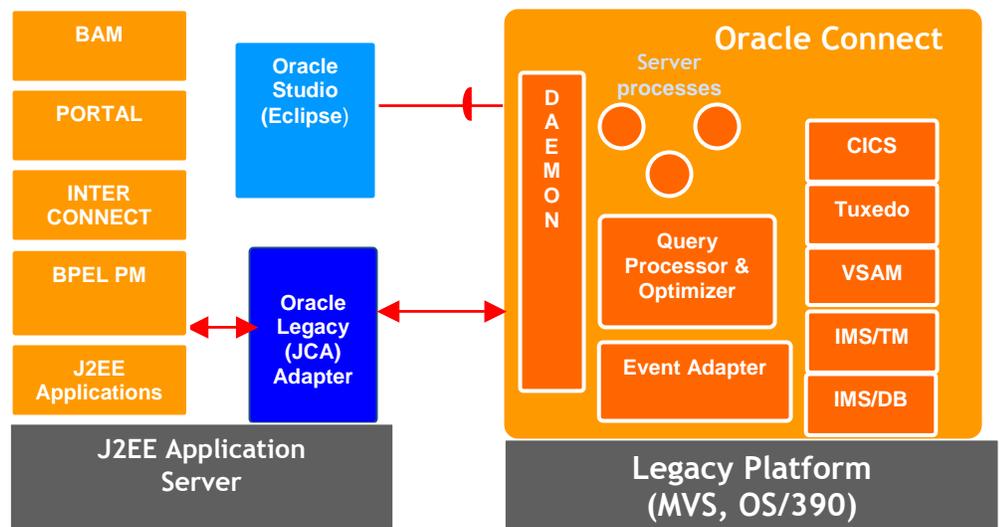

Figure 1: Mainframe Adapter Architecture Diagram

Product Overview

The Oracle Connect is the core component of the Adapter and resides natively on the legacy systems and contains pre-built native adapters for bi-directional integration with various legacy applications and data sources. It extensively supports SOA by exposing the legacy transactions and operations as Web Services to other Oracle Application Server product components.

Comprehensive Connectivity

The adapter supports more than one recommended interface to communicate with the EIS application and translates the EIS native data to standards-compliant XML and back. It offers bi-directional connectivity and can be used to synchronously invoke EIS transactions and workflows as well as query EIS data. In addition, it can also asynchronously receive events from the EIS application.

Simple and Easy to use Design Time Graphical Interface

Oracle Studio is an easy-to-use graphical tool for configuration and monitoring of Oracle Connect. The tool has built-in support for introspecting the metadata contained in COBOL copy books and automatically generates appropriate XSD and WSDL schemas for the same. This introspection is dynamic and does not require coding. In addition, Oracle Studio is capable of mapping the non-relational legacy data sources (like VSAM and IMS/DB) to an enhanced relational data model.

Query Optimizer

Oracle Connect exposes non-relational legacy data sources as relational data model. The Query Processor (QP) provides optimized query execution of SQL client requests against legacy data sources like VSAM and IMS/DB. It provides the query processing services for non-relational data sources making them behave like relational data sources. The QP also guarantees data integrity with transaction management support.

Transaction Support

The Oracle Connect engine supports global transactions for both transactional and data source applications. For example: a VSAM table may need to be updated in the same transaction as an insert to an Oracle table or, a CICS transaction may be part of an XA transaction managed by a J2EE Application Server. The Oracle Connect achieves the above by supporting standard transaction API (XA) and interfacing with IBM's Resource Recovery Service (RRS).

Real-time event capabilities

Oracle Connect is capable of publishing mainframe transaction events in real-time. It has an embedded Event Adapter for the above purpose. The Event Adapter is used by the legacy transactional application (CICS, IMS/TM) to

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generate an XML event and put it into a reliable and robust queue. The Event
Adapter is called through a native client API that can be used from a COBOL
application, CICS transaction or an IMS/TM transaction. Oracle Connect
supports Change Data Capture to trap legacy data source (VSAM, IMS/DB)
events for data replication and synchronization.

Security

The Adapter supports mainframe security mechanisms like RACF, TopSecret
and ACF-2. Oracle Connect provides a robust security framework, supporting
machine-level as well as data source/application-level authentication. Oracle
integrates with any of the mainframe security mechanisms listed above. Oracle
Connect also supports features such as impersonation, enabling credentials from
the client application to pass so that the user will automatically get access rights
on the mainframe.

Scalable and robust architecture

Oracle Connect provides a reliable and robust server that is proven to work
under changing loads ranging from single user solutions to multi-user solutions
supporting millions of requests a day. The Oracle Connect employs a front-end
process that manages client requests (daemon) and request-handlers that process
them (called servers). The servers are set up to wait for incoming requests (hot
servers), or are loaded upon request. Servers can also be defined to support
multiple requests (reusable servers) to handle many incoming requests to handle
different types of usage profiles. This flexible and robust server architecture
supports changing activity patterns while using only the necessary system
resources.

Fail-over and HA

Attunity Connect handles failover by providing back-up daemons so that the
system can always accept and handle client requests. If a client request fails,
Attunity Connect guarantees the transaction by rolling back any changes that
occurred and sending the client application an appropriate error message.

VSAM Integration

The Oracle Connect VSAM Adapter supports accessing VSAM (Virtual
Sequential Access Method) data sets directly and via CICS transactions. In the
former case, the Oracle Connect exposes the underlying VSAM data source as a
SQL interface. Oracle Connect supports the three access methods: Keyed
Sequential Data Set (KSDS) – indexed file, Relative Record Data Set (RRDS) –
relative file, and Entry Sequenced Data Set (ESDS) – sequential file.

CICS Integration

The Oracle Connect CICS Adapter is modeled as a collection of interactions
where each interaction is mapped to a specific CICS transaction. For each
transaction, its particular input record and output record is exposed as an XML
schema corresponding to the structure of the communication area

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(COMMAREA) used for communicating with the transaction.

IMS/TM Integration

The Oracle Connect IMS/TM Adapter is modeled as a collection of interactions in which each interaction is mapped to a specific IMS/TM transaction. For each transaction, its particular input record and output record is exposed as an XML schema corresponding to the structure of the communication area used for communicating with the transaction.

IMS/DB Integration

The Attunity IMS/DB Adapter models IMS/DB (Information Management System/Database) as a simple database with a SQL front-end provided by the Attunity Connect query processor. IMS/DB does not have a native SQL interface and its record definitions are typically maintained within definition files. Oracle Studio captures the metadata defined in COBOL Copy book, PSB and DBD files and exposes them as XSD/WSDL schemas.

Summary

Oracle Connect for Mainframe is the fastest and most productive way to connect legacy enterprise information in real-time for any new and future initiatives.

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