Oracle Application Server 10g
Adapters for Mainframes

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

KEY BENEFITS:
• Bi-directional, real-time connectivity
• Seamless integration with Oracle Application Server product components.
• Easy-to-use wizard based UI
• Rapid implementation and deployment
• Built on a standards based scalable, flexible and reusable architecture
• Comprehensive Interface support
• Complete Management through Oracle Application Server 10g

RELATED PRODUCT AND SERVICES
The OracleAS 10g Adapter is part of the OracleAS 10g product family. Related products include:
• Oracle AS Integration BPM
• Oracle AS Integration InterConnect
• Oracle AS Portal

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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.
(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.