

ORACLE APPLICATION SERVER WIRELESS 10g PARLAY AND PARLAY X

WIRELESS & VOICE APPLICATION PLATFORM

PARLAY

- Oracle is a member of the Parlay Group
- Oracle provides a high-level Internet standards-based development and deployment solution for Parlay Applications
- Oracle is integrating OracleAS Wireless with Parlay Gateway partners
- Support for Parlay X and OMA Frameworks will be available in future releases

INTEGRATION WITH 3RD

PARTY PARLAY GATEWAYS

- Plug and play
- Unified Application Development Environment
- Flexibility and Depth
- Simplifies and Enhances Enterprise Access of Network Resources
- Fosters Faster Adoption by Enterprise of Mobility
- Provides Bridge to Internet Developers

SERVICES ENABLED

- Messaging
- Location
- Charging
- Call Control
- Presence and Availability

Oracle Application Server Wireless 10g (OracleAS Wireless) is the industry-leading application server for wireless and voice applications. Based on open standards, it allows Service Providers like Mobile Network Operators to open their networks to enterprises and content providers. Serving millions of users at many leading Mobile Network Operators, it radically reduces the time and simplifies the process of developing, deploying and maintaining mobile services. OracleAS Wireless integrates into the core mobile network, while still providing developers with high-level interfaces and application models to rapidly build rich and exciting applications.

What is Parlay/OSA? (For more information <http://www.parlay.org>)

The Parlay APIs define a number of APIs for various core network features such as call control, messaging, location, content charging, etc. In addition to these network specific APIs, Parlay also defines the “Parlay/OSA Framework” that manages the allocation and controls the access to all Parlay APIs.

The Parlay group was established as an industry forum with the goal to develop APIs that would allow telecom operators to open up access to their core network capabilities. The relevant Parlay APIs are brought to 3GPP and ETSI for standardization in the context of Open Service Access.

The Parlay APIs are defined using OMG¹ IDLs² and are exposed by core network gateways that are normally known as “Parlay Gateways”. The Parlay Gateways use CORBA³ as the middleware infrastructure and expose the Parlay APIs using CORBA. In addition to CORBA, the Parlay APIs may also be defined as Web Services using WSDL⁴ to emulate the CORBA architecture and APIs. However, the Web Service interfaces have distinct disadvantages, as they often generate more network traffic and is inherently difficult to model the session-based Parlay APIs with session-less Web Services. Furthermore, most of the Parlay Gateway vendors are not yet exposing the Web Services interfaces.

¹ Object Management Group

² Interface Description Language

³ Common Object Request Broker Architecture. Defined by the OMG.

⁴ Web Services Description Language

In the mobile space, Parlay APIs provide high-level interfaces that can be used to start building innovative Intelligent Networks (IN) applications. Although these APIs still require a fair amount of telecom and CORBA knowledge, they have brought a standards-based approach to the otherwise proprietary IN interfaces provided by most network equipment manufacturers.

Benefits and Limitations of Parlay OSA for Mobile Solutions

Parlay is directed at single-domain well-controlled environments and simplifies operator infrastructure integration by exposing standard APIs to application developers. It addresses the development of IN and telecom in-house applications, and does this by providing a tight coupling between clients and server. However, it does not address some important requirements of the Internet developers who are building modern applications for convergent networks (merger of IP and IN networks). These requirements are:

- Support for multi-domain applications. The Parlay APIs, designed for working within a closed telecom environment, do not work well for applications that are deployed outside the telecom operator's domain. The Parlay architecture is optimized for a controlled environment with tight client and server coupling.
- Scalability of solutions and deployable applications. As the architecture requires a tight client and server coupling, adding new applications can adversely effect other applications within the same domain.
- There is still a need for application developers to have simpler and higher-level interfaces that do not require knowledge of the core network, CORBA, or other telecom specifics. Such higher-level APIs would allow typical web and desktop developers to also build mobile solutions into their existing applications.

OracleAS Wireless and Parlay Support

Oracle Corporation is a member of the Parlay Group, and has been actively working with several Parlay Gateway and application software vendors. Some of these partner solutions have been demonstrated at trade shows.

OracleAS Wireless - Internet Standard Development and Deployment Environment

OracleAS Wireless provides a standards-compliant J2EE⁵ and Web Services based application server for Wireless and Voice applications. The platform integrates into the core mobile network, while still providing developers with high-level Java, HTTP and Web Service interfaces and support for XML, VoiceXML and XHTML. In addition, it also provides application developers with powerful tools and application models to rapidly build rich and exciting wireless and voice applications.

OracleAS Wireless consists of a number of Foundation Services that can be used by

⁵ Java 2 Enterprise Edition

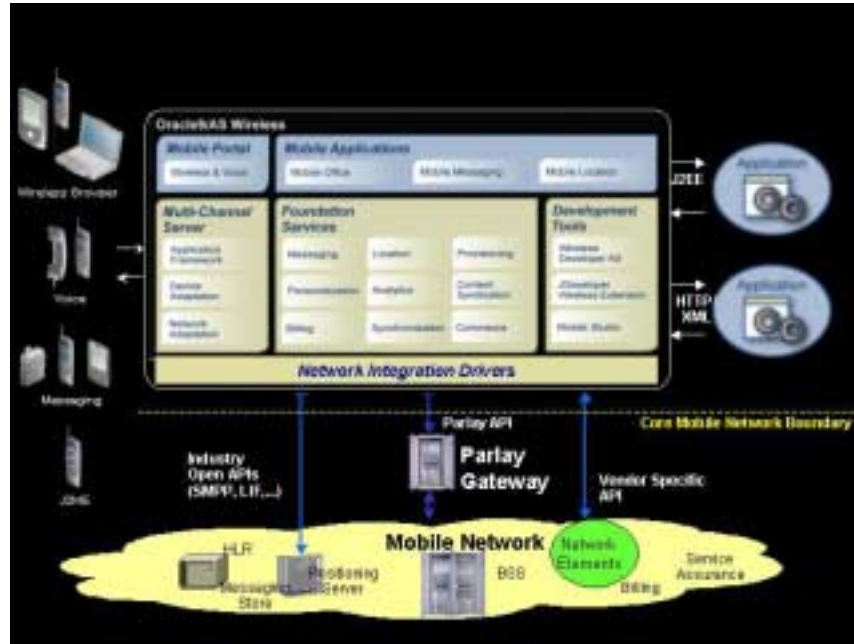


Figure 1 OracleAS Wireless connecting into the core mobile network either through a Parlay Gateway, through open standard APIs or proprietary vendor-specific APIs.

application developers to rapidly build applications that may use capabilities of the core network. Many of the Foundation Services integrate into the core mobile network using an open *driver* interface. Oracle, together with partners, have developed a large number of drivers for the most common network elements and gateways such as messaging servers, positioning servers, WAP gateways, billing systems, etc.

OracleAS Wireless and Third Party Parlay Gateway Support

OracleAS Wireless can also use a Parlay Gateway and the Parlay APIs to access capabilities of the network. To do this, a *driver* is required that uses the Parlay APIs to access the network capabilities. Extending the driver-based paradigm discussed above, Oracle is working actively with several partners to write these new drivers, for the various Parlay Gateways commercially available.

Using the open driver interface, OracleAS Wireless can connect to Parlay Gateways of several vendors simultaneously. The application developer is shielded from this complexity and can continue to use the high-level APIs based on Web Services, Java, XML and XHTML offered by OracleAS Wireless. This provides the flexibility to add more network gateways, to change the method of accessing the gateways or even to migrate applications to a different network, without having to re-write them since the high-level interfaces remain the same. Figure 2 shows the architecture of the Foundation Services.

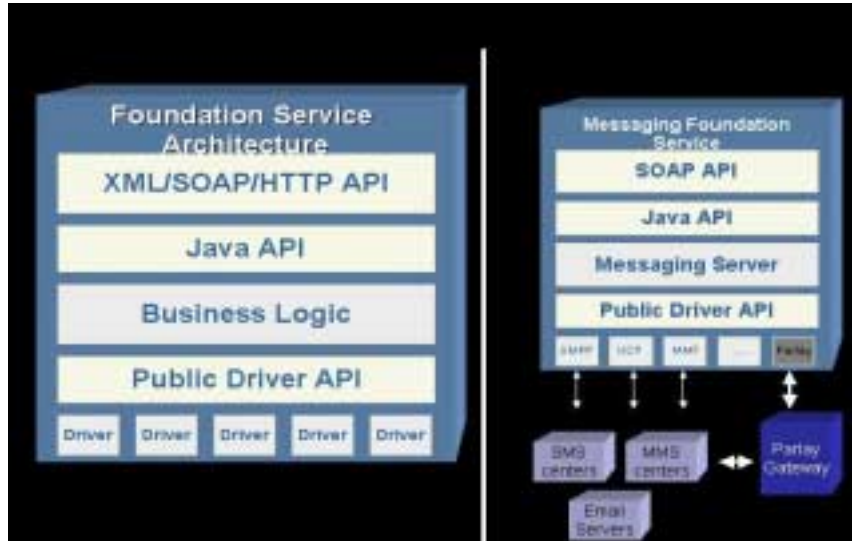


Figure 2. Foundation Services Architecture in OracleAS Wireless (left). The architecture of the Messaging Foundation Service (right). Connectivity to the messaging gateways can be done either through vendor/industry specific interfaces using SMPP, UCP, CIMD2, MM7, EAIF, SMTP, etc. or through the Parlay Gateway using the User Interaction APIs.

J2EE Applications within the Telco Domain

As mentioned earlier, Parlay is not that well suited for multi-domain applications. However, it may be used as a standard interface for building applications within the single telecom operator domain. By providing a standard set of APIs, it is beneficial to write internal IN applications using Parlay than to use proprietary interfaces developed by specific vendors.

Oracles together with some partners provide a solution for developing, testing and deploying these services using J2EE (Java 2 Enterprise Edition). This provides the application developer with a familiar Java interface based upon the Parlay *Java Realization APIs* – a friendlier Java interface to the standard Parlay/OSA APIs.

JSLEE

JSLEE (Java Service Logic Execution Environment) is specified by JSR-22 and provides an application server environment that acts as a container for Service Logic Execution Environment (SLEE) application components. JSLEE is optimized to support event-driven applications like call control (JCC) and transactions (JCAT) within a single and secure domain: the operator domain. JSLEE does not offer the necessary mechanism to secure and manage exposure of the capabilities that are implemented in the JSLEE.

JSLEE is not suitable to expose enablers to un-trusted application developers (within or across domains). However, it is the ideal Java environment to implement realizations of the Parlay APIs and Java Parlay Applications. It is also the appropriate environment to develop natively in Java high performance applications that handle real time high volumes of SLEE events (e.g. high volume call control applications).

Oracle drivers to Parlay Gateways are implemented in a JSLEE container provided by a partner. This environment can be used within the operator's domain, when deployed by the operator to execute and develop Parlay applications (using the Java realization). It also allows developer in the operator domain to extend the Parlay capability and develop high performance real time JSLEE applications when needed. Use of Parlay and JSLEE should be limited to legacy applications or high performance real time applications (e.g. high volume call control) within the application domain. In all other cases, Oracle recommends developing the applications in a mobilized J2EE environment (e.g. in Java or WS) and accessing the Parlay or JSLEE functionalities through the foundation services that are exposed in OracleAS Wireless. These in turn drive the Parlay components via drivers.

OracleAS Wireless and Parlay X

The Parlay X specifications provide high-level abstract interfaces for the most common functionality of the Parlay/OSA APIs. Parlay X is based on Web Services and the specifications define the WSDLs for the various interfaces. The goal of the Parlay X APIs has been to standardize the APIs at the Applications level. Although Parlay X and the Parlay APIs are both defined by the same standardization group, there is no direct binding between these two APIs.

Parlay X does not specify or dictate how it may be used and hence does not provide any framework for authentication, authorization or charging. This is left to vendors to implement. Parlay X also does not require using a Parlay Gateway to access the core network elements and gateways.

OracleAS Wireless will support Parlay X in a future release of the product, exposing the relevant Parlay X features through Parlay X APIs. In addition, OracleAS Wireless will also provide relevant frameworks for authentication, authorization and charging through a Service Gateway that can be used in conjunction with the Parlay X APIs. Oracle is also an active member of the Open Mobile Alliance (OMA) where the Web Services Framework and also additional Web Service interfaces are being defined.

Parlay X and Oracle network enabler web services with OracleAS Wireless's open network service management framework will allow network service providers to expose the network capabilities to third party content providers and enterprises in a manageable, secure and trackable manner. These web service interfaces are simple to use and require only loose coupling between the network service providers and the third providers.

Conclusion

Oracle is a member of the Parlay Group and together with OracleAS Wireless you can build Parlay/OSA Applications today. OracleAS Wireless provides high-level abstract interfaces based on open technologies like XML, XHTML, VoiceXML, HTTP, Web Services and Java, that allow application developers to rapidly build innovative wireless and voice applications.

FOR MORE INFORMATION

THE MOBILE
TECHNOLOGY CENTER
ON OTN:

Learn more about Oracles
Wireless and Voice Offering
on the Oracle Technology
Network (OTN). It is free to
become a member. Go to
the URL:
<http://otn.oracle.com/mobile>

PARLAY PARTNERS:

If you are a Parlay Gateway
or Application Vendor that
would like to know more
about how to partner with
Oracle, please contact
mobilepm@oracle.com.

Using OracleAS Wireless together with a Parlay Gateway, provides developers with the ability to use standard interfaces to access core network elements and gateways. At the same time, it provides a flexible deployment architecture that is Internet and Web Services friendly. This makes it easier to deploy and run applications built by different application providers in a distributed manner.

Oracle will be providing support for Parlay X Web Services in future releases of OracleAS Wireless. To complement the Parlay X interfaces, an OMA compliant framework will also be provided.

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