



Openwave® Smart User Repository

High-end Subscriber Data Management Solution to Deliver Subscriber Profiles and Policies

The increasing popularity of smartphones and other mobile devices is bringing greater data volumes to mobile operators' networks. Mobile operators are deploying traffic policy management solutions to extract the maximum return from their network infrastructure. However, to efficiently deliver real-time policy, these solutions need a highly scalable Subscriber Profile Repository (SPR). In addition, subscriber data is fragmented by different services using their own subscriber repositories. Because subscriber data is tightly coupled with services, it is difficult to share among multiple services, leading to time-to-market, integration and scalability challenges.

The Openwave Smart User Repository is an ideal solution for an SPR because it can store and deliver subscriber policies across large, distributed networks in real time. This enables the operator to support policy enforcement for each flow, transaction and packet with extremely low latency. Beyond the role of an SPR, the Smart User Repository can expand to be a single User Data Repository (UDR) for all user data in an operator's network. Flexibility is offered through a data consolidation or data federation model, making the solution more cost-effective for the service provider.

In use by more than 125 network operators worldwide, the Smart User Repository currently serves over two billion lookups per day at its largest deployment.

Product Benefits

- **Significant total cost of ownership (TCO) savings** – Lowers TCO by up to 95% through significant (15x) performance improvements as compared to existing subscriber data management deployments.
- **Proven reliability and scalability** – Supports several deployments of over 20M subscribers; is tested for up to 300M subscribers; largest deployment serves more than 100M subscribers and 3.3B searches per day with 99.999% availability; scales smoothly and linearly with increase in data entry sizes.

- **Real-time data retrieval** – Returns single entry requests in real time (less than one millisecond); rapid responses ensure continued customer satisfaction.
- **Open standards** – Supports LDAP v3 and DIAMETER

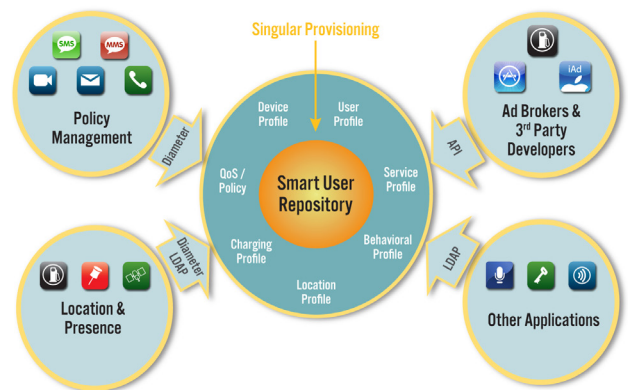


Figure 1: Openwave Smart User Repository stores and delivers subscriber policies across large, distributed networks.

Product Details

The Smart User Repository has three main architectural components:

- **Master** — used to accept and distribute provisioning operations.
- **Replica** — contains a partial or full set of the Master data; used to serve lookup requests at a very high rate.
 - Ensures low replication load on the Master via lightweight replication mechanism to facilitate linear system growth costs
 - Supports geographic distribution to ensure low latency for every request
 - Feeds Replicas from any Master Server of a Master Cluster, enabling deployment of more Replicas with minimal additional hardware investment

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- Enables horizontal scalability through additional Replicas
- Provides Replica storage in-memory or disk
- Uses advanced auto-load feature to turns Replicas on in the field (with no data pre-loading)
- -Notification Server - act as a replica but serves data change notifications to subscribing client applications.
- Non-blocking, operates independent of the core system and can be scaled separately.
- Ensures asynchronous change update propagation, which is useful for optimized client change response.

Continuous Service Operation During Upgrades

The loosely coupled architecture of the Smart User Repository provides resilience and flexibility to manage the system on a daily basis. For example, upgrades are conducted by component, with the Master being upgraded first (while Replicas keep serving requests) and each Replica upgraded thereafter. Automatic distribution of schema updates facilitates daily data model management, even for widely distributed systems.

For more information, please contact sales@openwave.com or visit www.openwave.com.

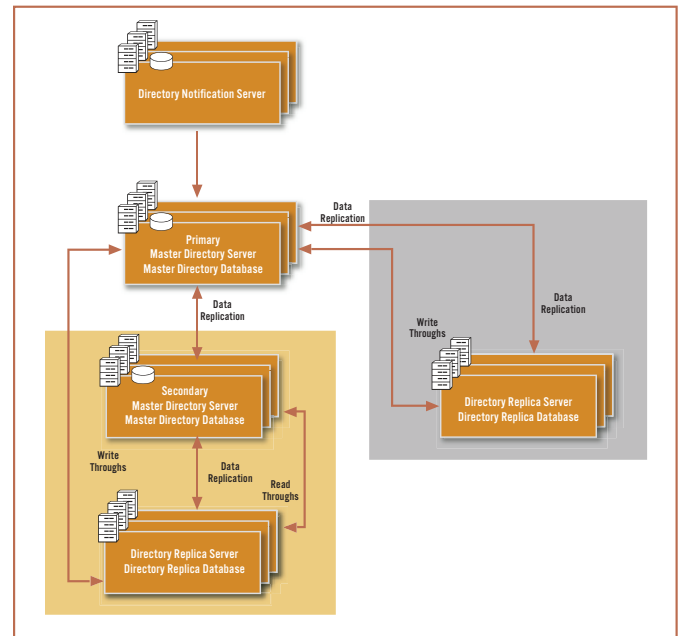


Figure 2: Openwave Smart User Repository Architecture.



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