

CASE STUDY

Data Center Broadband ISP Subscriber DB for Service Authorisation Session Data Record Generation Database Performance Monitoring

After the acquisition of a local broadband provider, a major Anglo-Saxon mobile telecom provider enhanced its service range with a correspondent broadband offering. To integrate this service, Intersys has realized a central subscriber database in the backend system as well as the provisioning component “SIS Provisioning Interface” that – after being used for the initial data migration – is used for the continuous extension of the customer base. In addition, the database has configurable scopes of static IP-addresses (or

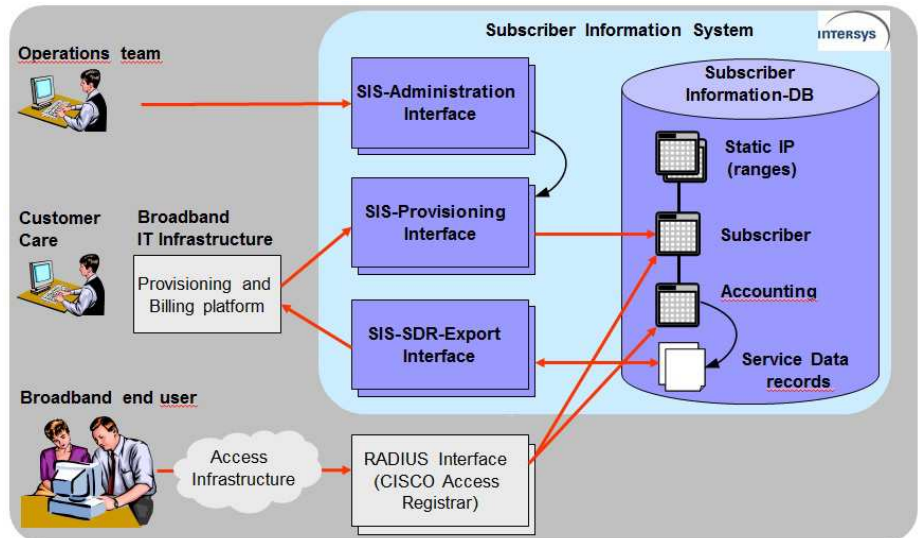


Bridging the gap



ranges) which are assigned to customers of certain customer categories and their use of specific products.

The subscriber data is used for the broadband service authorisation check, for which the subscriber data base provides specific functions for the access servers (RADIUS server CISCO Access Registrar).

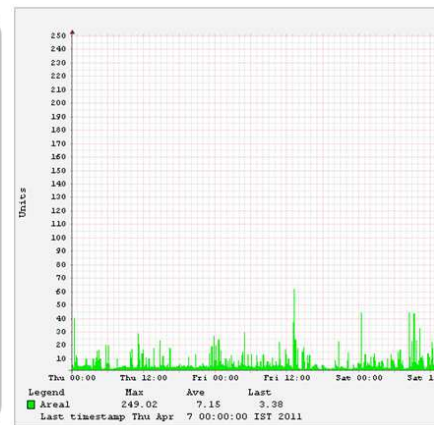
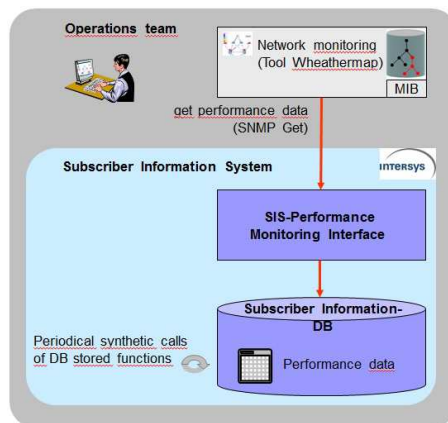


Once the authorisation check is done, the billing relevant start of the service use occurs (accounting start). The RADIUS server inserts the generated session data into the accounting tables of the database. And with another component developed by Intersys, the „SIS-SDR-Export Interface“, the session data is aggregated periodically to so-called “service data records” and exported to the billing platform.

For the provider’s operations team, Intersys has developed the „SIS-Administration Interface“, a command-line based tool containing various query- and configuration functions as well as statistical methods.



Bridging the gap



In close cooperation with the operations team, a performance monitoring of the most important database functions has been implemented as well. These are periodically queried and measured (every minute). The minimum and maximum values are then delivered via SNMP to the provider’s monitoring tool (every 5 minutes) by the component „SIS-Performance Monitoring

Interface“. The monitoring tool then graphically illustrates the measurements. Intersys defined the MIB enhancement (SNMP Version 2.0c) in accordance with the operations team.

Initial situation

The system had to be developed from scratch under huge time pressure. The Intersys components are individual developments according to the customer's requirements, in accordance with further involved suppliers (e.g. supplier of the RADIUS server in place (standard product)).

Requirements

- Development of components and connection to the given existing interfaces.
- Takeover of customer data of existing customers
- High-performance authorisation and accounting processes, including session and static IP management.
- Connection of components to the provider's existing fault management system.
- Performance monitoring of the database and connection to the provider's central performance monitoring tool.
- The complete project handling has to be assured, from specification to design, implementation and tests up to the complete setting into operation.
- The database had to be constructed within the provider's existing high-performance and high-availability environment.
- After setting into operation, Intersys had to offer a 7x24 emergency service in the form of a highly skilled support team (365 days).
- Extensions are to be done according to the customer's requirements in defined release cycles.

Implementation

The entire software of the application (interface components) has been developed by Intersys in Java and is running on the Solaris operation system (UNIX). The database is implemented on a high-availability infrastructure in an ORACLE DB management system running on an Oracle real application cluster (RAC). The database logic is implemented in PL/SQL. During the implementation, Intersys developed a test framework that is used for regression tests for further releases.

Result and conclusion

- With the implementation of Intersys, the subscriber database has become a central DB that is now used by further applications too (e.g. checking of session data during the activation of new customer end-devices).



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