

Security Enables New Services

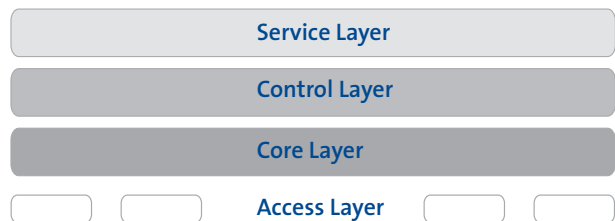
SECURE WEB SERVICES AS UNIVERSAL PLATFORM AT O₂ Germany

XML Web Services provide a powerful and flexible basis for telecommunications operators to create value-added services for their customers and to optimize their business processes. One of O₂ Germany's objectives is to fully realize the cost savings and potential increase of revenues enabled by the use of this technology. However, the introduction of Web Services at O₂ was confronted with the very high security requirements typical for the telecoms industry. Through the deployment of the Xtradyne Web Services security gateway, all security requirements could be met, so O₂'s Web Services could go into operation without any code modification or any compromise on O₂'s strict firewall security.

Today's (and even more tomorrow's) telecommunication networks are universal platforms for large numbers of diverse services. Examples for new services in mobile telecommunication networks are MMS notifications and applications that enable customers to configure and adapt their service environments directly themselves.

Opening networks to customers and the integration of services enables telecom operators to exploit the full potential of the existing infrastructure and to offer services that are available over various channels, while the boundaries between traditional services based on switched lines and value-added packet-based services are slowly disappearing.

The innovative market for telecommunication service offers, particularly in mobile telecoms, requires extremely high flexibility and very short time-to-market in order to be first to address new customer groups with new products. Thus, telecoms operators must be capable of combining and integrating new applications and service building blocks with existing services. Operators must also be ready for the use of external components and reselling services offered by 3rd parties. The development and introduction of flexible, service-oriented architectures (SOA) form the basis for building a uniform service layer from the existing heterogeneous platforms and technologies in the network. Hence, SOAs are of strategic importance for the agility of the enterprise.



Service layer and Network layers

XML Web Services

XML Web Services enable a service oriented view on the existing network and application resources; they are the pillars of any SOA. Web Services technology enables the rapid and easy integration of existing platforms and applications, a strategic advantage in dynamic markets, such as mobile telecommunications.

Thus, innovators in mobile telecoms such as O₂ have already begun to develop Web Services. Web Services are based on the exchange of XML formatted documents between applications as SOAP messages. In the general case, these messages pass internal and external network boundaries, i.e., existing firewall installations.

At O₂, all such interaction is subject to the strict security rules that are typical for the telecoms industry. The company's security policy rules out the uncontrolled deployment of Web Services:

"SOAP messages cannot be controlled by a traditional firewall. From the security point of view, the use of SOAP across various network segments is not acceptable. By principle, we do not permit uncontrolled SOAP traffic over network boundaries." say Frank Zabawa (Corporate Security) and Dr. Jörg Schreck (Service Management - Security) of O₂.

Security for Web Services

In order to leverage the advantages of Web Services technology, O2 was quick to realize that suitable security mechanisms are required to ensure that Web Services can be deployed and yet the company's network security is not compromised in any way and each security rule is still be followed strictly. Beside the authentication of messages, particularly the detailed authorization and the protection against malicious content of SOAP messages are necessary, combined with very high requirements regarding performance and high-availability.



Security in the Service Layer

Since these requirements are not fulfilled by traditional firewalls and Web security appliances, O2 began a thorough selection process for dedicated SOAP firewall products and finally decided to deploy the Web Services Domain Boundary Controller (WS-DBC) by Xtradyne, PrismTech's experts group for middleware security gateways. The WS-DBC is a security gateway that inspects SOAP messages and their XML content thoroughly before letting messages pass into the protected network. Moreover, the WS-DBC enables unified security management across different platforms.

"The WS-DBC enables us to protect our network and our applications directly and without any modification of the applications. Now, their use is no longer constrained to the backend network." says Dr. Mathijs Dijkhuizen, the project leader at O2. "Our Web Services projects could go into operation without any delay for security reasons."

O2 uses extensively the WS-DBC's advanced features for content filtering. Using XPath filtering and XML schema validation, O2 checks data types and contents of all incoming and outgoing messages. That way all attempts of intrusion and malicious contents are repulsed at the network boundary.

O2 runs the Xtradyne product in a high-availability scenario which is typical for telecommunications. *"The WS-DBC offers exactly the load-balancing capabilities and the multi-processor support that we need."* says Dirk Schoob, Master Specialist IN in O2's Network Competence Center. *"The purely software based architecture provides us with utmost flexibility regarding the deployment."*



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