Design and Development of Security as a Service for an SOA Platform

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Abstract:

Security is an important aspect in all information technology solutions. Today, web services are used to provide web centric access to information and information management. Hence, it is essential to explore security in web services and related platforms. Many standards such as WS-Security have been created to address the security concerns in this domain. Technologies such as JAAS provide frameworks to use implementations of such web security standards. However, legacy web service applications developed before such standards implement their own security implementations. The MSRSAS SOA platform is one such platform implementing its own password based access control scheme. This Project identifies and provides security services that are missing in this platform.

In this project, security services for a SOA platform is developed. After conducting a literature review of SOA Security with existing SOA platform, two security issues are identified that is File integrity and Confidentiality. While the existing SOA platform does provide a file storage service, it does not guarantee that files stored are the same files that are returned when requested. File Integrity checks are often performed using checksums. In this Project, a file integrity server is developed to guarantee the integrity of files stored on this server. This service is developed using JAX-WS with SOAP based message exchanges. It uses MD5 hashing algorithm to verify integrity of files. This server acts as a proxy to the file server and can be used when file integrity is required for files. Confidentiality in message exchanges is provided leveraging Java based security guarantees for message exchanges.

After implementing file integrity server, the server is validated and integrated with the existing SOA platform. The server is able to detect the differences to files and report when there is a difference noticed. HTTPS enabled connections ensure confidentiality of communication. There is however a noticeable delay in server access.
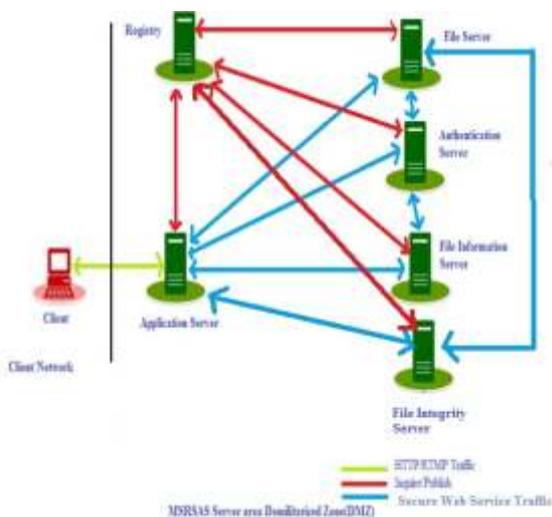
Architecture of SOA

JUDDI Registry