

## ZAPTHINK ZAPNOTE

### QUADRASIS *A VIRTUAL SECURITY SERVICE FOR REAL HETEROGENEOUS ENVIRONMENTS*

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#### Abstract

Quadrasis is using the power of Web Services to build a broad enterprise security architecture framework. They approach the enterprise IT environment from the top down, addressing the security requirements for the full breadth of heterogeneous systems in a typical enterprise. Their flagship product, EASI Security Unifier, provides a "virtual security service" for the enterprise, abstracting the individual security requirements of each system using the open standards of Web Services, and in particular, the Security Assertion Markup Language (SAML).

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## Using SAML to Provide Enterprise Application Security Integration

The typical enterprise IT environment is a minefield when it comes to security. Enterprises often have many different software applications running on several different, geographically dispersed systems in a complex, multi-domain environment. For these companies, Web Services offer a standards-based, loosely coupled alternative to the expensive, difficult, and brittle integration techniques that came before. As a result, Web Services technologies provide a promising foundation for a new generation of enterprise-class application security products.

Quadrasis is one vendor who is addressing the enterprise end of the application security market. Quadrasis is a business unit of the Software Solutions Division of Hitachi Computer Products (America), Inc., which in turn is a subsidiary of Hitachi America, Ltd. Quadrasis provides software and professional services to enterprise customers in the pharmaceutical, financial services, manufacturing and telecommunications industries.

Quadrasis is approaching the problem of enterprise application security by providing an abstracted security tier they call the *Enterprise Application Security Integration* (EASI) architecture. EASI facilitates the exchange of secure Web Services messages with all parts of an enterprise's architecture, including:

- The *perimeter tier* – the area outside a corporation's firewall
- The *middle tier* – the area within the firewall that contains the majority of the enterprise's applications
- The *legacy tier* – where the mainframes, databases, and other legacy applications reside.

Quadrasis bases its approach to enterprise application security on the Security Assertion Markup Language (SAML) (see sidebar). SAML describes the information necessary to provide security to each system in each tier, and a standard description of how to pass that information. In addition to enabling end-to-end secure interoperability within an enterprise, SAML enables secure interoperability between enterprises.

One of the most important requirements for enterprise security is the ability to log in once to a particular system and then to be able to complete several transactions on different systems within the enterprise without logging in again. This process is called *Single Sign-on* (SSO). SAML enables SSO by providing a software token that acts as proof of authentication. A SAML token is essentially an authentication assertion that all SAML-enabled systems can understand.

SAML (the Security Assertion Markup Language) is a standard for exchanging authentication and authorization information between systems or domains, and is currently a version 1.0 specification of the Organization for the Advancement of Structured Information Standards (OASIS) standards body.

The SAML specification provides three types of assertions:

- Authentication assertions (facts about users and their identities)
- Attribute assertions (information about the user such as credit limits)
- Authorization decision assertions (whether the user is authorized for a particular activity, such as purchasing)

SAML concerns itself only with authentication and authorization. Its main goal is to provide a standard procedure for enabling single sign-on across organizational boundaries using Web Services. The SAML protocol describes how systems request and retrieve assertions. The SAML protocol then defines the request and response messages and the simple choreography for using them.

By leveraging the power and flexibility of SAML, the Quadrasis EASI architecture provides the following capabilities across all the tiers within an enterprise IT environment:

- Identifies all participants in a transaction based upon whatever authentication mechanism each participant used to log in.
- Establishes a user context at each tier. A user context is a combination of the user's identity and security-relevant attributes like permissions.
- Applies a range of authorization policies to these user contexts.
- Passes user context from one tier or domain to another, establishing a consistent user context for the entire transaction. This capability eliminates the need to re-authenticate users when a request crosses tiers or domains, thus offering SSO capability.
- Performs enterprise-level audits of each step in a transaction, including the identities of the participants.

## Unifying Enterprise Application Security Integration

Quadrasis' core security product is the *EASI Security Unifier*. The EASI Security Unifier consists of a set of adapters and tools and a framework that links together multiple security technologies into a single, abstracted security layer. The EASI Security Unifier creates a common security infrastructure that improves security and reduces cost when compared to less coordinated security solutions. This product is similar to EAI software in that it provides a routing and transformation hub as well as a set of connectors that allow heterogeneous security systems such as authentication systems, single sign-on software and encryption products to work together.

The Quadrasis has based the EASI Security Unifier on SAML. SAML tokens convey the relevant security information from one domain or tier to another via Web Services. EASI then provides the tools to establish the user's security context within the current tier. The enterprise can then use the security context with existing authorization engines. EASI also supports security auditing across domains to provide consolidated records of transactions.

Quadrasis recently announced an add-on product to their EASI Security Unifier, called the *EASI Mapper for Single Sign-On*. This new software module allows organizations to use other vendors' SSO capabilities for controlling access to EASI-enabled applications, as well as integrating with existing security services to provide access control to legacy applications that may not have built-in, existing support for SSO.

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## The ZapThink Take

Hitachi is a large, multifaceted company that offers everything from power nailers to professional services (under its Experio division). This breadth gives them the resources to build a Web Services security division, but there is also the risk of internal conflict and confusion. However, it looks like Hitachi is aware of the potential challenges, and as a result has kept Quadrasis separate – with a different name and independent management team—in order to provide it the leeway to drive its strategy with the agility of a startup, all the while leveraging the resources of a large, multinational conglomerate.

Quadrasis' reliance on the SAML specification also presents them with a challenge, because SAML is only now at version 1.0. It is not clear how SAML will work with other security standards initiatives, like the umbrella WS-Security specification that Microsoft, IBM, and VeriSign assembled. While SAML has achieved reasonably broad acceptance within the SSO segment of the market, some other vendors consider it to be too complex. ZapThink believes that SAML will become widely implemented, but probably in a transformed version that integrates with other Web Services security standards.

While Quadrasis will need to adjust their products as the SAML specification changes, we feel that Quadrasis is up to the challenge, due to their focus on the needs of enterprise IT departments. They are taking an architectural approach to the issue of enterprise security that will offer their customers solid value regardless of the details of any one specification. Therefore, while they describe themselves as offering security for Web Services, what Quadrasis is actually doing is leveraging Web Services to provide security for enterprises.

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## Related Research

- *XML and Web Services Security* Report (ZTR-WS104)
- *Web Services Technologies and Trends* Report (ZT-WEBSRV)
- *Phaos Technology* ZapNote (ZTZN-0603)
- *RSA Security* ZapNote (ZTZN-0610)
- *Vordel* ZapNote (ZTZN-0238)
- *Westbridge Technology* ZapNote (ZTZN-0612)

## About ZapThink, LLC

ZapThink is an IT market intelligence firm that provides trusted advice and critical insight into XML, Web Services, and Service Orientation. We provide our target audience of IT vendors, service providers and end-users a clear roadmap for standards-based, loosely coupled distributed computing – a vision of IT meeting the needs of the agile business.

ZapThink's role is to help companies understand these IT products and services in the context of SOAs and the vision of Service Orientation. ZapThink provides market intelligence to IT vendors who offer XML and Web Services-based products to help them understand their competitive landscape and how to communicate their value proposition to their customers within the context of Service Orientation, and lay out their product roadmaps for the coming wave of Service Orientation. ZapThink also provides implementation intelligence to IT users who are seeking guidance and clarity into how to assemble the available products and services into a coherent roadmap to Service Orientation. Finally, ZapThink provides demand intelligence to IT vendors and service providers who must understand the needs of IT users as they follow the roadmap to Service Orientation.

ZapThink's senior analysts are widely regarded as the "go to analysts" for XML, Web Services, and SOAs by vendors, end-users, and the press. They are in great demand as speakers, and have presented at conferences and industry events around the world. They are among the most quoted industry analysts in the IT industry.

ZapThink was founded in October 2000 and is headquartered in Waltham, Massachusetts. Its customers include Global 1000 firms, public sector organizations around the world, and many emerging businesses. ZapThink Analysts have years of experience in IT as well as research and analysis. Its analysts have previously been with such firms as IDC and ChannelWave, and have sat on the working group committees for standards bodies such as RosettaNet, UDDI, CPExchange, ebXML, EIDX, and CompTIA.

Call, email, or visit the ZapThink Web site to learn more about how ZapThink can help you to better understand how XML and Web Services impact your business or organization.

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