Topic

WS-Notification

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WS-Notitification

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* Framework for subscribe/notify
* Messages encoded in XML
* Features to support scalability
* Relies on WS-Security
* Subscriptions can be grouped by type
* A collection of standards documents

Summary

WS-Notification is a set of OASIS standards defining a framework for modeling and signaling event-driven systems in a web services architecture.

Discussion

A common architecture for distributed applications includes a requirement for various components to notify one another when certain events have occurred.

WS-Notification describes a general framework for supporting such applications. It defines the various component roles and signaling semantics. It does NOT define payload types and formats. Instead, payload implementations are considered to be domain-specific and left to the designer.

WS-Notification is designed to work well with resource-constrained devices, making it a potential candidate for implementation on mobile communication and embedded systems. Further, the architecture is transport-independent. WS-Notification uses the fault definitions defined in WS-BaseFaults.

In WS-Notification a *notification* representing an event or situation is created by a *NotificationProducer* and received by a *NotificationConsumer*. *Subscription Managers* can be present to simplify the implementation of complex distributions of endpoints.

Notification messages are expressed in XML, typically using SOAP.

The framework supports a polling mode for environments in which real time push signaling is problematic.

WS-Notification does not provide a security framework. Instead, it relies on the recommendations of WS-Security. Like most web services, transport level security is appropriate (e.g. TLS, SSL). Applications are entrusted to implement security using logic appropriate for their business rules.

WS-BrokeredNotification defines a framework in which intermediary elements can handle notifications. This is particularly appropriate for large scale or interdomain applications where such management becomes necessary to manage the size of the deployment.

WS-Topics defines a framework in which related notification types (*topics*) can be grouped into *topic trees* and further into topic forests (*topic namespaces*). Such grouping allows endpoints to subscribe to particular topic areas that are of interest, and reduces the number of messages required.

Strategy Considerations

WS-Notification appears to be a well defined framework for subscribe-notify architectures. It is content neutral and should support a variety of applications. Like other web service standards based on XML, messages are inefficient, though this may not be a problem for modern communication systems and computing platforms. Although WS-Notify is transport independent, it is aimed primarily at http/https transport. Implementers should be careful to understand the implications of using this transport-over-transport model.

For Further Information

1. OASIS Standard, Web Services Base Notification 1.3 (WS-BaseNotification), S. Graham, D. Hull, B. Murray, October 2006

2. OASIS Standard, Web Services Brokered Notification 1.3, D. Chappel, L. Liu, October 2006

3. OASIS Standard, Web Services Topics 1.3, W. Vambenepe, S. Graham, P. Niblett, October 2006

4. OASIS Standard, Web Services Base Faults 1.2 (WS-BaseFaults), L. Liu, S. Meder, April 2006