

SWIM Interactive Developer Workshop 2016

*Introduction to SWIM
and Solace*

By: Alexander R. Murray
Noblis, SWIM Data Lead

Date: 06/21/2016



Federal Aviation
Administration

SWIM
Interactive Developer
Workshop 2016



Workshop SWIM Environment

A Mini SWIM System has been stood up to support the Developers Workshop.

The Mini SWIM System consist of several virtual Solace Appliance to provide Subscription messaging services to multiple SWIM Data Feeds including:

- FDPS 1.3 (*week old*)
- TFMS R13 (*five minute delay*)
- STDDS (*NCT, PHL, Y90*)
- ITWS

Additionally, a proxy has been deployed to provide Web Service access to the FNS NOTAM Distribution Service.

- Due to a limitation of the frequency that the FNS bulk query service can be accessed, a local cache has been set up to enable this capability for this workshop.

Solace Overview

What is Solace

- Solace is a hardware based messaging middleware device that has been adopted by the SWIM program to support fan-out distribution of SWIM Subscription Services to the external SWIM community.

Benefits of Solace

- Provides durable endpoints that retain message during session interruption
- Improves bandwidth savings through compression
- Provides support for additional programming languages

Supported Protocols

- Solace Messaging Format (SMF)
All wire level messaging is provided through a protocol designed by Solace called SMF. Because of this, Solace can support Java, .NET, and C languages.
- Java Messaging Service (JMS)
Solace has created their own implementation of JMS and supports the JMS 1.1 specification.

Getting Connected

Each participant has been assigned:

- A username and password
- A server for Solace access
- Solace Queues for each Subscription Data Service

A dedicated LAN has been setup for use during the workshop

- The LAN does not have internet access
- A separate wireless network is available for internet access

Once connected to the LAN you can access the SWIM services using your assigned server IP and username/password credentials.

Quick Start Guide for Solace

Using an Existing JMS client

- Solace provides a JMS 1.1 compliant API that enables seamless transition from other JMS clients such as ActiveMQ or WebLogic.
- To use an existing JMS client with Solace you will need to:
 - Add the Solace JMS libraries to the clients lib folder
 - Change the following JMS properties accordingly:
 - Context.INITIAL_CONTEXT_FACTORY = com.solacesystems.jndi.SolJNDIInitialContextFactory
 - Context.PROVIDER_URL = sfm://serverip
 - Context.SECURITY_PRINCIPAL = *username@vpn*
 - Context.SECURITY_CREDENTIALS = *password*
- Next just set the endpoint to the applicable Queue
 - *USERNAME.TFMS*
 - *USERNAME.STDDS*
 - *USERNAME.FDPS*
 - *USERNAME.ITWS*

Creating a New Solace Client

- If you would like to create a client you can use either of two available APIs
 - SMF (C, .NET, Java)API or
 - JMS (Java) API.
- Both the APIs are well documented and available online at dev.solacesystems.com