

SIF AU Technical Workshop November 2018

Sif3Framework .NET Training Exercises (AU).docx

Location
Melbourne: Room 1 up on level 8 at AITSL

Some sessions may be recorded for online use. Participants are unlikely to be videoed, but if you have any concerns about this please contact the presenter.

Pre-Requisites

The table below lists some pre-requisites for the training course. These are either installed software on your laptop or it can mean some reading that is recommended to be done before the course. It is split between Java and .Net due to different pre-installed software for each development environment.

It is important to note that the training course is limited to the SIF3 Framework. It is not a training course in administering a web-server (i.e. Tomcat, JBoss, IIS etc), neither is it a training course that will teach you Java, C# or how to maintain a database. It is expected that you are proficient in these technologies and programming languages prior to attending the SIF3 Framework Training course.

Java	.NET
<p>Window & Mac Users</p> <p>Windows and Mac Users have two options to get their development environment ready for the training course:</p> <p>Option 1 (recommended for Windows and Mac OS users)</p> <p>We will provide a pre-installed development environment on the day. It will be distributed on a USB stick and participants simply copy the pre-installed setup to their machine. This is the easiest option.</p> <ul style="list-style-type: none">• Mac OS Users: Please ensure that you have Java 8 installed (Visit this site for a free OpenJDK - https://www.azul.com/downloads/zulu/)• Windows Users: No need to install anything. All is provided including a self-contained OpenJDK 8. <p>Option 2 (manual)</p> <p>Participants can install the development environment themselves ahead of the training. In this case it is important that the instructions listed after the agenda are followed to ensure a consistent training experience.</p> <p>Linux Users</p> <p>If you are a linux user you must setup your development environment manually according to the instructions listed after the agenda. This ensures a consistent training experience.</p>	<ul style="list-style-type: none">• .NET version 4.6.1+ (requirement for using Web API)• Visual Studio 2017 (or Express version)• SIF 3.0 Framework (https://github.com/insip/sif3-framework-dotnet) <p>Although not explicitly required (included in either Visual Studio or the framework), the framework relies on the following technologies:</p> <ul style="list-style-type: none">• Web API• SQLite• IIS (express)• AutoMapper

Training Course Agenda

Thursday Nov 15, 2018	Sessions
8:30am - 9:00am	"Registration" & Welcome

9:00am - 9:30am	<p>SIF Intro - Joerg Huber</p> <ul style="list-style-type: none"> • What is SIF? • What Problems are Solved? • What is an Adapter, a Broker, a Zone and what is their relationship? • SIF Environment and Connections <p>Presentation - "00 - SIF Intro"</p>
9:30am - 10:00am	<p>SIF 3.x Concepts - Joerg Huber</p> <ul style="list-style-type: none"> • REST • DIRECT vs. BROKERED • Immediate vs. Delayed • Events • Specification <p>See also Common Terms and SIF 3.0.x Concepts for some more information.</p> <p>Presentation - "04 - SIF3 Concepts.pptx"</p>
9:30am - 10:00am	<p>SIF3 Framework Overview (Java & .Net)- Joerg Huber & Raf Rafiq</p> <ul style="list-style-type: none"> • Overview • What does it cover. • What is missing. <p>Presentation - "01 - SIF3 Framework Overview.pptx"</p>
10:30am - 10:45am	<p>Short Coffee Break</p>
10:45am - 11:15am	<p>SIF3 Framework Install (Java & .Net)- Joerg Huber & Raf Rafiq</p> <ul style="list-style-type: none"> • Install • Verify <p>Exercise 1 - "SIF3 Training Exercises (2 Day) - Java.docx" & "Sif3Framework .NET Training Exercises (AU).docx"</p>
11:45am - 12:15am	<p>First Consumer (incl. Exercise) - Separate Sessions and Split Groups</p> <ul style="list-style-type: none"> • What is an Object Consumer • What can the Frameworks do • How to develop a basic Object Consumer <p><u>Option 1 - Standard</u></p> <ul style="list-style-type: none"> • Datamodel: StudentPersonal • How to develop a basic consumer (Get Methods) with local Student Provider <p><u>Option 2 - Advanced</u></p> <ul style="list-style-type: none"> • Datamodel: FQReporting • Develop submit FQ and retrieve FQ potentially using HITS <p>See also SIF Consumers.</p> <p>Presentation - "03 - SIF3 First Consumer.pptx"</p> <p>Exercise 2 - "SIF3 Training Exercises (2 Day) - Java.docx" & "Sif3Framework .NET Training Exercises (AU).docx"</p>
12:15pm - 1:00pm	<p>Lunch Break</p>
1:00pm - 1:45pm	<p>First Look at an Object Provider - Joerg Huber</p> <ul style="list-style-type: none"> • What is an Object Provider • What is it responsible for (events, RefId allocation, Environments if DIRECT) • What can the Frameworks do • How to develop a basic Object Provider <p>See also SIF Providers.</p> <p>Presentation - "05 - SIF3 Providers.pptx"</p>

1:45pm - 2:30pm	<p>Exercise: Write a Provider - SchoolInfo</p> <p>Presentation - "06 - SIF3 Provider Exercise.pptx"</p> <p>Exercise 3 - "SIF3 Training Exercises (2 Day) - Java.docx" & "Sif3Framework .NET Training Exercises (AU).docx"</p>
2:30pm - 3:00pm	<p>Catch up on outstanding Exercises...</p> <p>Or</p> <p>Optional Exercise 4: ("SIF3 Training Exercises (2 Day) - Java.docx" & "Sif3Framework .NET Training Exercises (AU).docx")</p> <p>Add some more functionality to your Consumer (Multi-Object Operations)</p>
3:00pm - 3:15pm	Short Coffee Break
3:15pm - 3:45pm	<p>SIF 3.x Environment, Zone and Context- Joerg Huber</p> <ul style="list-style-type: none"> • What do these terms mean? • How do they relate? • Components of an Environment <p>Presentation - "07 - SIF3 Env Zone Ctx.pptx"</p>
3:45pm – 4:15pm	<p>Exercise: Environment Management in SIF3 Framework- Separate Sessions and Split Rooms</p> <p>Presentation - "08 - SIF3 EnvMgt Exercise.pptx"</p> <p>Exercise 4 - "SIF3 Training Exercises (2 Day) - Java.docx" & "Sif3Framework .NET Training Exercises (AU).docx"</p>
4:15pm - 4:30pm	Wrap up Day 1

Friday Nov 16, 2018	Sessions
9:00am - 9:30am	<p>REST URLs structures used in SIF 3.x - Joerg Huber</p> <ul style="list-style-type: none"> • During testing it is useful to know the basics of a SIF3 REST URL. • Components • HTTP Headers or SIF eXpress? <p>Presentation: "08 - SIF3 REST URL Structure .pptx"</p>
9:30am - 10:30am	<p>Option 1: Multi-Object CRUD Operations & Exercise - Joerg Huber</p> <p>Presentation - "10 - SIF3 Multi-Object CRUD.pptx"</p> <p>Exercise 5 - "SIF3 Training Exercises (2 Day) - Java.docx" & "Sif3Framework .NET Training Exercises (AU).docx"</p> <p>Option 2: Functional Services - Joerg Huber (no exercise)</p> <p>Presentation - "25 - SIF3 Functional Services.pptx"</p>
10:30am - 10:45am	Short Coffee Break
10:45am - 12:00pm	<p>Service Paths & Query By Example (QBE) - Joerg Huber</p> <ul style="list-style-type: none"> • What is a Service Path • What is QBE • How to use them, when to use them? <p>Presentation: "12 - SIF3 Service Paths .pptx"</p> <p>Exercise 6 - "SIF3 Training Exercises (2 Day) - Java.docx" & "Sif3Framework .NET Training Exercises (AU).docx"</p>

12:00pm - 12:45pm	<p>Lunch Break</p>
12:45pm - 13:30pm	<p>SIF Events including Demo - Joerg Huber</p> <ul style="list-style-type: none"> • What is a SIF Event • Who is responsible to send an Event and when? • What events are there? • What is the infrastructure for Events? • Real Live Event Demo with a SIF3 Broker <p>Presentation: "SIF3 Events and Demo.pptx"</p>
13:30pm - 14:00pm	<p>HITS Overview</p> <ul style="list-style-type: none"> • What is HITS • What is a HITS environment • Guide on using HITS and the Dashboard.
14:00pm - 15:30pm	<p>Connect-A-Thon</p> <p>For the remainder of the afternoon participants try to connect their consumers and providers between each other. Knowledge gained throughout the last two days should enable them to connect and exchange data. Ideally we can pair up .Net with Java developers to show case that the programming language or the framework used does not matter since they implement the SIF3 Standard.</p> <p>This is also an opportunity to connect to HITS and play with your consumers to retrieve data from a HITS environment.</p> <p>Exercise 7: "SIF3 Training Exercises (2 Day) - Java.docx" & "Sif3Framework .NET Training Exercises (AU).docx"</p>
Optional Sessions	<ul style="list-style-type: none"> • Other options and functionality of the frameworks (11 - SIF3 Framework Options.pptx). • "Changes Since" (21 - SIF3 Changes Since.pptx) • Brokers (SIF3 Do I need a Broker.pptx) • NAPLAN Adapter vs. NAPLAN API

Manual Development Environment Setup for Java (required for Linux users, optional for Windows & Mac users)

Please note, while the SIF3 Framework is not tied into a given JDK, IDE, Database, Web- or Application Server there will be some constraints and boundaries we set for the training course to make it as efficient as possible. During the course and specifically for the exercises there will be very limited time to download, install and configure your development environment and therefore we expect certain software already be downloaded and installed. We also suggest a specific IDE, and Web-Server to ensure consistency during the exercises. So, please take note of the pre-requisites and their versions. If you wish to alter any of the suggested software you **must** ensure that you have installed and tested it before you start the training.

The SIF3 Framework (Java) Training will expect and use the following software and minimum versions thereof:

- **JDK 8 installed:** Version 1.8 installed on the developer's machine (i.e. visit this site for a free OpenJDK - <https://www.azul.com/downloads/zulu/>).
=> *It is assumed that the developer has a good working knowledge of Java and Java Web development.*
- **Eclipse IDE installed:** The training course will use the **Java EE Developer** version of Eclipse such as Luna. You can find it at this location: <http://eclipse.org/downloads/packages/eclipse-ide-java-ee-developers/mars2>. Please note you could use any other IDE but the training course is packaged as an Eclipse project, so using eclipse will make it much easier for you.
=> *It is assumed that the developer has a good working knowledge on how to use their IDE of choice.*
- **Tomcat 8 or 8.5 installed:** You can find it at this location: <https://tomcat.apache.org/download-80.cgi>. Please note you can use a newer version if you wish but the Training Project is pre-configured to use version 8 of Tomcat.
=> If you decide to use another web- or application server (i.e. JBoss 6+, Jetty 8+), please ensure that you have it downloaded, installed and configure to use it with your IDE. The selected web- or application server **must support the servlet 3.0** specification and the developer must have a good understanding on how to administer the selected web- or application server.
- **DB:** During the training we will use the SQLite DB that comes with the Training Projects. There is no need to install or bring along another DB.
- **DB Explorer installed:** For some of the exercise we need to look at the DB setup of the framework. Therefore a DB Explorer based on JDBC will be required. DBVisualiser and SquirrelL (<https://sourceforge.net/projects/squirrel-sql/files/1-stable/3.7.1-plainzip/>) are two examples. Because the training will use SQLite you need a SQLite JDBC driver. You can download one from [here](#). Ideally you configure your DB Explorer to use this driver but this could potentially be done during the training.
- **Ant:** Build scripts are provided as part of the training course. You may or may not use them. If you wish to use them you should have ant installed on your machine either as part of your IDE or external to your IDE.
- **REST Client:** For some exercises we will need a REST client to test the code. There are quite a few rest clients around. The Firefox browser can be used but the most convenient and simplest REST Client is Postman. We recommend to use this and download it from [here](#).
- **SIF3 Framework** (optional but recommended) from Github (<https://github.com/nsip/sif3-framework-java>) downloaded and imported to the developer's IDE. It will be used as reference material and potentially as demo for some concepts.
- **SIF3 Training Project downloaded** from Github (<https://github.com/nsip/sif3-training-java>): Exercises, sample code and solutions for training course. Download and import into your IDE. **It will be used as part of the training.**

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