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April 14-17, 2014
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DEVNATION

April 13-17, 2014
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Connecting Wildfly to ARM IoT Devices

Scott Stark

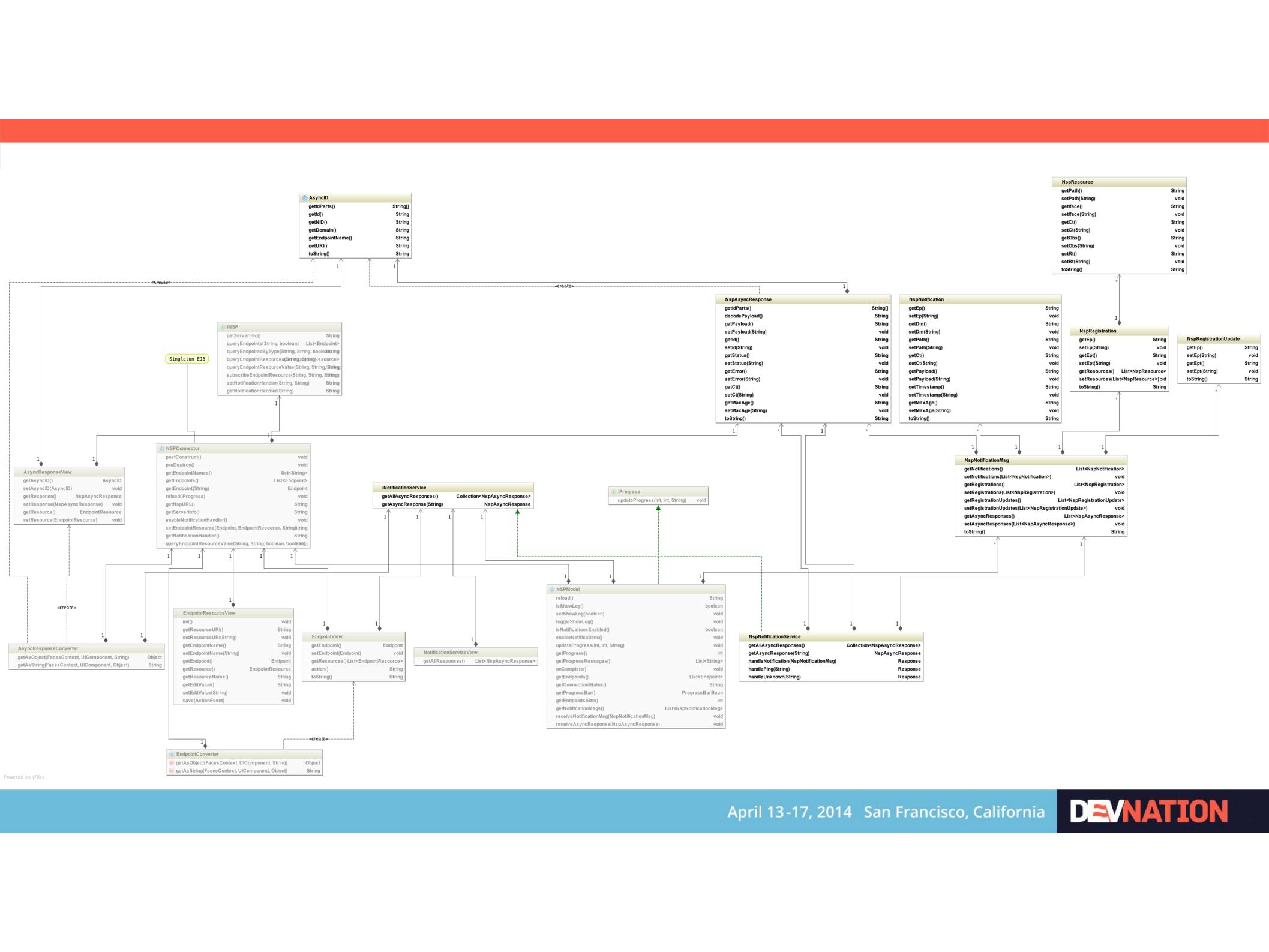
Technologies Used

- NanoService Enterprise v1.11.0
 - Bridges IoT technologies like COAP,
 - Exposes access to connected devices via REST API over HTTP
- Wildfly server 8.0.0.Final
 - Java EE 7
 - Singleton EJB
 - JSF 2.2 views and managed beans
 - CDI 1.1
 - JAX-RS 2.0

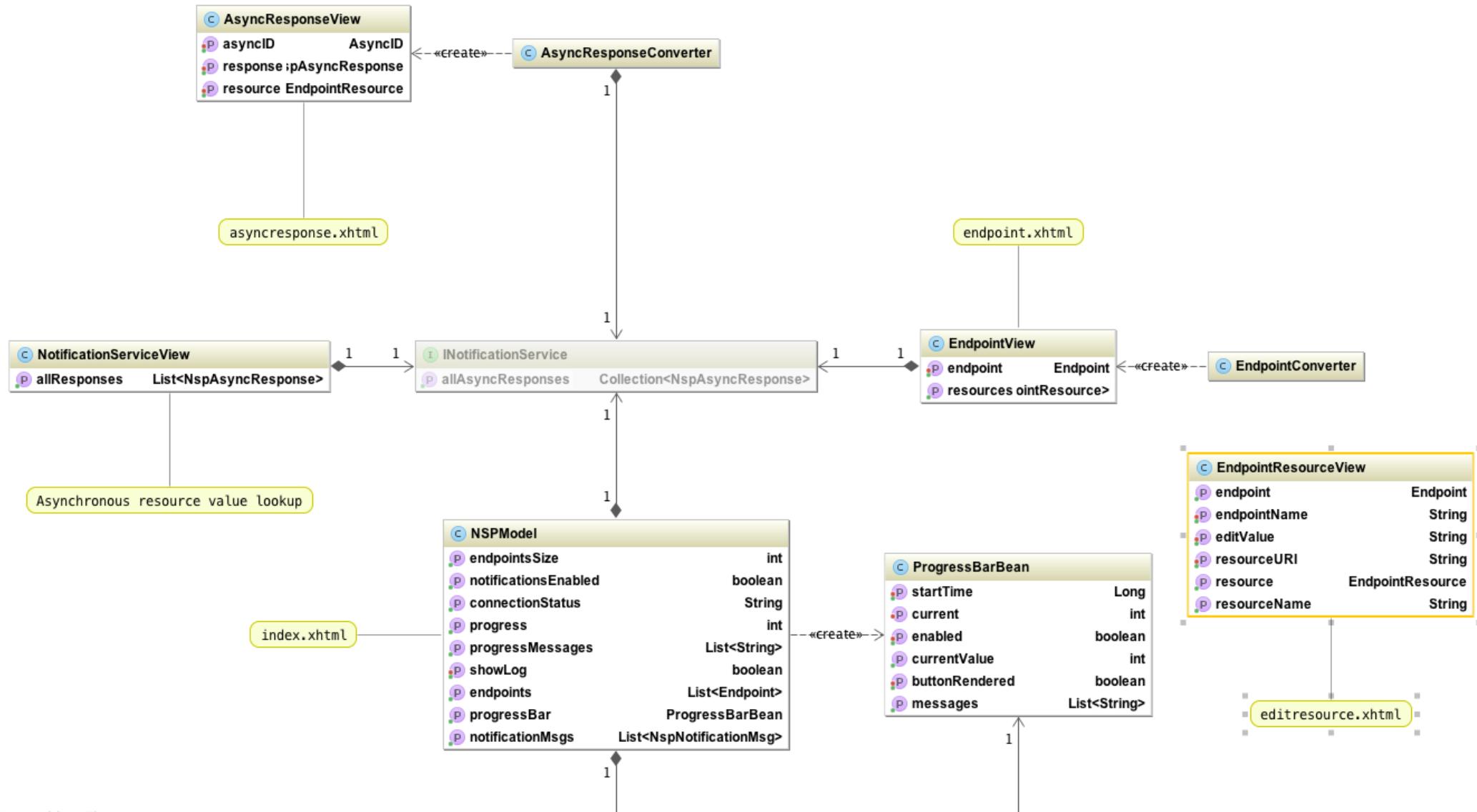
Class Diagrams for NSPView Application

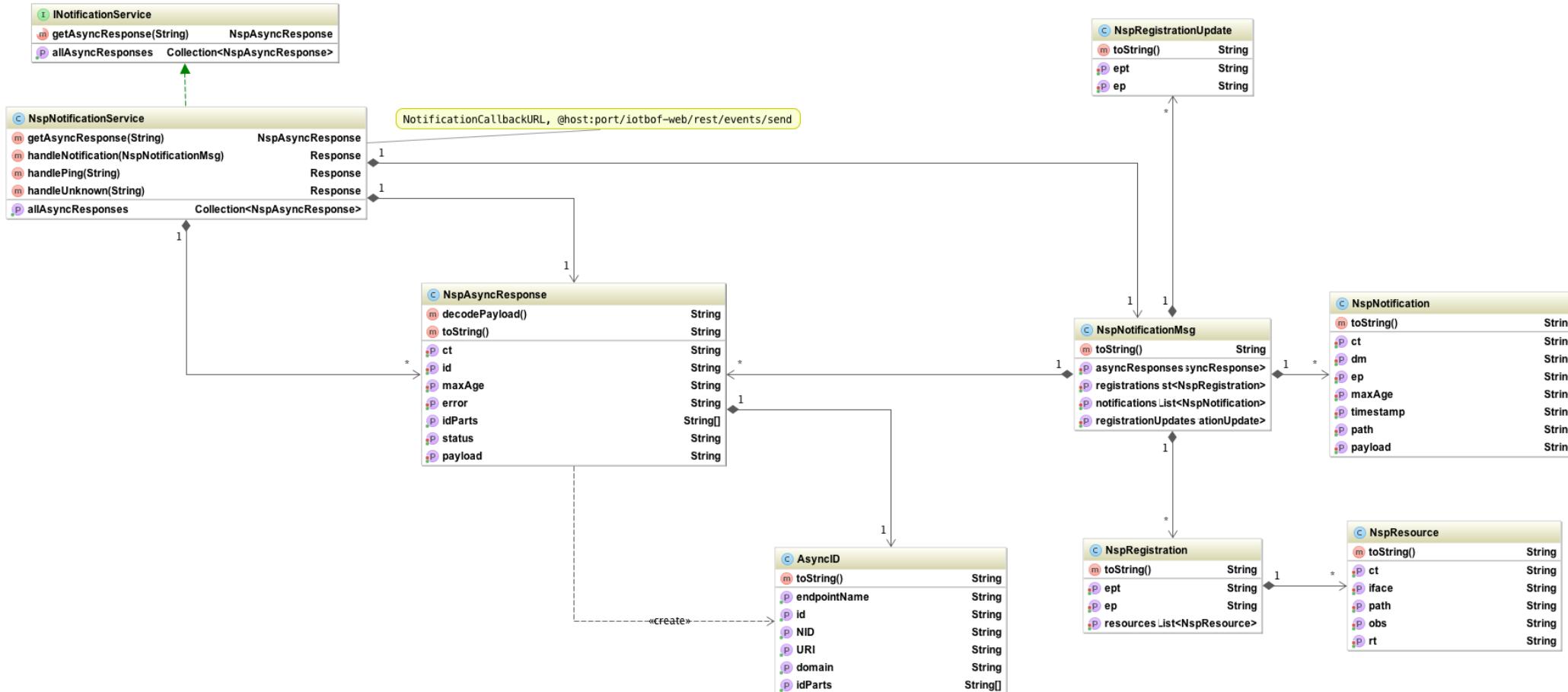
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Building the NSPView Application

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Requirements

- Java SE 7+ JDK
- git
 - May provide big zipball to download from server
- Wildfly 8.0.0.Final
- Maven 3.0+
- Laptop

Step by Step

See README.md

1. Install Wildfly

1. wget <http://download.jboss.org/wildfly/8.0.0.Final/wildfly-8.0.0.Final.zip>
2. unzip wildfly-8.0.0.Final.zip
3. Note the path to the wildfly-8.0.0.Final directory as it will be used a wildfly.home in configurations

2. git clone <https://github.com/starksm64/DevNation2014>

3. cd DevNation2014

4. set JAVA_HOME if needed

5. edit the pom.xml and

1. set the wildfly.home property to the directory path noted above
2. cd into the scripts directory and run mvn wildfly:start wildfly:execute-commands

6. mvn install

7. cd iotbof-ear

8. mvn wildfly:run

Web Application Pages

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NSPView Application

192.168.1.107:8081/iotbof-web/index.xhtml

NSP Endpoints

Device Endpoints		
Name	Type	Status
lwm2m-example-2		ACTIVE
lwm2m-example-1		ACTIVE
mbed-ethernet-1DE41	mbed_lpc1768_appboard	ACTIVE

In total there are 3 endpoints.

Refresh Endpoints **Enable Notifications** **Show Debug Log**

Messages

ProgressMessages

Show Hide

100%

Connected to: NanoServicePlatform v1.11.0-2 @ http://red-hat-summit.cloudapp.net:8080/

NSPView home page



Endpoint Detail: mbed-ethernet-1DE41

Resources

URI	Type	Value	Access	Observable
/4/0/1	ConnectivityMonitoring/AvailableNetworkBearer	{"async-response-id": "64533#mbed-ethernet-1DE41@domain/4/0/1"}	R	false
/3/0/3	Device/FirmwareVersion	{"async-response-id": "64535#mbed-ethernet-1DE41@domain/3/0/3"}	R	false
/303/0/5700	IPSOTemperatureSensor/SensorValue	30.50	R	true
/3/0/2	Device/SerialNumber	{"async-response-id": "64537#mbed-ethernet-1DE41@domain/3/0/2"}	R	false
/4/0/4	ConnectivityMonitoring/IPAddresses	{"async-response-id": "64539#mbed-ethernet-1DE41@domain/4/0/4"}	R	false
/gps/loc	Location/SensorValue	{"async-response-id": "64541#mbed-ethernet-1DE41@domain/gps/loc"}	R	true
/4/0/5	ConnectivityMonitoring/RouterIPAddresses	{"async-response-id": "64543#mbed-ethernet-1DE41@domain/4/0/5"}	R	false
/311/0/5851	IPSOLightControl/Dimmer	{"async-response-id": "64545#mbed-ethernet-1DE41@domain/311/0/5851"}	R,W	false
/306/0/5850	IPSOActuator/OnOff	{"async-response-id": "64547#mbed-ethernet-1DE41@domain/306/0/5850"}	R,W	false
/3/0/1	Device/ModelNumber	{"async-response-id": "64549#mbed-ethernet-1DE41@domain/3/0/1"}	R	false
/3/0/0	Device/Manufacturer	{"async-response-id": "64551#mbed-ethernet-1DE41@domain/3/0/0"}	R	false
/3/0/16	Device/SupportedBindingAndModes	{"async-response-id": "64553#mbed-ethernet-1DE41@domain/3/0/16"}	R	false
/4/0/0	ConnectivityMonitoring/NetworkBearer	{"async-response-id": "64555#mbed-ethernet-1DE41@domain/4/0/0"}	R	false

In total there are 13 resources.

Automatically Resolve Async Values:

EditResource Result Page

Endpoint

Resolved Async Response: 64009#mbed-ethernet-1DE41@domain/306/0/5850

DecodedValue: 0

RawValue: {"async-response-id":"64009#mbed-ethernet-1DE41@domain/306/0/5850"}

Resource `async-response` forced resolve page

**Seen when the `NspNotificationService` has not received a response
and “Automatically Resolve Async Values” was true.**

Endpoint**Async Response Detail: 64781#mbed-ethernet-1DE41@domain/4/0/5**

DecodedValue:	192.168.1.1
RawValue:	MTkyLjE2OC4xLjE=
Status:	200
MaxAge:	

Resource async-response resolved page

Seen when an async response has been received by the NspNotificationService

Endpoint

Failed to load resource value, {Domain=domain,nid=64541,EP=mbed-ethernet-1DE41,URI=/gps/loc}
Failed to lookup asyncID

Resource async-response error page

**Seen when the NspNotificationService has not received a response
and “Automatically Resolve Async Values” was false.**

[Endpoint](#)

Edit Resource: IPSOLightControl/Dimmer for: mbed-ethernet-1DE41

Resource Value: **Save**

Messages

**i** Saved value, msg=null Saved value, msg=null**EditResource Result Page**