

## Introduction

This application note describes the compatibility issues surrounding Java versions in the EpiSensor NGR-30-3 product.

In general, Java Virtual Machines are backwards compatible with Java source code compiled with an earlier version of Java but are not forwards compatible. So for example, a gateway running Java 8 will run software compiled for Java 7. However a gateway running Java 7 will not run software compiled for Java 8. Please note that for optimum performance a gateway running Java 8 should run software compiler for Java 8.

The newer NGR-30-3 hardware, required a new operating system image (V02.00) which included Java 8. The older Beaglebone Black hardware was programmed with an operating system image (V01.02 or earlier) which included Java 7.

## Upgrading the Gateway Software on the NGR-30-3

### NGR-30-3 Version Identification

The hardware and java versions of the NGR-30-3 can be identified on the Settings->System page of the EpiSensor Gateway web interface as shown below.

#### Status

<b>Platform</b>	ARMv7 Processor rev 2 (v7l)
<b>Java Version</b>	1.8.0_131
<b>OS Version</b>	V02.00
<b>Number of Processors</b>	1

This above example is taken from a newer version NGR-30-3. This is identified by the OS Version field. In addition this gateway is running Java 8 (1.8.0\_131)

## Status

<b>Platform</b>	ARMv7 Processor rev 2 (v7l)
<b>Java Version</b>	1.7.0_25
<b>OS Version</b>	V01.02
<b>Number of Processors</b>	1

This above example is taken from an older version NGR-30-3. This is identified by the OS Version field. In addition this gateway is running Java 7 (1.7.0\_25)

## Software Upgrade

V04.00.01.00 was the first formal release version compiled with Java 8. So from this release on, care must be taken to make sure that Java 8 software upgrade files are NOT deployed to older NGR-30-3 hardware running Java 8.

For each formal release version, a Java 7 upgrade file will also be produced for deployment on older NGR-30-3 hardware in the field. Currently the automated release mechanism does not indicate the Java version in the name of the upgrade file but this will be include for release version V04.01.00.00 (i.e. gateway-JAVA8-V04.01.00.00.tgz and gateway-JAVA7-V04.01.00.00.tgz will be prepared).

## Disaster Recovery

In the event, that a JAVA 8 software upgrade file it to deployed to an older NGR-30-3 running Java 7, the gateway software will not start-up. To recover from this scenario the following steps may be performed.

1. ssh in to the gateway in question (that is the one which is running java 7).
2. cd to /usr/local.
3. Delete the gateway directory there : rm -rf gateway
4. Copy over a java 7 compiled TGZ to /usr/local.
5. Extract the gateway SW : tar -xvzf gateway-JAVA7-V04.01.00.00.tgz
6. Now you should have a /usr/local/gateway directory again.
7. Power cycle the gateway which will result in the gateway software starting up again. (Alternatively run the scripts/startGateway script)