EPICS Collaboration Meeting June 2019

EPICS IOC EMBEDDED IN ANDROID APPLICATION

Moreno, Javier[1] (*jmoreno@gmv.com*); Melis, Stefano[1]; Sánchez, Carlos[2]; Talleda, Gorka[3]; Sanz, Diego[1]; Claver, Juan José[2]; Conde, Pablo[2]

[1]GMV; [2]Elytt Energy; [3]Neureus Technologies

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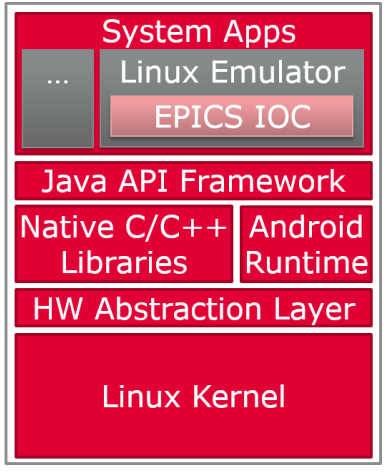
RUNNING AN IOC ON...

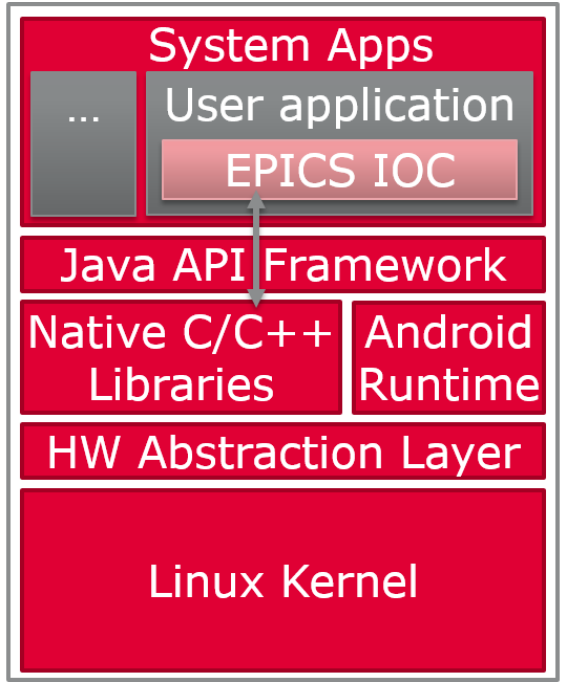
IOC target platforms:

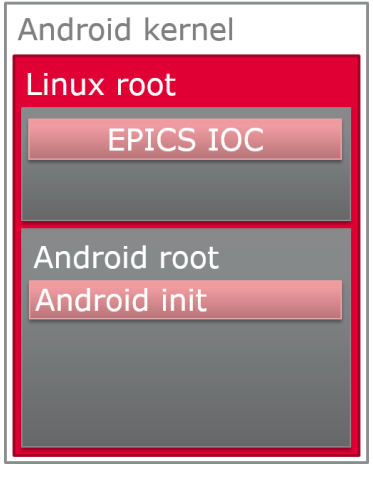
- GNU/Linux
- MacOS
- MS Windows
- RTEMS
- VxWorks
- Android?

How to run an IOC in Android:

- Third-party applications emulating a Linux environment
- Running on parallel both Linux and Android
- IOC embedded in Android Application







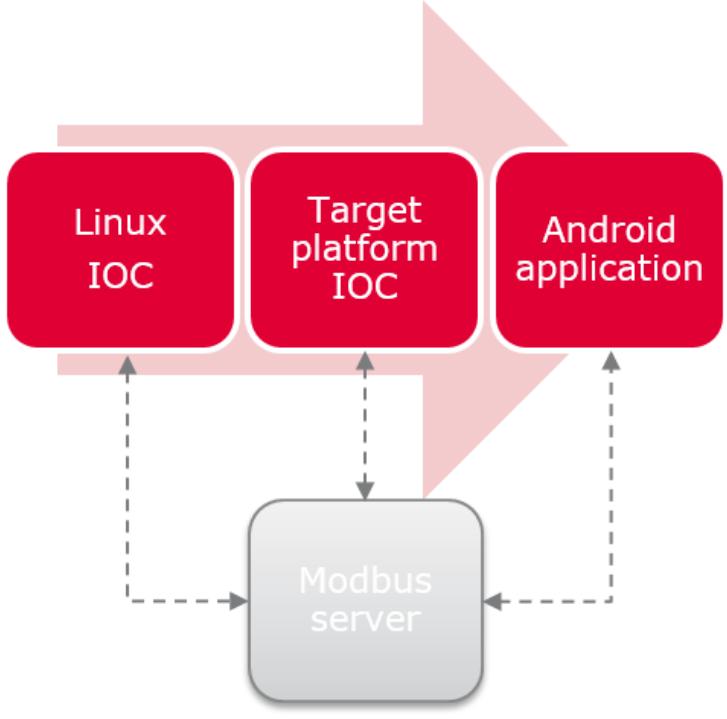
MODBUS IOC IN ANDROID

Environment

- Octa-Core board with ARM Cortex A-53 processor
- Android 5.1

Development steps:

- Set-up the IOC in Linux environment
- Test as it works as expected
- Compile it for target
- Develop the Android application
- Include the compiled IOC in the Android application
- Provide the Android application with IOC features:
  - Start/Stop
  - IOC Shell
  - IOC commands



PROTOTYPE

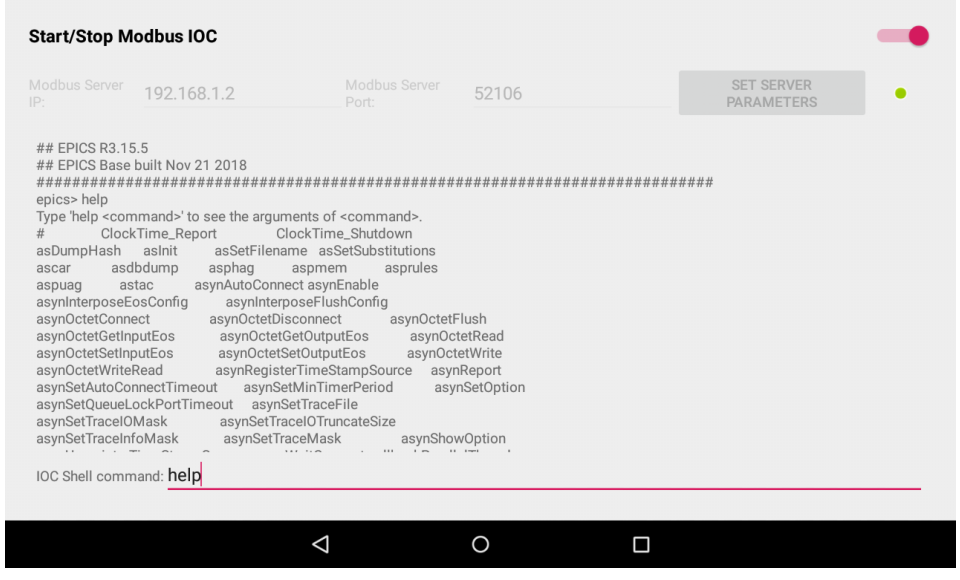
IOC MODBUS

Initial state

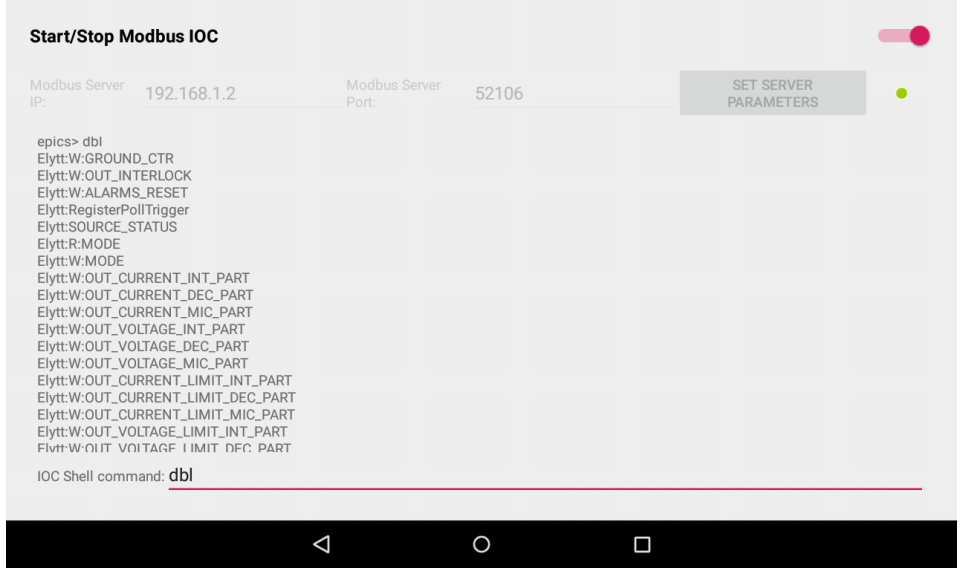
IOC running successfully

PROTOTYPE

IOC MODBUS



help command



dbl command

PROTOTYPE

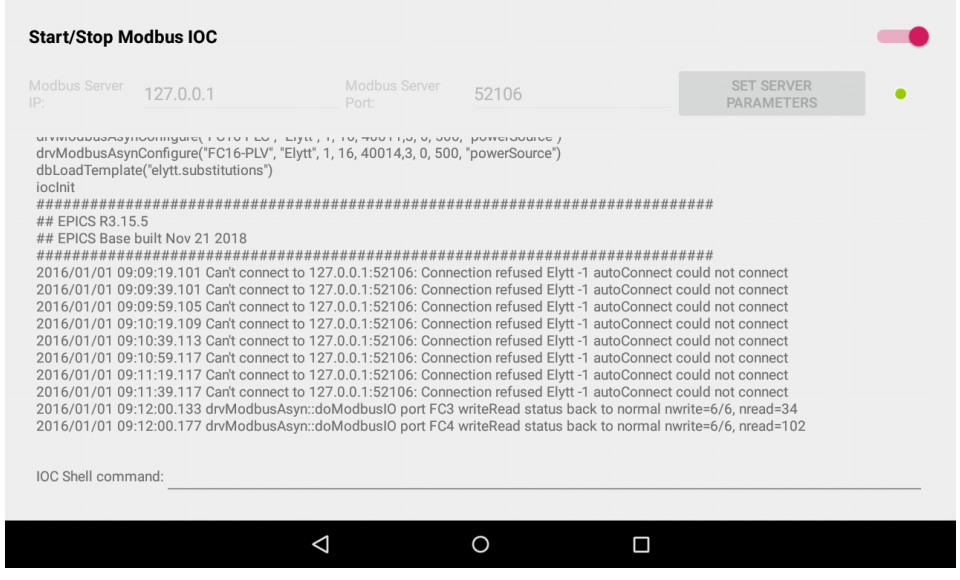
IOC MODBUS

No server

Connection refused

PROTOTYPE

IOC MODBUS



Connection back to normal status

IOC Stopped

USE-CASE

- Upgraded version supported by *Elytt Energy* & *Neureus Technologies*
- *EPOWERSYS*: high stability power converters
- 11 units of standard 300A, 20V for quadrupole magnets in the MEBT section of the Linac at European Spallation Source

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THANK YOU

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