



# Hands-on workshop: RAMSES

Oct 10, 2018

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# Agenda

- Where to get RAMSES?
- What is RAMSES?
- Why open source it?
- Demo
- Hands-on session

# Where to get RAMSES

- Get RAMSES from GitHub repository:
  - `git clone https://github.com/GENIVI/ramses <path>`
  - `cd <path>`
  - `git submodule update --init --recursive`
- Install docker (Ubuntu)
  - `apt install docker.io`
  - `groupadd docker #can fail if already exists`
  - `usermod -aG docker $USER`
  - `#re-login or restart`
  - `docker run hello-world #optional`
- Build RAMSES docker
  - `cd scripts/docker`
  - `./build-basic-container.sh`
- Start RAMSES docker
  - `./start-basic-for-x11.sh (on wayland-enabled systems: ./start-basic-for-wayland.sh)`
- Inside RAMSES docker
  - `./build-ramses.sh`
  - `./run-unittests.sh #optional`

# What is RAMSES?



# Why open source it?

- Make collaboration with suppliers easier
- Hopefully benefit from contributions
- Long term:
  - Maybe establish as a standard
  - -> Larger community, better support, lower costs
- BMW will continue maintenance for next years

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# Run simple example

- In the docker container:
  - `cd build/bin`
  - `./ramses-example-local-client-XXXX`
    - *On X11:* `./ramses-example-local-client-x11-egl-es-3-0`
    - *On Wayland:* `./ramses-example-local-client-wayland-shell-egl-es-3-0`
  - *Runs a renderer with a single triangle*
  - *Both Client and Renderer are in the same application*

# Run distributed example

- *Have to start three executables:*
  - *A renderer (does the OpenGL rendering)*
  - *A client application (provides the content)*
  - *A ramses daemon (connects client and renderer over network)*
- *Need three docker terminals to start each executable*
- *Open two new docker terminals:*
  - *Open a new terminal (tab)*
  - *docker ps*
  - *Copy the container ID*
  - *docker exec -it <container-id> bash*
  - *cd /home/ramses-build/build/bin*
  - *Repeat one more time in a new terminal*
- *Execute a renderer, daemon, and one example:*
  - *./ramses-renderer-<wayland-or-x11>*
  - *./ramses-daemon*
  - *./<example-executable> # e.g. ramses-example-basic-blending*



# Build workshop examples

- Open a new terminal (tab)
  - Not possible to modify the source tree within the container (read-only)!
- Checkout branch with examples
  - `cd <ramses-path>`
  - *If you want to code along:*
    - `git checkout tech_summit_examples_template`
  - *If you want to get the fully implemented code:*
    - `git checkout tech_summit_examples_implemented`
- Switch to docker tab and re-build RAMSES:
  - `<switch to docker tab>`
  - `./build-ramses.sh`
- *Example binaries will be in the /build/bin folder in RAMSES*
  - *They are enumerated, e.g. 1\_helloWorld, 2\_cube, 3\_...*

# Questions?

# Thank you!

Visit GENIVI at <http://www.genivi.org> or <http://projects.genivi.org>

Contact us: [help@genivi.org](mailto:help@genivi.org)

Contact the RAMSES team: [ramses@genivi.org](mailto:ramses@genivi.org)

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