

# RTEMS Boot - Quick Start-up

## Definitions

- BOLD: refers to files that need to be modified or generated by IOC developer

- *Italics: symbolic link*

## How-To setup the IOC boot directories

The instructions differ between production and development due to permission restrictions in production.

**Production:** lcls, lcls2, facet, testfac

1. Send email to Ken Brobeck requesting:
  - a. create controls infrastructure for a new IOC on facility production server, which includes the following:
    - i. Add boot directory: \$EPICS\_IOC<ioc> directory
    - ii. Add data directories: \$IOC\_DATA/<ioc>/<autosave,autosave-req,restore,iocInfo,archive> directories
2. Proceed to **Development Step #3**

**Development:** dev

1. Create the \$IOC\_DATA directory for your iocs as follows:
  - i. cd \$IOC\_DATA
  - ii. mkdir sioc-<area>-<subsystem-prefix><2-digit#>
  - iii. cd <sioc>
  - iv. mkdir archive autosave-req autosave iocInfo restore
2. Create the \$EPICS\_IOC<ioc> boot directory
  - a. mkdir sioc-<area>-<subsystem-prefix><2-digit#>
3. Setup ioc boot directory files
  - a. cd \$EPICS\_IOC<ioc>/ioc-<area>-<subsystem-prefix><2-digit#>
  - b. copy the ioc startup.cmd script from \$EPICS\_IOC<ioc>/template
    - i. cp ../template/startup.cmd.rtems startup.cmd
4. Edit **startup.cmd**
  - a. replace <ioc> with your ioc name
  - b. replace <facility> based on the FACILITY in Table 1 below.

Table 1

Facility	Replace <facility> with
Dev	g/lcls
LCLS	lcls
FACET-II	facet
Test-Fac	g/acctest

c. if your IOC Application uses a non-standard location for the startup.cmd file, change path of EPICS\_IOC\_APP

d. Setup a relative symbolic link that points to the EPICS IOC Application TOP as follows: `ln -s ../../iocTop/<app>/<version> iocSpecificRelease`

5. Modify **\$EPICS\_IOC<ioc>/screeniocs** – Please note that this is a symbolic link to a CVS file.
6. Verify that the file in use has not been modified without being committed.
  - a. cd \$EPICS\_IOC<ioc>/All/<facility>, where facility is Dev,Prod,facet,acctes
  - b. cvs diff -r HEAD screenioc
  - c. if there are issues, then send email to whoever made the change or to controls-software that you are about to update this file and uncommitted edits will be lost, so please commit your changes to CVS. If you don't get a response, you can either add the changes to CVS in addition to yours or just add yours.
7. check out **screeniocs** from CVS into your work area
  - a. cd
  - b. cd <work> cvs co epics/iocCommon/All/<facility>, where facility is Dev,Prod,facet,acctest
    - i. cd epics/iocCommon/All/<facility>/screeniocs
    - ii. edit **screeniocs**
      1. add line for <ioc>. For server refer to table 1 above. format: sioc-<area>-<subsystem prefix><2-digit #> <executable w /full absolute path> sioc <server> [#comment]
      2. The "comment" field in **screeniocs** is optional and must be preceded by a "#".
      3. add comment in the "Mod:" section of the header
8. commit your changes of **screeniocs** to CVS as follows:
  - a. cvs commit -m "added cpu and ioc blah" screeniocs
  - b. update the screeniocs file in use
  - c. cd \$EPICS\_IOC<ioc>/All/<facility>, where facility is Dev,Prod, facet, acctest
  - d. rm -f screeniocs
  - e. cvs update screeniocs

How-to boot an IOC from the Linux host:

There are multiple ways to boot an RTEMs ioc, which are listed below:

1. Use iocConsole to start an ioc, which uses the screen program
  - a. `iocConsole <ioc> --stayup`
2. Boot ioc from the facility home network display.

[How-to use screen program:](#)

- `ctrl a d` : detach from the screen session
- `ctrl a [` : scroll up through the start-up messages.