

# Autosave

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# Purpose of “autosave” (aka. ‘bumpless save/restore’)

- Values of some EPICS Records need to persist across IOC reboots
  - ‘Set points’ entered by user
  - Current ‘positions’ of motors\*

## \* Fine print:

In some cases, the hardware can do this: PLC, Parker6k, ...  
At IOC startup, Device support ‘init()’ should then read from hardware.

But what if the hardware lost the settings?

Who’s in charge here?? Need to think about this case-by-case!

# How To Use

**1. Add 'autosave' module to IOC**

**2. Configure what to persist**

**Originally: Manually craft list of record fields and save to request file somefile.req**

**Now: EPICS database annotations create those \*.req files on the fly**

# Add Autosave to IOC

1. Define path in `configure/RELEASE` or `../RELEASE.local`:

```
AUTOSAVE=/home/controls/epics/.../autosave-R5-9
```

2. Add binary and DBD info to `xyzApp/src/Makefile`:

```
YourProduct_DBD += asSupport.dbd  
YourProduct_LIBS += autosave
```

3. Use the support module in the IOC startup file:

```
cd ${AUTOSAVE}  
# Optional database for autosave status  
dbLoadRecords "db/save_restoreStatus.db", "P=$(IOCNAME) :"  
  
# Configure (more later)  
set_requestfile_path("/home/controls/var")  
create_monitor_set(..)
```

# Specify What to Save

Add annotations to the EPICS database:

```
record(type, "$ (S) :SomeRecord")  
{  
  info(autosaveFields, "VAL LOW")  
  field(LOW, "-10")  
  ..  
}
```

# IOC Startup

```
# Configure file locations
epicsEnvSet IOCNAME MyIOCName
epicsEnvSet SAVE_DIR /home/controls/var/$(IOCNAME)

save_restoreSet_status_prefix("$(IOCNAME):")
set_requestfile_path("$(SAVE_DIR)")
set_savefile_path("$(SAVE_DIR)")

# Schedule a maximum of 3 sequenced backups of the .sav file
# every 10 minutes - .sav0, .sav1, .sav2
save_restoreSet_NumSeqFiles(3)
save_restoreSet_SeqPeriodInSeconds(600)

# Arrange for restoring saved values into records
set_pass1_restoreFile("$(IOCNAME).sav")

# Start IOC processes
iocInit

# Create request file and start periodic 'save'
makeAutosaveFileFromDbInfo("$(SAVE_DIR)/$(IOCNAME).req",
    "autosaveFields")

create_monitor_set("$(IOCNAME).req", 30)
```

# Autosave

- **Some boilerplate for initial setup**
  - **Later, when adding records, remember**  
**“info (autosaveFields, VAL) ”**
- IOC now restarts with previously saved values**

# Autosave Documentation

- <https://github.com/epics-modules/autosave/blob/R5-9/documentation/autoSaveRestore.html>
- Link returns R5-8 document
- Overview
  - Credits, history, asVerify
- Important nuances
- Section 8 – Notes on restore passes
- Section 10 – Paranoia commands
- Most often, autosave works without issues.