

CoSORT for UNIX Installation Guide

READ ME FIRST!

Requirements

- 10 MB of disk space in the target-location; we suggest /opt or /usr/local
- SHAR.Z file provided by IRI for your operating system

Installation Procedure

File Installation

1. `cd <target-location>`
2. `uncompress SHAR.Z`
3. `sh SHAR`
4. press `<enter>` to verify `<target-location>/cosort` is correct
5. enter `y` to run setup now
6. fill in the registration form as prompted; you will be able to edit the form later
7. send the generated file `<target-location>/cosort/RegForm.txt` to IRI via email `licenses@iri.com`, or via fax +1-407-952-9777

License Activation

8. receive your license keys from IRI
9. set `COSORT_HOME` to `<target-location>/cosort`; for example:
`sh/ksh users: COSORT_HOME=/opt/cosort; export COSORT_HOME`
`csh users: setenv COSORT_HOME /opt/cosort`
10. execute `$(COSORT_HOME)/etc/setup`
11. enter `3` (“First Time Setup” menu selection)
12. enter `y` to verify you have the license keys
13. enter the first; enter the second; and enter the third key
14. enter `y` to verify the keys are correct

Resource Control File (cosortrc) Setup

The setup program will now ask you a series of questions regarding performance settings, and generate a `$COSORT_HOME/etc/cosortrc` file for you. Each prompt offers a default response that provides good general performance.

User Setup

- *sh* and *ksh* users add the following lines to the end of `.profile`:

```
COSORT_HOME=<target-location>/cosort; export COSORT_HOME  
PATH=$COSORT_HOME/bin:$PATH  
LD_LIBRARY_PATH=$LD_LIBRARY_PATH:$COSORT_HOME/lib
```
- *csh* users add the following lines to the end of `.cshrc`:

```
setenv COSORT_HOME <target-location>/cosort  
setenv PATH $COSORT_HOME/bin:$PATH  
setenv LD_LIBRARY_PATH $LD_LIBRARY_PATH:$COSORT_HOME/lib
```

NOTE: the CoSORT package includes a drop-in replacement for the system's sort utility. The above changes allow users to invoke CoSORT's implementation of `sort` instead of the system's `/bin/sort`. To revert to the system sort, swap `$COSORT_HOME/bin` and `$PATH` in the `PATH` assignment above.

OPERATING SYSTEM TUNING

Refer to the section that applies to your operating system to tune your system for high-performance, high-volume sorting.

NOTE: *Multiple-processor CoSORT Licensees:* the values recommended in this section are for a single multi-processor execution of CoSORT. If you have a requirement for running multiple concurrent CoSORT jobs, or, if you are running a database system in conjunction with CoSORT, you may need to increase the resource requirements listed here.

Solaris, CRS-OS, Unicos, DC/OSx, DG/UX, DYNIX/ptx, MP-RAS, SCO/UnixWare, SINIX

- `/tmp` should not be specified as a `WORK_AREA` in your `cosortrc` file. `/tmp` storage is used for swap space.

Kernel Parameters: Multiple-processor CoSORT License only

The kernel configuration parameters are stored in a file `/etc/system` (see `system(4)`). The following formulas should be used as a guide to modify the parameter values in the file before rebooting the system:

Parameter Name	Value
<code>msgsys:msginfo_msgmax</code>	20480
<code>msgsys:msginfo_msgmnb</code>	$\text{PROCESSOR_MAX} * 20480 + 20480$
<code>msgsys:msginfo_msgmni</code>	1
<code>shmsys:shminfo_shmmni</code>	$\text{PROCESSOR_MAX} * 4$
<code>shmsys:shminfo_shmmax</code>	size of physical memory, up to 2GB
<code>shmsys:shminfo_shmseg</code>	2
<code>semsys:seminfo_semmni</code>	$\text{PROCESSOR_MAX} * 2 + 2$
<code>semsys:seminfo_semmns</code>	$\text{PROCESSOR_MAX} * 11 + 3$
<code>semsys:seminfo_semmsl</code>	$\text{PROCESSOR_MAX} * 2 + 2$

where `PROCESSOR_MAX` is the number of CPUs you have licensed.

HP-UX

maxdsiz: default value only 64MB

The kernel parameter 'maxdsiz' must be increased to the size you desire to use for sort memory (`MEMORY_PERPROCESSOR` setting in `cosortrc`). This can be done through SAM but will require your kernel to be re-built followed by a system re-boot. Note that the value of `maxdsiz` is expressed in bytes and the maximum allowed by SAM is 2063835136.

Kernel Parameters: Multiple-processor CoSORT License only

Use SAM to modify kernel system parameters based upon the following formulas:

Parameter Name	Value
<code>msgmnb</code>	$\text{PROCESSOR_MAX} * 20480 + 20480$
<code>msgmni</code>	1
<code>shmmni</code>	$\text{PROCESSOR_MAX} * 4$
<code>shmmax</code>	size of physical memory, up to 2GB
<code>shmseg</code>	2
<code>semmni</code>	$\text{PROCESSOR_MAX} * 2 + 2$
<code>semmns</code>	$\text{PROCESSOR_MAX} * 11 + 3$

where `PROCESSOR_MAX` is the number of CPUs you have licensed.

OSF/1, Digital UNIX, Compaq Tru64/UNIX

dfldsiz: default value only 132MB

The kernel parameter 'dfldsiz' must be increased to the size you desire to use for sort memory (MEMORY_PERPROCESSOR setting in cosortrc); see your System Administration publication on how to reconfigure your kernel for this purpose.

Kernel Parameters: Multiple-processor CoSORT License only

The kernel configuration parameters are stored in `/etc/sysconfigtab`. The following formulas for each parameter should be used to modify the file before rebooting:

Parameter Name	Value
msg-max	20480
msg-mnb	$\text{PROCESSOR_MAX} * 20480 + 20480$
msg-mni	1
shm-mni	$\text{PROCESSOR_MAX} * 4$
shm-max	size of physical memory, up to 2GB
shm-seg	2
sem-mni	$\text{PROCESSOR_MAX} * 2 + 2$
sem-mns	$\text{PROCESSOR_MAX} * 11 + 3$
sem-msl	$\text{PROCESSOR_MAX} * 2 + 2$

where PROCESSOR_MAX is the number of CPUs you have licensed.

AIX, AIX/ESA, OS/390

Limits file settings

Ensure that users are not restricted by the default limits for file size, data segment size, and real memory usage. The file `/etc/security/limits` should contain lines like this:

```
fsize = -1
data = -1
rss = -1
```

See the limits File in AIX Files Reference for further details.

IRI Contact Information

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