# IPC (Inter-Process Communication) Limits

## Special Notices

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## About This Document

This document describes how to set limits for IPC mechanisms and is applicable to AIX versions 3.2, 4.1 and 4.2.

## Shared Memory Segments

On most UNIX systems you edit /etc/master and set your own limits for IPC mechanisms (i.e. semaphore, shared memory segments, message queues). The only problem with this method is that the higher you set the limits, the bigger the kernel gets and performance can be affected. AIX uses a different method.

In AIX, upper limits are set for IPC mechanisms and the individual IPC types are dynamically allocated/deallocated up to these upper limits.

Therefore, the kernel grows and shrinks in size as IPC types are allocated and so any performance hit is only for the life of the IPC type.

This difference in methods sometimes confuses users who are installing or using databases. In AIX IPC limits are taken care of for you. The only limit that may cause a problem is the max number of shared memory segments per process (10).

The structures containing IPC limits are defined in three include files: (/usr/include/sys/) "sem.h", "msg.h", and "shm.h". The structures themselves are called "seminfo", "msginfo", and "shminfo", respectively. Only the structures are defined -- not the contents.

The following is a list of values for AIX 3.2, 4.1. and 4.2. None of these values can be modified.

| | AIX 3.2 | AIX 4.1 | AIX 4.2 |
|---|---|---|---|
| Semaphores: | | | |
| Maximum number of semaphore IDs | 4096 | 4096 | 4096 |
| Maximum semaphores per semaphore ID | 65535 | 65535 | 65535 |
| Maximum operations per semop call | 1024 | 1024 | 1024 |
| Maximum undo entries per process | 1024 | 1024 | 1024 |
| Size in bytes of undo structure | 8208 | 8208 | 8208 |
| Semaphore maximum value | 32767 | 32767 | 32767 |
| Adjust on exit maximum value | 16384 | 16384 | 16384 |
| | | | |
| Message Queues: | | | |
| Maximum message size | 65535 | 65535 | 65535 |
| Maximum bytes on queue | 65535 | 65535 | 65535 |
| Maximum number of message queue IDs | 4096 | 4096 | 4096 |
| Maximum messages per queue ID | 8192 | 8192 | 8192 |
| | | | |
| Shared Memory: | | | |
| Maximum segment size | 256MB | 256MB | 256MB |
| Minimum segment size | 1 | 1 | 1 |
| Maximum number of shared memory IDs. | 4096 | 4096 | 4096 |
| Maximum number of segments per process | 10 | 10 | 10 |

## Reader's Comments

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