There are some UNICOS features that require support from the file system level code, but are not fully supported in the current SFS implementation.

Disk quotas	The implementation of disk quotas is dependent upon the utilization of in-core data structures for the enforcement of appropriate quota levels. The current implementation of SFS does not support disk quotas.
Mount points	A directory in a shared file system cannot be used as a mount point.
Block and character special devices	The current UNICOS SFS implementation does not support the utilization of block and character special device nodes. Since the principal location of nodes of this type is within the `/dev` directory structure, the main impact of this limitation is to tape devices. The character special node that would be created as the result of a `tpmnt` command cannot reside in a shared file system.
Named pipes	The current SFS implementation does not support the utilization of a named pipe that has been created within SFS name space.
Security	The UNICOS Multilevel Security (MLS) feature is not currently supported with UNICOS SFS.
Data Migration	Client/Server operations for Data Migration Facility (DMF) for shared file systems are not yet available.
MPP Restrictions	The following restrictions apply to MPP systems.

Mirroring	Mirrored disk partitions are not currently supported on CRAY T3D and CRAY T3E systems.
Input/Output Node (ION) configuration for FCNs and MPNs	The FCN and MPN Input/Output Nodes provide the semaphore operations for the disks they support. Some restrictions apply to their use. No other semaphore device can be used with disks connected through these IONs. Further, only a single FCN or MPN may be used to access the disks when

		SFS is being used (a second ION would not have access to the semaphore information).
	Input/Output Node configuration for HPNs	The HPN Input/Output Node does not contain the semaphore code. It passes semaphore information on to a semaphore device on the HIPPI network. As such, it does not have the same limitations as the FCNs and MPNs. The HPN does not support both IPI-3 and TCP/IP packets simultaneously. The HPN disk driver will not supported until UNICOS/mk 1.5.1.

Symbolic Semaphore Representation

The SFS symbolic semaphore implementation has a design limitation.

Devices that use symbolic semaphores (ND-40 disks, H-SMP semaphore devices, GigaRing based Fiber Channel Nodes (FCNs) and GigaRing-based Multiple-Purpose I/O Nodes (MPNs)) select semaphores to use for a given file based on the file's device (minor) number and inode value placed into a 32-bit field. The upper 8-bits store the lower portion of the device number while the lower 24-bits store the lower portion of the inode value (removing the partition component).

The potential hazard is that when multiple devices are using the same semaphore server, it is possible for the value derived from the truncated device and inode values to match that of a file on another device. This makes it feasible for a single semaphore to be used for access to two different files and can cause file corruption and system panics.

The problem can be avoided by doing two things:

- Limit the minor device values for the file systems to values less then 256. This will ensure that the top 8-bits of the semaphore selection field are unique for a given device.

- Do not mount SFS file systems with multiple partitions

Questions should be directed to your Cray Research Service Representative.