

More slides

Soft Interrupts

- **Like hardware interrupts**
- **Happen immediately**
- **Flag to say don't switch**
- **Less needed?**

Interrupts

- **No SPLs**
- **No ipending**
- **Hardware interrupts are really prioritized**
- **Sharing breaks prioritization**
- **Priority may still keep thread from running**
- **Borrowed context means it can run on another process**
- **Priority inversion in relation to another processor can occur**

Read path locks

- **0 syscall()**
- **1 read()**
- **2 vn_read()**
- **3 VOP_LEASE**
 - **NFS_LOCK()** layering problem
 - **NFS_UNLOCK()** no really needed
- **4 VOP_GETATTR/ufs_getattr**
 - **acquire vnode interlock**
 - **release vnode interlock**
- **3 VOP_LEASE (back to)**
 - **NFS_LOCK()**
 - **NFS_UNLOCK()**
- **2 vn_read() (back to)**
- **3 vn_lock()**
 - **acquire VI_LOCK**
- **4 lockmanager(lock)**
 - **acquire lockmanager internal lock**
 - **release lockmanager internal lock**

- **3 vn_lock() (back to)**
 - **acquire VI_LOCK**
 - **release vnode interlock**
- **2 vn_read() (back to)**
- **3 vnode_pager_read_synch() no locks**
- **2 vn_read() (back to)**
- **3 ufs_read()**
- **4 bread()**
- **5 getblk()**
 - **acquire buf hash mutex**
 - **BUF_LOCK()**
 - **BUF_UNLOCK()**
 - **release buf hash mutex**
- **4 bread() (back to)**
- **3 ufs_read() (back to)**
- **4 uiomove()**
- **3 ufs_read() (back to)**
- **4 brelse**
 - **acquire bufq_lru_mtx**

- **release bufq_lru_mtx**
- **BUF_LOCK()**
- **BUF_UNLOCK()**
- **3 ufs_read() (back to)**
 - **acquire vnode interlock**
 - **release vnode interlock**
- **2 vn_read() (back to)**
 - **acquire file lock**
 - **release file lock**
- **3 lockmanager(unlock)**
 - **acquire lock manager internal lock**
 - **release lock manager internal lock**
- **2 vn_read() (back to)**
- **1 read (back to)**
- **0 syscall (back to)**
 - **acquire proc lock**
 - **release proc lock**