



























	CPU VIRTUALIZING	
■ How should t	he CPU be shared?	
Time Sharing Run one proc	g: cess, pause it, run another	
How do we S efficiently?	WAP processes in and out of the CPU	
Goal is to n	ninimize <u>overhead</u> of the swap	
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PRC	DCESS DATA STRUCTURES
<ul> <li>OS provides</li> <li>Process list</li> <li>Process Da</li> <li>State of pr</li> <li>Register co</li> </ul>	data structures to track process information t ata rocess: Ready, Blocked, Running ontext
<ul> <li>PCB (Process</li> <li>A C-structu process</li> </ul>	s Control Block) re that contains information about each
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XV6 KERNEL DATA STRUCTURES - 2				
<pre>// the information xv6 track // including its register co struct proc {     char *mem;     uint sz;     char *kstack;     enum proc_state state;     int pid;     struct proc *parent;     void *chan;     int killed;     struct file *ofile[NOFII     struct inode *cwd;     struct context context;     struct trapframe *tf;   };</pre>	<pre>is about each process ontext and state // Start of process memory // Size of process memory // Bottom of kernel stack // for this process // Process state // Process ID // Parent process // If non-zero, sleeping on chan // If non-zero, have been killed E]; // Open files // Current directory // Switch here to run process // Trap frame for the // current interrupt</pre>			
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LINUX: IHREAD_INFO					
struct	thread info {				
	struct task struct	*task;	/* main task structure */		
	struct exec domain	*exec domain;	/* execution domain */		
u32		flags;	/* low level flags */		
	 u32	status;	/* thread synchronous flags */		
	u32	cpu;	/* current CPU */		
	int	preempt_count;	<pre>/* 0 =&gt; preemptable,</pre>		
	mm segment t	addr limit;			
struct restart block		restart block;			
	voiduser	*sysenter_retu	rn;		
#ifdef	CONFIG_X86_32				
	unsigned long	<pre>previous_esp;</pre>	<pre>/* ESP of the previous stack in</pre>		
			case of nested (IRQ) stacks		
			*/		
	u8	supervisor_stac	ck[0];		
#endif					
	int	uaccess_err;			
};					



















