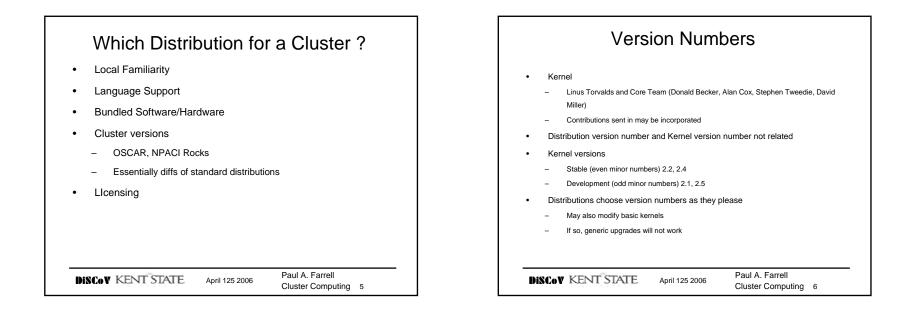


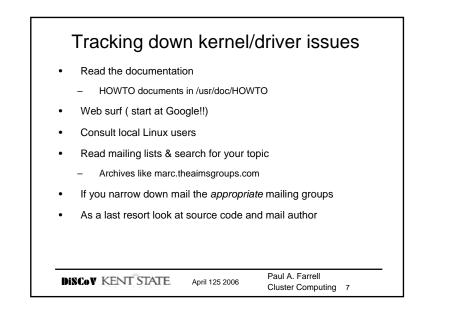
Kernel v Distribution
 Linux is kernel which controls hardware, multitasking, virtual memory, shared libraries, demand laoding, shared copy-onwrite executables, TCP/IP, file systems
 Distribution usually includes installer and also includes many other public domain programs

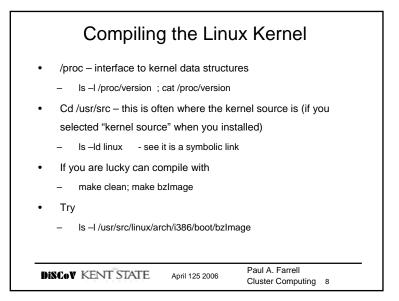
 RedHat, SuSe, Fedora, Mandrake, SlackWare,
 Also integrated hardware/software Beowulf solutions based on one of these
 Beowulf setup systems e.g. OSCAR, NPACI Rocks

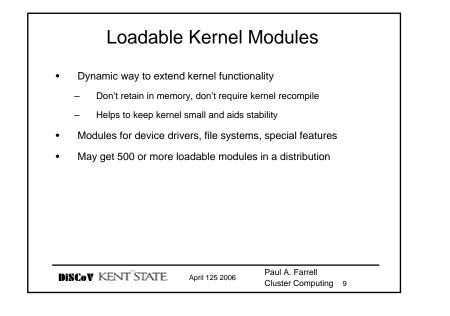
GPL v Op	ben Source
 Modifications of GPLed soft binary only . Source must be – Linux is GPLed 	ware must not be distributed as e made available
 Open Source software whic and sold as binary only code Mozilla, X-windows, BSD, 	
DISCOV KENT STATE April	Paul A. Farrell Cluster Computing 3

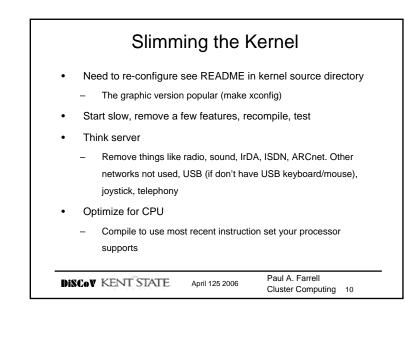
Linux Distributions		
Red Hat	www.redhat.com	
SuSe	www.suse.com	
Mandrake	www.mandrake.com	
Debian	www.debian.org	
SlackWare	www.slackware.com	
TurboLinux	www.turbolinux.com	
Connectiva	www.connectiva.com	
Gentoo	www.gentoo.org	
Fedora	www.fedora.us	
	fedora.redhat.com	
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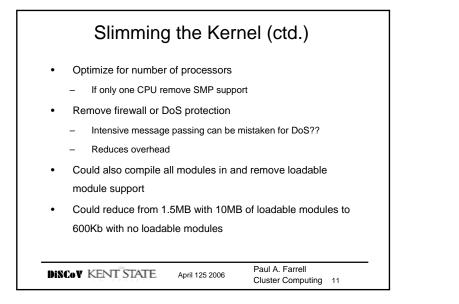








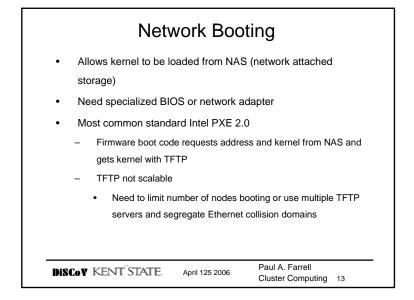




Possibly Worth Supporting

- NFS for small clusters
- Serial console
- Kernel IP configuration get IP address using BOOTP or DHCP
- NFS root supports diskless booting by allowing mounting of root file systems
- Special high performance network drivers Gigabit Ethernet, Myrinet
- A file system

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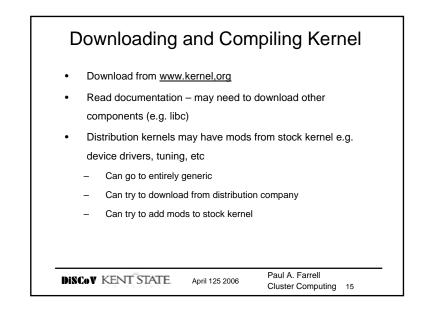


Diskless Operation

- Why?
 - Security reasons
 - If need to change kernels/distributions frequently
 - Only need to maintain one image
- See Diskless-HOWTO and Diskless-root-NFS-HOWTO
- Need NFS root to mount other needed configuration files
 (/etc/passwd etc) and dynamic libraries
- NFS is not scalable for large clusters (see later)

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Linux File Systems Default is EXT2 (extended file system version 2)

- EXT2 is not a journalling file system, one where writes ensure that file system is always or can always be put in a consistent state – avoids the need for fsck
- Slightly slower must write "journal" to disk first, which will enable
 restoration of consistent state
- So depends on whether want optimum disk performance on local nodes
- Journalling systems: EXT3, ReiserFS (SuSe, better for small files/large dirs), IBM JFS, SGI XFS (optimized for large block writes from virtual memory)

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