

SYSTEM INFORMATION

Hostname

Internet (IP) address

Ethernet address

Hub and port numbers

Emergency contact person

Boot command

Disk partitions, tape drives, etc.

UNIX[®] SYSTEM ADMINISTRATION HANDBOOK

SECOND EDITION

A Prentice Hall book by Evi Nemeth, Garth Snyder, Scott Seebass, and Trent R. Hein. ISBN 0-13-151051-7

Information and on-line orders: <http://www.admin.com/>

COMMON COMMAND EXAMPLES

```
ifconfig plumb # Solaris: probe for network interfaces
ifconfig lo0 127.0.0.1 up # Loopback interface
ifconfig en0 inet 128.130.240.1 up netmask
0xFFFFFFFF broadcast 128.130.240.255
```

```
route add net 128.130.138.0 128.130.240.12 1
route add default 128.130.240.12 1
# BSD/OS and OSF/1 use -net and -host and no metric
route add -net 128.130.138.0 128.130.240.12
route add default 128.130.240.12
```

```
netstat -rn # Routing table (numeric addresses)
netstat -I en0 5 # Monitor en0 at 5-second intervals
netstat -in # Interfaces (numeric addresses)
```

```
dump 0uf /dev/nrst0 /users # Level 0 dump
dump 0f - /usr | (cd /mnt; restore rvf -) # Copy
```

```
tar cf - /from | (cd todir; tar xvfp -) # Copy dir
```

```
# Find object files larger than 1MB not accessed in a year
find /users -type f -name "*.o" -size +1048576c
-atime +365 -print
```

```
# List all C source files sorted by number of lines
find . -name "*.c" -exec wc -l {} \; | sort -nr
# A more efficient version
```

```
find . -name "*.c" -print | xargs wc -l | sort -nr
```

```
# Run in daemon mode, process queue every 30 min
sendmail -bd -q30m
```

```
# Run in address test mode with a new config file
sendmail -bt -C/etc/sendmail.cf.new
```

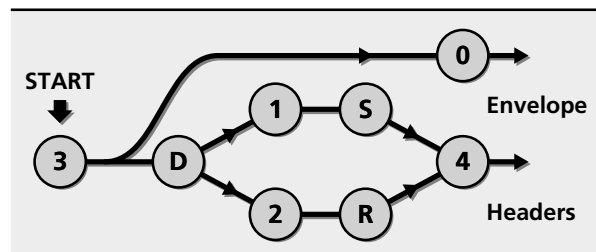
```
ps -axu # User-oriented output in BSD (slow)
```

```
ps -axl # Technical output in BSD (fast)
```

```
ps -ef # User-oriented output in System V
```

```
ps -efl # Technical output in System V
```

SENDMAIL RULESET ORDER



TOKENS USED IN SENDMAIL.CF

Token	Debug	Meaning
\$@		Match zero tokens (V8 only)
\$-	^R	Match exactly one token
\$+	^Q	Match one or more tokens
\$*	^P	Match zero or more tokens
\$X		Match value of macro variable X
\$&X		Match value of X at run time
\$=X	^SX	Match any token in class X
\$~X	^TX	Match any token not in class X

The Debug column shows the tokens as they will be printed by `sendmail` in address test mode (`sendmail -bt`).

DNS RECORD TYPES

Type	Syntax
SOA	zone [ttl] IN SOA primary admin serial refresh retry expire min
NS	zone [ttl] IN NS host
A	hostname [ttl] IN A ipaddr
PTR	ipaddr [ttl] IN PTR hostname
MX	hostname [ttl] IN MX pref host ...
CNAME	nickname [ttl] IN CNAME hostname
RP	hostname [ttl] IN RP admin txt
TXT	name [ttl] IN TXT text ...

In SOA, *primary* is the IP address of the primary name server, and *admin* is the email address of the administrator with the @ replaced by a period.

The last four values are timeouts in seconds. Secondaries check in every *refresh* seconds; if the primary cannot be contacted, the secondaries try again every *retry* seconds. After *expire* seconds, a secondary will stop trying. *min* is the default time-to-live (ttl) for all records.

We suggest the following values:

<i>refresh</i>	21600	(6 hours)
<i>retry</i>	1800	(30 minutes)
<i>expire</i>	1209600	(2 weeks)
<i>min</i>	432000	(5 days)

In RP, *admin* is the administrator's email address (similarly encoded), and *txt* is the *name* of a TXT record (or set of TXT records) that contains further information.

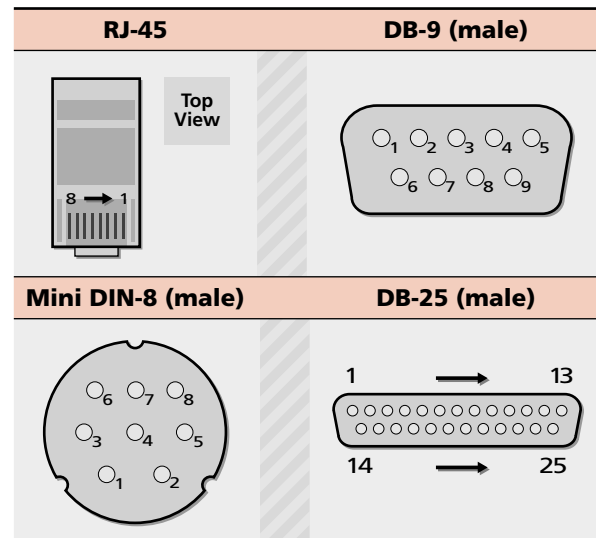
Remember to update the SOA's *serial* field whenever you modify a zone's configuration files.

SUGGESTED HARDWARE VENDORS

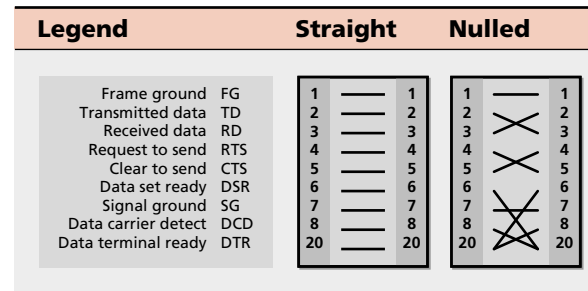
This is a table of network hardware vendors that we still trust, recommend, and use ourselves today. We have no association or connection with any of these vendors.

Vendor	State	Telephone
Cables and connectors		
AMP	PA	(800) 522-6752
Anixter	IL	(708) 677-2600
Belden Cable	IN	(319) 983-5200
Black Box Corporation	PA	(412) 746-5500
Krone	CO	(800) 992-9901
Lan-Tech	CO	(303) 695-9473
Newark Electronics	IL	(312) 784-5100
The Siemon Company	CT	(203) 274-2523
Test equipment		
Fluke	WA	(800) 323-5700
The Siemon Company	CT	(203) 274-2523
Wavetek	CA	(800) 854-2708
Repeaters and hubs		
Allied Telesis	CA	(415) 964-2771
Cabletron	NH	(603) 332-9400
Routers		
Cisco Systems	CA	(415) 326-1941

PINOUTS FOR SERIAL CONNECTORS



DB-25 TO DB-25 RS-232 CONNECTIONS



MINI DIN-8/DB-9 STRAIGHT CABLES

DIN-8	DB-9	DB-25	Signal and function
3	2	2	TD Transmitted data
5	3	3	RD Received data
6	8	4	RTS Request to send
2	7	5	CTS Clear to send
-	6	6	DSR Data set ready
4,8	5	7	SG Signal ground
7	4	8	DCD Data carrier detect
1	1	20	DTR Data terminal ready

FOUR-PAIR UTP WIRING FOR RJ-45

Pair	Colors	Wired to	Diagram
1	White/Blue	Pins 4/5	<p>TOP</p>
2	White/Orange	Pins 3/6	
3	White/Green	Pins 1/2	
4	White/Brown	Pins 7/8	

a. This scheme reflects the TIA/EIA-568A standard.

DISK BLOCK SIZES

System	du	df	quot
Solaris 2.4	512 ^a	512 ^a	1024
HP-UX 9.0	1024	1024	2048 ^b
IRIX 5.2	512 ^a	512 ^a	1024
SunOS 4.1.3	1024	1024	1024
DEC's OSF/1 2.0	512 ^a	512 ^a	1024
BSD/OS 2.0	512 ^c	1024	-

a. You can get 1K blocks with the **-k** option.

b. True only with **quot -h**.

c. Uses environment variable **BLOCKSIZE**, if defined.

CONTROLLING RUNNING PROCESSES

Proc	Operation	Command
cron	Reread crontab (BSD)	kill -HUP pid
gated	Reread config file	kill -HUP pid
	Dump current state	kill -INT pid
	Graceful shutdown	kill -TERM pid
	Toggle tracing	kill -USR1 pid
	Check net interfaces	kill -USR2 pid
inetd	Reread config file	kill -HUP pid
init	Go to single-user mode	kill -TERM 1
(BSD)	Reread terminal config	kill -HUP 1
init	Go to single-user mode	telinit S
(Sys V)	Change run level	telinit level
	Reread inittab file	telinit -q
named	Reread config files	kill -HUP pid
	Dump DB and cache	kill -INT pid
	Dump stats	kill -IOT pid
	Dump stats (some OSs)	kill -ABRT pid
	Dump database files	kill -TERM pid
	Increment debug level	kill -USR1 pid
	Turn off debugging	kill -USR2 pid
	Toggle query logging	kill -WINCH pid

USEFUL INTERNET SITES

Category	URL
Software	ftp://ftp.uu.net/ ftp://wuarchive.wustl.edu/ ftp://gatekeeper.dec.com/
Sysadmin	http://www.usenix.org/ http://www.ora.com/
Banking	http://www.wellsfargo.com/ http://www.mastercard.com/ http://www.bofa.com/
Consumer goods	http://www.internet.net/ http://internet-plaza.net/ http://www.hot.presence.com/ http://www.cdnw.com/
Travel	http://www.goalamo.com/ http://www.vegas.com/ http://www.travelweb.com/
Shipping	http://www.ups.com/ http://www.fedex.com/
Government	http://www.odci.gov/ http://www.uspto.gov/
Weather	http://cirrus.sprl.umich.edu/wxnet/