NTP Cheat Sheet : ntpd Configuration File

Unicast Modes

Time Servers:
`server` <ip/hostname> [options]

Symmetric Active Peers:
`peer` <ip/hostname> [options]

[options] can be one or more of the following flags:

`iburst`	initial burst, speed up initial synchronization
`minpoll x` `maxpoll x`	change minimum or maximum polling interval to 2^x seconds: 4=16s, 5=32s, 6=64s, 7=128s, 8=256s, 9=512s, 10=1024s, 11=2048s, 12=4096s, 13=8192s, 14=16384s, 15=32768s, 16=65536s, 17=131072s
`prefer`	preferred source
`key n`	use symmetric key number n
`autokey`	use autokey with this source
`noselect`	only monitor, never use as sync source
`true`	always consider this source being a truechimer

Broadcast / Multicast Modes

IANA assigned NTP multicast address:
224.0.1.1 (IPv4) / ff05::101 (IPv6)

Send out broadcast/multicast packets:
`broadcast` <bcast/mcast ip> [options]

[options] can be
`autokey`, `key n` (see left)

`ttl`	Time To Live, number of max.router hops the packets should be forwarded (default=127)

Listen to NTP broadcast packets:
broadcastclient [novolley]

`novolley`	do not measure network delay (uni-directional mode)

Listen to NTP multicast packets
`multicastclient` <mcast ip>

Useful Weblinks

http://www.ntp.org - Official NTP Website
http://support.ntp.org/ - Support Web
http://www.meinberg.de - Meinberg Website
http://www.time-server-monitor.com - free NTP Monitor Utlility

Generate Statistics

Enable Statistics Collection:
`enable stats`

Select statistics files to be generated:
`stats` [space separated list of stats]

List of available stats:

`clockstats`	clock statistics
`cryptostats`	crypto public key stats
`loopstats`	loop filter statistics
`peerstats`	peer statistics
`rawstats`	raw timestamps info
`sysstats`	ntpd statistics

Select where to create statistics files:
`statsdir` <directory path>

Filename management:
`filegen` <name> [file fname] [type ftype] [link | nolink] [enable | disable]

name	is the name of the stats type (e.g. clockstats)
fname	fixed part of filename
ftype	can be either none=single plain file pid=process id in the filename day/week/month/year=one file per day/week/... age=new file every 24hrs
`link`	create hardlink to current file

NTP Cheat Sheet : Command/File Reference

ntpd
Command Line Options

-a		require crypto auth for bcast, mcast and peers
-A		do not require auth (!)
-b		enable broadcastclient
-c	cfgfile	use cfgfile as config file
-d		debugging mode
-D	level	debugging level
-f	driftfile	specify drift file name
-g		allow big initial timestep
-i	jaildir	chroot to jaildir
-k	keyfile	specify key file name
-l	logfile	specify log file name
-L		do not listen to virtual IPs (default: listen)
-n		do not fork process (stay in foreground)
-p	pidfile	specify process ID file
-q		exit after first sync
-r	bdelay	specify broadcast delay
-s	statsdir	specify statsdir
-t	key	specify a trusted key
-U	ifupd	specify interface update interval
-x		step threshold = 600s (instead of 128ms)

ntpq
Command Line Options

ntpq [options] <hostname>

If no <hostname> is specified, localhost will be used.

-c „x y“	run ntpq command x with parameter(s) y (multiple -c's are ok!)
-n	do not resolve hostnames
-p	show status billboard

Command Reference

command (short form) [pars]:

peers	show status billboard
associations (as)	show list of associations with id and their status
readvars (rv) [assoc]	show peer vars for association assoc (or the ntpd instance sysvars if empty)
clockvars (cv) [assoc]	show clock vars for association assoc
keyid n	use key n for queries
passwd	ask for key (password)
timeout x	set timeout for replies to x milliseconds

Key File Format

/etc/ntp.keys:
<n> M <passphrase>

n	key id
passphrase	key passphrase

Statistics Files Format

/var/log/peerstats:

mjd sec.frac paddr status offs delay disp rmsjitter

/var/log/clockstats:

mjd sec.frac caddr timecode

/var/log/loopstats:

mjd sec.frac offs freq rmsjitter alandev clkdconst

/var/log/sysstats:

mjd sec.frac uptime pr pp cver pver bver acden badlen badauth rexc

mjd	Mod. Julian Date
sec.frac	seconds/fractions since midnight
paddr/caddr	peer / clock address
status	peer status in hex
offs,delay,disp	offset, delay, dispersion in s
rmsjitter	RMS jitter in s
timecode	last received timecode from clock
freq	frequency offset (PPM)
alandev	Alan Deviation (PPM)
clkdconst	Clock Discipline Time Constant
uptime	time in hours since last restart
# of packets received:	
pr, pp	received/processed
cver,pver,bver	current, prev or bad version
acden	denied access
badlen	bad length/format
badauth	bad authentication
rexec	rate exceeded

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