NAME

ntp_mon - Monitoring Options

INTRODUCTION

The **ntpd** includes a comprehensive monitoring facility which collects statistical data of various types and writes the data to files associated with each type at defined events or intervals. The files associated with a particular type are collectively called the generation file set for that type. The files in the file set are the members of that set.

File sets have names specific to the type and generation epoch. The names are constructed from three concatenated elements **prefix**, **filename** and **suffix**:

prefix The directory path specified in the **statsdir** command.

name The name specified by the **file** option of the **filegen** command.

suffix A string of elements bdginning with . (dot) followed by a number of elements depending on the file set type.

Statistics files can be managed using scripts, examples of which are in the **./scripts** directory. Using these or similar scripts and Unix **cron** jobs, the files can be automatically summarized and archived for retrospective analysis.

MONITORING COMMANDS

filegen *name* **file** *filename* **[type** *type***] [link | nolink] [enable | disable]**

name Specifies the file set type from the list in the next section.

file *filename*
Specfies the file set name.

type *typename*
Specifies the file set interval. The following intervals are supported with default **day**:

none The file set is actually a single plain file.

pid One file set member is created for every incarnation of **ntpd**. The file name suffix is the string .**n**, where **n** is the process ID of the **ntpd** server process.

day One file set member is created per day. A day is defined as the period between 00:00 and 23:59 UTC. The file name suffix is the string .**yyyymmdd**, where **yyyy** is the year, **mm** the month of the year and **dd** the day of the month. Thus, member created on 10 December 1992 would have suffix **.19921210**.

week One file set member is created per week. The week is defined as the day of year modulo 7. The file name suffix is the string .**yyyyWww**, where **yyyy** is the year, **W** stands for itself and **ww** the week number starting from 0. For example, The member created on 10 January 1992 would have suffix **.1992W1**.

month One file set member is created per month. The file name suffix is the string .**yyyymm**, where **yyyy** is the year and **mm** the month of the year starting from 1. For example, The member created on 10 January 1992 would have suffix **.199201**.

year One file set member is generated per year. The file name suffix is the string .**yyyy**, where **yyyy** is the year. For example, The member created on 1

January 1992 would have suffix **.1992**.

age One file set member is generated every 24 hours of **ntpd** operation. The filename suffix is the string **.addddddddd**, where **a** stands for itself and **ddddddddd** is the **ntpd** running time in seconds at the start of the corresponding 24-hour period.

link | nolink
It is convenient to be able to access the current file set members by file name, but without the suffix. This feature is enabled by **link** and disabled by **nolink**. If enabled, which is the default, a hard link from the current file set member to a file without suffix is created. When there is already a file with this name and the number of links to this file is one, it is renamed by appending a dot, the letter **C**, and the pid of the **ntpd** server process. When the number of links is greater than one, the file is unlinked. This allows the current file to be accessed by a constant name.

enable | disable
Enable or disable the recording function, with default **enable**. These options are intended for remote configutation commands.

statsdir *directory_path*
Specify the directory path prefix for statistics file names.

FILE SET TYPES

clockstats
Record reference clock statistics. Each update received from a reference clock driver appends one line to the **clockstats** file set: **49213 525.624 127.127.4.1 93 226 00:08:29.606 D**

Item	Units	Description
49213	MJD	date
525.624	s	time past midnight
127.127.4.1	IP	reference clock address
message	text	log message

The *message* field includes the last timecode received in decoded ASCII format, where meaningful. In some cases a good deal of additional information is displayed. See information specific to each reference clock for further details.

cryptostats
Record significant events in the Autokey protocol. This option requires the OpenSSL cryptographic software library. Each event appends one line to the **cryptostats** file set: **49213 525.624 128.4.1.1** *message*

Item	Units	Description
49213	MJD	date
525.624	s	time past midnight
128.4.1.1	IP	source address (**0.0.0.0** for system)
message	text	log message

The *message* field includes the message type and certain ancillary information. See the Authentication Options page for further information.

loopstats

Record clock discipline loop statistics. Each system clock update appends one line to the **loopstats** file set: **50935 75440.031 0.000006019 13.778 0.000351733 0.013380 6**

Item	Units	Description
50935	MJD	date
75440.031	s	time past midnight
0.000006019	s	clock offset
13.778	PPM	frequency offset
0.000351733	s	RMS jitter
0.013380	PPM	RMS frequency jitter (aka wander)
6	log2 s	clock discipline loop time constant

peerstats

Record peer statistics. Each NTP packet or reference clock update received appends one line to the **peerstats** file set: **48773 10847.650 127.127.4.1 9714 -0.001605376 0.000000000 0.001424877 0.000958674**

Item	Units	Description
48773	MJD	date
10847.650	s	time past midnight
127.127.4.1	IP	source address
9714	hex	status word
-0.001605376	s	clock offset
0.000000000	s	roundtrip delay
0.001424877	s	dispersion
0.000958674	s	RMS jitter

The status field is encoded in hex format as described in Appendix B of the NTP specification RFC 1305.

protostats

Record significant peer, system and [rptpcp; events. Each significant event appends one line to the **protostats** file set: **49213 525.624 128.4.1.1 963a 8a** *message*

Item	Units	Description
49213	MJD	date
525.624	s	time past midnight
128.4.1.1	IP	source address (**0.0.0.0** for system)
963a	code	status word
8a	code	event message code
message	text	event message

The event message code and *message* field are described on the Event Messages and Status Words page.

rawstats

Record timestamp statistics. Each NTP packet received appends one line to the **rawstats** file set: **50928 2132.543 128.4.1.1 128.4.1.20 3102453281.584327000 3102453281.58622800031 02453332.540806000 3102453332.541458000**

Item	Units	Description
50928	MJD	date
2132.543	s	time past midnight
128.4.1.1	IP	source address
128.4.1.20	IP	destination address
3102453281.584327000	NTP s	origin timestamp
3102453281.586228000	NTP s	receive timestamp
3102453332.540806000	NTP s	transmit timestamp
3102453332.541458000	NTP s	destination timestamp

sysstats Record system statistics. Each hour one line is appended to the **sysstats** file set in the following format: **50928 2132.543 3600 81965 0 9546 56 512 540 10 4 147 1**

Item	Units	Description
50928	MJD	date
2132.543	s	time past midnight
3600	s	time since reset
81965	#	packets received
0	#	packets for this host
9546	#	current versions
56	#	old version
512	#	access denied
540	#	bad length or format
10	#	bad authentication
4	#	declined
147	#	rate exceeded
1	#	kiss-o’-death packets sent

timingstats

(Only available when the deamon is compiled with process time debugging support (--enable-debug-timing - costs performance). Record processing time statistics for various selected code paths. **53876 36.920 10.0.3.5 1 0.000014592 input processing delay**

Item	Units	Description
53876	MJD	date
36.920	s	time past midnight
10.0.3.5	IP	server address
1	#	event count
0.000014592	s	total time
message	text	code path description (see source)

SEE ALSO

ntp.conf(5), ntp_decode(5)

The official HTML documentation.

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