

Tracing Mobile IP Operations

Mobile IP supports tracing operations. Mobile IP tracing operations track Mobile IP operations and record them in a log file. The error descriptions captured in the log file provide detailed information to help you solve problems.

By default, nothing is traced. When you enable the tracing operation, the default tracing behavior is as follows:

1. Important events are logged in a file called `mipd` located in the `/var/log` directory. You cannot change the directory (`/var/log`) in which trace files are located.
2. When the file `mipd` reaches 128 kilobytes (KB), it is renamed `mipd.0`, then `mipd.1`, and so on, until there are three trace files. Then the oldest trace file (`mipd.2`) is overwritten.

You can optionally configure the maximum file size to be from 10 KB through 1 gigabyte (GB). You can also specify the number of trace files to be from 2 through 1000. (For more information about how log files are created, see the *JUNOS System Log Messages Reference*.)

Log files can be accessed only by the user who configures the tracing operation.

To configure Mobile IP tracing operations:

1. Specify that you want to configure tracing options.

```
[edit services mobile-ip]
user@host# edit traceoptions
```

2. (Optional) Configure the name for the file used for the trace output.

See “Configuring the Mobile IP Trace Log Filename” on page 2.

3. (Optional) Configure the number and size of the log files.

See “Configuring the Number and Size of Mobile IP Log Files” on page 2.

4. (Optional) Configure access to the log file.

See “Configuring Access to the Mobile IP Log File” on page 2.

5. (Optional) Configure a regular expression to filter logging events.

See “Configuring a Regular Expression for Mobile IP Lines to Be Logged” on page 3.

6. (Optional) Configure flags to filter the operations to be logged.

See “Configuring the Mobile IP Tracing Flags” on page 3.

The Mobile IP traceoptions operations are described in the following sections:

- Configuring the Mobile IP Trace Log Filename on page 2
- Configuring the Number and Size of Mobile IP Log Files on page 2
- Configuring Access to the Mobile IP Log File on page 2

- Configuring a Regular Expression for Mobile IP Lines to Be Logged on page 3
- Configuring the Mobile IP Tracing Flags on page 3

Configuring the Mobile IP Trace Log Filename

By default, the name of the file that records trace output for Mobile IP is `mipd`. You can specify a different name with the `file` option.

To configure the filename for Mobile IP tracing operations:

- Specify the name of the file used for the trace output.

```
[edit services mobile-ip traceoptions]
user@host# set file mip_1
```

Configuring the Number and Size of Mobile IP Log Files

By default, when the trace file reaches 128 kilobytes (KB) in size, it is renamed `filename.0`, then `filename.1`, and so on, until there are three trace files. Then the oldest trace file (`filename.2`) is overwritten.

You can optionally configure the maximum file size to be from 10 KB through 1 gigabyte (GB). You can also specify the number of trace files to be from 2 through 1000.

For example, you can set the maximum file size to 2 MB, and the maximum number of files to 20. When the file that receives the output of the tracing operation (`filename`) reaches 2 MB, `filename` is renamed `filename.0`, and a new file called `filename` is created. When the new `filename` reaches 2 MB, `filename.0` is renamed `filename.1` and `filename` is renamed `filename.0`. This process repeats until there are 20 trace files. Then the oldest file (`filename.19`) is overwritten by the newest file (`filename.0`).

To configure the number and size of trace files:

- Specify the name, number, and size of the file used for the trace output. (Mobile IP supports the `files` and `size` options for the `traceoptions` statement.)

```
[edit services mobile-ip traceoptions]
user@host# set file mip_1 _logfile_1 files 20 size 2097152
```

Configuring Access to the Mobile IP Log File

By default, log files can be accessed only by the user who configures the tracing operation. You can enable all users to read the log file and you can explicitly set the default behavior of the log file.

To specify that all users can read the log file:

- Configure the log file to be world-readable.

```
[edit services mobile-ip traceoptions]
user@host# set file mip_1 _logfile_1 world-readable
```

To explicitly set the default behavior, in which the log file can only be read by the user who configured tracing:

- Configure the log file to be no-world-readable.

```
[edit services mobile-ip traceoptions]  
user@host# set file mip_1 _logfile_1 no-world-readable
```

Configuring a Regular Expression for Mobile IP Lines to Be Logged

By default, the trace operation output includes all lines relevant to the logged events.

You can refine the output by including regular expressions that will be matched.

To configure regular expressions to be matched:

- Configure the regular expression.

```
[edit services mobile-ip traceoptions]  
user@host# set file mip_1 _logfile_1 match regex
```

Configuring the Mobile IP Tracing Flags

By default, only important events are logged. You can specify which trace operations are logged by including specific tracing flags. The following table describes the flags that you can include.

Flag	Description
all	Trace all operations
authentication	Trace authentication operations
binding	Trace bindings
configuration	Trace configuration events
event	Trace events
home-agent	Trace home agent operations
interface-database	Trace interface database operations
packet	Trace packet decoding operations
protocol	Trace protocol operations
rtstock	Trace routing socket operations
session-db	Trace session database events
signal	Trace signal operations
subscriber	Trace subscriber events

Flag	Description
trace	Trace changes in tracing
tunnel	Trace tunneling operations

To configure the flags for the events to be logged:

- Configure the flags.

```
[edit services mobile-ip traceoptions]
user@host# set flag home-agent
```