

## Tracing ANCP Operations

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ANCP supports tracing operations. ANCP tracing operations track ANCP 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 `ancpd` located in the `/var/log` directory. You cannot change the directory (`/var/log`) in which trace files are located.
2. When the file `ancpd` reaches 128 kilobytes (KB), it is renamed `ancpd.0`, then `ancpd.1`, and so on, until there are three trace files. Then the oldest trace file (`ancpd.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*.)

By default, only the user who configures the tracing operation can access log files. You can optionally configure read-only access for other users.

To configure ANCP tracing operations:

1. Specify that you want to configure tracing options.

```
[edit protocols ancp]
user@host# edit traceoptions
```

2. (Optional) Configure the name for the file used for the trace output.  
See “Configuring the ANCP Trace Log Filename” on page 2.
3. (Optional) Configure the number and size of the log files.  
See “Configuring the Number and Size of ANCP Log Files” on page 2.
4. (Optional) Configure access to the log file.  
See “Configuring Access to the ANCP Log File” on page 2.
5. (Optional) Configure a regular expression to filter logging events.  
See “Configuring a Regular Expression for ANCP Lines to Be Logged” on page 3.
6. (Optional) Configure flags to filter the operations to be logged.  
See “Configuring the ANCP Tracing Flags” on page 3.

The ANCP traceoptions operations are described in the following sections:

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

- Configuring a Regular Expression for ANCP Lines to Be Logged on page 3
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### **Configuring the ANCP Trace Log Filename**

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

To configure the filename for ANCP tracing operations:

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

```
[edit protocols ancp traceoptions]  
user@host# set file ancp_1
```

### **Configuring the Number and Size of ANCP 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. (DHCP local server and DHCP relay agent both support the `files` and `size` options for the `traceoptions` statement.)

```
[edit protocols ancp traceoptions]  
user@host# set file ancp_1 _logfile_1 files 20 size 2097152
```

### **Configuring Access to the ANCP Log File**

By default, only the user who configures the tracing operation can access the log files. 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 protocols ancp traceoptions]
```

```
user@host# set file ancp_1 _logfile_1 world-readable
```

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

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

```
[edit protocols ancp traceoptions]  
user@host# set file ancp_1 _logfile_1 no-world-readable
```

## Configuring a Regular Expression for ANCP 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 to be matched.

To configure regular expressions to be matched:

- Configure the regular expression.

```
[edit protocols ancp traceoptions]  
user@host# set file ancp_1 _logfile_1 match regex
```

## Configuring the ANCP 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
config	Trace configuration events
cos	Trace class-of-service events
general	Trace general flow.
packet	Trace ANCP packet transmit and receive events
process	Trace process internal events
protocol	Trace protocol operations
restart	Trace process restart flow
routing-socket	Trace routing socket events
session	Trace connection events and sessions
startup	Trace ANCP startup events and flow

Flag	Description
subscriber	Trace subscriber events
timer	Trace timer processing

To configure the flags for the events to be logged:

- Configure the flags.

```
[edit protocols ancp traceoptions]  
user@host# set flag restart
```

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