



NerveCenter Protocol and Perl Metrics

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Protocol and Perl Metrics

Starting in NerveCenter 6.1 Bld28, the nccmd command line utility supports generating metrics for NerveCenter Server's protocol layer and Perl interpreters. Calling upon these new features produces files in spreadsheet format (.csv) in /var/opt/NerveCenter/tables/ that can be used to look at the server's performance in these areas. For example, running TraceQueues and looking through the output may show you that your server's protocol layer is falling behind or is struggling to keep up. By then running the added Protocol-Metrics you get a closer look into just how the protocol layer is doing with respect to SNMP and ICMP operations. Similarly, interrogation of your TraceQueues may be showing that the Poll Manager Thread or one of the other threads is having trouble keeping up. Running the new Perl-Metrics you get a glimpse into how the Perl interpreters are functioning within your server. Together, these two added functions provide a deeper look into your server's protocol layer operation and Perl Interpreter usage.

Protocol-Metrics

Turning on protocol-metrics produces two csv files that are placed in /var/opt/NerveCenter/tables.

- 1) ProtocolLayer-NodeMetrics.csv
- 2) ProtocolLayer-PollMetrics.csv

The contents of these files are based on the node count on your server and the number of polls active per node for the running instance of ncserver. As such, these files can get fairly large in size and content. To make viewing and understanding the contents of these two files a bit easier, there is a Perl script in /opt/OSInc/nc/bin/ called "protocol-metrics.pl" that can be run against the csv files to produce html files suitable for viewing with a web browser. Copy the "protocol-metrics.pl" file into the /var/opt/NerveCenter/tables/ directory and execute it directly from there using ./protocol-metrics.pl to produce the html files for web browser viewing.

To enable the protocol-metrics via the nccmd command line utility, connect to your server and issue one of the following commands.

```
nccmd> trace server protocol-metrics now (takes a one-time snapshot at this point in time of the metrics)
```

```
nccmd> trace server protocol-metrics on x (where x represents the number of minutes of how often you want the server to generate the metrics. This feature overwrites the two .csv files at the selected interval. This feature also needs to be turned off using the "trace server all off" command.)
```

To turn off the metrics

```
nccmd > trace server all off
```

To check the status of protocol-metrics

```
nccmd > trace server status all
```

Converting the csv output to html

There is a script located in /opt/OSInc/nc/bin/ called "protocol-metrics.pl" that will convert the csv files into html files for easy viewing. The script needs to be run from within the same directory as the ProtocolLayer-Metrics.csv files (/var/opt/NerveCenter/tables). Copy the script from /opt/OSInc/nc/bin/ to /var/opt/NerveCenter/tables/.

To run the script

```
cd /var/opt/NerveCenter/tables
```

```
./protocol-metrics.pl (the output will be two html files)
```

ProtocolLayer-PollMetrics.html

ProtocolLayer-NodeMetrics.html

Once the output of the csv files has been converted into html format, you can view them in a browser. The output is formatted as below.

ProtocolLayer-PollMetrics.html

2014-12-03 22:11:00																														
R o w	P o l l	N o d e	SNMP															ICMP												
			Requests						Responses									Requests			Responses				Timing (cs)					
			T o t a l	A t t e m p t s		V e r s i o n			O p e r a t i o n			T o t a l	V e r s i o n			O p e r a t i o n			O u t c o m e			T i m i n g (c s)	T o t a l	A t t e m p t s		T o t a l	O u t c o m e			T i m i n g (c s)
				I n i t i a l	R e t r y	V 1	V 2	V 3	G e t	N e x t	B u l k		V 1	V 2	V 3	G e t	N e x t	B u l k	O K	T i m e o u t	S N M P			I C M P	m i n g		a v e r a g e	m a x	I n i t i a l	

The output is read either **DOWN** as a column or a combination of **ACROSS & DOWN** as a grouping. Below are examples of each so you can get the idea on how it all works

Reading **DOWN**

Row the row number in this table

Poll > ID the id number for the poll being tracked in this row

Node > ID the node id number for which the poll has been run

Reading **ACROSS&DOWN**

SNMP > Requests > Total total of snmp requests made

SNMP > Requests > Attempts > Initial number of initial attempts

SNMP > Requests > Attempts > Retry number of snmp retries

SNMP > Requests > Version > Vx the number of operations requested by version (V1, V2, V3)

SNMP > Requests > Operation > type (the number of requests by SNMP type (get, get-next, get-bulk)

SNMP > Responses > Total total of SNMP responses

SNMP > Responses > Version the number of SNMP responses by version V1, V2, V3

SNMP > Responses > Operation number of SNMP responses by type (get , get-next, get-bulk)

SNMP > Responses > Outcome the number of responses by outcome (OK, SNMP_TIMEOUT, SNMP_ERROR, ICMP_ERROR)

SNMP > TIMING (cs) timing in Centi-seconds (cs) for Min, Avg, Max

ICMP > Requests > Total number of total ICMP requests

ICMP > Requests > Attempts The number of ICMP requests for Initial requests and retries

ICMP > Responses > Total total number of ICMP responses

ICMP > Responses > Outcome the number of ICMP responses that are (OK, ICMP_TIMEOUT, ICMP_ERROR)

ICMP > Timing (cs) timing in Centi-seconds (cs) for Min, Avg, Max

Perl-Metrics

The NerveCenter server has a number of Perl interpreters that can be looked at to see how they are performing. These interpreters work in conjunction with the poll, mask, perl-sub and action router threads within the server and can provide valuable information on each threads usage of the interpreter.

Turning on perl-metrics produces a file called "PerlUser-Metrics.csv " in the tables directory. It is turned on thru the ncccmd utility just like the Protocol-Metrics above.

```
NC>trace server perl-metrics on 2    (Tracing metrics enabled, 2 minute rate)
```

```
NC>trace server status all
```

Tracing enabled for

perl-metrics, every 2 minutes

```
NC>trace server perl-metrics now    ( a snapshot of the interpreters at this instance in time)
```

Perl user metrics written

Within the csv file there is one row for each Perl interpreter. The columns go like this:

ID - the integer ID for the Perl interpreter.

Interpreter - the name of the Perl interpreter

Polls - the number times a Poll Function has used this interpreter

Traps - the number of times a TrapMask has used this interpreter

PSubs - the number of times a Perl Subr has used this interpreter

ActRtrs - the number of times an action router check has used this interpreter

ETotal - the total execution time used up by this interpreter.

EMin - the least amount time used for a single perl execution

EAvg - the average amount of time used for perl executions

EMax - the max amount of time used so far for a single perl execution

WTotal - the total amount of time spent waiting for this interpreter to become available

WMin / WAvg / WMax - the min/average/max wait times

TStart - the UNIX timestamp of when this interpreter began its most recent execution

TStop - the UNIX timestamp of when this interpreter ended its most recent execution

ThreadId - the id of the thread to last use this Perl interpreter

Type - the type of logic last used: PerlSub, Poll, TrapMask

ID - the id of the PerlSub or Poll or TrapMask to last use this interpreter

Name - the actual name of the PerlSub or Poll or TrapMask

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If you have not received or have forgotten your log-in credentials, please e-mail us with a contact name and company specifics at techsupport@logmatrix.com.

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