Performance Tuning of the Network Performance Server in Network Node Manager i
December 8, 2016
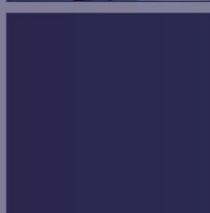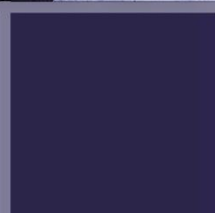
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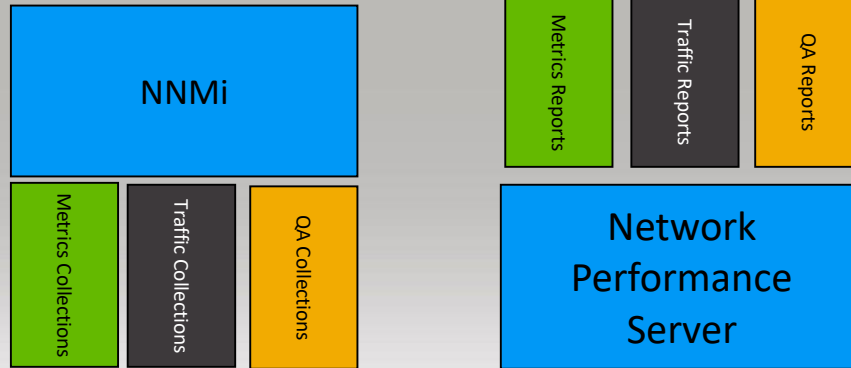YOUR INDEPENDENT HPE SOFTWARE USER COMMUNITY

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Agenda

➢ Introduction to NNMi iSPI for Metrics

➢ Is your NPS server under performing?

➢ Tuning of different components of NPS

➢ Best practices

➢ Some troubleshooting.

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Introduction

➢ Performance – real time charts and historical analysis

➢ Performance Components can reside on same server as NNM, or on a dedicated server

➢ Foundation of the performance components is the Network Performance Server (NPS)

➢ Many iSPIs use NPS for reporting purposes

- IPT
- Multicast
- MPLS
- Quality Assurance
- Metrics
- Traffic

Is your NPS server under performing?

Do you see your reports taking time than usual?

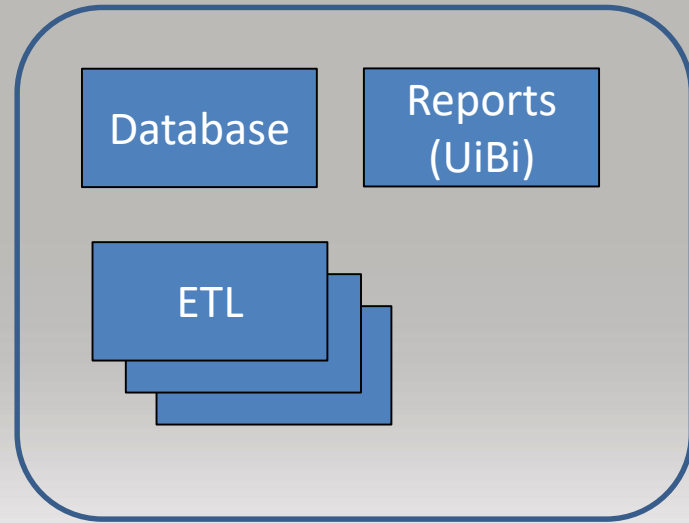Do you see many metric files getting stuck in nnmi shared folder?

Do you see the server resource consumption on a high?

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Do I need to scale up?

Am I meeting the support matrix?
Explore FSD.

Database

Reports (UiBi)

ETL

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Is your NPS server STILL under performing?

- ➢ **ETL**
  - **How to find if ETL needs tuning?**
    - Backlog of metric files
      - Mar 24, 2016 12:24:39 AM [PID:44817] INFO /opt/OV/NNMPerformanceSPI/bin/.etl-runtime.Interface_Health.ovpl[1474] ETL.Interface_Health Found 1595 new metrics files for InterfaceMetrics, processing first batch of 4 files...
    - Increase in input (records in metric and topo files, number of topo files)
      - Mar 24, 2016 12:25:21 AM [PID:44817] INFO /opt/OV/NNMPerformanceSPI/bin/.etl-runtime.Interface_Health.ovpl[1877] ETL.Interface_Health Forking 15 child preprocessors to process total of 2901862 records pending
    - Missing ETL-Heartbeat
      - MainServiceLoop ETL process for ExtensionPack Interface_Health: Heartbeat last received 16 minutes ago (expected every 5 minutes). Process will be restarted 60 minutes after last heartbeat.

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ETL Tuning

➤ **Tune the following ETL parameters :**

- ETL_MaxChildProcs

- ETL_MaxRecordsPerChild

- ETL_MaxMetricsFilesPerBatch

- ETL_SCDType2Disable

- PRSPI_ENABLE_BASELINE

ETL Tuning

NNMPerformanceSPI.cfg

```
# ETL Controls
ETL_MaxChildProcs              5
ETL_MaxRecordsPerChild     100000
ETL_MaxMetricsFilesPerBatch    1      # Increasing may improve backlog processing time, but will also increase ETL memory usage.
ETL_MaxAllowedTimeKeyRange     14     # Max allowed TimeRange for any batch of input data (in days)
ETL_TimeKeyRangeCheck        3650       # If set, ETL will reject records more than N days from system time (dflt 10 years)
ETL_SCDType2Disable            0         # Flag to disable ETL from Type2 Group Calculations.  To disable, set to 1




PRSPI_HTTP_PORT      9300
PRSPI_HTTPS_PORT     9305
PRSPI_HTTPS_ENABLED FALSE


# Enable or disable baseline calculations. Turn off  (comment out line) in very high load systems.
PRSPI_ENABLE_BASELINE    1
```

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Is your NPS server STILL under performing?

DB

- ➤ **How to find if DB needs tuning?**
  - Reports run for longer duration
  - IQ_SYSTEM_TEMP errors
    - I. 09/07 19:16:44. 0000028590 Allocation failed. Dbspace IQ_SYSTEM_TEMP is OUT OF SPACEI. 09/07 19:16:44. 0000028590 Exception Thrown from slib/s_blockmap.cxx:4823, Err# 0, tid 540 origtid 540I. 09/07 19:16:44. 0000028590   O/S Err#: 0, ErrID: 2096 (s_nodbspaceexception); SQLCode: -1009170, SQLState: 'QSB66', Severity: 14I. 09/07 19:16:44. 0000028590 [20223]: You have run out of space in IQ_SYSTEM_TEMP DBSpace.

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DB Tuning

➢ IQ parameters
  • Iqtc, iqmc, iqlm

➢ DB usage
  • IQ_SYSTEM_TEMP, USER_MAIN

DB Tuning

Perfspi.cfg

```
# note: you must restart IQ for this parameter to take effect
# also note that on RHEL6 systems the kernel setting for maximum number of threads is limited to 1024.
#

-iqmc 18738
-iqtc 56214
-iqlm 37476

# Logging
# Explicitly place server log and error log in NPS logs dir, limit to 512M with one old generation, add SQL and connection timing detail
-o "/var/opt/OV/NNMPerformanceSPI/logs/perfspi.srv.log"
-oe "/var/opt/OV/NNMPerformanceSPI/logs/perfspi.err.log"
-on 512m
-zr SQL
-zt
```

Is your NPS server STILL under performing?

UI

- ➢ How to find if UI needs tuning?
  - Reports fail to run with cognos errors
    - http-9300-55 caf 2047 1 Audit.dispatcher.caf Request Failure SecureErrorId: *<date>-<time>*.646-#44 Original Error: DPR-ERR-2002 Unable to execute the request because there were no connections to the process available within the configured time limit
  - ASE logs has specific errors

00:0002:00000:00010:2014/05/17 17:21:09.50 server There are not enough 'user connections' available to start a new process. Retry when there are fewer active users, or ask your System Administrator to reconfigure ASE with more user connections.

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UI Tuning

- ➤ **BI parameters**
- ➤ **ASE parameters**

Property	Default	Suggested Value
Number of high affinity connections for the report service during non-peak period	2	10
Number of low affinity connections for the report service during non-peak period	8	10
Maximum number of processes for the report service during non-peak period	2	10
Number of high affinity connections for the report service during peak period	2	10
Number of low affinity connections for the report service during peak period	8	10
Maximum number of processes for the report service during peak period	2	10

Best Practices

- Size properly

- Number of extension packs

- Number of concurrent users

- Use case based reporting

- Number of schedules planned

- Ad-hoc reporting

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Some Troubleshooting

- ➤ **Different log files**
  - • prspi.log - Contains all operational details of NPS.
  - • perfspi.srv.log - Contains all operational details of the Sybase IQ database used by NPS. This file can grow up to 512 MB.
  - • perfspi.iqmsg - Sybase IQ messages file. This file can grow up to 512 MB.
  - • dbproxy.log - Records all database queries triggered by NPS.
  - • perfspiUI.log - Log file created and updated by the Business Intelligence Server and content store.

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Some Troubleshooting

BI admin page

Some troubleshooting

- Iostat, vmstat, top, perfmon

```
[root@nmcvm094 ~]# iostat -x 5 5
Linux 2.6.32-358.el6.x86_64 (nmcvm094)  11/29/2016     _x86_64_      (8 CPU)

avg-cpu:  %user   %nice %system %iowait  %steal   %idle
           1.23    0.00    0.64    0.02    0.00   98.11
```

Device:	rrqm/s	wrqm/s	r/s	w/s	rsec/s	wsec/s	avgrq-sz	avgqu-sz	await	svctm	%util
sda	0.10	207.42	0.63	26.89	22.54	1901.11	69.91	0.06	2.06	0.53	1.46
dm-0	0.00	0.00	0.72	234.27	22.42	1900.71	8.18	0.80	3.42	0.06	1.46
dm-1	0.00	0.00	0.01	0.05	0.10	0.40	8.00	0.00	4.95	0.20	0.00

Some troubleshooting

```
[root@nmcvm094 ~]# vmstat 2 2
procs -----------memory---------- ---swap-- -----io---- --system-- -----cpu-----
 r  b  swpd  free   buff  cache   si  so   bi  bo   in   cs us sy id wa st
 1  0 97212 841000 390148 6619360  0   0    2  119   9    5  1  1 98  0  0
 0  0 97212 840620 390148 6619360  0   0    0    4  900 1757  0  0 99  0  0
[root@nmcvm094 ~]#
```

```
top - 14:55:59 up 7 days,  4:53,  2 users,  load average: 0.08, 0.06, 0.06
Tasks: 391 total,   1 running, 390 sleeping,   0 stopped,   0 zombie
Cpu(s):  0.7%us,  0.6%sy,  0.0%ni, 98.7%id,  0.0%wa,  0.0%hi,  0.0%si,  0.0%st
Mem:  16333916k total, 15490376k used,   843540k free,   390148k buffers
Swap:  8290296k total,    97212k used,  8193084k free,  6619820k cached
```
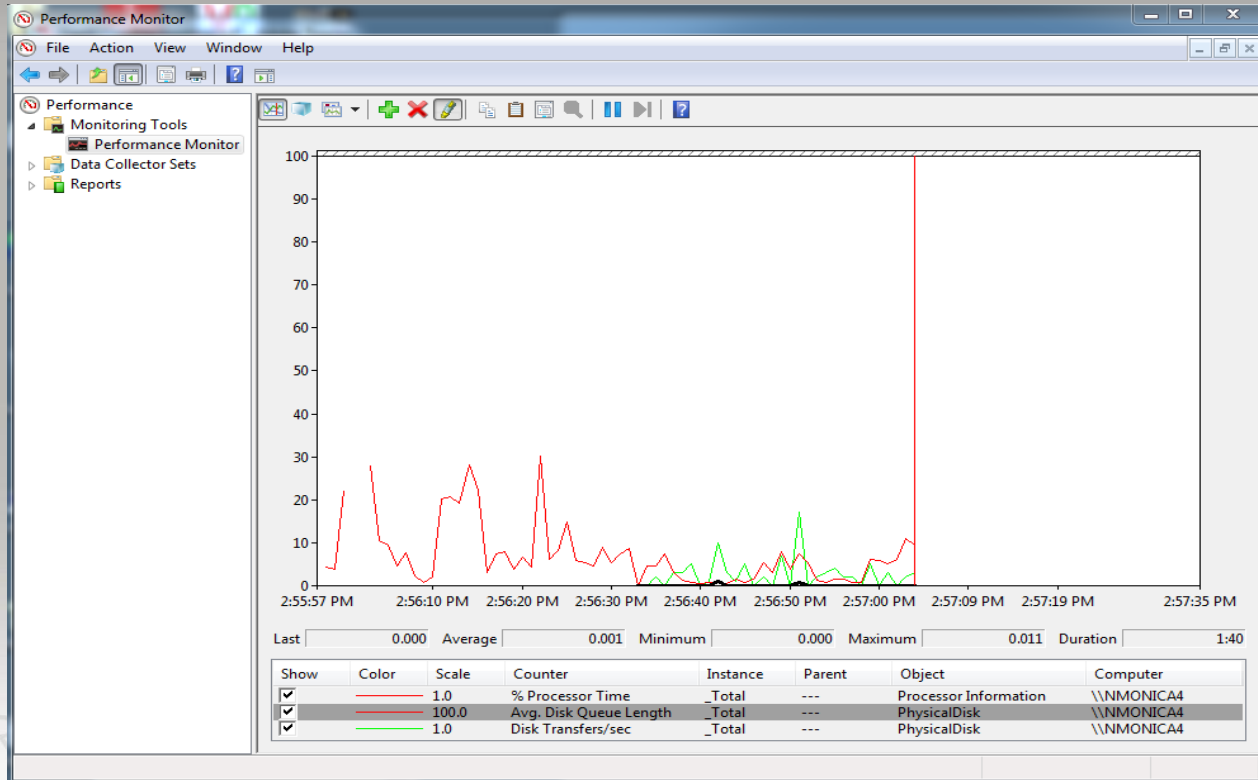
```
 PID USER      PR  NI  VIRT  RES  SHR S %CPU %MEM    TIME+  COMMAND
2894 nmsproc   20   0 13.7g 2.6g  24m S  3.6 16.5 214:35.85 /opt/OV/bin/ovjboss
5108 root      20   0  496m 229m 228m S  1.7  1.4  42:16.86 /opt/OV/nonOV/sybas
5317 root      20   0 6313m 1.4g  25m S  1.0  9.0  19:27.42 /opt/OV/nonOV/jdk/n
7254 root      20   0 15308 1496  956 R  0.7  0.0   0:00.10 top -c
```

Some troubleshooting

Q & A

Additional Resources

Available On-Demand:
Drive Value with NNMi and NA with Integrations and Automation
http://www.vivit-worlddwide.org/members/group_content_view.asp?group=90989&id=584576

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