



**Hewlett Packard  
Enterprise**

# **Modern Operation & Performance Management**

2016

# Operation / Performance

## New Web ViewPoint



NS Live

10.26.98.21/dnslive30/#/index

Jira1DQBMDGD

AWS

HP S.

EV

Lucid

FutexLive

Virtu

General

NSLive

NS Live

Other bookmarks

Iddev.khody

NonStop

WSCLLOUD

WSCLCLOUD 16:52:05

CPU S

| Core | Usage (%) |
|------|-----------|
| 00   | 1.2       |
| 01   | 1.8       |
| 02   | 0.8       |
| 03   | 0.7       |
| 04   | 0.7       |
| 05   | 0.7       |
| 06   | 1.5       |
| 07   | 0.6       |

Process

| Core | Usage (%) |
|------|-----------|
| 00   | 0.4       |
| 01   | 0.4       |
| 02   | 0.2       |
| 03   | 0.2       |
| 04   | 0.2       |
| 05   | 0.1       |
| 06   | 1.2       |
| 07   | 0.1       |

Disk

| Interval | Usage (%) |
|----------|-----------|
| 40       | 0.12      |
| 45       | 0.12      |
| 50       | 0.12      |
| 55       | 0.13      |
| 00       | 0.12      |
| 05       | 0.12      |

TMP

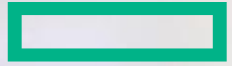
| Interval | Usage (Units) |
|----------|---------------|
| 40       | 1500          |
| 45       | 1500          |
| 50       | 1500          |
| 55       | 1500          |
| 00       | 1500          |
| 05       | 1500          |

23801\_Stuart\_Ranch\_...p...

Show all downloads

# Operation Solutions

| Solution           | X86     | Blade   | Itanium |
|--------------------|---------|---------|---------|
| Web ViewPoint Plus | BE299AC | QSJ75V1 | HSJ75V1 |
| Web ViewPoint      | BE295AC | QSJ70V5 | HSJ70V5 |



**Hewlett Packard  
Enterprise**

# Remote Analyst

2016

```

2+ install-cpu 1
Cpu 1 MSE-Q      Init Lock Pgs      19      Mem Pages      524288
Memory MB      8192      PCBs      12198      Pg Size      16384      Bytes
Format Version: H87      Data Version: H87      Subsystem Version: 3
Local System VMSDEMO      From 7 Jul 2015, 14:25:08      For 60 Seconds
----- Processor -----
Cpu-Busy-Time      8.47 %      Dispatches      182.55 /s
Cpu-Qtime      8.01 AQL      Intr-Busy-Time      8.05 %
Comp-Traps      79.21 /s      Process-Overhd
----- Memory -----
Starting-Free-Mem      440,893 #      Ending-Free-Mem      440,898 #
Swaps      0 #      Page-Requests      8.05 /s
MM-Page-Scans      6.07 /s      Page-Scans      6.07 /s
Unsp-Page-Start      0 #      Ending-UCME
Starting-SCL      42,420 #      Ending-SCL      42,420 #
Starting-Free-CIDs      331,611 #      Ending-UCL      331,614 #
Starting-Timer-Cells      62,968 #      Ending-Free-CIDs      62,968 #
Locked-Page-Start      1,137 #      Ending-Timer-Cells      1,137 #
Locked-Page-End      55,971 #      Locked-Page-End      55,974 #
----- Device I/O -----
Disc-I/Os      8.06 /s      Cache-Hits      0.98 /s
Transactions      6.15 /s      Response-Time
----- Messaging -----
Link-Prepush-Msgs      2.35 /s      Readlinkcache-All      10.16 /s
Link-Readlink-Msgs      9.82 /s      Readlinkcache-Ctrl      8.72 /s
Link-Large-Msgs      0.18 /s      Readlinkcache-None      19.46 /s
Replyctrlicache-Msgs
++

```

```

----- Device I/O -----
Disc-I/Os      6.15 /s      Cache-Hits      0.97 /s
Transactions      6.15 /s      Response-Time
----- Messaging -----
Link-Prepush-Msgs      11.22 /s      Readlinkcache-All      17.47 /s
Link-Readlink-Msgs      0.18 /s      Readlinkcache-Ctrl      2.19 /s
Link-Large-Msgs      0.18 /s      Readlinkcache-None      19.10 /s
Replyctrlicache-Msgs
++
----- Endpoint Transfers Initiated by this Local Processor -----
to/from      READS INTO CPU      READ BYTES      WRITES FROM CPU      WRITE BYTES
CPU-0      31.37 /s      59,603 /s      37.26 /s      48,593 /s
CPU-1
CPU-2
CPU-3
CPU-4
CPU-5
CPU-6
CPU-7
CPU-8
CPU-9
CPU-10
CPU-11
CPU-12
CPU-13
CPU-14
CPU-15
See TOTAL for sum over all initiating CPUs; total data into & from each CPU.
++

```

# Cloud Analytics

Remote Analyst

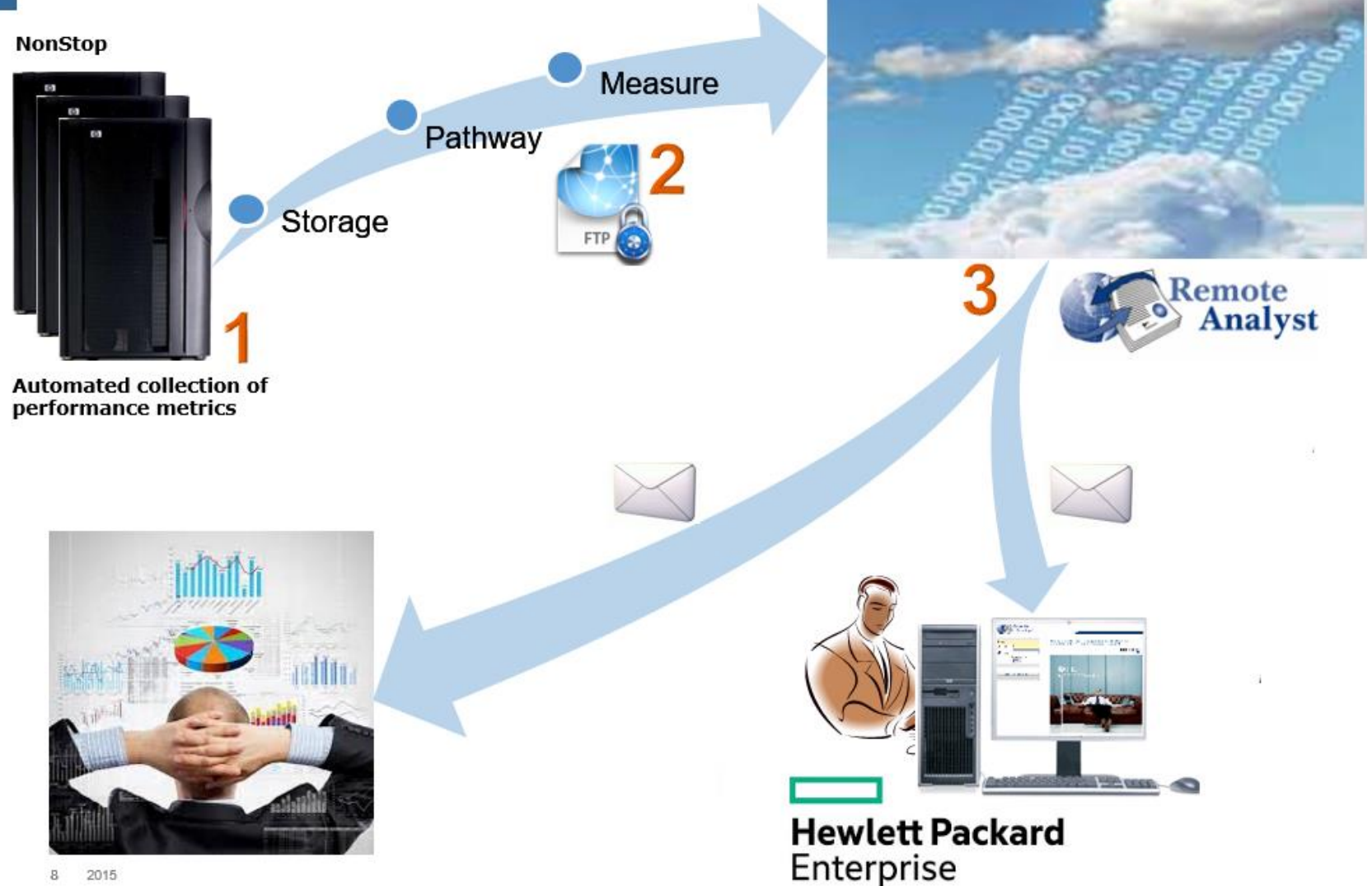
AWS

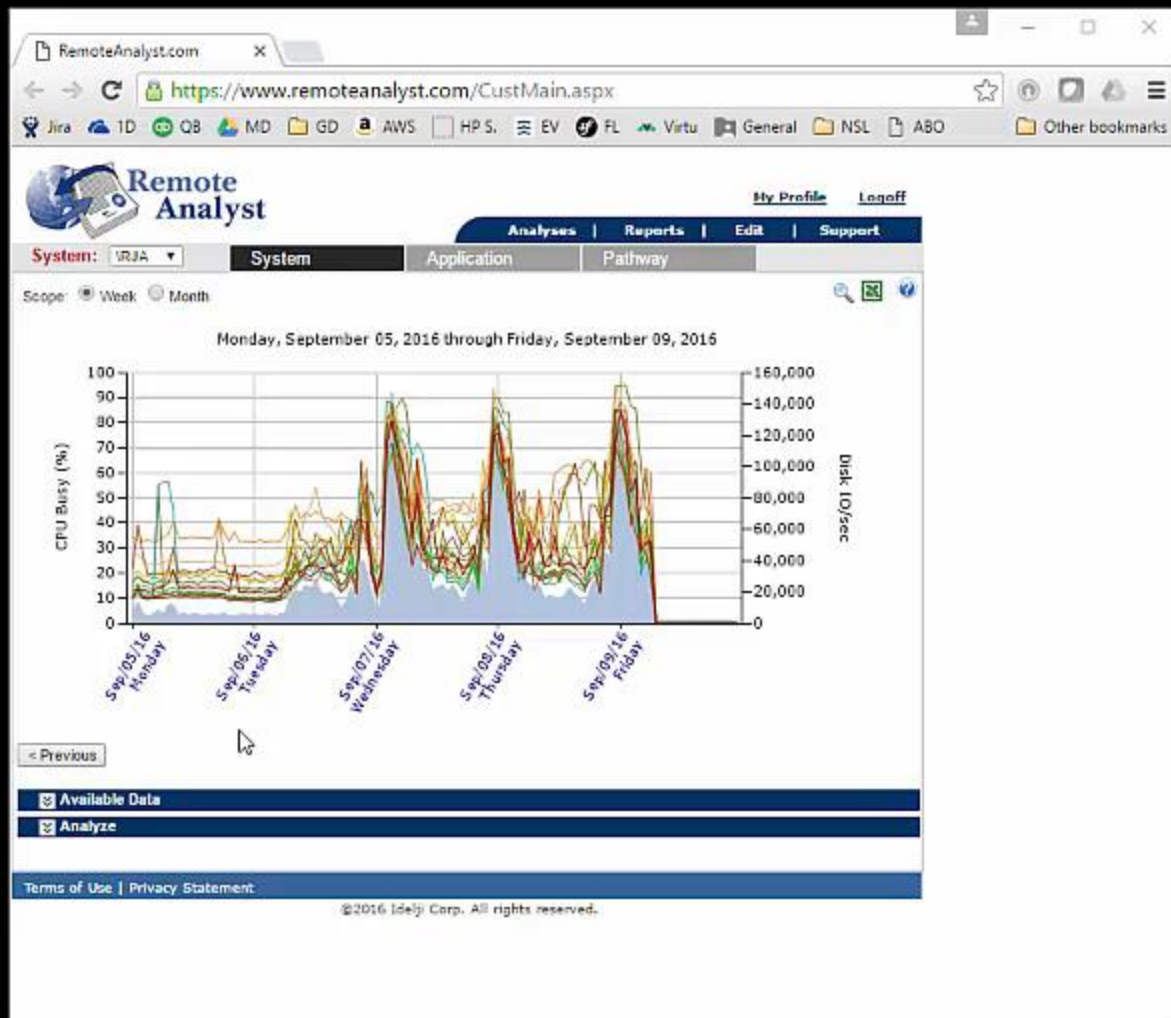
or

Your Private Cloud

“Local Analyst”

## Remote Analyst Architecture





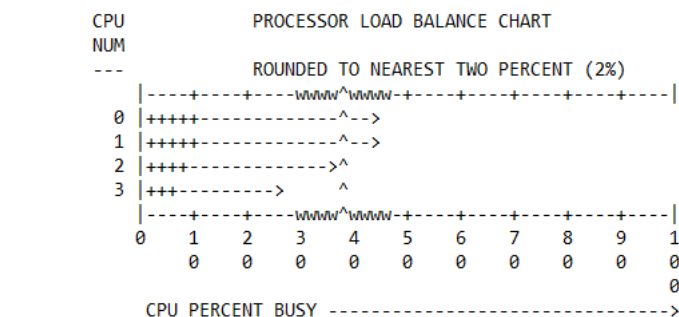
# Quick Tuner

## Know your NonStop

| A  | B                                      |
|----|----------------------------------------|
| 1  | Table of Contents                      |
| 2  | About                                  |
| 3  | System Performance Summary             |
| 4  | Node Overview                          |
| 5  | Processor Overview                     |
| 6  | System Performance Score               |
| 7  | Global Performance Indicators          |
| 8  | Node Characteristics                   |
| 9  | Disk Volume Performance                |
| 10 | CPU                                    |
| 11 | Interval Busy Graph                    |
| 12 | Processor Load Balance                 |
| 13 | Processor Performance                  |
| 14 | High/Low PIN Usage                     |
| 15 | Queue Lengths                          |
| 16 | Memory Utilization                     |
| 17 | Process and Busy Distribution Analysis |
| 18 | Process Counts                         |
| 19 | Percent CPU Busy                       |
| 20 | Peak Processes Per Interval            |
| 21 | Peak Processes                         |
| 22 | Queue Processes                        |
| 23 | Idle Programs                          |
| 24 | Idle Processes                         |
| 25 | Storage Analysis                       |
| 26 | Capacity Utilization                   |
| 27 | Processor Disk Diagram                 |
| 28 | Processor Disk Detail                  |
| 29 | Volume Performance                     |
| 30 | Cache Performance                      |
| 31 | Performance Score                      |
| 32 | Subprocess Recommendations             |
| 33 | OSS Analysis                           |
| 34 | OSS Name Servers                       |
| 35 | Process - OSS NS                       |
| 36 | OSS CPU                                |
| 37 | OSS Infrastructure                     |
| 38 | OSS Infrastructure Details             |
| 39 | Alerts                                 |
| 40 | DISK_PROCESS_QLength                   |

|     | A                   | B | C       | D      | E       | F      | G       | H      | I       | J      | K       | L      | M       | N      | O       | P      | Q       | R      | S       | T      | U       | V      | W       | X     | Y       | Z      |  |
|-----|---------------------|---|---------|--------|---------|--------|---------|--------|---------|--------|---------|--------|---------|--------|---------|--------|---------|--------|---------|--------|---------|--------|---------|-------|---------|--------|--|
| 1   |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 2   | Processor Overview  |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 3   |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 4   | Processor           |   | 00      |        | 01      |        | 02      |        | 03      |        | 04      |        | 05      |        | 06      |        | 07      |        | 08      |        | 09      |        | 10      |       | 11      |        |  |
| 5   | CPU Type            |   | NS16200 |        | NS16200 |        | NS16200 |        | NS16200 |        | NS16200 |        | NS16200 |        | NS16200 |        | NS16200 |        | NS16200 |        | NS16200 |        | NS16200 |       | NS16200 |        |  |
| 6   | Memory Size (GB)    |   | 8       |        | 8       |        | 8       |        | 8       |        | 8       |        | 8       |        | 8       |        | 8       |        | 8       |        | 8       |        | 8       |       | 8       |        |  |
| 7   | Disk Process        |   | 3       |        | 3       |        | 16      |        | 16      |        | 14      |        | 14      |        | 18      |        | 18      |        | 0       |        | 0       |        | 0       |       | 0       |        |  |
| 8   |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 9   | CPU Out of Balance  |   | N       |        | Y       |        | N       |        | N       |        | Y       |        | N       |        | N       |        | N       |        | Y       |        | N       |        | Y       |       | N       |        |  |
| 10  |                     |   | Avg     | Max    | Avg     | Max    | Avg     | Max    | Avg     | Max    | Avg     | Max    | Avg     | Max    | Avg     | Max    | Avg     | Max    | Avg     | Max    | Avg     | Max    | Avg     | Max   | Avg     | Max    |  |
| 11  | CPU Busy %          |   | 50      | 54     | 37      | 40     | 52      | 54     | 48      | 50     | 54      | 58     | 51      | 54     | 53      | 56     | 52      | 55     | 32      | 35     | 46      | 49     | 31      | 33    | 39      | 42     |  |
| 12  | CPU Q Length        |   | 2.28    | 2.63   | 0.98    | 1.12   | 3.09    | 4.06   | 2.07    | 2.74   | 2.34    | 3.67   | 2.36    | 2.69   | 2.16    | 2.48   | 1.72    | 1.91   | 0.82    | 0.88   | 1.54    | 1.70   | 0.83    | 0.91  | 3.56    | 4.24   |  |
| 13  | Dispatch rate       |   | 21,722  | 23,580 | 15,866  | 16,852 | 23,174  | 24,004 | 21,378  | 22,577 | 24,202  | 26,121 | 22,463  | 23,840 | 26,276  | 28,838 | 25,745  | 26,994 | 10,899  | 11,615 | 14,036  | 14,775 | 9,397   | 9,839 | 13,668  | 14,392 |  |
| 14  | Swap rate           |   | 0.80    | 1.63   | 1.29    | 3.71   | 0.78    | 2.19   | 0.80    | 2.10   | 0.76    | 2.24   | 1.15    | 2.33   | 0.78    | 2.22   | 0.87    | 1.42   | 1.02    | 2.06   | 0.95    | 1.89   | 1.07    | 2.33  | 0.88    | 2.20   |  |
| 15  | Processes           |   | 2,085   | 2,085  | 2,567   | 2,567  | 2,170   | 2,170  | 2,361   | 2,361  | 2,080   | 2,080  | 2,193   | 2,193  | 2,110   | 2,110  | 2,009   | 2,009  | 2,067   | 2,067  | 2,153   | 2,153  | 2,108   | 2,108 | 2,160   | 2,160  |  |
| 16  | Low PIN             |   | 90      | 93     | 123     | 126    | 137     | 139    | 88      | 148    | 129     | 130    | 94      | 128    | 95      | 96     | 96      | 100    | 53      | 58     | 31      | 63     | 59      | 64    | 40      | 69     |  |
| 17  | Transient Processes |   | N/A     | 479    | N/A     | 870    | N/A     | 384    | N/A     | 598    | N/A     | 344    | N/A     | 489    | N/A     | 428    | N/A     | 343    | N/A     | 606    | N/A     | 654    | N/A     | 622   | N/A     | 671    |  |
| 18  | Disk Volume Busy    |   | 9.12    | 26.10  | 0.00    | 0.00   | 3.23    | 5.63   | 17.01   | 79.95  | 9.21    | 27.23  | 7.62    | 16.24  | 8.84    | 37.55  | 12.31   | 43.00  | 0.00    | 0.00   | 0.00    | 0.00   | 0.00    | 0.00  | 0.00    | 0.00   |  |
| 19  | Disk Process Busy   |   | 1.14    | 2.30   | 0.00    | 0.00   | 1.64    | 2.74   | 1.35    | 2.98   | 1.64    | 3.46   | 1.51    | 2.29   | 1.39    | 4.27   | 1.42    | 2.84   | 0.00    | 0.00   | 0.00    | 0.00   | 0.00    | 0.00  | 0.00    | 0.00   |  |
| 20  | % Mem used          |   | 60.06   | 60.49  | 56.20   | 56.49  | 80.01   | 80.47  | 81.26   | 82.00  | 77.61   | 78.41  | 75.30   | 76.01  | 79.95   | 81.56  | 76.88   | 77.29  | 48.93   | 49.48  | 48.37   | 48.63  | 48.69   | 49.90 | 74.23   | 76.83  |  |
| 21  | Mem left GB         |   | 3.20    | 3.24   | 3.50    | 3.54   | 1.60    | 1.65   | 1.50    | 1.54   | 1.79    | 1.85   | 1.98    | 2.03   | 1.60    | 1.67   | 1.85    | 1.89   | 4.09    | 4.14   | 4.13    | 4.15   | 4.10    | 4.21  | 2.06    | 2.22   |  |
| 22  |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 23  |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 24  |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 25  |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 26  |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 27  |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 28  |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 29  |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 30  |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 31  |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 32  |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 33  |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 34  |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 35  |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 36  |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 37  |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 38  |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 39  |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 40  |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 41  |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 42  |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 43  |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 44  |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 45  |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 46  |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 47  |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 48  |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 49  |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 50  |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 51  |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 52  |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 53  |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 54  |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 55  |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 56  |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 57  |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 58  |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 59  |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 60  |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 61  |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 62  |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 63  |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 64  |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 65  |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 66  |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 67  |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 68  |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 69  |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 70  |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 71  |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 72  |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 73  |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 74  |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 75  |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 76  |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 77  |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 78  |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 79  |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 80  |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 81  |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 82  |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 83  |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 84  |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 85  |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 86  |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 87  |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 88  |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 89  |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 90  |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 91  |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 92  |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 93  |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 94  |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 95  |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 96  |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 97  |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 98  |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 99  |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 100 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 101 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 102 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 103 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 104 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 105 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 106 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 107 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 108 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 109 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 110 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 111 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 112 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 113 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 114 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 115 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 116 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 117 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 118 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 119 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 120 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 121 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 122 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 123 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 124 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 125 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 126 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 127 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 128 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 129 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 130 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 131 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 132 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 133 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 134 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 135 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 136 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 137 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 138 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 139 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 140 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 141 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 142 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 143 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 144 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 145 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 146 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 147 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 148 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 149 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 150 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 151 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 152 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 153 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 154 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 155 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 156 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 157 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 158 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 159 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 160 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 161 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 162 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 163 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 164 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 165 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 166 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 167 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 168 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 169 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 170 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 171 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 172 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 173 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 174 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 175 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 176 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 177 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 178 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 179 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 180 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 181 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 182 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 183 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 184 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 185 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 186 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 187 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 188 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 189 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 190 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 191 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 192 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 193 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 194 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 195 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 196 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 197 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 198 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 199 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 200 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 201 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 202 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 203 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 204 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 205 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 206 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 207 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 208 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 209 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 210 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 211 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 212 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 213 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 214 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 215 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 216 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 217 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 218 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 219 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 220 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 221 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 222 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 223 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 224 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 225 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 226 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 227 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 228 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 229 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 230 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 231 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 232 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 233 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 234 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 235 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 236 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 237 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 238 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 239 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 240 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 241 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 242 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 243 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 244 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 245 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 246 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 247 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 248 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 249 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 250 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 251 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 252 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 253 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 254 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 255 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 256 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 257 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 258 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 259 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 260 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 261 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 262 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 263 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 264 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 265 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 266 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 267 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 268 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 269 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 270 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 271 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 272 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 273 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 274 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 275 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 276 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 277 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 278 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 279 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 280 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 281 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 282 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 283 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 284 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 285 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 286 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 287 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 288 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 289 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 290 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 291 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 292 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 293 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 294 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 295 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 296 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 297 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 298 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 299 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 300 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 301 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 302 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 303 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 304 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 305 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 306 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 307 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 308 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 309 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 310 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 311 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 312 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 313 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 314 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 315 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 316 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 317 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 318 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 319 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 320 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 321 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 322 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 323 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 324 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 325 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 326 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 327 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 328 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 329 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 330 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 331 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 332 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 333 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 334 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 335 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 336 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 337 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 338 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 339 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 340 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 341 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 342 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 343 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 344 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 345 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 346 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 347 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 348 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 349 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 350 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 351 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 352 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 353 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 354 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 355 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 356 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 357 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 358 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 359 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 360 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 361 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 362 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 363 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 364 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 365 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 366 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 367 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 368 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 369 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 370 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 371 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 372 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 373 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 374 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 375 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 376 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 377 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 378 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 379 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 380 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 381 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 382 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 383 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 384 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 385 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 386 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 387 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 388 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 389 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 390 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 391 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 392 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 393 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 394 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 395 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 396 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 397 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 398 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 399 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 400 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 401 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 402 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 403 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 404 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 405 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 406 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 407 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 408 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 409 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 410 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 411 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 412 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 413 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 414 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 415 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 416 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 417 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 418 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 419 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 420 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 421 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 422 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 423 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 424 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 425 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 426 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 427 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 428 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 429 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 430 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 431 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 432 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 433 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 434 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 435 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 436 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 437 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 438 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 439 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 440 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 441 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 442 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 443 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 444 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 445 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 446 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 447 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 448 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 449 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 450 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 451 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 452 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 453 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 454 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 455 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 456 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 457 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 458 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 459 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |
| 460 |                     |   |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |       |         |        |  |

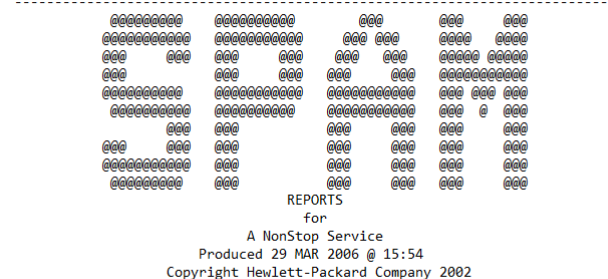
# You liked this in the 80s.



PROCESSOR PERFORMANCE CHART

|       |        |   |       |       |       |       |
|-------|--------|---|-------|-------|-------|-------|
| 1 CPU | NUM    | : | 0     | 1     | 2     | 3     |
| 2 CPU | TYPE   | : | TXP   | TXP   | TXP   | TXP   |
| 3 MB  | MEMORY | : | 8     | 8     | 8     | 8     |
| 4 PCT | BUSY%  | : | 45.54 | 43.63 | 36.66 | 26.93 |

MEASURE Load ID: M0328N3 - 28 MAR 2006, 13:27:30 to 13:27:40 ( 10 secs)



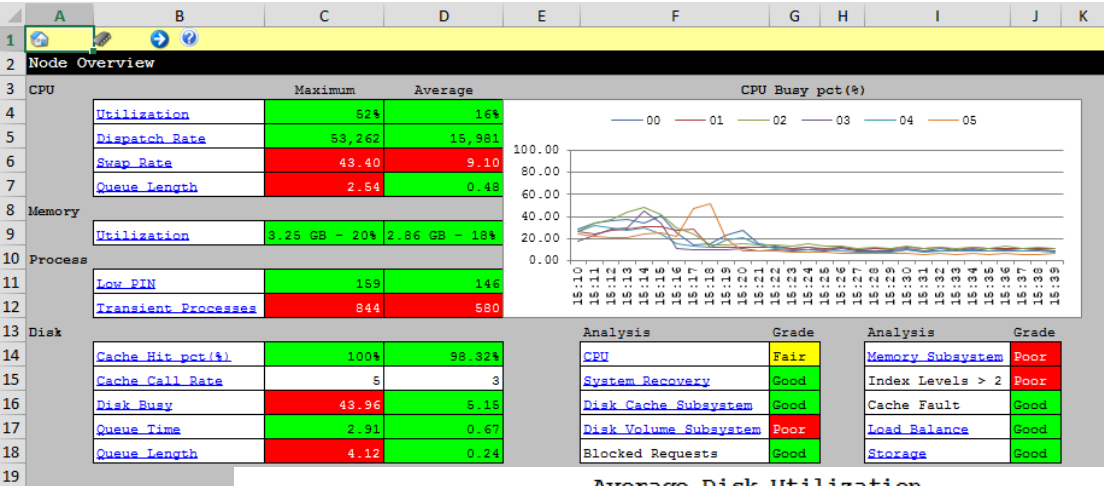
SPAMH01 V5.5 (16Sep05) NonStop Services  
MEASURE Load ID: M0328N3 - 28 MAR 2006, 13:27:30 to 13:27:40 ( 10 secs)

MEASURE Load ID: M0328N3 - 28 MAR 2006, 13:27:30 to 13:27:40 (Window: 10.33 seconds)

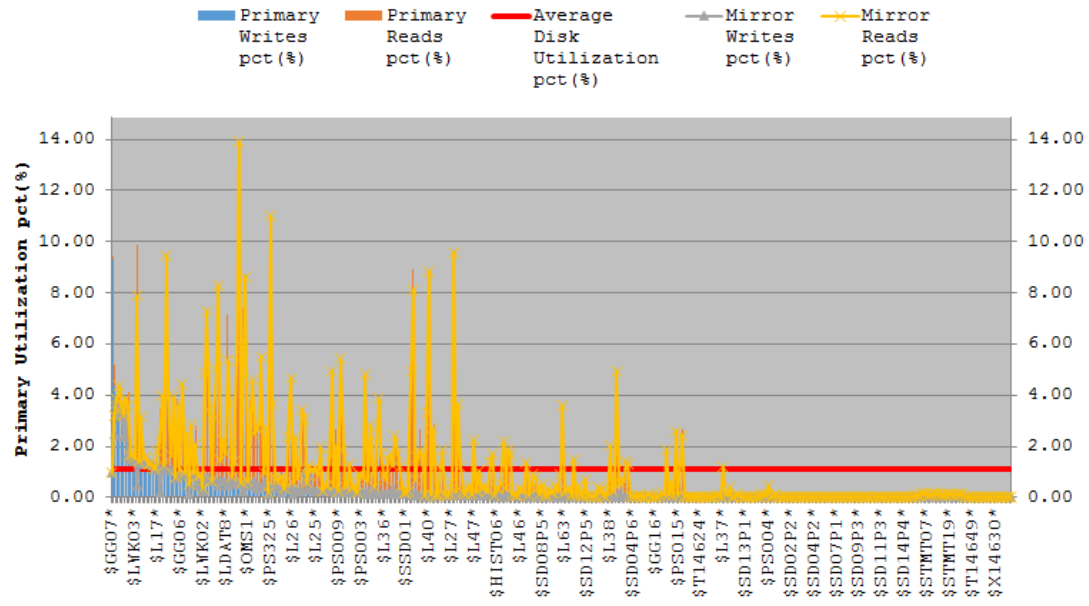
## PHYSICAL DISC I/O Activity Report for System \RS06 (Release H06)

| \$Device | LDV | Rqsts/ Second | Avge. Service (msec) | PC Gr.Md.S1 | Total Busy% | <-I/Os PER SECOND--> |        |       | <---BYTES TRANSFERRED PER SECOND--- |         |         | <---AVERAGES P |        |
|----------|-----|---------------|----------------------|-------------|-------------|----------------------|--------|-------|-------------------------------------|---------|---------|----------------|--------|
|          |     |               |                      |             |             | Reads                | Writes | Seeks | Input                               | Output  | Total   | Read           | Write  |
| \$XATA43 | 232 |               |                      | 09 >>.02.01 | .7%         | .5                   | 5.2    |       | 1,292                               | 71,680  | 72,972  | 2,662          | 13,672 |
| \$XATA49 | 227 | 7.7           | .7                   | 07 >>.02.01 |             |                      |        |       | 0                                   | 0       | 0       |                |        |
|          |     |               |                      | 07 >>.03.01 | .0%         |                      | 1.0    |       | 0                                   | 3,977   | 3,977   |                | 4,096  |
|          |     |               |                      | 07 >>.02.01 | .1%         |                      | 1.0    |       | 0                                   | 3,977   | 3,977   |                | 4,096  |
| \$XATA53 | 223 | 1.1           | .0                   | 03 >>.02.01 |             |                      |        |       | 0                                   | 0       | 0       |                |        |
|          |     |               |                      | 03 >>.03.01 | .0%         |                      | .2     |       | 0                                   | 6,363   | 6,363   |                | 32,768 |
|          |     |               |                      | 03 >>.02.01 | .0%         |                      | .2     |       | 0                                   | 6,363   | 6,363   |                | 32,768 |
| \$XATA54 | 222 | 13.0          | .0                   | 03 >>.02.01 |             |                      |        |       | 0                                   | 0       | 0       |                |        |
|          |     |               |                      | 03 >>.03.01 | .0%         |                      | .2     |       | 0                                   | 6,363   | 6,363   |                | 32,768 |
|          |     |               |                      | 03 >>.02.01 | .0%         |                      | .2     |       | 0                                   | 6,363   | 6,363   |                | 32,768 |
| \$XATA55 | 221 | 396.7         | .2                   | 07 >>.03.01 |             |                      |        |       | 0                                   | 0       | 0       |                |        |
|          |     |               |                      | 07 >>.02.01 | 3.4%        |                      | 66.1   |       | 0                                   | 271,211 | 271,211 |                | 4,096  |
|          |     |               |                      | 07 >>.02.01 | 3.8%        |                      | 66.1   |       | 0                                   | 271,211 | 271,211 |                | 4,096  |
| \$XATA58 | 218 | 18.8          | .1                   | 09 >>.02.01 |             |                      |        |       | 0                                   | 0       | 0       |                |        |
|          |     |               |                      | 09 >>.03.01 | .0%         |                      | .8     |       | 0                                   | 3,181   | 3,181   |                | 4,096  |
|          |     |               |                      | 09 >>.02.01 | .0%         |                      | .8     |       | 0                                   | 3,181   | 3,181   |                | 4,096  |
| \$XATA60 | 216 | 118.0         | .3                   | 07 >>.02.01 |             |                      |        |       | 0                                   | 0       | 0       |                |        |
| \$XATA65 | 211 | 6.8           | .8                   | 09 >>.02.01 |             |                      |        |       | 0                                   | 0       | 0       |                |        |
|          |     |               |                      | 09 >>.03.01 | .1%         |                      | 1.9    |       | 0                                   | 4,474   | 4,474   |                | 2,304  |
|          |     |               |                      | 09 >>.02.01 | .1%         |                      | 1.9    |       | 0                                   | 4,474   | 4,474   |                | 2,304  |
| \$XATA66 | 210 | 132.2         | .4                   | 09 >>.02.01 |             |                      |        |       | 0                                   | 0       | 0       |                |        |
|          |     |               |                      | 09 >>.03.01 | .8%         |                      | 23.1   |       | 0                                   | 53,238  | 53,238  |                | 2,304  |
|          |     |               |                      | 09 >>.02.01 | .9%         |                      | 23.1   |       | 0                                   | 53,238  | 53,238  |                | 2,304  |

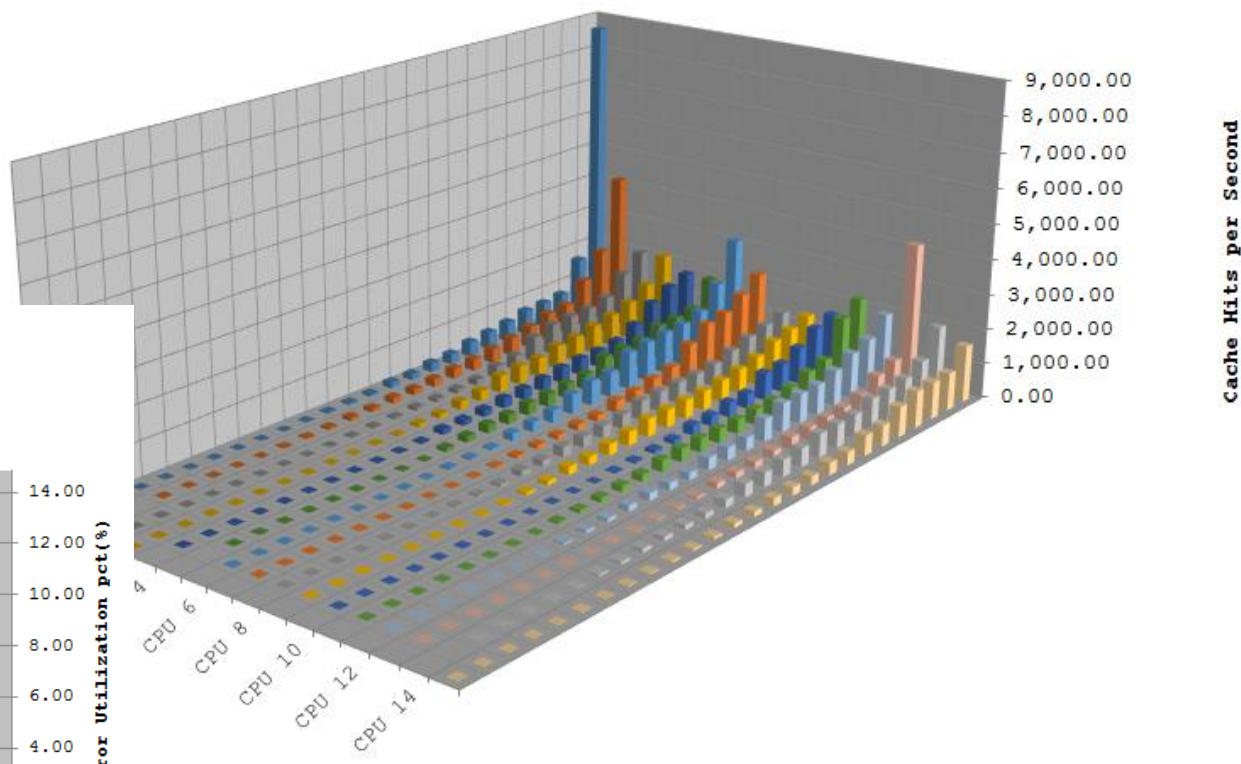
# You need this today.



Average Disk Utilization



Disk Cache Hits Distribution



# Simple Capacity Model

Simple Capacity Model

Transaction Profile: acmisepa

Transaction based on Peak Average CPU busy, for

Time Period:

08

:

00

To

17

:

00

Of Date Period:

01/01/2015

To

12/31/2015

Week Days:

☐ Su

☒ M

☒ Tu

☒ W

☒ Th

☒ F

☐ Sa

CPU:

☒ 00

☒ 01

☒ 02

☒ 03

☒ 04

☒ 05

☒ 06

☒ 07

☒ 08

☒ 09

☒ 10

☒ 11

☒ 12

☒ 13

☒ 14

☒ 15

Assume

3

% monthly growth for the next

18

months

Keep Peak % Busy of any CPU below

65

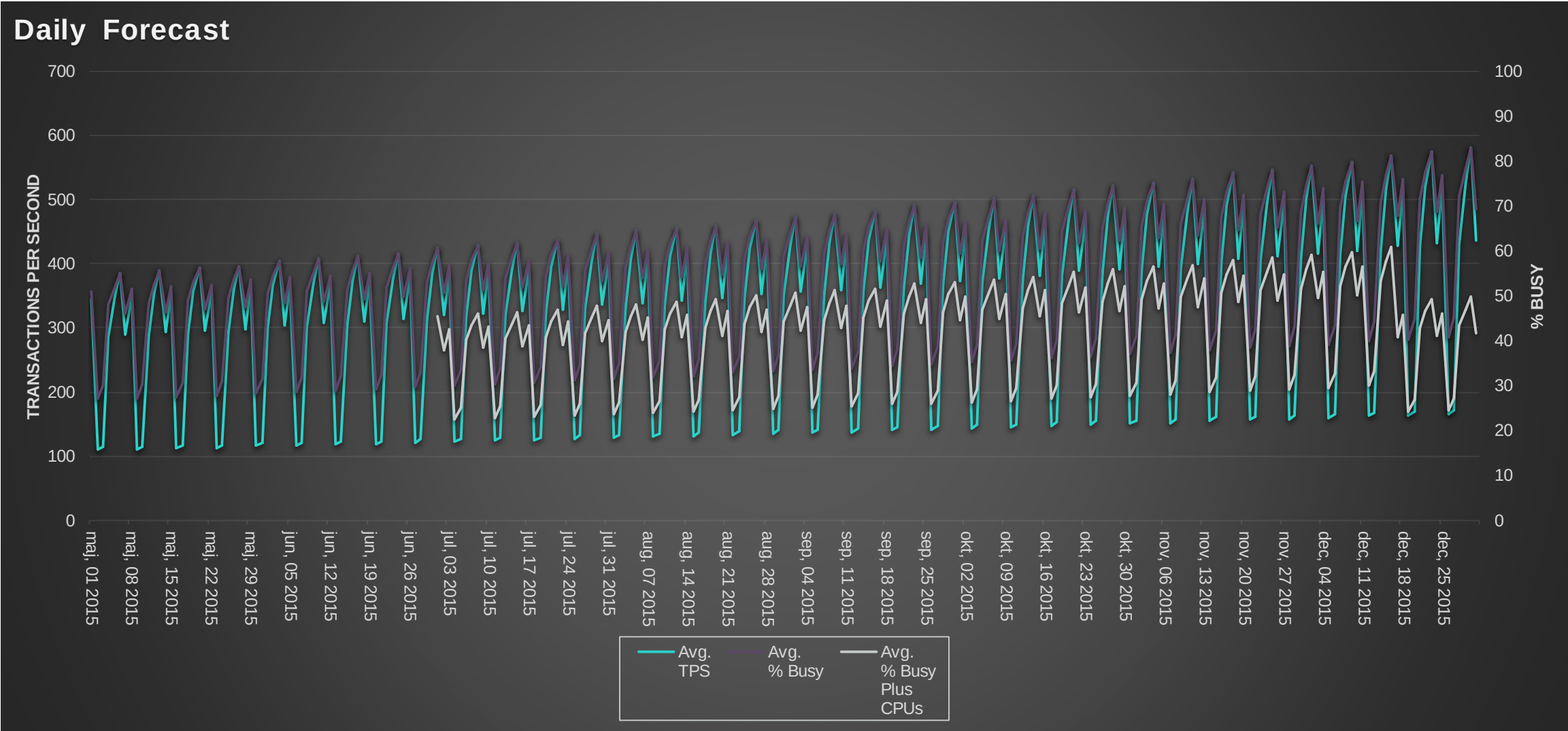
%

SUBMIT

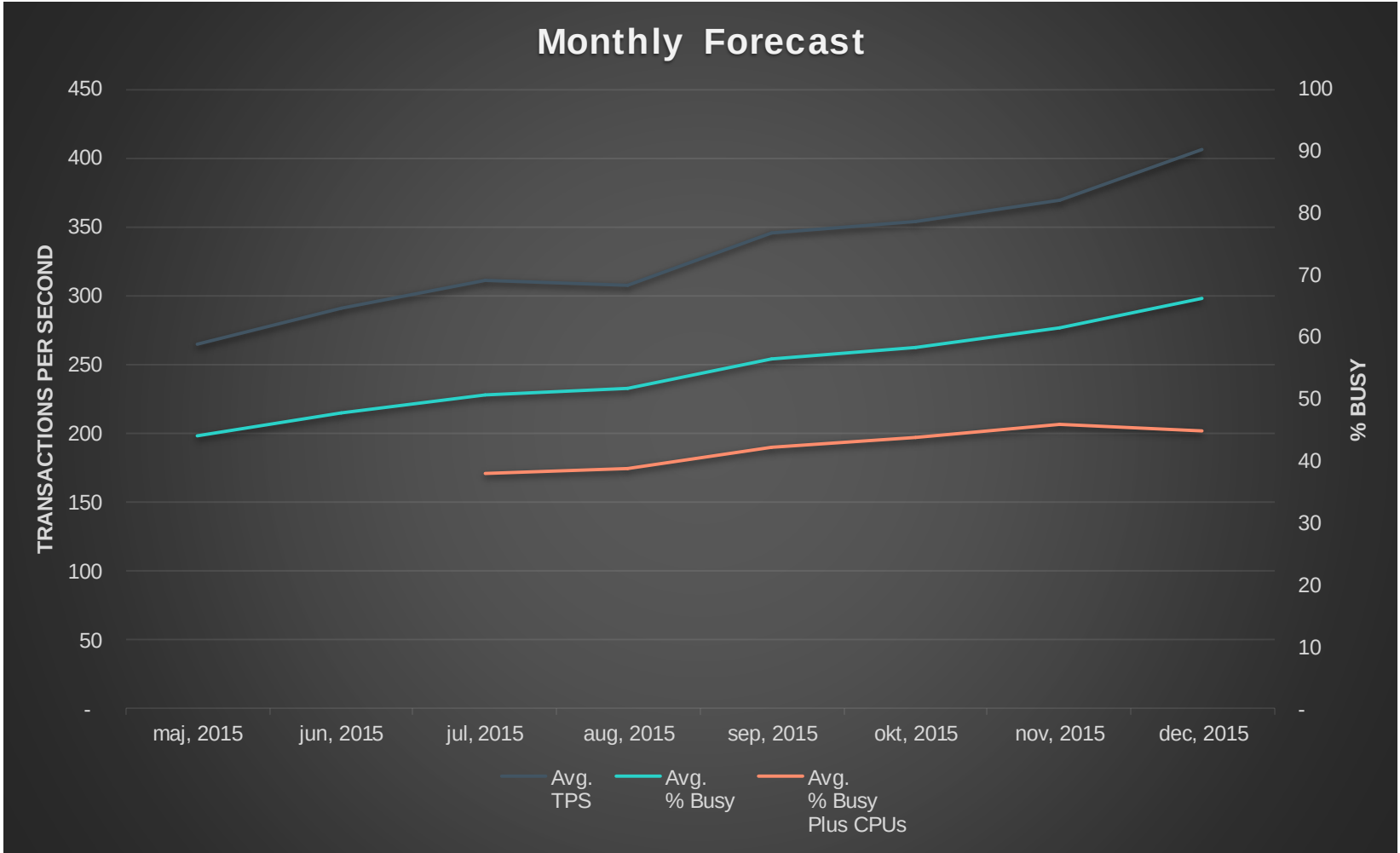
# Transaction Growth – Resource Requirements

|     | A                                        | B     | C   | D              | E  | F  | G  | H  | I  | J  | K  | L  | M  | N  | O   | P   |
|-----|------------------------------------------|-------|-----|----------------|----|----|----|----|----|----|----|----|----|----|-----|-----|
| 1   | Forecast TPS & CPU Busy, with added CPUs |       |     |                |    |    |    |    |    |    |    |    |    |    |     |     |
| 2   | Day                                      | Time  | TPS | Avg.<br>% Busy | 00 | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10  | 11  |
| 96  |                                          | 23:15 | 124 | 29             | 21 | 31 | 15 | 33 | 35 | 40 | 15 | 23 | 39 | 39 |     |     |
| 97  |                                          | 23:30 | 200 | 26             | 22 | 28 | 27 | 23 | 14 | 15 | 15 | 38 | 38 | 38 |     |     |
| 98  |                                          | 23:45 | 137 | 31             | 35 | 31 | 13 | 40 | 17 | 37 | 36 | 18 | 40 | 40 |     |     |
| 99  | May 31, 2015<br>Tuesday                  | 00:00 | 155 | 34             | 15 | 37 | 28 | 44 | 40 | 29 | 29 | 45 | 36 | 36 |     |     |
| 100 |                                          | 00:15 | 140 | 26             | 37 | 10 | 17 | 10 | 19 | 44 | 10 | 42 | 35 | 35 |     |     |
| 101 |                                          | 00:30 | 120 | 26             | 26 | 18 | 33 | 26 | 14 | 25 | 25 | 14 | 40 | 40 |     |     |
| 102 |                                          | 00:45 | 101 | 28             | 29 | 21 | 38 | 14 | 21 | 35 | 22 | 21 | 40 | 40 |     |     |
| 103 |                                          | 01:00 | 111 | 25             | 24 | 35 | 15 | 27 | 43 | 27 | 10 | 13 | 30 | 30 |     |     |
| 104 |                                          | 01:15 | 149 | 31             | 43 | 33 | 25 | 13 | 29 | 15 | 41 | 41 | 33 | 33 |     |     |
| 105 |                                          | 01:30 | 149 | 25             | 16 | 25 | 12 | 13 | 11 | 40 | 26 | 29 | 39 | 39 |     |     |
| 106 |                                          | 01:45 | 137 | 28             | 36 | 24 | 17 | 36 | 26 | 15 | 44 | 10 | 37 | 37 |     |     |
| 107 |                                          | 02:00 | 183 | 29             | 42 | 30 | 28 | 31 | 28 | 13 | 14 | 20 | 40 | 40 |     |     |
| 108 |                                          | 02:15 | 140 | 25             | 37 | 10 | 17 | 10 | 19 | 44 | 10 | 42 | 31 | 31 |     |     |
| 109 |                                          | 02:30 | 120 | 25             | 26 | 18 | 33 | 26 | 14 | 25 | 25 | 14 | 32 | 32 |     |     |
| 110 |                                          | 02:45 | 101 | 28             | 29 | 21 | 38 | 14 | 21 | 35 | 22 | 21 | 38 | 38 |     |     |
| 111 |                                          | 03:00 | 111 | 26             | 24 | 35 | 15 | 27 | 43 | 27 | 10 | 13 | 32 | 32 |     |     |
| 112 |                                          | 03:15 | 149 | 30             | 43 | 33 | 25 | 13 | 29 | 15 | 41 | 41 | 32 | 32 |     |     |
| 113 |                                          | 03:30 | 149 | 25             | 16 | 25 | 12 | 13 | 11 | 40 | 26 | 29 | 40 | 40 |     |     |
| 114 |                                          | 03:45 | 137 | 27             | 36 | 24 | 17 | 36 | 26 | 15 | 44 | 10 | 31 | 31 |     |     |
| 115 |                                          | 04:00 | 183 | 27             | 42 | 30 | 28 | 31 | 28 | 13 | 14 | 20 | 34 | 34 |     |     |
| 116 |                                          | 04:15 | 140 | 25             | 37 | 10 | 17 | 10 | 19 | 44 | 10 | 42 | 30 | 30 |     |     |
| 117 |                                          | 04:30 | 120 | 26             | 26 | 18 | 33 | 26 | 14 | 25 | 25 | 14 | 37 | 37 |     |     |
| 118 |                                          | 04:45 | 315 | 70             | 85 | 90 | 80 | 74 | 80 | 74 | 78 | 80 | 30 | 30 |     |     |
| 119 |                                          | 05:00 | 111 | 24             | 24 | 35 | 15 | 27 | 43 | 27 | 10 | 13 | 31 | 31 | Add | Add |
| 120 |                                          | 05:15 | 149 | 30             | 43 | 33 | 25 | 13 | 29 | 15 | 41 | 41 | 35 | 35 | 20  | 20  |
| 121 |                                          | 05:30 | 149 | 22             | 16 | 25 | 12 | 13 | 11 | 40 | 26 | 29 | 36 | 36 | 30  | 30  |
| 122 |                                          | 05:45 | 137 | 26             | 36 | 24 | 17 | 36 | 26 | 15 | 44 | 10 | 34 | 34 | 34  | 34  |
| 123 |                                          | 06:00 | 183 | 26             | 42 | 30 | 28 | 31 | 28 | 13 | 14 | 20 | 34 | 34 | 30  | 30  |

# Simple Capacity Model



# Capacity Model – Resource Requirements



# More:

- User Defined Counters
- Base 24
- Telco INS / HLR
- Linux / CLIMs
- In-house applications
- Behavior Analyses
- NS Live



# Secure – Power – Simple – Always On

- Fully automated
- Any device.
- No client software to install, ever!
- Secured access from any place, any time
- Unlimited access and analyses
- Simple one-time installation on NonStop
- Same price, for any Processor type or count
- One, three, and five year terms



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# Performance Solutions

Remote or Local Analyst, your choice

| Cloud Solution | 1-Year  | 3-Year  | 5-Year  |
|----------------|---------|---------|---------|
| Remote Analyst | HPRAS1Y | HPRAS3Y | HPRAS5Y |



**Hewlett Packard**  
Enterprise

# Thank you

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[Support@remoteanalyst.com](mailto:Support@remoteanalyst.com)