MPE/iX 7.5 and HP e3000 PA-8700 Performance Upgrade Updates

Kevin Cooper

Hewlett-Packard

kevin.cooper@hp.com

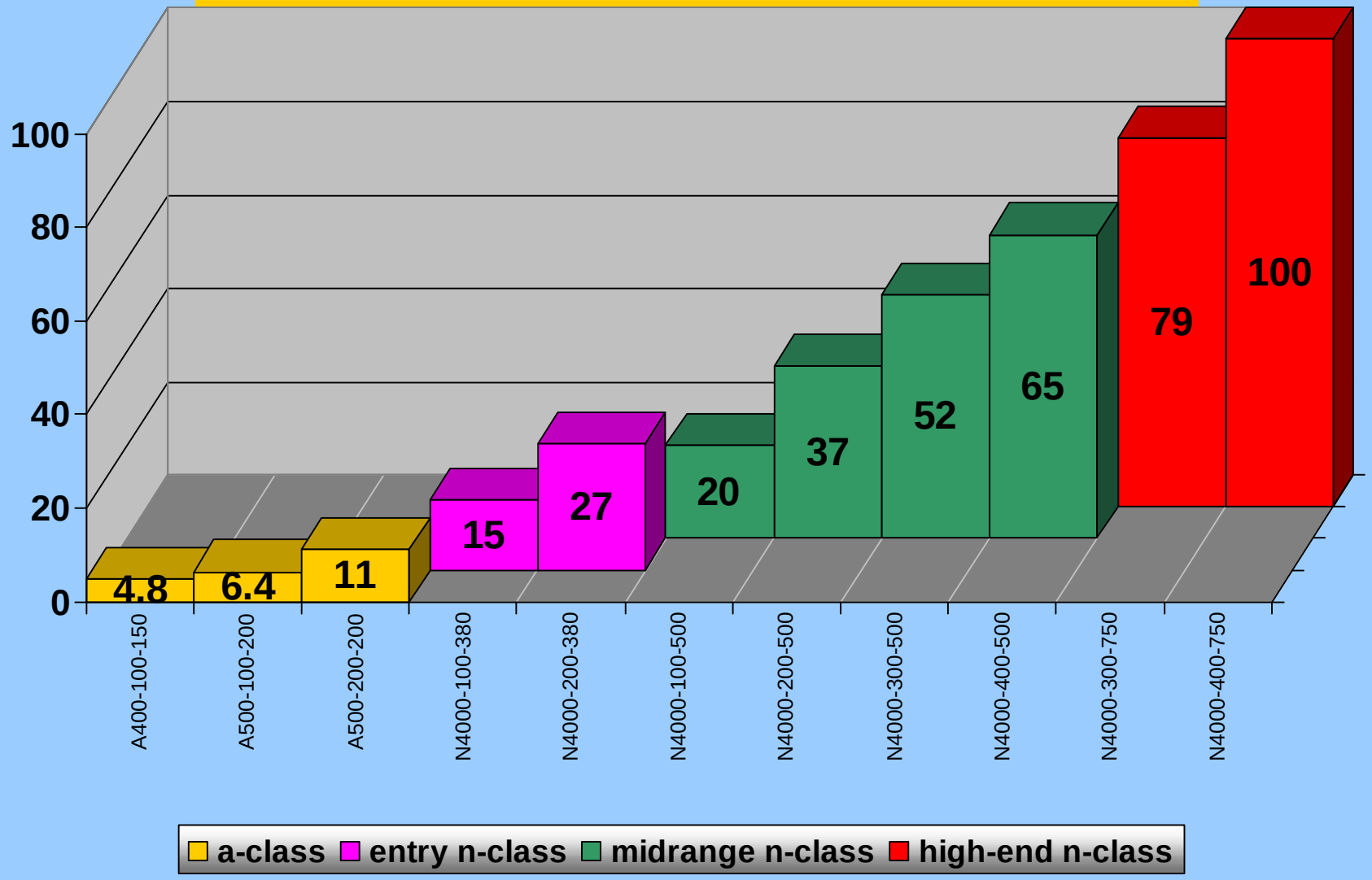
Overview

- New HP e3000 PA-8700 Systems
- Recommended Upgrade Paths
- Memory “Rules of Thumb”
- New Features of MPE/iX 7.5
- MPE/iX 6.5 and 7.0 Performance Patches

New HP e3000 PA-8700 Systems

- New high-end N-class systems with 750 MHz processors, providing higher levels of both OLTP and batch performance.
- New mid-range N-class systems with effective clock speeds of 380 and 500 MHz.
- New option for a second 380MHz processor.
- New entry-level A-class systems at DOUBLE the performance of the existing A-class; now based on 650 MHz processors.

new hp e3000 a-class and n-class performance range



New Highest-Performing HP e3000 OLTP System

- The new N4000-400-750 delivers **100** MPE/iX Relative Performance Units.
- **Over 35% gain** in OLTP system throughput compared to the previous high-end system, the N4000-400-550, at **72** Units.
- **Almost double** the OLTP throughput of the Series 997/1200, at **52.3** Units.
- Can be configured with 3 or 4 processors.

New Highest-Performing HP e3000 Batch System

CPU time to sort an 800MB file
(10 million 80-byte records):

- 997 13 minutes
- 989/x50 8 minutes
- N4000-550 4 minutes
- N4000-750 3+ minutes

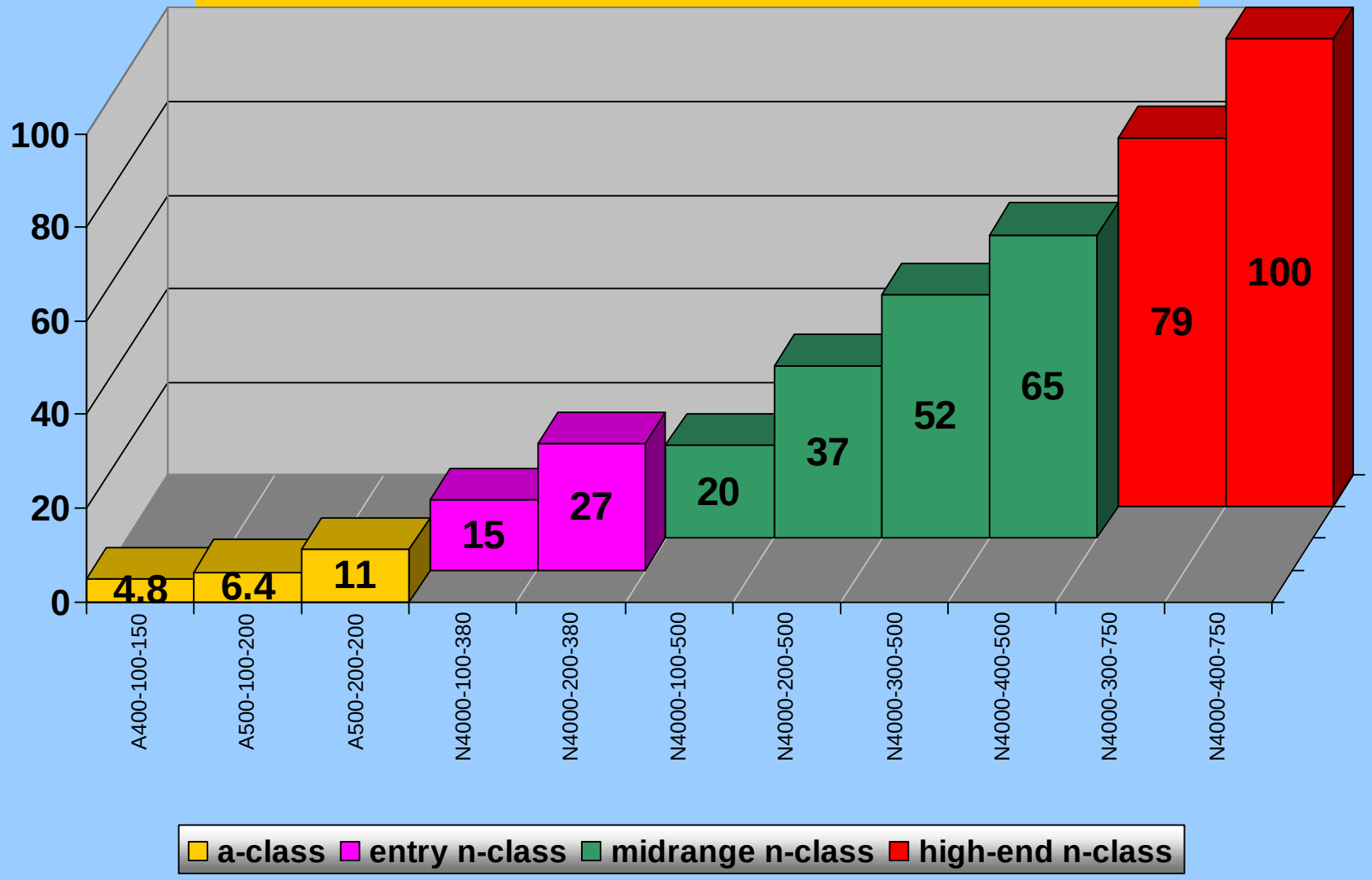
New Mid-Range N-class Systems

- N4000-100-380 delivers **15** MPE/iX Relative Performance Units.
- New option to add a second processor takes this up to **27** Units.
- N4000-100-500 delivers **20** MPE/iX Relative Performance Units.
- Up to three additional processors can take this up to **37, 52,** or **65** Units.

New Entry-Level A-class Systems

- A400-100-150 delivers **4.8** MPE/iX Relative Performance Units – more than DOUBLE the performance of the previous A400 (**2.2** Units).
- A500-100-200 delivers **6.4** Units – DOUBLE the previous A500 (**3.2** Units).
- Optional second processor in the A500 can take it up to **11** Performance Units, DOUBLE the previous A500 2-way (**5.4** Units).

new hp e3000 a-class and n-class performance range



Recommended Upgrades to the N4000-400-750

- New System:

N4000-400-750	100

- Upgrade from:

N4000-400-550	72
N4000-400-440	57
Series 997/1200	52.3

Recommended Upgrades to the N4000-300-750

- New System:

N4000-300-750	79

- Upgrade from:

N4000-300-550	58
N4000-300-440	46
Series 997/1000	48

Recommended Upgrades to the N4000-400-500

- New System:

N4000-400-500	65

- Upgrade from:

N4000-300-440	46
Series 989/650	43.8
Series 997/800	39

Recommended Upgrades to the N4000-300-500

- New System:

N4000-300-500	52

- Upgrade from:

N4000-200-440	33
Series 989/450	35.2
Series 989/600	33.2
Series 997/600	32.2

Recommended Upgrades to the N4000-200-500

- New System:

N4000-200-500	37

- Upgrade from:

N4000-100-440	18
Series 989/250	21.3
Series 989/300	24.4
Series 997/400	23.7
Series 979/400	24.4

Recommended Upgrades to the N4000-100-500

- New System:

N4000-100-500	20

- Upgrade from:

N4000-100-330	13
Series 989/150	11.1
Series 997/200	13.2
Series 969/220	12.4

Recommended Upgrades to the N4000-200-380

- New System:

N4000-200-380	27

- Upgrade from:

Series 989/200	17.2
Series 979/200	14.6
Series 969/400	16.4
Series 959/400	14.3

Recommended Upgrades to the N4000-100-380

- New System:

N4000-100-380	15

- Upgrade from:

N4000-100-220	9
Series 989/100	9.1
All older 9x9/100	4.6 – 7.9
All 929, 939	3.3 – 5.4

Recommended Upgrades to the A500-200-200

- New System:

A500-200-200	11

- Upgrade from:

A500-200-140	5.4
Series 988	5.1
Series 987/150	5.9
Series 987/200	7.8

Recommended Upgrades to the A500-100-200

- New System:

A500-100-200	6.4

- Upgrade from:

A500-100-140	3.2
Series 977, 978	3.4
Series 987/100	4.2

Recommended Upgrades to the A400-100-150

- New System:

A400-100-150	4.8

- Upgrade from:

A400-100-110	2.2
Series 967, 968	2.6 – 2.8
Smaller 9x7, 9x8	1.3 – 2.1

Memory “Rules of Thumb” – PA-8700 System Minimums

- 1.5 - 2 GB per processor
  for N4000 750 MHz systems
- 1 GB per processor
  for N4000 380 or 500 MHz systems
- 512 MB per processor
  for the new A500 system
- 256 MB
  for the new A400 system

Memory “Rules of Thumb” – When to Add More

- For memory-intensive applications (such as those using 4GLs)
- For heavy batch processing
- For a high number of online user sessions
- When adding processors to a system

New Features of MPE/iX 7.5 - FibreChannel

- Native FibreChannel PCI I/O cards are now supported in N-class and A-class systems, allowing FibreChannel disks to be directly connected to these systems.
- Provides greater I/O bandwidth than Fast/Wide SCSI – but I/O channels are seldom a bottleneck on HP e3000s.

New Features of MPE/iX 7.5 - FibreChannel

- Six new system processes were added to MPE/iX 7.5 for FibreChannel, so the Transaction Manager (XM) Checkpoint Processor now starts with System Process 17, instead of Process 11.

New Features of MPE/iX 7.5 – TurboIMAGE Large File Datasets

- Can now use a single large file (128GB) instead of a jumbo dataset with chunks
- Supports Dynamic Dataset Expansion
- Avoids POSIX-style names for DB files
- Jumbos may perform better during XM checkpoints in big OLTP environments

New Features of MPE/iX 7.5 – TurboIMAGE Scalability II

- Enhanced High Water Mark (EHWM) may provide improved concurrency for DBPUT and DBDELETE on busy OLTP systems.
- Can provide even greater scalability than the existing DSEM and Prefetch options.
- Disabled by default; enabled with DBUTIL.
- Best performance improvement is seen on systems with six or more processors.

New Features of MPE/iX 7.5 - PLFD Expansion

- A process can open more files and/or sockets, up from 1024 to 4096.
- A new hashing algorithm provides better performance when a process has more than 512 files and/or sockets open.

Other New Features of MPE/iX 7.5

- The number of users that can connect to a single user logging process has been increased from 1140 to 2851.
- LDEV 1 can now be greater than 4GB in size. MPE/iX system files must still reside in the first 4GB on this disk.

Review of Some Recent High-End Features

- A system can now have up to 12000 processes, by enabling the “BIGPIN” feature in SYSGEN (introduced in 7.0 Express 1).
- Systems needing additional processes can replace the :RUN command with the :NEWCI command, to eliminate one process per user (introduced in 6.5).

MPE/iX 6.5 and 7.0 Performance Patches

- Two patches were released in 2001, which may improve performance on some larger systems running MPE/iX 6.5 or 7.0:
  - MPELXH8 (Memory Manager)
  - MPELXH3 (TurboSTORE)
- Both patches are included in MPE/iX 7.5.
- No 6.5 or 7.0 Power Patches contain both of these patches; customers must request them.

MPE/iX 6.5 and 7.0 Performance Patches

- MPELXH8 is superseded by MPELXV3 on 6.5, and by MPELXQ5 on 7.0. None of these patches are included in any Power Patch release for MPE/iX 6.5 or 7.0.
- MPELXH3 is superseded by MPELXY4 on both 6.5 and 7.0. MPELXY4 is included in MPE/iX 6.5 Power Patch 3, but the changes of MPELXH3 are NOT included in any other Power Patch release for MPE/iX 6.5 or 7.0.

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