

MPE/iX 7.5 and
HP e3000 PA-8700
performance update



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Overview



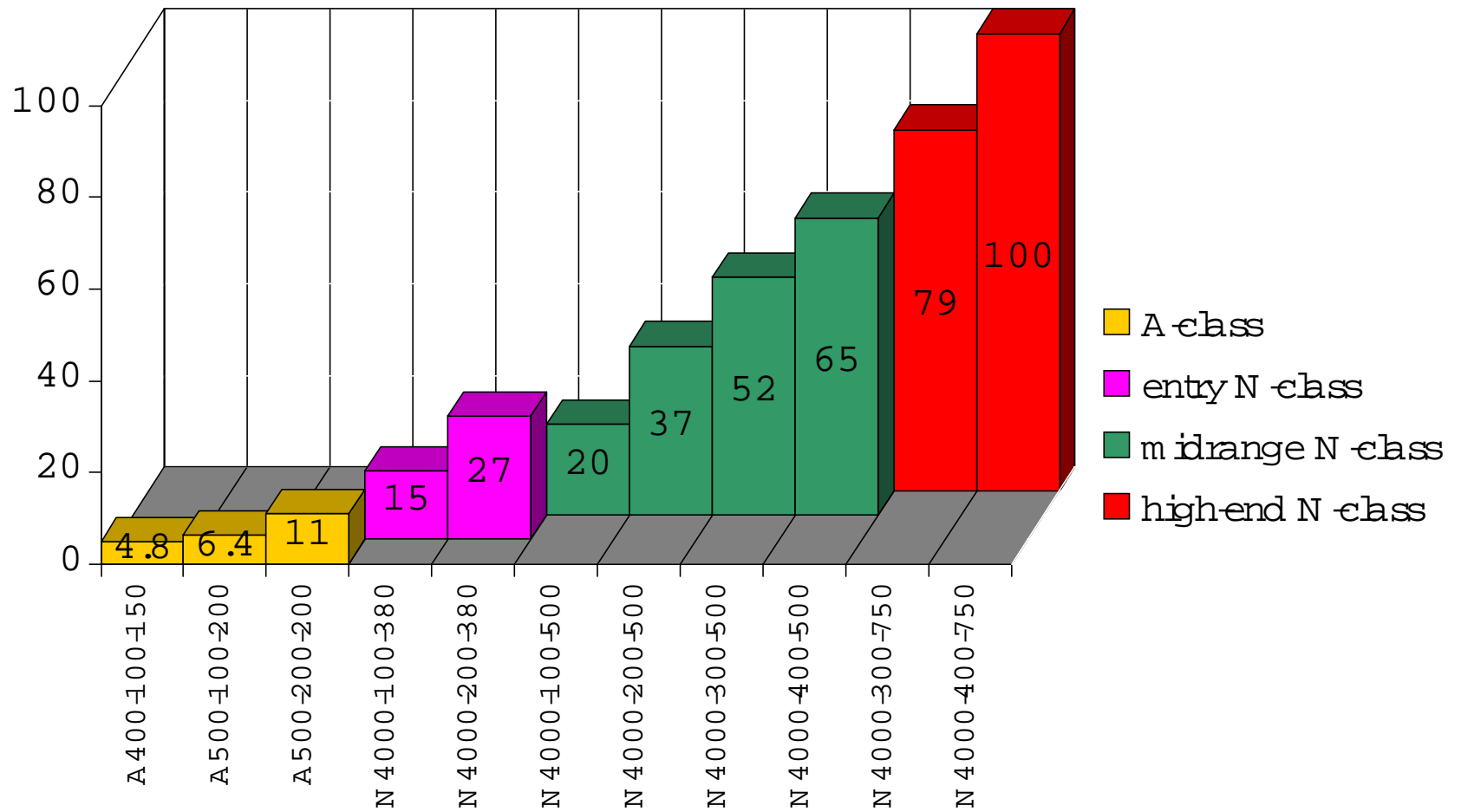
- New HP e3000 PA-8700 systems
- Recommended upgrade paths
- Memory "rules of thumb"
- New features of MPE/iX 7.5
- MPE/iX 6.5 and 7.0 performance patches

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 (**72** units).
- **Almost double** the OLTP throughput of the Series 997/1200 (**52.3** units).
- Can be configured with 3 or 4 processors.

New highest-performing HP e3000 batch system



CPU time to sort an 800 MB 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



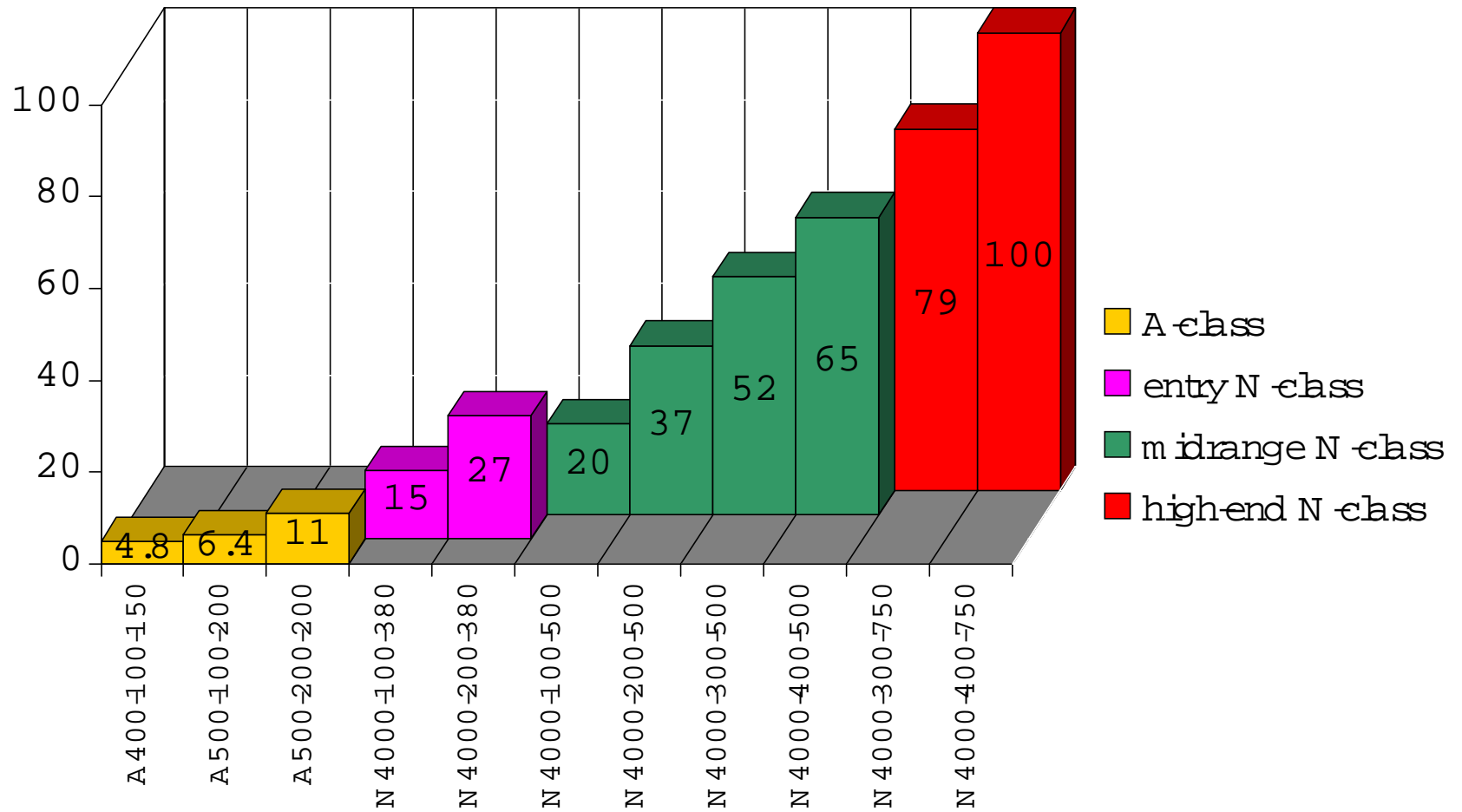
- N4000-100-380 delivers
15 MPE/iX relative performance units.
- New option to add a second processor
takes this up to 27 units.
- N4000-100-500 delivers
20 MPE/iX relative performance units.
- Up to three additional processors can take
this up to 37, 52, or 65 units.

New entry-level A-class systems



- A400-100-150 delivers 4.8 MPE /iX relative performance units – that's **MORE THAN DOUBLE** the performance of the previous A400 (at 2.2 units).
- A500-100-200 delivers 6.4 units – **DOUBLE** the previous A500 (3.2).
- An optional second processor in the A500 can take it up to 11 performance units – **DOUBLE** the previous A500 2-way (5.4).

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 |
|---------------|----|

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|-----------------|------|
| 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 |
|---------------|----|

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|----------------|------|
| Series 989/450 | 35.2 |
|----------------|------|

| | |
|----------------|------|
| Series 989/600 | 33.2 |
|----------------|------|

| | |
|----------------|------|
| Series 997/600 | 32.2 |
|----------------|------|

Recommended upgrades to the N4000-200-500



- New system:

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|---------------|----|
| 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 |
|----------------|------|

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|----------------|------|
| Series 969/220 | 12.4 |
|----------------|------|

Recommended upgrades to the N4000-200-380



- New system:

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|---------------|----|
| 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:

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|--------------|-----|
| A400-100-150 | 4.8 |
|--------------|-----|

- Upgrade from:

| | |
|--------------|-----|
| A400-100-110 | 2.2 |
|--------------|-----|

| | |
|-----------------|-----------|
| Series 967, 968 | 2.6 – 2.8 |
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|------------------|-----------|
| 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 Ultra SCSI or Fast/Wide SCSI, which can help greatly on systems with heavy disk I/O.

New features of MPE/iX 7.5 – FibreChannel



- FibreChannel benchmarks show big performance gains for disk-intensive processing.
- 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 (EHW M) 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 4 GB in size. MPE/iX system files must still reside in the first 4 GB on this disk.

Review of some recent high-end features



- An N4000 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.

MPE/iX 6.5 and 7.0 performance patches



- The latest 6.5 and 7.0 Power Patch releases also contain these patches.
- 6.5 Power Patch 3 includes:
 - MLELXQ5, which superseded MPELXH8, and
 - MPELXY4, which superseded MPELXH3.
- 7.0 Power Patch 2 includes:
 - MPEMXB2, which superseded MPELXH8, and
 - MPEMX64, which superseded MPELXH3.



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