



# 64-Bit is Ready for Prime Time But You Need a Plan

Pam Taylor  
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HP presentation template user tutorial



# Agenda

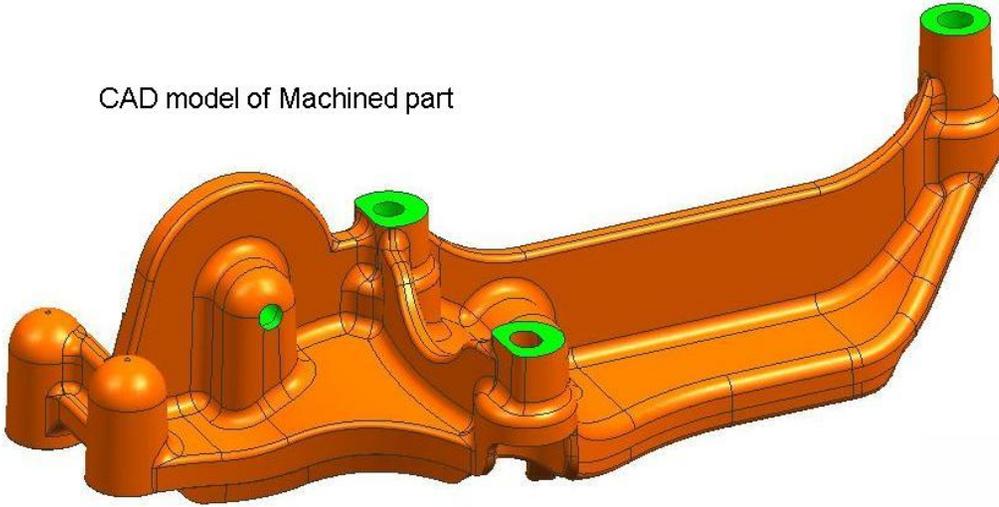


- Why users should consider changing
- 64-bit availability timeline
- When to consider the switch to 64-bit
- Performance expectations
- Key transition considerations
- The advantage in choosing HP for 64-bit

# CAD Parts are very complex – consume memory

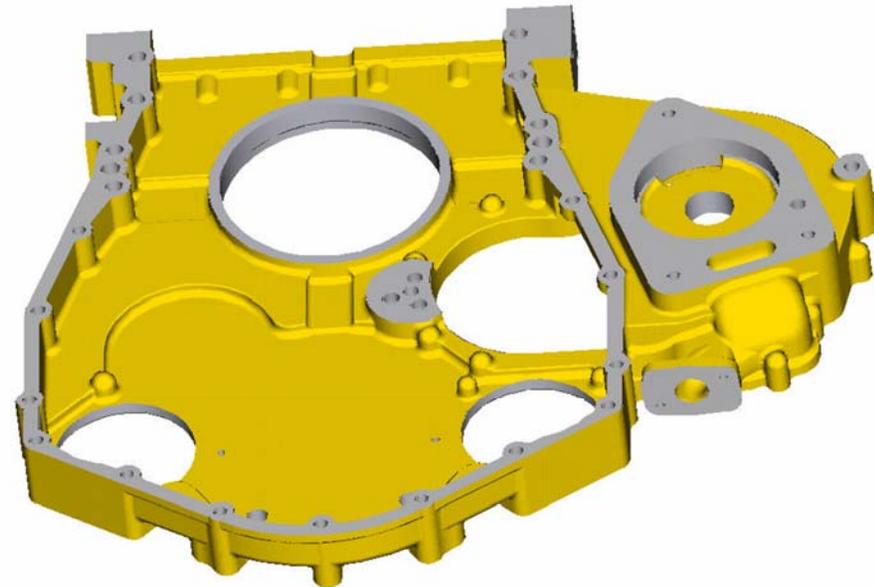


CAD model of Machined part



Each unique area is a feature

Each feature requires definition such as dimensions, curvature, finish, tolerances, etc.



# NX on Microsoft® Windows® 32-bit or 64 bit, what do you really need?

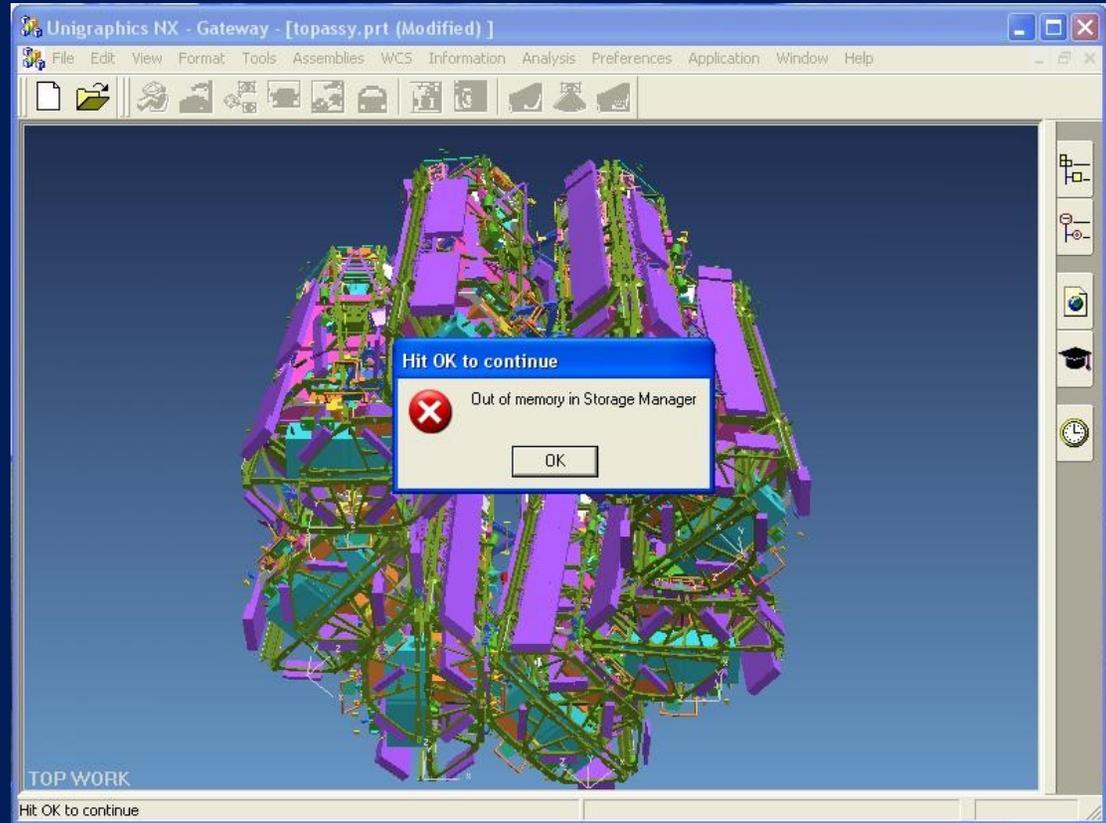


## IT isn't always aware of 64-bit needs

Users often work around memory issues by:

- Loading partial data
- Avoid operations that require more memory

Some people think installing more memory will solve the problem



... xw8200 maximum configurable memory is 16GB but WinXP 32-bit has  
**LIMITS!**



On WinXP (32bit), some options are available to try to avoid the “out of memory” problem

- Increased memory to at least 4GB
- Set swap size appropriately
- Run WindowsXP with ~3GB to increase process data space  
PTF can help easily modify the boot.ini file for /3GB configuration

... and if you still get the “out of memory” error message?

- Run NX (32-bit) on WindowsXP x64  
which can increase process data space to just under 4GB

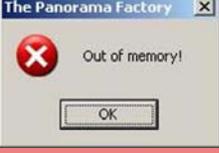
... but are you still getting the “out of memory” error message?

**NX4 (64bit) on Windows XP x64 EM64T or AMD HP workstations  
requires no workarounds and has room to grow!**

# CAD commands impact file size



## CAD commands make it a surprise to users

CAD Operation	Pentium 4 System Windows 2000	Pentium 4 System Windows XP*	C3750 PA-RISC HP-UX 64-Bit
	4 GB	4 GB	8 GB
Load Assembly			
Shade-High Quality			
Hidden Line Removal			

Some CAD operations consume additional memory

\* Windows XP with 3GB switch settings

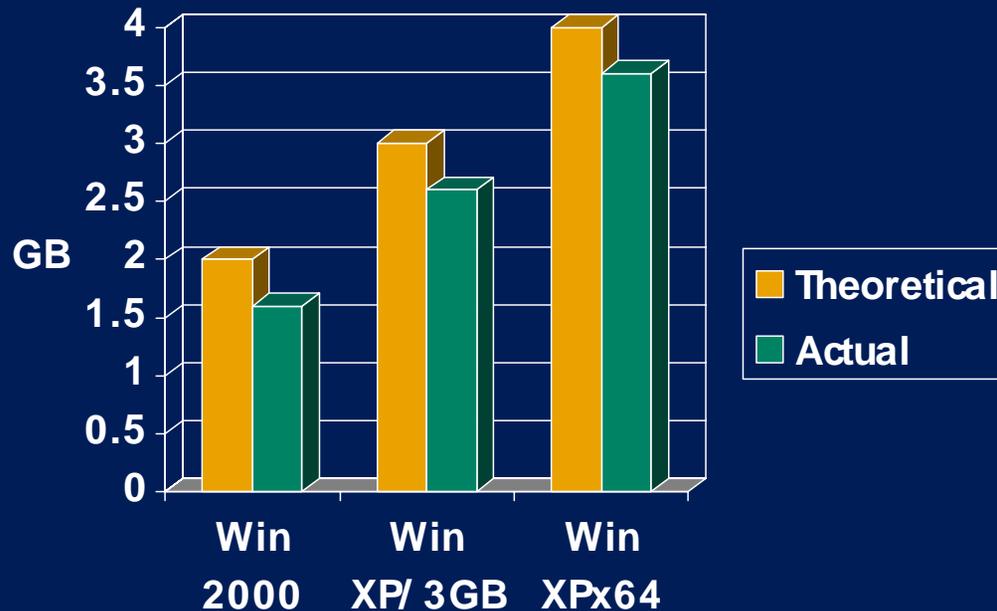
# 32-bit limit impacts product design



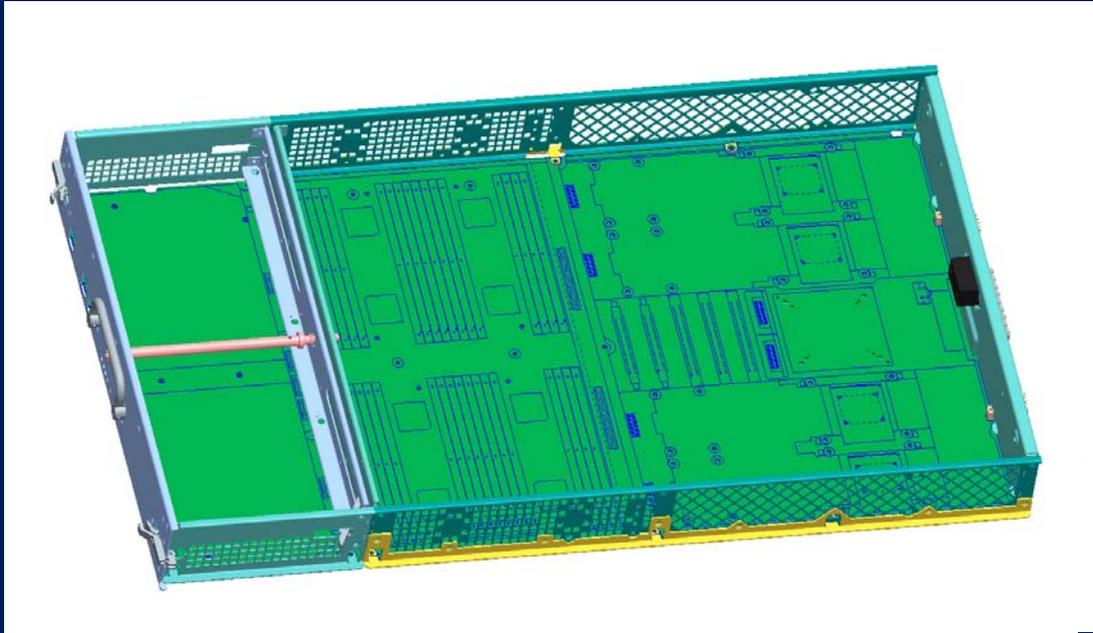
Forces engineers to:

- Compromise or simplify their 3D models
- Run both Unix and Windows environments to achieve the 64-bit capabilities
- Tweak the Windows XP OS to be able to access 3GB of memory
- Develop new design practices to address large assembly management

32-bit application limit– user addressable space



# Workaround example



# CAD availability on 64-bit



# HP and Windows 64 bit

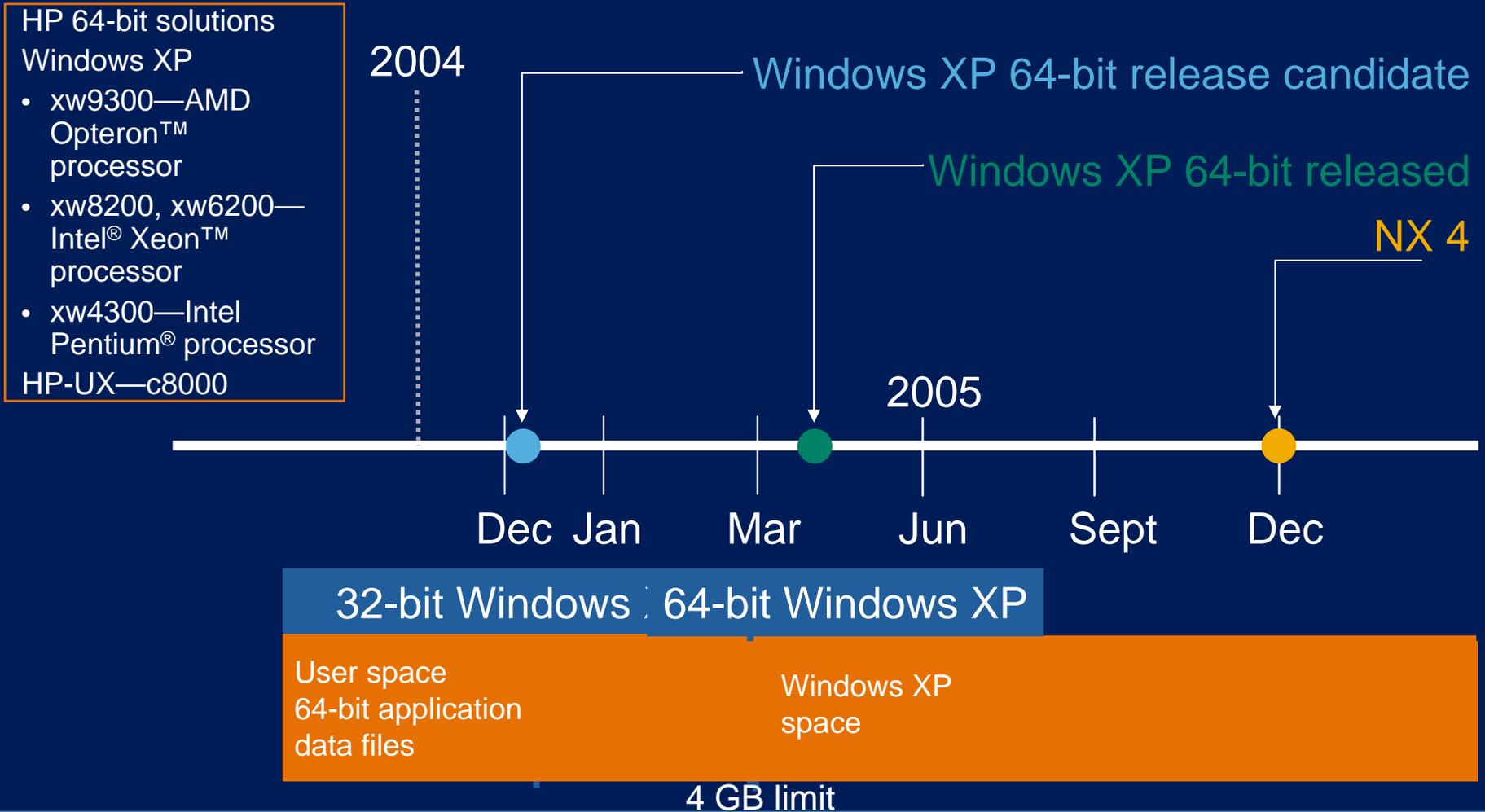


- HP has extensive expertise in 64-bit
- Shipped Itanium workstations with Windows XP, over 5 years ago.
- Worked with partners to help develop the applications in native 64-bit.
- Established a 64-bit beta test program with over 30 customers
- First customer usage of a 64-bit application on Microsoft Windows XP 64-bit edition was on an HP Workstation.
- First company to ship Microsoft Windows XP 64-bit edition to customers.

# 64-bit CAD availability



## Timeline—availability



# Performance Data

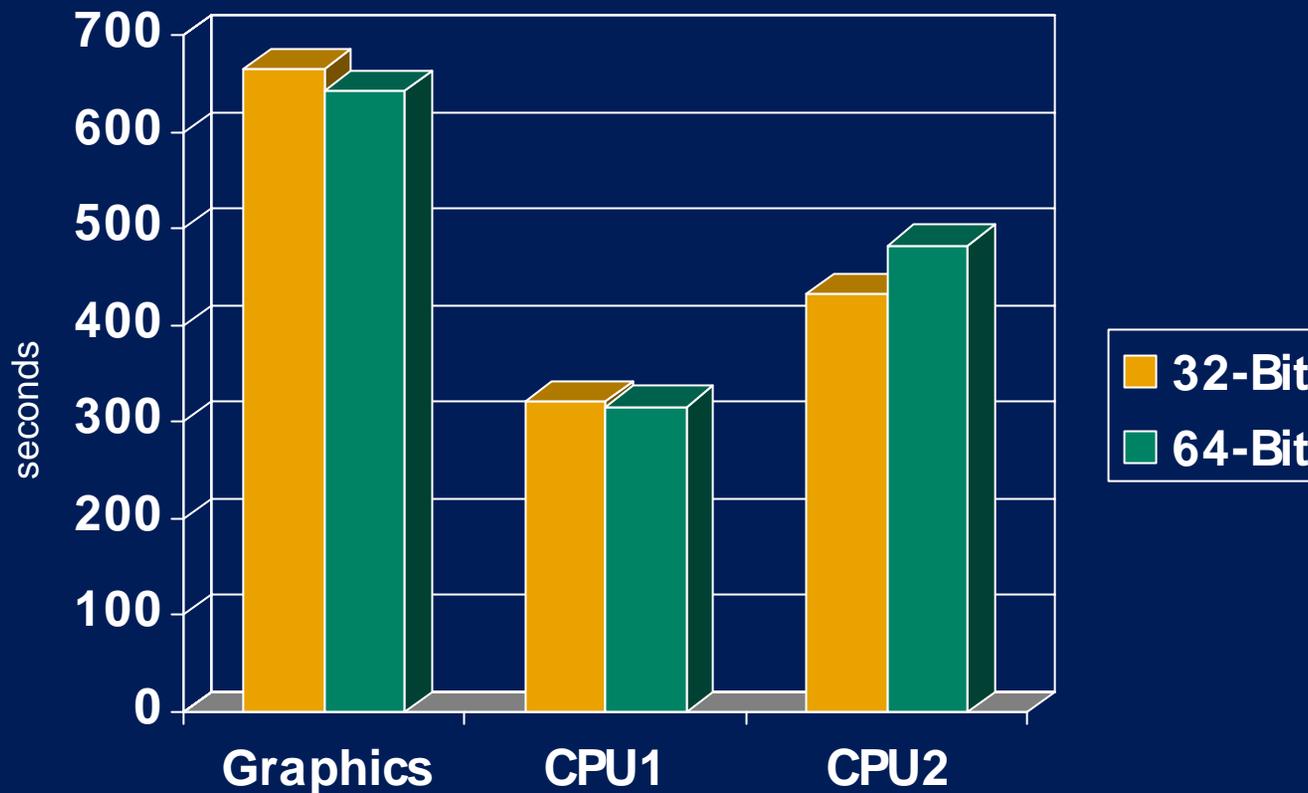
hp



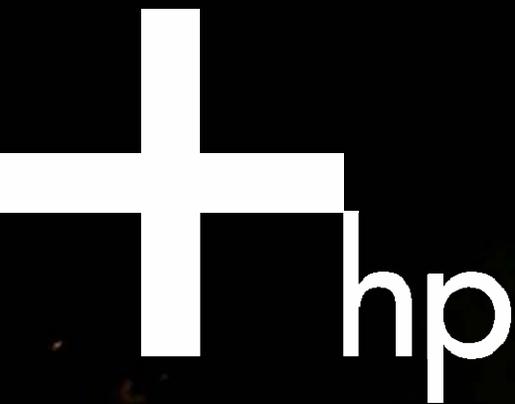
# Windows XP 64-bit vs. Windows XP 32-Bit



Performance gain/loss is operation dependant



# Transitioning to Windows XP 64- Bit

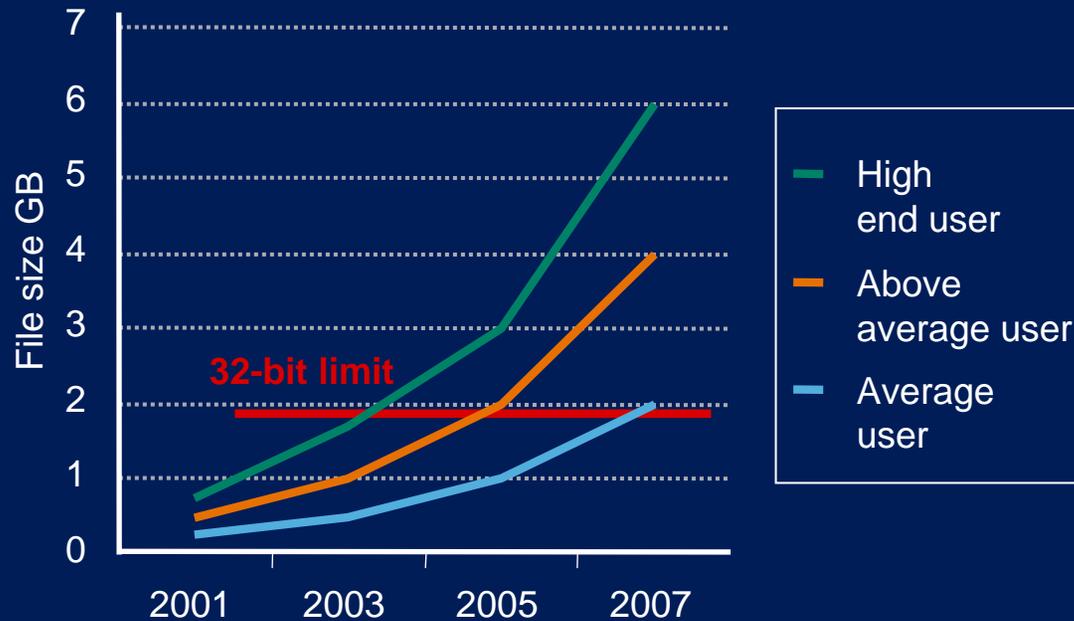


YELLOW DE.

# When to plan for 64-bit usage

## Model sizes double every 18 - 24 months

In 2006 30% of NX users will reach the 32-bit limit – 50% in 2007

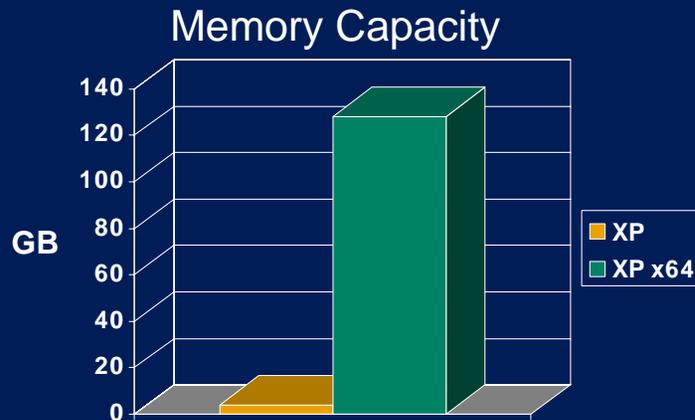


NX user CAD study

# Transitioning Planning to XP x64 Edition



- Windows XP Professional x64 Edition
  - Increased memory to 128 GB
  - Optimized for x64 processors
  - Most software applications will run fine.
    - e.g. Microsoft Office, Adobe Acrobat Reader, games, iTunes
  - Look and feel of Windows XP
  - Standard Microsoft Windows XP manageability



# How To Get Windows XP x64 Edition



- Purchase with the workstation (**Recommended**)
- If the customer has a volume license agreement with Microsoft, and if the system already has a valid Windows XP 32-bit license, they can upgrade to Windows XP x64 edition.
- It is NOT sold by Microsoft, or by retail suppliers.
- Microsoft has a 120 day try-before-you-buy time-bombed version of X64  
available: <http://www.microsoft.com/windowsxp/64bit/evaluation/trial.msp>
- Some distributors (Tiger Direct) offer it, bundled with hardware for low prices (ex.\$139.99)

# Transition requires



- Workstation – 64 bit capable
  - AMD or Intel
- Windows XP Professional x64 edition
- 64-bit versions of CAD/CAE/home grown applications
  - 32-bit versions of CAD/CAE applications will work if supported by supplier. – User space subject to 4 GB limit
- 64-bit drivers

# Transitioning Planning to XP x64 Edition



- Technical risks to transition
  - New Software needed
    - Kernel mode drivers. e.g. AntiVirus, DVD codecs, backup, firewalls.
    - HW drivers e.g. printers, plotters, scanners, etc.
    - Workstation drivers e.g. BIOS, Audio, Chipset, Graphics, Network, Storage, etc.
    - CAD or CAE software on Windows XP Pro x64 version
  - Test homegrown applications
- Must Test your environment!

# Printer Drivers for x64



- Most DesignJet Printers (Large Format) are fine
- Ex. DesignJet4000 – driver page
  - [http://h20000.www2.hp.com/bizsupport/TechSupport/DriverDownload.jsp?prodNameId=431040&locale=en\\_US&taskId=135&prodSeriesId=431039&prodTypeId=18972](http://h20000.www2.hp.com/bizsupport/TechSupport/DriverDownload.jsp?prodNameId=431040&locale=en_US&taskId=135&prodSeriesId=431039&prodTypeId=18972)
  - Has selection for “Windows XP Professional x64 Edition”



# Office Printers - Deskjet, Officejet, PSC, and Photosmart



- 32-Bit Drivers do not work
- Must check web site for drivers
  - currently supported by Windows XP x64 drivers
  - will be supported in the future
  - will never be supported
- Printer Web site
  - <http://h20000.www2.hp.com/bizsupport/TechSupport/Document.jsp?objectID=c00364537>



# Windows® Vista is a transition consideration



- Windows XP 64-bit gets you ready for Vista
  - Can engineers afford to wait for Vista?
- General Availability H107
  - Beta available now
  - All flavors will be available in x64 versions
  - Both 32 & 64-bit drivers required for Vista logo
- <http://www.microsoft.com/windowsvista>

# Transition Risks



- Customer

- IT Resources trained
- Low priority for IT (but not for company)
- Time to run tests
- Transition timing/scheduling
- Purchasing/obtaining Windows XP Professional 64 edition

# Transition plan unique to Mechanical CAD/CAE



## Mainstream Users will likely wait



Y2002



2004



Late 2007

## Mechanical CAD Users will get substantial benefits



Y2002



2004



Early 2006



Late 2007

# For MCAD Benefits Clearly Outweigh Risks



- **Bigger problems - Faster Answers:**
  - Reduced time working around 32-bit limitations
  - Ideal solution for large parts or assemblies
  - Ideal for design validation thoroughness
  - Improved productivity boost dealing with simultaneous running applications.
- Application Performance gains that are significant in some cases

# The HP 64-bit advantage



# The HP advantage



- HP worked with CAD vendors on Windows 64-bit for over 5 years – most in the industry!
- Helped in porting partners applications to Windows XP Prof x64 edition
- Incorporating knowledge into
  - More product choices – AMD or Intel, graphics, etc.
  - Certification testing
  - Performance Tuning Framework features
  - Customer information - HP 64-bit web pages & 64-bit tool kit
  - Customer support

# HP workstation family + Windows XP x64 edition



Entry  High-end

## Personal workstations (Windows)

HP xw4300



Single or dual core entry workstation

HP xw6200



Expansive power for constrained spaces

HP xw8200



Impressive scalability and power

HP xw9300



Ultimate performance and expandability

## Mobile workstation (Windows)

HP nw8240



Workstation features, notebook mobility

## PA-RISC workstation (HP-UX)

HP c8000

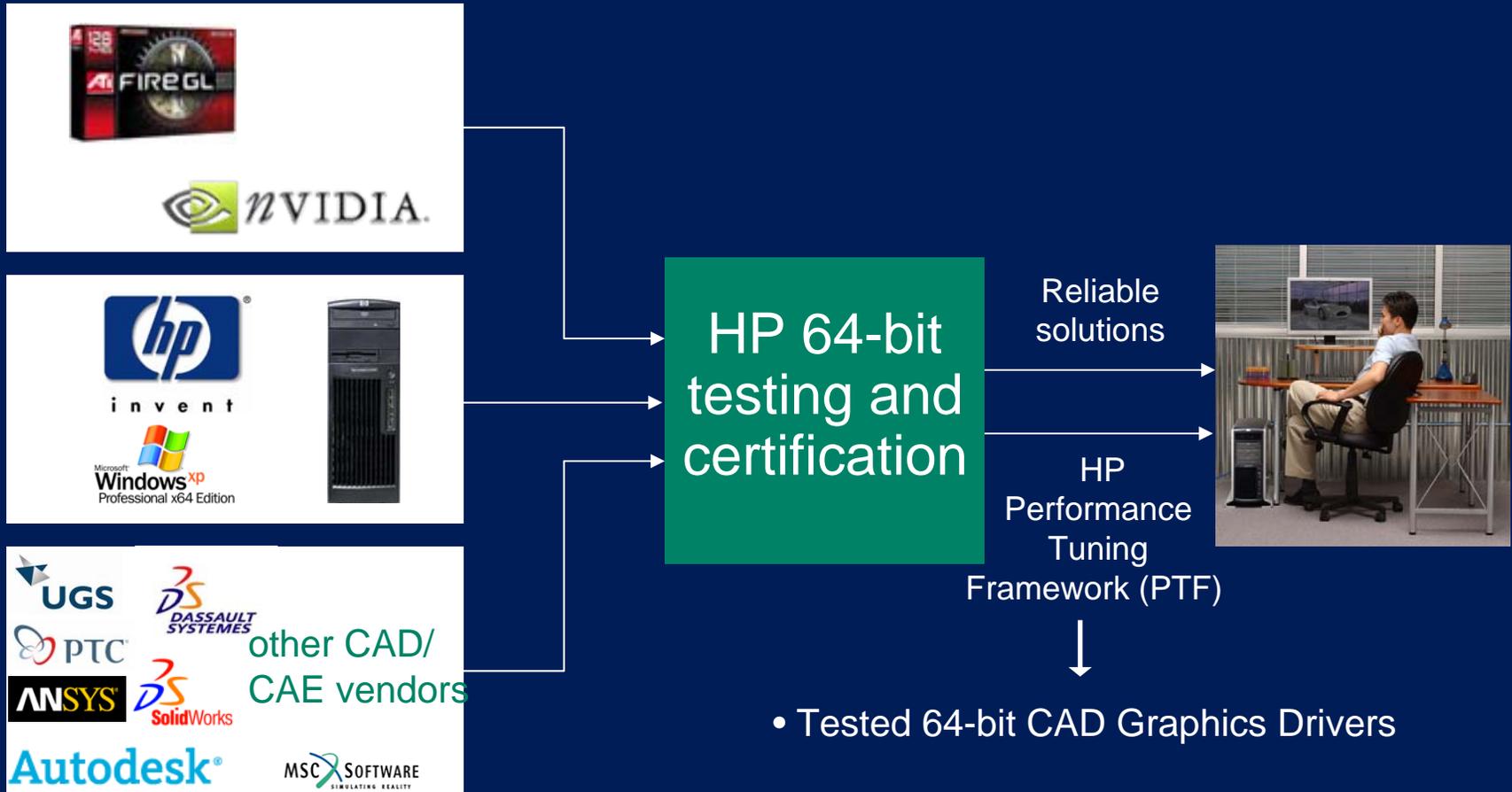


Multiprocessing leadership, UNIX performance

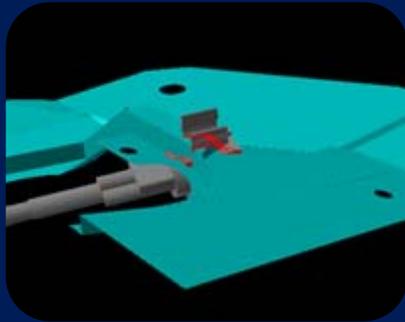
# HP Application Competency Centers



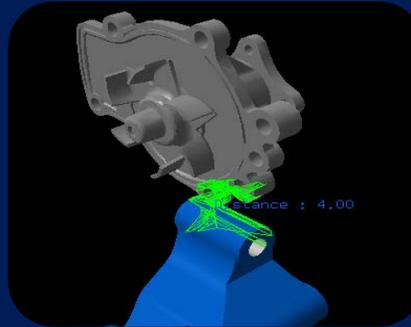
Close working relationship with CAD/CAE providers



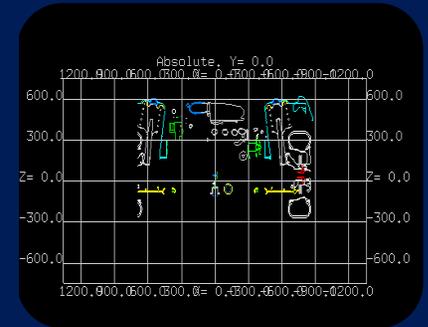
# Result - HP testing so all the pieces work



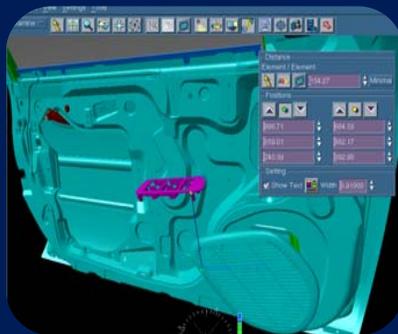
part interference check



clearance check



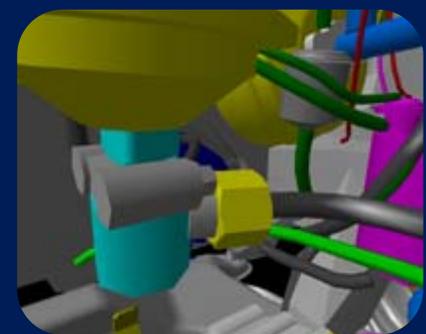
section check



measure distance



fitting



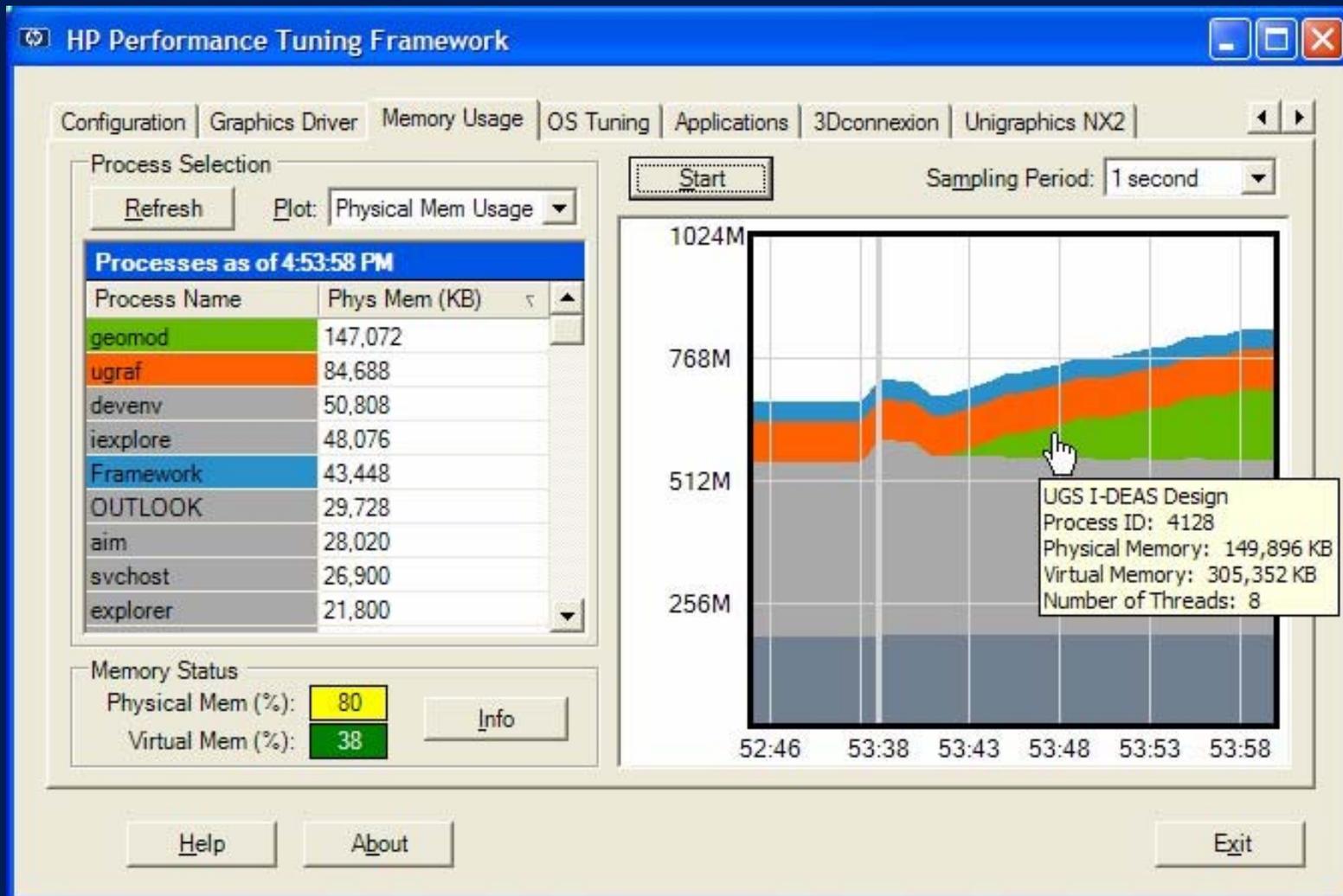
fly thru

# Memory sizing importance- renewed awareness



- For CAD/CAE applications memory usage varies with
  - Both Initial file size & Loaded model size
  - Number of components with data loaded
  - CAD commands chosen – some (Ex. hidden line removal) can duplicate files
  - Number of applications or instances of an application running
  - Graphic card selection
- Correct memory sizing can improve productivity,
  - Operations in memory are a minimum of 53 times faster than pulling from the disk.
  - Larger models– disk access times can be much, much larger than 53 times
- The Goal should be to NEVER run out of physical memory,
- Memory will take a higher percentage of the total costs.
- PTF helps users understand/manage users specific memory needs.

# PTF helps you understand your memory requirements



# If You Need More Memory



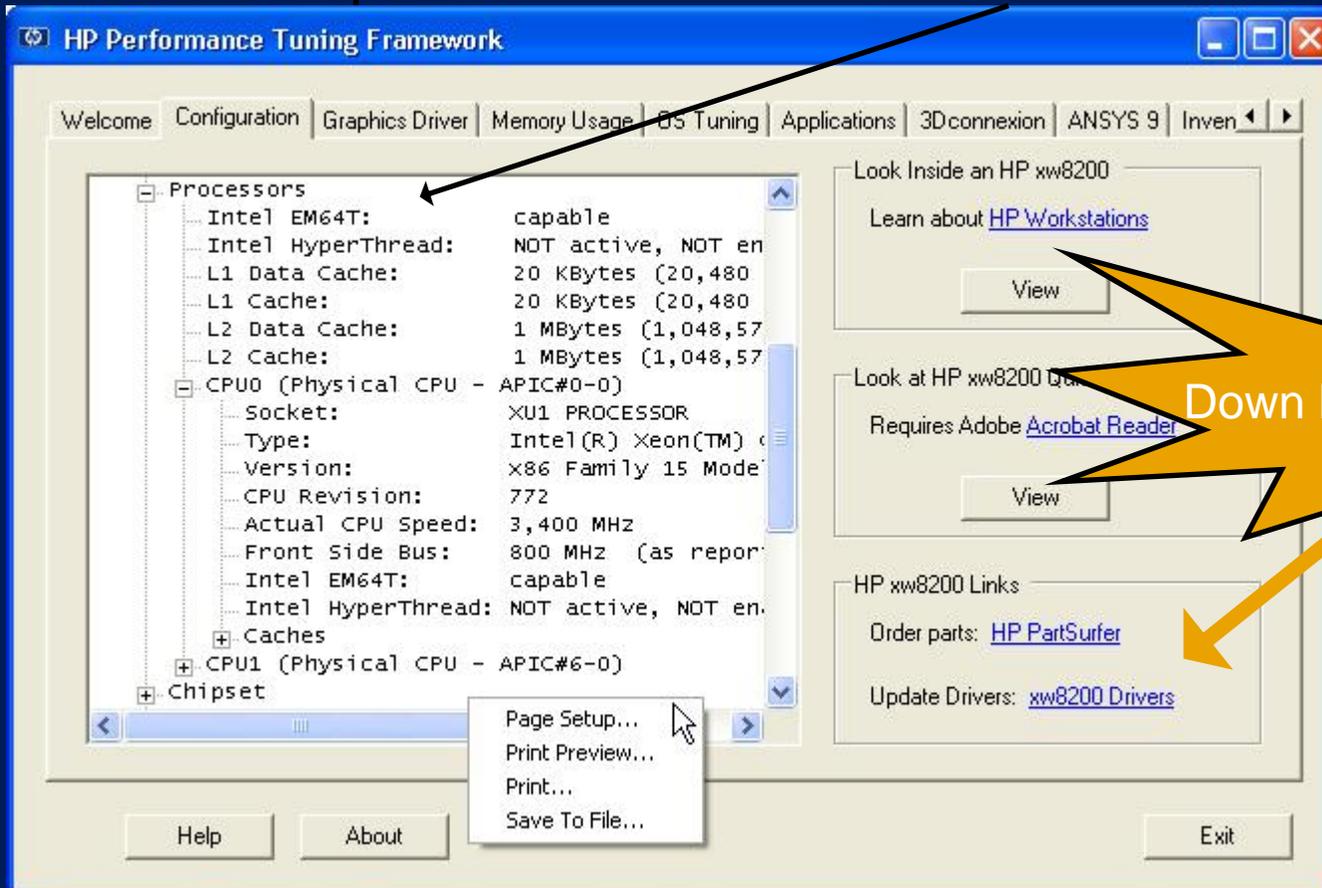
## Inside of PTF link to Parts Surfer

- Your system configuration appears on HP's web page.
- Scroll over and Memory information appears. Click again for more detail.
- Can price and order through links on this page.

# PTF shows EM64T capable processor



Complete electronic information ex. processor with EM64T



Down load 64-bit drivers

# HP 64-bit toolkit



- Only from HP
  - Designed to help you plan and pilot your 64-bit implementation
  - Provides resources for enterprise development teams for porting and programming in 64-bit
  - Provides insight on threading applications to take advantages of dual core



# HP Has The Best 64-bit Webpage support



- Start Here – MCAD support
  - <http://www.hp.com/workstations/segments/mcad/64bit.html>
- Transition Tool Kit
  - <http://www.hp.com/workstations/pws/windowsxp64/toolkit.html>
- Frequently Asked Questions
  - <http://www.hp.com/workstations/pws/windowsxp64/faq.html>
    - Click on “Find my HP Drivers” (Upper right grey box)
    - Select Workstation and OS get complete list of driver downloads
      - BIOS, Audio, Chipset, Graphics, Network, Storage, etc.
    - Click on “Online Chat” as well
    - Also-easily get there from [www.hp.com](http://www.hp.com) – Software & Driver Downloads
- Check supported components status
  - <http://www.hp.com/workstations/pws/windowsxp64/components.html>
- HP Workstation Drivers are available!

<http://www.hp.com/workstations/pws/windowsxp64/faq.html>

## Example of Questions with Answers:

How do I upgrade from Microsoft® Windows® XP Professional SP2 (32-bit); to Microsoft Windows XP Professional x64 Edition?

Will Windows XP Professional x64 Edition be available in standard retail channels?

Will Windows XP Professional x64 Edition be available in different languages

Can I try out Windows XP Professional x64 Edition?

What HP workstations can run Windows XP x64?

What must be configured or changed on an x64 capable HP workstation to install and run Windows XP x64?

# HP workstation products summary



- HP offers unique tools to improve 64-bit user productivity:
  - HP Performance Tuning Framework
  - 64-bit Toolkit
  - HP Remote Graphics Software
  - 64-bit web page support
- Thoroughly tested by HP Application Competency Centers
- Complete 64-bit product offering



**i n v e n t**