IA-64 Software Programs
Overview

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Agenda

- IA-64 Server & Workstation Strategy
- IA-64 Software Programs
- Leading OSVs/ISVs IA-64 Status
- Call to Action
IA-64 Server Opportunity

WW server units >$25K

IA-64 Workstation Opportunity

Workstation Market Segment Growth (Units Shipped)

Solution Stacks

Solution Stacks for Itanium™:

- Demonstrate IA-64 benefits
- Offer high volume opportunity
- Emerging as key segments for e-business solutions

Get Real Solutions to Launch
Server Solution Stacks

Business Intelligence
- Data Mining
- Data Visualization
- Data Warehousing
- OLTP

ERP/Extended ERP
- CRM
- Supply Chain Management

E-Commerce
- E-Store front Catalog
- Online Procurement

Telephony/Security

Consolidate Messaging
- Messaging/Collaboration

Internet Infrastructure
- Application Server
- Directory Server
- Proxy/Cache Server
- Web Server

Telephony/Security

IA-32

IA-64
Scalability
64-bit Addressing
FP Performance
Performance Headroom
Workstation Solution Stacks

Digital Content Creation
- Video Editing
- Compositing/Effects
- 3D Animation
- 3D Rendering

E-Business & Finance
- Emerging Services
- Risk Analysis

IA-64
Scalability
64-bit Addressing
FP Performance
Performance Headroom

Scientific/Engineering Applications
- Computer Aided Design
- Electronic Design Automation
- Finite Element Analysis
- Fluid Dynamic Solutions

DCC Finance MDA EDA
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IA-64 Milestones

- Finish IA-64 Clean Code work
  - Understanding the IA-64 ISA: [http://developer.intel.com/design/ia64/architecture.htm](http://developer.intel.com/design/ia64/architecture.htm)
  - Getting Software Ready for IA-64: [http://developer.intel.com/design/ia64/devinfo.htm](http://developer.intel.com/design/ia64/devinfo.htm)

- Finish recompile & debug
  - Review the Compiler Technology presentation for more information on IA-64 compilers: [http://developer.intel.com/design/ia64/devinfo.htm](http://developer.intel.com/design/ia64/devinfo.htm)

- Application optimization

- Application release
IA-64 Developer Resources

- Intel Tools and Tech Support
- Intel 64 Fund
- Monterey Funds
- Training (IDF, Web-based)
- Operating Systems
- Developer’s Interface Guides for IA-64
- Application Solution Centers
- Itanium™ Development Systems
- High-end Platform Enhancements

Enterprise & Internet Computing Solutions

More to Come...
## IA-64 Developer Enabling Model

<table>
<thead>
<tr>
<th>Segment</th>
<th>High</th>
<th>Medium</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leaders</td>
<td>Direct Support, SDKs, SDVs, ASCs, Direct Training, Marketing Inclusion, Launch Presence, Demo Support, Access to private web site, DIG, IDF</td>
<td>SDKs access, SDVs access, Training, Engineering Support, Intel 64 Fund, Potential Demo Support, Access to private web site, DIG, IDF, ASCs</td>
<td>Web Site Access, Intel 64 Fund, Limited SDV access, Web-based Training, IDF, Potential presence on Intel web site</td>
</tr>
<tr>
<td>Emerging Companies Dependency Apps</td>
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<tr>
<td>All Others</td>
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</tbody>
</table>

**Intel Labs**
Web-based Developer Information

- IA-64 Home Page
  (http://developer.intel.com/design/IA64/)
  - Links to public technical documents, web based training, etc.

Extending the Intel Architecture
See how the IA-64 architecture is extending the Intel® Architecture to new levels of performance and functionality for servers and workstations.

IA-64 Architecture
Learn about and download the exciting technology behind the IA-64 architecture that combines performance, scalability, and availability features with full IA-32 binary compatibility for high performance servers and workstations.

IA-64 Developer Information
Get the latest information, tools, and development guides for the IA-64 architecture, or click here to download the IA-64 Application Developer's Architecture Guide.
Web-based Developer Information

- New software developer site for ISVs
  (http://developer.intel.com/design/servers/softdev/)
Application Solution Centers

- IA-64 architecture/tools training
- Assistance in porting effort

http://developer.intel.com/software/asc

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Application Solution Center Speedups

*Data for WW ASCs

Server Segment by Speed up

<table>
<thead>
<tr>
<th>Segment</th>
<th>Speed up</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other Server</td>
<td>2.57</td>
</tr>
<tr>
<td>E-Commerce</td>
<td>2.05</td>
</tr>
<tr>
<td>Enterprise</td>
<td>4.32</td>
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<tr>
<td>Messaging/ Network svcs</td>
<td>4.66</td>
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<tr>
<td>Database</td>
<td>3.83</td>
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<tr>
<td>Data Warehousing</td>
<td>2.52</td>
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<tr>
<td>Web Internet</td>
<td>3.54</td>
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<tr>
<td>Java</td>
<td>5.75</td>
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</table>

Workstation Segments by Speed up

<table>
<thead>
<tr>
<th>Segment</th>
<th>Speed up</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other Workstation</td>
<td>3.48</td>
</tr>
<tr>
<td>SWE</td>
<td>3.4</td>
</tr>
<tr>
<td>MDA - Mechanical Design Automation</td>
<td>2.51</td>
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<tr>
<td>Finance</td>
<td>2.18</td>
</tr>
<tr>
<td>EDA - Electronic Design &amp; Automation</td>
<td>1.56</td>
</tr>
<tr>
<td>DCC - Digital Content Creation</td>
<td>2.25</td>
</tr>
<tr>
<td>CAE - Computer Aided Engineering</td>
<td>1.19</td>
</tr>
</tbody>
</table>

Outstanding performance gains across all segments

Intel 64 Fund

- A $250m equity fund formed to accelerate the adoption of IA-64 based high volume server and workstation solutions.

http://www.intel64fund.com

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Early IA-64 Developer Tools

• **Purpose:** Ensure quality tools for first Itanium™ based systems

• **Intel SDK**
  - For clean code, compiling, linking & initial run-time debugging

• **Intel DDK**
  - For device driver development & run-time debugging

• **Pre-production Itanium™ based systems**

We’re working with a small number of vendors to improve IA-64 developer tools
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OSVs on track for Itanium™!

- **Microsoft (Win64)**
  - Booting with EFI loader; ACPI HAL is now default
  - WOW64 executing simple IA-32 instructions
  - Public Demo at WinHec

- **IBM/SCO (Monterey64)**
  - Multi-user OS booting on Simulator
  - Key device drivers ported (Kbd, Mouse, Video, Disk, NIC)

- **IA-64 Linux**
  - Trillian team formed to port Linux to IA-64 (VA Linux, IBM, Intel, HP, SGI, Cygnus)
  - IA-64 Linux booted and Apache web server running on Simulator

- **Novell (Modesto)**
  - OS booting, NetFire JVM & Proxy Cache server executing on Simulator
  - Public demos at BrainShare (US/Europe)
  - EPC providing tools/compiler

- **Hewlett Packard (HP-UX)**
  - Multi-user boot on Simulator
  - Key device drivers ported (Kbd, Mouse, Video, Disk, NIC)
  - Several applications running on Simulator

- **Sun (Solaris)**
  - Multi-user OS booting on Simulator
  - Key device drivers ported (Kbd, Mouse, Video, Disk, NIC)

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Leading ISVs on track to complete “Clean Code” by Q4
### IA-64 Workstation ISV Status

<table>
<thead>
<tr>
<th>Segment</th>
<th>ISV Commit</th>
<th>Engr. team in place</th>
<th>Engr. team trained</th>
<th>Code Clean</th>
<th>Debug &amp; Compile</th>
<th>Validation &amp; Certification</th>
</tr>
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<tbody>
<tr>
<td>MDA</td>
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Leading ISVs on track to complete “Clean Code” by Q4
Partial List of ISVs on the Itanium™ Simulator

- **Server ISVs**
  - Apache
  - Microsoft
  - Novell
  - Oracle
  - SAP
  - SAS Institute, Inc.

- **Workstation ISVs**
  - MSC
  - Mental Ray
  - Kinetix
  - Mentor Graphics
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Call-to-Action

• Get your software ready for IA-64 (i.e. “Code Cleaning”)
  ❖ Use existing IA-64 developer resources

• Identify dependency applications