

Specific Topics Expected to be Documented in the DIG64 Include:

Basic System Component Guidelines

- Core Processor Services
- Multiprocessing Support
- Core Memory Services
- Core I/O Services

System Initialization Guidelines

- Power On Considerations
- System Boot Services
- Power Management Services
- Configuration Management Services

Server Management Guidelines

- Platform Management
- Services Requirements
- Testability Services

I/O Bus Guidelines

- I/O Bus Requirements
- Expansion Bus Requirements
- USB Requirements
- Other Bus Requirements

Networking and Communications Guidelines

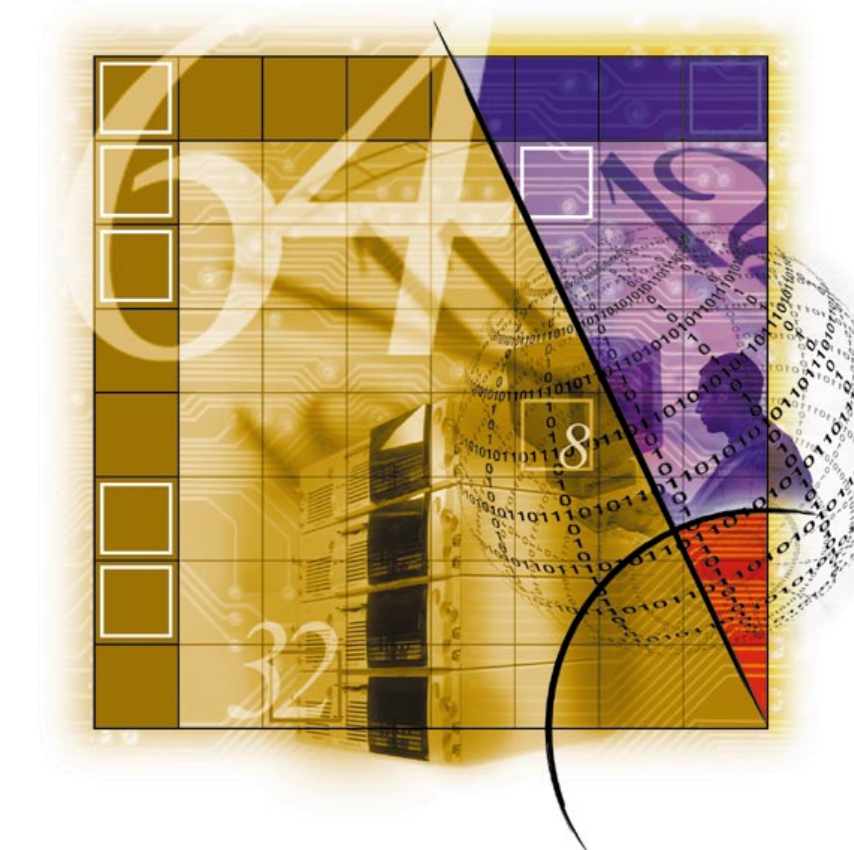
- Server Types and Communications Requirements
- LAN Device Guidelines
- Modem Device Guidelines
- ATM Device Guidelines
- ADSL Device Guidelines
- Cable Modem Device Guidelines
- ISDN Device Guidelines
- Other Communications Device Guidelines

Storage Device Guidelines

- Server Types and Storage Requirements
- SCSI Controller Device Guidelines
- ATA Controller Device Guidelines
- Fibre Channel Controller Device Guidelines
- Tape Controller Device Guidelines
- Other Storage Controller Device Guidelines

General I/O Adapter Guidelines

- I/O Adapter Recommendations



Developer's Interface Guide for IA-64 Servers

As the transition to IA-64-based server systems draws nearer, OEMs, IHVs, ISVs and OSVs must look ahead to both the opportunities and challenges these new platforms will present. Now is the time to define a common baseline hardware interface for programmers developing IA-64 server solutions. It's an opportunity to build a strong, sustainable new platform and to anticipate issues that could cause legacy problems as the architecture evolves in the future.

intel®

Copyright © Intel Corporation 1999.
*Third-party brands and names are the property of their respective owners.
Part # 284094-001

For more information please visit http://developer.intel.com/go/dev_guides

A Common Set of Hardware Building Blocks

The Developer's Interface Guide for IA-64 Servers (DIG64) is a document under development to set the guidelines for systems in the emerging IA-64-based server environment. The DIG64 is an industry initiative promoted by Intel and the leading OEMs (Compaq, Dell, HP, IBM, NEC and Siemens) whose purpose is to arrive at a common definition of compatibility between IA-64 server hardware and system-level software (OS hardware interfaces and device drivers).

The DIG64 specification is expected to define a common set of baseline building blocks and interfaces for IA-64-based servers and will provide the confidence and consistency needed to accelerate development of the foundation system for ISVs. Most importantly, the DIG64 specification is to provide the necessary framework to support concurrent development of IA-64-based solutions at all levels.

What's in the Developer's Interface Guide for IA-64 Servers

The DIG64 specification is intended to be a key reference covering baseline hardware architecture, programming conventions, test criteria, test suites and development tools. The promoters of the specification plan to include ample detail about the system and programming architecture to provide a thorough contextual basis for developing interoperable software programs and server systems.

What the DIG64 Specification will do For You

The DIG64 specification is aimed at reducing time-to-market for mission-critical, IA-64-based server products, software and devices. In the near term, its key value is to enable developers of such solutions to work from a set of low-level definitions that will ensure arrival at the same goal—flexible, interoperable hardware and software products—in a timely manner. The DIG64 specification will lay the groundwork for a clean, well-supported industry transition to IA-64-based server solutions.

The guidelines in the DIG64 specification ensure stable processor/chipset interfaces underlying the development of OS elements, drivers and applications. This will reduce development costs and enable all levels of IA-64 solutions to evolve in step with the system architecture. It all adds up to longer design life and easy design reuse for products that comply with the DIG64 specification.

In addition, the DIG64 guidelines, because they clarify low-level components, support more effective RAS solutions across the breadth of IA-64-based products.

Benefits for IT Departments and Users

The DIG64 specification provides a higher degree of standardization at the base system level. This increases reliability and confidence in deployment. It reduces qualification effort for IA-64-based server solutions, and provides a much broader choice of products.

Improved standardization, combined with the DIG64's pre-emptive effort to forestall legacy problems, means higher levels of compatibility and lower upgrade and maintenance costs.

Benefits for OEMs

The DIG64 specification defines stable, testable hardware interfaces. Simply having this degree of resolution will shorten time-to-market for IA-64-server systems and reduce design and testing costs. As noted previously, informed management of legacy issues will reduce design cycles. These guidelines will make it easier for all vendors involved with the IA-64-based platforms to design products confidently. This will accelerate the arrival of the full range of needed IA-64 solutions, helping the IA-64 market to reach "critical mass" quickly. It adds up to faster return on investment. With fewer interface variables to plan and design for, OEMs can concentrate on adding differentiating features for users in their products.

Benefits for ISVs

The DIG64 specification will ensure a better match of hardware to application requirements, and in turn higher performance and simplified development efforts. With a common baseline platform, ISVs will have early access to stable system interfaces from all the leading server manufacturers' products—providing a broader customer base for their solutions software. A common focus for platform evolution will result in shorter time-to-market and increased design longevity. Because legacy problems will be minimized, application upgrade and maintenance engineering costs will be reduced.

Benefits for OSVs

The standard hardware interfaces defined in the DIG64 specification will shorten time-to-market for IA-64 operating systems and reduce porting efforts to multiple vendor platforms. Furthermore, these interfaces will provide additional system-level support of OS RAS capabilities. Standard hardware interfaces can streamline porting efforts for ISV applications, broadening potential markets. And as with ISVs, OSVs will benefit from the reduced legacy problems as the IA-64-based server platform evolves in the future. Legacy issues will be "managed" rather than random. OSVs can anticipate legacy issues, rather than reacting to them as they emerge. This will reduce development and maintenance engineering efforts going forward.

Benefits for IHVs

The DIG64 specification ensures that core OS functionality will work across a broad set of Intel-based server systems. This minimizes porting efforts and provides stable, testable hardware interfaces that will shorten time-to-market for IA-64 systems, and reduce design and testing efforts.

Conclusion

The Developer's Interface Guide for IA-64 Servers is designed to establish consistent guidelines for developments in the IA-64-based server environment. Because the goal is to define a common set of baseline building blocks and interfaces for IA-64-based servers, it will hasten and smooth the industry's transition to the IA-64 environment. This goal will provide a means whereby OSVs, ISVs, IHVs and OEMs can concurrently develop efficient, interoperable IA-64-based solutions.