What is IBM up to with POWER7 and IBM i 7.1

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Agenda

• POWER7
  • Technology
  • Servers
  • Upgrade paths

• IBM i 7.1
  • Workload optimization
  • DB2 Integration
  • Resiliency without downtime
  • Virtualization without limits
  • Management with automation
Power your planet.
Smarter systems for a Smarter Planet.
Technology leadership

- 4, 6 or 8 cores per socket
- 3.0 to 4.14 GHz
- Up to 4 threads per core
- Integrated eDRAM L3 Cache
- Dynamic Energy Optimization
Processor Technology
IBM Investment in the Power Franchise

POWER4™ 180 nm

POWER5 130 nm

POWER6 65 nm

POWER7 45 nm

POWER8™

Future
POWER Systems Leadership Portfolio

POWER7 Servers
✓ POWER7 Blades
✓ Power® 750 Express
✓ Power 755 for HPC
✓ Power 770 modular
✓ Power 780 modular high-end

Entire POWER6 line continues to be available

PS Blades
JS Blades
Power 780

✓ New Modular High-End
✓ Up to 64 Cores
✓ TurboCore
✓ 3.86 or 4.14 GHz
✓ Up to 343,050 CPW
✓ Capacity on Demand
✓ Enterprise RAS
✓ 24x7 Warranty
✓ PowerCare
Power 770

- 12 or 16 core 4U Nodes
- Up to 4 Nodes per system
- 3.1 and 3.5 GHz
- Up to 181,000 CPW
- Capacity on Demand
- Enterprise RAS
POWER7 High-End Server Statement of Direction

✓ IBM plans to deliver a new high-end server in 2010 with up to 256 POWER7 processor cores

✓ Designed to operate within the same physical footprint and energy envelope of the current 64-core Power 595 server.

✓ High-Voltage DC Power option

✓ IBM also plans to provide an upgrade path from the current IBM Power 595 server with 12X I/O to the new POWER7 high-end server.

✓ Enterprises with multiple systems leveraging PowerVM™ Live Partition Mobility may use this function to maintain application availability during the upgrade process.

All statements regarding IBM's future direction and intent are subject to change or withdrawal without notice, and represent goals and objectives only.
Power 750 Express

- 4 Socket 4U
- 6 or 8 cores per socket
- 3.0 to 3.55 GHz
- Up to 181,000 CPW
- Energy-Star Qualified
Power Systems Blades

- **PS700 1 socket 4 core**
  - 21,200 CPW
- **PS701 1 socket 8 core**
  - 42,100 CPW
- **PS702 2 socket 16 core**
  - 76,300 CPW
- **3.0 GHz**
Power is Workload Optimization

Power Systems offers balanced systems designs that automatically optimize workload performance and capacity at either a system or VM level

✓ TurboCore™ for max per core performance for databases
✓ MaxCore for incredible parallelization and high capacity
✓ Intelligent Threads utilize more threads when workloads benefit
✓ Intelligent Cache technology optimizes cache utilization flowing it from core to core
✓ Intelligent Energy Optimization maximizes performance when thermal conditions allow
✓ Active Memory™ Expansion provides more memory for SAP
✓ Solid State Drives optimize high I/O access applications
✓ Optimization and increased flexibility, for a more efficient cloud environment

Workload-Optimizing Features make POWER7 #1 in Transaction and Throughput Computing

Power your planet.
The future of UNIX

AIX 6 Editions for entry to enterprise servers & workload consolidation
AIX 7* to exploit 1024 POWER7 threads, and support AIX 5.2 WPARs

Total integration with i

IBM i 7.1 features XML in DB2, automatic workload optimization with SSDs, Rational Open Access: RPG Edition and much more

Scalable Linux ready for x86 consolidation

POWER7 support for RHEL 5.5 & 6*, SLES 10 & 11 plus PowerVM Lx86 performance optimized for x86 server consolidation

All 3 operating environments available with POWER7

*All statements regarding IBM's future direction and intent are subject to change or withdrawal without notice, and represent goals and objectives only. Some features require the purchase of additional software components.
Model Upgrades (Same Serial Number)

POWER5
- 595
- 570*** W/D planned EOY 2010
- 550
- 520/525
- 520/515

POWER6
- 595
- 570*
- 560
- 550
- 520* 2/4 core
- 520 1-core

POWER7
- future
- 780
- 770**
- 750

* from 9117 or 8203, convert 940x before upgrading
** to 3.5 GHz 770
*** No 1-step POWER5 to POWER7 upgrades

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Power your planet.
Smart systems for a Smarter Planet.

AIX

POWER7
BUILT ON

Power

for Business

Linux

IBM Systems Director

PowerHA

PowerVM
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  • Technology
  • Servers
  • Upgrade paths

• IBM i 7.1
  • Workload optimization
  • DB2 Integration
  • Resiliency without downtime
  • Virtualization without limits
  • Management with automation
IBM i 7.1 Overview
IBM i Strategy and Roadmap

“With our clearly defined roadmaps for POWER processors and the IBM i operating environment, IBM's commitment to our i clients is solid and unchanged. We are making substantial investments in the future of i as an important, strategic element in the IBM product portfolio.”

General Manager, IBM Power Systems

New IBM white paper reviews IBM i Strategy and Roadmap

Includes information about the IBM i market, Power Systems and IBM i roadmap, and concludes with a listing of the wide range of IBM initiatives to help businesses reduce costs, improve service, and manage risk.

IBM i Roadmap

<table>
<thead>
<tr>
<th>2008</th>
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Delivering a major new release of IBM i every two years

All statements regarding IBM’s future direction and intent are subject to change without notice, and represent goals and objectives only.
IBM i 7.1 Announcement Highlights

- **Workload-Optimizing Systems**
  - Automatically locate hot data to SSDs for dramatic performance improvements

- **Total Integration with DB2**
  - Simplify data exchange with customers and suppliers with native XML support
  - Efficiently search unstructured XML data with OmniFind Text Search Server
  - Improve application performance with SQE enhancements

- **Resiliency without downtime**
  - Extended distance supported for multi-site disaster recovery solutions
  - Automatically switch storage between servers for high availability

- **Virtualization without limits**
  - Host multiple IBM i releases to facilitate upgrading to IBM i 7.1

- **Management with Automation**
  - Lower cost of PTF management with IBM Systems Director
  - Manage multiple IBM i releases from single browser environment
  - Enhanced performance management to optimized application environments
IBM i 7.1 Announcement Highlights

- **DB2**
  - Support for XML and column level encryption

- **PowerHA**
  - Async Geographic Mirroring & LUN-level switching

- **Virtualization**
  - IBM i 6.1 virtualization for i 7.1 partitions

- **Solid State Drives**
  - Automatic movement of hot data to SSDs

- **Open Access for RPG**
  - Extend application reach to pervasive devices

- **Zend Server Community Edition**
  - PHP environment preloaded with IBM i

- **Systems Director**
  - Richer management of IBM i via Systems Director

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Announce April 13
GA April 23
DB2 for i – XML Support

- XML is an industry standard for exchanging information between customers, suppliers, and partners

- Rich XML Support now available with DB2 for i
  1. XML data type stores XML documents supporting database operations
  2. Decompose (shred) XML documents into relational columns
  3. Generate XML documents from existing relational data

- OmniFind Text Search Server provides support for searching XML documents
  - Search elements of an XML document (e.g., customer name = Smith)
  - SQL statements use OmniFind to search the XML documents
  - Available with IBM i for no additional charge

- Strategic replacement for XML Extenders Program Product

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DB2 for i - Additional Enhancements

- Column Level Encryption
  - Allows for transparent (no application changes) encryption of a specific column in a database table accessed through SQL or native
  - Solutions from tool providers including Patrick Townsend and Linoma Software supply encryption algorithms

- Application Developers
  - MERGE, Array support, Global Variables, and consuming result sets in RPG allows for more powerful and efficient programming

- Performance
  - Adaptive Query Processing can modify query plan while the query is running to significantly improve performance
  - Advanced SQE query optimizer now supports native logical files

- Management
  - New tooling to monitor long running operations
  - SQL_CANCEL procedure to cancel long running queries.
  - Random or Sequential I/O statistics to identify tables that can benefit from SSDs

---

On-Demand Performance Center

- Rich tools for DB2 for i
  - Including Visual Explain
  - Adaptive Query Processing can automatically build an index to replace table scan... taking queries from 30 minutes to 1 minute

---

DB2 is an integrated database supporting transaction processing and business intelligence applications
DB2 Web Query Enhancements

- **New functions for IBM i 5.4, 6.1 and 7.1**
  - Security Enhancements
    - Change password from within DB2 Web Query
    - Enhanced meta data control
  - Administrative Enhancements
    - Change Management
    - New WRKWEBQRY functions simplifies admin
  - Performance Enhancements
    - Improved internal processing
    - Improved analysis capabilities
  - Functional Enhancements
    - Improved Dashboard development
    - Active Reports usability enhancements

- **DB2 Web Query supports querying XML documents with IBM i 7.1**

- **Get Better Performance**
  - Up to 5x better performance over Query/400

- **Reduce Report Maintenance**
  - Leverage parameterized reporting or OLAP functions to minimize report maintenance

- **Remove Dependency on IT**
  - Give the Power of the data to end users in the formats they want it with information in real time

- **Upgrade into full blown BI**
  - DB2 Web Query enabled Data Mart/Warehouses

- **Upgrade Query/400 with DB2 Web Query**

- **Bring BI and Query Solution Back to IBM i**
  - Stop the pain and expense of replicating data
  - Make decisions with current data

---

**DB2 Web Query provides an integrated Business Intelligence solution that offers rich functionality and breakthrough performance**
PowerHA SystemMirror for i - IBM 7.1 Enhancements

- **Asynchronous Geographic Mirroring for multi-site DR solution**
  - IBM i based mirroring for geographically dispersed systems
  - Asynchronously mirrors disk writes to target system
  - Support for automatic failover
  - Supports IASPs on integrated disk, SAN, and virtual disk

- **Space-Efficient Flash Copy**
  - Working with IBM DS8000 function to allow Flash Copy without requiring double DASD

- **LUN level switching for local HA solution**
  - Switch IASP on DS8000 or DS6000 between local systems
  - Support for automatic failover
  - Supports native and VIOS with NPIV attached SANs

*PowerHA provides a robust, simple to manage High Availability and Disaster Recovery solution*
Virtualization Enhancements for IBM i

1. **IBM i 6.1 partition can host**
   - IBM i 7.1 and 6.1 partitions
   - AIX 5.2, 5.3, 6.1 and SLES and Red Hat Linux partitions
   - iSCSI attached System x and BladeCenter

2. **IBM i 7.1 partition can host**
   - IBM i 7.1 and 6.1 partitions
   - AIX 5.2, 5.3, 6.1 and SLES and Red Hat Linux partitions
   - iSCSI attached System x and BladeCenter

3. **PowerVM VIOS can host**
   - IBM i 7.1 and 6.1 partitions
   - AIX and Linux partitions
   - VIOS supports advanced virtualization technologies including Active Memory Sharing and NPIV

**Storage Virtualization can reduce costs while improving IT infrastructure flexibility**
IBM i integration with BladeCenter and System x Enhancements

- **iSCSI Software Target Supports Higher Speed Connection**
  - Replaces current iSCSI adapter on Power server side with software in IBM i
  - Uses Ethernet adapters and network to connect Power to BladeCenter and System x
  - Supports 1 Gb and 10 Gb Ethernet connections
  - Can connect to iSCSI adapter or software initiator on BladeCenter and System x

- **Supported Environments**
  - Windows Server 2008 and 2003 Server editions
  - VMware ESX 4.0
  - VMware ESXi Embedded 4.0

- **New installation wizard**
  - Simplifies setup of integration environment and then starts install of Windows Server or VMware operating system

IBM i provides advanced storage management for x86 systems enabling cost reductions and better risk management
**IBM i Storage Management Enhancements for SSD**

- **IBM i supports hierarchical storage management**
  - Now IBM i automatically collects I/O performance data and moves most active data to Solid State Drives (SSD)

- **DB2 for i supports SSD as preferred media**
  - New DB2 Random Read Statistics

- **Additional enhancements for SSDs**
  - New “SSD-Aware” utilities
  - Improved performance instrumentation
  - Usability enhancements

- **SSD Analyzer Tool**
  - Designed to help determine if SSDs can help improve application performance
  - Runs on IBM i 5.4, 6.1 or 7.1

**SSDs can improve performance of long running batch jobs or queries. IBM i can easily get the right data on the SSDs**

---

**Batch Performance Runs**

- **40% Reduction**

  - Associated Bank Reduces Batch Run Time by 40% with SSDs*

  ![Graph showing 40% Reduction](image)


Systems Management Enhancements

- **Systems Director Navigator for i**
  - Ability to manage a target IBM i 5.4, 6.1 or 7.1 system
    - Navigator management server runs in one place
    - One browser used to manage multiple environments
    - Extends Navigator management to IBM i 5.4
  - Support for Tape and Journal management and BRMS

- **Performance Management Enhancements**
  - More metrics into Collection Services: DS8000, 12X Bus, Save/Restore, and Tape
  - Performance Data Investigator is enhanced to include Disk response time and Java memory perspectives

- **Systems Director Enhancements**
  - New functions for managing IBM i
  - Management server runs on AIX, Linux, or Windows
  - Manages IBM i 6.1 and 7.1 environments

*Systems Director provides an integrated platform management solution for IBM i and heterogeneous servers*
IBM i Network Upgrade Simplifies Upgrading Multiple Systems

IBM i 6.1 Base Support
• Installation of LPs, and PTFs onto a IBM i 6.1 system

October 2009 – 6.1.1 Support
• Upgrade to IBM i 6.1.1 from i 6.1 system

April 2010 – 7.1 Support
• Upgrade to IBM i 7.1 from i 6.1 or i 6.1.1

Future Plan*
• Scratch install of new system
• IBM i 6.1, IBM i 6.1.1, or IBM i 7.1

Electronic software distribution

IBM

DVD

NFS Server

Save IBM or Custom Image

SAVSYS, SAVOBJ, SAVLICPGM… to NFS Device

IBM i 6.1 (CRTDEVOPT *SRVLAN)

Install / Restore

POWER6 server

POWER7 server

IBM i 6.1 or later

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Web Server Enhancements

- IBM HTTP Server for i running Apache
  - Latest Apache 2.2 release
  - Payment Card Industry (PCI) Compliant

- IBM Technology for Java
  - Java 5 and 6 support for 32-bit and 64-bit JVMs
  - No longer shipping Classic JVM

- Integrated Web Application Server
  - Part of IBM i
  - Supports running Java 5 and 6 applications

- Integrated Web Services Server
  - Up to 2x performance improvement
  - Static WSDL support providing enhanced flexibility
  - Now supports programs in IASP

*Integrated Web technologies easily support new application deployments*
Web Integration New Features

- **Developers can use Web Admin**
  - No longer need *ALLOBJ special authority
  - Administrators can grant users ‘Permission’
  - Empowering the User

- **Monitor Web Server Log files**
  - Monitor log and error files for ALL Web servers
  - Send notifications on discovery
    - *QSYSOPR or Email

*Integrated GUI interface now available to Developers and Operators without compromising your system security*
WebSphere Support for IBM i 7.1

- **WebSphere Application Server**
  - WebSphere Application Server Express V6.1 and V7.0
  - WebSphere Application Server V6.1 and V7.0
  - WebSphere Application Server Network Deployment V6.1 and V7.0
  - Fix Packs 6.1.0.29 and 7.0.0.7 contain IBM i 7.1 level support

- **WebSphere MQ**
  - WebSphere MQ V7.0.1
  - WebSphere MQ File Transfer Edition V7.0.2.1

- **WebSphere Portal**
  - WebSphere Portal 6.1.5

- **WebSphere Commerce Server**
  - WebSphere Commerce Server 7 (with fix pack 1)
    - (SOD for 2010 delivery for IBM i 6.1 and 7.1)

*WebSphere offers rich Web application server solutions for IBM i*
Rational Support for IBM i 7.1

**Rational Developer for Power**
- Feature: RPG and COBOL Development for i
  - Eclipse-based tools for RPG/COBOL development
  - New screen and print designer & support for language enhancements
  - Replaces Rational Developer for i (RDi)
- Support for COBOL and C/C++ options for AIX

**Rational Team Concert for Power**
- Collaborative software development, automate best practices
- Integrated source control and build management
- IBM i or AIX repository options

**Rational Application Developer**
- Robust Java development environment
- Web/Web Services development integration
- EJB and J2EE fully supported

**Rational Development Studio**
- Rebranding for WebSphere Development Studio
- Provides ILE & OPM compliers + traditional development tools
- New language functions have been added to ILE Compilers

*Eclipse-based development tools can improve programmer productivity and provide a familiar development environment for new employees*
ILE RPG Enhancements

- New & updated built-in functions - %LEN, %SCANRPL, %PARMNUM
- Implicit Unicode conversion of parameters
- Sort & search data structures
- Sort ascending or descending
- Performance improvement when returning large values
- Optional prototypes
- Support for ALIAS names in externally-described DDS
- New options for the XML-INTO function (PTF for 6.1 also)
- Support for Open Access RPG Edition (PTF for 6.1 also)

Other Enhancements

- Freeze SEU syntax checking at IBM I 6.1 level
- Encrypt the debug listing view
- Teraspace storage model supported
Rational Open Access: RPG Edition

- Extends RPG application reach to pervasive devices
  - Provides ability for RPG programs to work with a variety of clients including phones, XML, Web Services
  - Developers write handlers for non-5250 interfaces

- Tool providers plan to offer handler solutions for common devices and interfaces

- New product 5733-OAR required to create or run programs that utilize Open Access for RPG

- Rational Developer for Power with RPG development feature is required to write the code to invoke handlers

- Supported Environments
  - IBM i 7.1 and 6.1

Open Access enables RPG applications to easily reach new devices and new users with new interfaces
Rational Open Access: RPG Edition

- RPG applications produce 5250 data stream
  - HATS and partner tools are used to extend to other user interfaces

RPG Applications Today

RPG Applications with Open Access

Handlers Available from
- LANSA
- looksoftware
- Profound Logic
- IBM Lab Services
Zend PHP Enhancements

- **Zend Server Community Edition for i**
  - Preloaded with IBM i 7.1, 6.1, 5.4
  - Includes one year of Silver support from Zend
  - Provided for no additional charge
  - Also available for download from Zend.com
  - Replaces Zend Core

- **Zend Server for i**
  - Provides advanced functions
  - Available from IBM with advanced support offerings
  - Also available from zend.com
  - Replaces Zend Platform

- **Zend Studio for i**
  - Eclipse-based development environment
  - Integrate with Rational Developer for Power
  - Available with one year of Silver support from Zend for no additional charge
  - Advanced support offerings available

- **Simplified Set Up and Management**
  - FastCGI support between ILE Apache and PHP
  - Eliminates 2nd copy of Apache and reverse proxy
  - Software fixes via PTFs

- **Significant Performance Enhancements**

- **New and improved features**

**Zend provides open, easy to use PHP-based development and deployment solutions for i**
Lotus Support for IBM i 7.1

- **Lotus Notes and Domino**
  - Collaboration beyond e-mail
  - Domino 8.5.1

- **Lotus Sametime**
  - Real-Time community collaboration
  - Sametime 8.5.1

- **Lotus Quickr**
  - Share everyday content
  - Quickr 8.5

- **Additional Products**
  - Enterprise Integrator 8.5.2
  - Forms 3.5.1
  - Domino Fax V4R5

**IBM i offers platform for consolidation of Lotus collaboration solutions**

For the latest information, see:
Additional Enhancements

- **IBM Transform Services for i Enhancement**
  - Delivers Adobe PDF output support to IBM i applications
  - New support to transform existing Spool Files to PDF format
  - Shipped with IBM i

- **Encrypted ASP Enhancements**
  - Added ability to start/stop encryption on an existing iASP
  - Encryption key management enhancements

- **Save/Restore and BRMS Enhancements**
  - Improved functions for managing backups, media, backup history, and recoveries

- **Support for additional Tape Libraries with NPIV through PowerVM VIOS**
  - 3577 (TS3400) with (TS1120/TS1130) drives
  - 3584 (TS3500) with (TS1120/TS1130) drives
  - 3576 (TS3310) with LTO drives
Save/Restore Enhancements

- **Fast restore of single object**
  - Track physical location on tape of each object
  - New field in OUTFILE or output report
  - User must retain information
  - New POSITION parameter on restore commands
  - BRMS automatically uses this support

- **RTVSYSINF with QUSRsys save**
  - SAVLIB & SAVCHGOBJ automatically save
  - Also included with SAVSYS
  - PTF to support on IBM i 6.1
BRMS Enhancements

- **IBM Systems Director Navigator support enhanced**
  - Scheduling
  - Filtering of log messages
  - Mark volumes for duplication
  - Multiple email addresses for notifications

- **QIBMLINK link list**
  - List of IBM directories in IFS
  - Added to *SAVSYS backup group

- **QALLUSRLINK link list**
  - List of user directories in IFS

- **Reports show more than 999,999 objects saved correctly**

- **OUTFILE supported on BRMS restores**

- **PRTMOVBRM TYPE(*NEXT) shows future movement of media**

- **Clear volumes in *ERR status without deleting them from BRMS**

- **Run BRMS saves with non-BRMS volumes**
Additional Enhancements

- **IBM i Access Family Enhancements**
  - IBM i Access for Windows 7.1 offers:
    - Enhancements to the .NET, ODBC, and OLE DB providers including support for XML data type
    - Enhancements to Data Transfer
    - Updated PC5250 Display and Printer Emulation based on IBM Personal Communications 6.0
    - Help files converted to html help format
    - Enhancements to Install, including install-time support for secondary languages
  - IBM i Access for Web 7.1 includes:
    - Additional option for viewing spooled files as PDF documents

- **Networking Enhancements**
  - IBM i DHCP server is now based on the ISC (Internet Systems Consortium) DHCP server which contains support for IPv6 and DHCP failover
  - IPv6 support for the DHCP Client, PPP (Point-to-point protocol), L2TP (Layer 2 Tunneling Protocol), and RADIUS (Remote Authentication Dial In User Service)
  - Support for the IKEv2 (Internet Key Exchange version 2) tunneling protocol in the IBM i VPN support
  - Telnet Client support on IBM i is now SSL enabled (also PTF to IBM i 6.1 & 5.4)
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- **Workload-Optimizing Systems**
  - Automatically locate hot data to SSDs for dramatic performance improvements

- **Total Integration with DB2**
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- **Management with Automation**
  - Lower cost of PTF management with IBM Systems Director
  - Manage multiple IBM i releases from single browser environment
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IBM i Life Cycle

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*The projected date for the service of IBM i releases is based on current IBM planning assumptions. Note that it is IBM’s current practice to support an IBM i release until the next two releases have been made available, plus twenty four months. This presentation contains information about IBM’s plans and directions. Such plans are subject to change without notice.
## IBM i System Support

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<td>POWER6</td>
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<tr>
<td>520, 550*, 570, 595</td>
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<tr>
<td>POWER5+</td>
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<td>515, 525</td>
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<td>520, 550, 570, 595</td>
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<td>800, 810, 825, 870, 890</td>
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<td>270, 820, 830, 840</td>
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</table>

* Specific models
## Withdrawals and Changes

<table>
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<th>Function / Product</th>
<th>Notes</th>
<th>Recommended Replacement</th>
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<tr>
<td>Direct Attach Ops Console</td>
<td>Not supported with i 7.1</td>
<td>LAN Console or HMC</td>
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<tr>
<td>Java Developer Kit (Classic)</td>
<td>Not included with i 7.1</td>
<td>IBM Technology for Java</td>
</tr>
<tr>
<td>Extended Integrated Server Support</td>
<td>Not support on i 7.1 (5761-LSB) Linux not supported on iSCSI attached systems IBM i no longer support save while active and File Level Backup for Linux partitions</td>
<td>IBM i in Option 29 - Integrated Server Support.</td>
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<tr>
<td>IBM i Information Center Media</td>
<td>Physical Media no longer available</td>
<td>Use the online version of the Information Center</td>
</tr>
<tr>
<td>AnyNet</td>
<td>Still included in i 7.1, but no longer supported</td>
<td>Enterprise Extenders function of IBM i</td>
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<tr>
<td>System i Access for wireless</td>
<td>Not supported on i 7.1 (5722-XP1)</td>
<td></td>
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<tr>
<td>Secure Perspectives</td>
<td>Not supported on i 7.1 (5733-PS1)</td>
<td>Lab Services offering</td>
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<tr>
<td>Rational Developer for i</td>
<td>Withdraw Feb 9 effective May 11 (5733-RDI)</td>
<td>Rational Developer for Power – RPG and COBOL Development for i</td>
</tr>
<tr>
<td>Zend Core for i</td>
<td>5639-ZC1 product renamed to Zend Server Community Edition for i</td>
<td>Zend Server Community Edition for i</td>
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<tr>
<td>Zend Platform for i</td>
<td>Withdraw 4/13 effective 7/17 (5619-ZP1, 5771-ZP1)</td>
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<tr>
<td>Zend and MySQL Value Pack</td>
<td>Withdraw 4/13 effective 7/17 (5639-MVP)</td>
<td>Zend Server Support for i 5771-ZC1</td>
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</tbody>
</table>

**IBM i Planning Web Site**  
IBM i 7.1 Announcement Highlights

- **DB2**
  - Support for XML and column level encryption

- **PowerHA**
  - Async Geographic Mirroring & LUN-level switching

- **Virtualization**
  - IBM i 6.1 virtualization for i 7.1 partitions

- **Solid State Drives**
  - Automatic movement of hot data to SSDs

- **Open Access for RPG**
  - Extend application reach to pervasive devices

- **Zend Server Community Edition**
  - PHP environment preloaded with IBM i

- **Systems Director**
  - Richer management of IBM i via Systems Director

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**PO #** | **Customer #** | **Date** | **Credit Card** | **Purchase Order** |
--- | --- | --- | --- | --- |
123 | 2468 | 5/27/09 | &^$&$ | XML |

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Announce April 13
GA April 23
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Revised September 26, 2006
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Revised February 9, 2010
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- rPerf estimates are calculated based on systems with the latest levels of AIX and other pertinent software at the time of system announcement. Actual performance will vary based on application and configuration specifics. The IBM eServer pSeries 640 is the baseline reference system and has a value of 1.0. Although rPerf may be used to approximate relative IBM UNIX commercial processing performance, actual system performance may vary and is dependent upon many factors including system hardware configuration and software design and configuration. Note that the rPerf methodology used for the POWER6 systems is identical to that used for the POWER5 systems. Variations in incremental system performance may be observed in commercial workloads due to changes in the underlying system architecture.

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CPW for IBM i

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Revised April 2, 2007