

# *i5/OS V5R4 What's New*

*An Overview of the New Features and  
Enhancements to the System i5's Latest  
Operating System*



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# i5/OS V5R4 Brings New Functions and Enhancements

## General Availability: Feb 14, 2006

The following is an overview of the enhancements and new functions of i5/OS V5R4. To find more information, please access the new iSeries Information Link on the web at:

<http://publib.boulder.ibm.com/series>

**Note:** This document is not a replacement for *Memo to Users* and other operating system installation information. Please be sure to read all installation documentation before installing and/or upgrading to V5R4

## **Installation:**

- V5R4 requires minimum 17.5GB load source
- V5R4 requires minimum memory of 128MB

## **Backup & Recovery**

- Virtual Tape
  - ability to save multiple libraries or entire system to disk (eliminates save file limitations)
  - virtual volumes stored as IFS stream files; volumes can be write protected
  - can duplicate volumes to media or ftp to second system
  - integrated with BRMS
- Native Spool File Save/Restore via new SPLFDATA parameter on save/restore commands
  - support to save/restore entire output queues (no support for individual spool files)
  - BRMS now uses this method to save/restore spool files
- Parallel save/restore for IFS files to reduce save window for large IFS objects
- New commands for ability to cumulatively backup key SAVSYS object changes between full saves without requiring a restricted system
  - SAVSYSINF: partial save of data saved by SAVSYS command
    - Does not save:
      - Licensed Internal Code
      - QSYS library
      - System values which cannot be changed
      - Configuration objects (use SAVCFG)
      - Security data (use SAVSECDTA)
  - RSTSYSINF: requires appropriate restore sequence of SAVSYS command, followed by RSTSYSINF
  - Cannot use to restore to different system or for system upgrades/migrations

## ***System Management***

- iSeries Navigator browser interface now supports more functions
- IBM Director Multiplatform V5.1 shipped with i5/OS V5R4

## ***Work Management***

- ability to end a job without creating a job log will improve job ending performance

## ***Windows Integration***

- 5722-WSV iSeries Integration for Windows Server replaced by option 29 of i5/OS
- support for expanding a network drive without copying it
- support for Windows 2004 Volume Shadow Copy

## ***Application Development***

- CL
  - simple subroutine support
  - support for structures using defined variables
  - can take advantage of APIs shipped in i5/OS programs and service programs
  - new pointer data type and based CL variables
- RPG
  - ability to access data in XML documents
  - ability to use free format SQL database access in applications
  - deploy RPG application as Web service provider
  - enable RPG application as requester to Web service
- Cobol
  - ability to out Cobol data records to XML format
- Java
  - New 32-bit JVM 1.5
    - smaller memory footprint
    - standard across all IBM platforms
  - Java Virtual Machine Tool Interface replaces Java Virtual Machine Profiler Interface and the Java Virtual Machine Debug Interface
  - Previously delayed PTFs for JVM can be applied when no JVM is active
  - Java Cryptography Extension (JCE) 1.0
  - Support for properties for J2SE, version 5.0
  - New Java tools available as of JDK 1.5
    - apt
    - Pack200/unpack200
- Websphere Development Studio
  - Enhanced wizard to create SOA service from RPG application
  - Webfacing and HATS integrated runtime environment (eliminates need for 5250)
  - WDS Lite Technology Preview - smaller footprint and memory requirements

## ***Communications***

- SNA applications over IP networks with i5/OS Enterprise Extenders
  - supports High Performance Routing
  - significantly better performance than AnyNet
- Production ready IPv6
  - supported over loopback, all ethernet adapters and virtual ethernet between partitions
  - fragmentation is fully supported
  - multiple ethernet adapters may be enabled for IPv6
  - same adapter can use IPv4, IPv6 and PPPoE
- TCP/IP Configuration
  - New alias names for IP interfaces
  - New preferred interface list for virtual IP adapters

## ***Security***

- Enterprise Identity Mapping
- 5722-NAE Network Authentication Enablement replaces 5722-AC3 Crypto Access Provider 128-bit
- iSeries Access base code includes all functionality of 5722-CE3 Client Encryption which is now no longer shipped
- V5R4 is last release to support 5722-CR1 IBM Cryptographic Support for AS/400
- Additional auditing features
- 1st release of native TCP/IP Intrusion detection - events reported to audit journal
- Server side NAT traversal support
- Enhanced Hardware Storage Protection - No more ability to directly access system objects
  - requires database and other object conversion after V5R4 install

## ***Printing and Output Management***

- Native save/restore of spool data (option to save all spool files or just new ones)
- APIs available to create filters to select spool files for save/restore
- Option to expire save files

## ***High Availability/Continuous Operations***

- Base cluster services enhanced with administrative domain support
  - adds replication of user profiles, work management objects, selected system values and network attributes
- i5/OS replication services will optionally automatically journal non-DB objects in addition to new database files
- Cross site mirroring: improve re-synchronization to remote mirrored disk pool
  - source tracking of changes that did/did not get replicated to target
- Journaling
  - new default options when creating/changing journals
  - enhanced recovery support with WRKJRN command
  - new entries for data areas and data queues
  - additional information on WRKJRNA and DSPJRN commands

## ***Database***

- New administrative tools
  - Real time index advisor and tools to manage index rebuilds
  - Enhanced tools to monitor and analyze SQL performance
  - New health center advises on use of database
- Database on Demand Performance Center (via iSeries navigator) - enables ability to quickly identify and correct performance problems using various tools:
  - Control cpu and disk intensive queries
  - Manage Indexes and MQTs (Materialized Query Tables)
  - Monitor and analyze SQL Performance
  - Monitor and analyze SQL Plan Cache
  - Show current activity
  - Show current database limits and sizes
- Free format embedded SQL in ILE RPG
- Enhanced SQL standards support for Scalar fullselect and standard flagger

## ***iSeries Access***

- iSeries Access for the Web:
  - Browse File Shares
  - OpenOffice spreadsheet format added to SQL uploads/downloads
  - Import and run existing Query/400 and DB2 Query Manager requests from a browser