



IBM i 7.1 Technology Refresh 7 offers performance, usability, and integration enhancements

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At a glance

IBM® i 7.1 Technology Refresh 7 offers new capabilities to help you exploit the latest technology:

- Extensions to IBM Integrated Web Application Server enable you to use the Java™ web server runtime engine.
- Improvements to IBM DB2® for IBM i help you deal better with big data.
- Enhancements to I/O devices for the IBM Power Systems™ product line help you exploit the solid-state drive (SSD) flash technology evolution.

For ordering, contact your IBM representative, an IBM Business Partner, or IBM Americas Call Centers at 800-IBM-CALL (Reference: AE001).

Overview

IBM i 7.1 Technology Refresh 7 provides significant new capability for clients to take advantage of the latest technology, with significant new enhancements in RPG IV and DB2 for i, and with extended I/O hardware support.

The RPG IV programming language is enhanced to include additional free format coding support, helping to increase productivity and modernizing the RPG language. New extensions to the database will include new and advanced capabilities allowing the use of SQL to do a broad range of tasks. The new lighter weight, easy-to-use WebSphere® Liberty Application Server has become an option that clients can select when working with the IBM i Integrated Application Server. Hardware I/O support has been extended to include a variety of new devices and enhanced capabilities of existing devices.

- Integrated Web Application Server is extended to include WebSphere Liberty Application Server.
- The following DB2 database enhancements are included:
 - VLDB: IBM i gets bigger and better.
 - Modernization: It is now easier to move from DDS to SQL DDL.
 - DB2 for i systems management catalogs offer a new breed of data.
 - DB2 for i as a solutions platform.
- Scheduling flexibility enhancements have been made to IBM Application Runtime Expert.

- New Java V7.1 is included in the IBM i Java Runtime.
- The Free Format RPG IV language to help improve productivity for RPG Coders.
- New I/O hardware enhancements can help increase client choices for technology to more closely match their requirements:
 - PCIe2 1.8 GB Cache RAID SAS Adapter.
 - New small form factor 387 GB and 775 GB solid-state drives (SSD).
 - 1.2 TB/1.1 TB 10k RPM Disk Drive.
 - PCIe 2-port Async EIA-232 Adapter now supports Async PPP protocol.

Note: In this announcement letter, the term *Technology Refresh 7* refers to the set of PTFs required to support new hardware functionality. The term *Technology Update* refers to the multiple PTFs or PTF groups that will provide additional functionality in IBM i and related products. The term *Technology Refresh* is widely used to group both of these together. Availability of IBM i 7.1 TR7, IBM i 6.1.1 and related products are available November 15, 2013.

Key prerequisites

Refer to the [Technical information](#) section for specific hardware and software prerequisites.

Planned availability date

October 7, 2013

Description

IBM i

Integrated Web Application Server

The Integrated Web Application Server has been extended to leverage a new runtime engine based on the new WebSphere Liberty Application Server. Users of the Integrated Application Server will now have a choice between the older LWI-based support or the new Liberty support. This support will be automatically installed as part of the latest HTTP PTF Group, allowing clients to take advantage of this new small footprint to use the Java web server runtime engine.

There are several benefits to this new Liberty base:

- Faster startup and deployment due to dynamic configuration update
- Latest standards, including the Java EE web profile, which includes: servlet 3.0, JSF 2.0, JSP 2.2, JSTL 1.2, EJB Lite 3.1, and JPA 2.0
- Improved performance
- Easily portable from system to system

For additional details, visit the Integrated Web Application Server product page

<http://www-03.ibm.com/systems/i/software/ias/>

DB2 for IBM i

In the tradition of previous Technology Refreshes, DB2 for IBM i is again being extended to provide new capabilities, including built-in improvements for dealing with big data. The unique position IBM i has as the solution platform for business is being enriched through the delivery of new SQL capabilities for advanced SQL scripting, improved RPG language support for Embedded SQL, and a new breed

of database catalogs. Improvements are also being provided to make it easier to modernize databases from DDS to SQL DDL.

Moving up to the suggested DB2 PTF Group will result in a database that provides significant new capabilities and that runs better, faster, and smarter.

- VLDB: IBM i gets bigger and better:
 - SQL Indexes can grow to 1.7 TB in size.
 - Automatic tracking and trending for growth rates of DB2 tables and indexes.
 - Live movement of DB2 tables and indexes to SSD.
- Modernization: Making it easier to move from DDS to SQL DDL:
 - Field reference detail maintained over CREATE TABLE AS
 - Improved SQL Generate DDL support for Keyed DDS files
- DB2 for i systems management catalogs -- a new breed of data:
 - System values and their settings
 - User profile information and user storage consumption
 - Function Usage IDs and their settings
 - Configured privileges broken apart by type of SQL object
 - Authorization lists added to Privilege catalogs
 - Using SQL to mine the audit journal and IFS journals
- DB2 for i as a solutions platform:
 - Additional Free Format RPG with embedded SQL
 - Advanced SQL scripting with the Dynamic Compound statement

Visit the IBM i Technology Updates wiki on developerWorks® to learn more about these and other DB2 for IBM i enhancements

<http://www.ibm.com/developerworks/ibmi/techupdates/db2>

To see the DB2 for IBM i PTF Group details, visit

<http://www.ibm.com/developerworks/ibmi/techupdates/db2/groupptf>

Program products

Application Runtime Expert

The Application Runtime Expert product (5733-ARE) has been enhanced to include the ability to schedule verifications based on a timeframe that fits your needs. From the Application Runtime Expert GUI interface, it is possible to schedule a verification to run at a specific time against a list of chosen systems. This provides additional flexibility and usability to help extend the usefulness of the product. This new support will be delivered in the latest HTTP PTF Group and will require that the 5733-ARE product is already installed. These new enhancements are available for both IBM i 6.1 and IBM i 7.1.

For details on Application Runtime Expert, refer to this site in developerWorks

<http://www-03.ibm.com/systems/power/software/i/are/index.html>

Java

IBM has announced a new version of the Java Runtime Engine (Java 7). The new version, Java V7.1, will be delivered as part of the Java product (5761-JV1). It is being delivered in both a 32-bit and 64-bit implementation. The new Java V7.1 is being delivered as a "addendum" to the existing Java 7 product options.

```
5761 JV1 Option 14 Java 7 32bit and Java 7.1 32bit
/QOpenSys/QIBM/ProdData/JavaVM/jdk70/32bit
/QOpenSys/QIBM/ProdData/JavaVM/jdk71/32bit
```

5761 JV1 Option 15 Java 7 64bit and Java 7.1 64bit
/QOpenSys/QIBM/ProdData/JavaVM/jdk70/64bit
/QOpenSys/QIBM/ProdData/JavaVM/jdk71/64bit

For details on the Java V7.1 support for IBM i, visit the following web page in IBM developerWorks

<https://www.ibm.com/developerworks/ibmi/techupdates/java>

Free Format RPG IV

IBM Rational® has announced a significant update to the RPG IV language delivered in 5770-WDS. In the continuing effort to ensure RPG as a modern business language, RPG IV will support free-form Control, File, Definition, and Procedure specifications. RPG coders will now have the option to code programs with no regard to columns. Developers trained in other languages will more easily pick up the RPG language for writing modern applications. These new enhancements will be delivered through new PTFs and can be applied to RPG IV V7.1. These new enhancements will be documented in the RPG Cafe in developerWorks at

https://www.ibm.com/developerworks/mydeveloperworks/wikis/communitywiki?communityUuid=b_542d3ac-0785-4b6f-8e53-f72051460822

Hardware enhancements

IBM has introduced several I/O enhancements for the Power Systems product line, especially featuring options for higher-performance SAS/SSD configurations for those clients looking to leverage flash technology with IBM i. Additional enhancements provide expanded options for spinning disk and for async PPP protocol. Among the highlights are:

- Refreshed PCIe2 1.8 GB Cache RAID SAS adapter with lower energy requirements
- Higher capacity SSD features up to 775 GB
- Higher capacity 10K RPM disk drives up to 1.2 TB
- Improved write performance for IBM i configurations with VIOS that use PCIe2 1.8 GB Cache RAID SAS adapters
- Lower-cost async adapter option for IBM i applications using the Asynchronous Point-to-Point Protocol (PPP)

For more details on these I/O enhancements, refer to Hardware Announcement [113-171](#), dated October 07, 2013 .

For an IBM i related description of these I/O enhancements, refer to

<https://www.ibm.com/developerworks/ibmi/techupdates/hw>

Statement of direction

IBM plans to provide support for IBM Power® Virtualization Center (PowerVC) to manage systems running the IBM i operating system and for IBM SmartCloud® Entry for Power to provision images to IBM i.

IBM's statements regarding its plans, directions, and intent are subject to change or withdrawal without notice at IBM's sole discretion. Information regarding potential future products is intended to outline our general product direction and it should not be relied on in making a purchasing decision. The information mentioned regarding potential future products is not a commitment, promise, or legal obligation to deliver any material, code, or functionality. Information about potential future products may not be incorporated into any contract. The development, release, and timing of any future features or functionality described for our products remains at our sole discretion.

Program number

Program number	VRM	Program name
5770-SS1	V7.1	IBM i V7
5761-SS1	V6.1	IBM i5/OS

Product identification number

Program PID number	Maintenance 1-year PID number	Maintenance 3-year PID number
5770-SS1	N/A	N/A
5761-SS1	N/A	N/A

Program PID number	Maintenance 90-Day PID number
5733-WQE	5665-WQE
5733-WQS	5665-WQS

Offering Information

Product information is available via the Offering Information website

<http://www.ibm.com/common/ssi>

Business Partner information

If you are a Direct Reseller - System Reseller acquiring products from IBM , you may link directly to Business Partner information for this announcement. A PartnerWorld® ID and password are required (use IBM ID).

<https://www.ibm.com/partnerworld/mem/sla.jsp?num=213-423>

Publications

No publications are shipped with these programs.

Technical information

Specified operating environment

Hardware requirements

For specific hardware requirements, see the IBM i Technology Updates wiki on developerWorks at

<http://www.ibm.com/developerworks/ibmi/techupdates/hw>

Software requirements

IBM i 7.1 TR 7 and IBM i 6.1.1 enhancements will be available on November 15, 2013, as PTF updates. Refer to the link in the [Description](#) section for more details.

For more details on software requirements, visit

<http://www.ibm.com/developerworks/ibmi/techupdates>

The program's specifications and specified operating environment information may be found in documentation accompanying the program, if available, such as a readme file, or other information published by IBM, such as an announcement letter. Documentation and other program content may be supplied only in the English language.

Companion products

The MSP Utility Pricing Offer is a program that leverages channel-led discounting for Managed Service providers who purchase a Cloud Hosting Infrastructure built with IBM hardware and software.

IBM Electronic Support

The IBM Support Portal is your gateway to technical support. This includes IBM Electronic Support tools and resources, for software and hardware, to help save time and simplify support. The Electronic Support tools can help you find answers to questions, download fixes, troubleshoot, automate data collection, submit and track problems through the Service Request online tool, and build skills. All these tools are made available through your IBM support agreement, at no additional charge.

- Read about the Electronic Support portfolio of tools
<http://ibm.com/electronicssupport>
- Access the IBM Support Portal
<http://ibm.com/support>
- Access the online Service Request tool
<http://ibm.com/support/servicerequest>

Planning information

- The next generation of servers following POWER7 / POWER7+ is not planned to support IBM i 6.1 and will require IBM i 7.1, or later.
- The release after IBM i 7.1 will run on POWER6 and newer hardware. No POWER5 technology-based systems are supported.
- Partitions with the release after IBM i 7.1 cannot own any HSL/RIO or IOP hardware, but they can be virtual clients. (This support statement was already true for POWER7 and later. This planning statement specifically applies to POWER6 technology-based systems running the release after IBM i 7.1.)
- Language Translation Support: Starting with the release after 7.1, the 5770-SS1 IBM i operating system and subsequent products will no longer be translated into Croatian and Romanian. The national language version feature codes for Croatian (#2912) and Romanian (#2992) will remain, but the text will now be delivered in English. The system multicultural support for these languages will not be affected.

Security, auditability, and control

These programs use the security and auditability features of the host hardware or software. The customer is responsible for evaluation, selection, and implementation of security features, administrative procedures, and appropriate controls in application systems and communication facilities.

Software Services

IBM Software Services has the breadth, depth, and reach to manage your services needs. You can leverage the deep technical skills of our lab-based, software services team and the business consulting, project management, and infrastructure expertise of our IBM Global Services team. Also, we extend our IBM Software Services reach through IBM Business Partners to provide an extensive portfolio of capabilities. Together, we provide the global reach, intellectual capital, industry insight, and technology leadership to support a wide range of critical business needs.

To learn more about IBM Software Services or to contact a Software Services sales specialist, visit

<http://www.ibm.com/software/sw-services/>

Ordering information

IBM i 7.1 (5770-SS1)	No-charge feature number
IBM i 7.1 (5770-SS1)	

Registration features for
PureFlex™ Systems

PureFlex User qty 5	6495
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IBM i 6.1.1 (5761-SS1)

IBM i 6.1.1 (5761-SS1)	No-charge feature number
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Registration features for
PureFlex Systems

PureFlex User qty 5	6495
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The following will be added to all upgrade orders for DB2 Web Query Express® (5733WQE) or Standard (5733WQS). These are 90 day, no-charge products and are used by IBM to properly transfer software maintenance from the current customer DB2 Web Query version (5733-QU2 or 5733-WQE) to the upgraded DB2 Web Query version. Customers receiving this no-charge product will be entitled to software maintenance on the upgraded DB2 Web Query version for 90 days after the upgrade order or for the duration of their existing software maintenance, whichever is longer.

IBM Web Query for System i® SWMA 90 day Transfer Reg/Ren (5665-WQS)	No-charge Per Processor Core feature
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Per Processor Core 90D Reg	0001
Per Proc Core 7x24 90D Reg	2897

IBM Web Query for System i SWMA 90 day Transfer Reg/Ren (5665-WQE)	No-charge Per Processor Core feature
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Per Processor Core 90D Reg	0002
Per Proc Core 7x24 90D Reg	0001

Terms and conditions

The information provided in this announcement letter is for reference and convenience purposes only. The terms and conditions that govern any transaction with IBM are contained in the applicable contract documents such as the IBM

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IBM International Program License Agreement including the License Information document and Proof of Entitlement (PoE) govern your use of the program. PoEs are required for all authorized use.

This software license includes Software Subscription and Support (also referred to as Software Maintenance).

Agreement for Acquisition of Software Maintenance

The IBM Agreement for Acquisition of Software Maintenance (Z125-6011) applies for Subscription and Support (also referred to as Software Maintenance) and does not require customer signatures.

These programs are licensed under the IBM Program License Agreement (IPLA) and the associated Agreement for Acquisition of Software Maintenance, which provide for support with ongoing access to releases and versions of the program. IBM includes one year of Software Subscription and Support (also referred to as Software Maintenance) with the initial license acquisition of each program acquired. The initial period of Software Subscription and Support (also referred to as Software Maintenance) can be extended by the purchase of a renewal option, if available. These programs have a one-time license charge for use of the program and an annual renewable charge for the enhanced support that includes telephone assistance (voice support for defects during normal business hours), as well as access to updates, releases, and versions of the program as long as support is in effect.

License Information form number

The program's License Information will be available for review on the IBM Software License Agreement website

<http://www.ibm.com/software/sla/sladb.nsf>

Limited warranty applies

Yes

Limited warranty

IBM warrants that when the program is used in the specified operating environment, it will conform to its specifications. The warranty applies only to the unmodified portion of the program. IBM does not warrant uninterrupted or error-free operation of the program or that IBM will correct all program defects. You are responsible for the results obtained from the use of the program.

IBM provides you with access to IBM databases containing information on known program defects, defect corrections, restrictions, and bypasses at no additional charge. For further information, consult the IBM Software Support Handbook found at

<http://www.ibm.com/support/handbook>

IBM will maintain this information for at least one year after the original licensee acquires the program (warranty period).

Money-back guarantee

If for any reason you are dissatisfied with the program and you are the original licensee, you may obtain a refund of the amount you paid for it, if within 30 days of your invoice date you return the program and its PoE to the party from whom you

obtained it. If you downloaded the program, you may contact the party from whom you acquired it for instructions on how to obtain the refund.

For clarification, note that for programs acquired under any of IBM's On/Off Capacity on Demand (On/Off CoD) software offerings, this term does not apply since these offerings apply to programs already acquired and in use by you.

Volume orders (IVO)

Yes. Contact your IBM representative.

Passport Advantage applies

No

Software Subscription and Support applies

Yes. All distributed software licenses include Software Subscription and Support (also referred to as Software Maintenance) for a period of 12 months from the date of acquisition, providing a streamlined way to acquire IBM software and assure technical support coverage for all licenses. Extending coverage for a total of three years from date of acquisition may be elected.

While your Software Subscription and Support is in effect, IBM provides you assistance for your routine, short duration installation and usage (how-to) questions, and code-related questions. IBM provides assistance via telephone and, if available, electronic access, only to your information systems (IS) technical support personnel during the normal business hours (published prime shift hours) of your IBM support center. (This assistance is not available to your end users.) IBM provides Severity 1 assistance 24 hours a day, every day of the year. For additional details, consult your IBM Software Support Handbook at

<http://www.ibm.com/support/handbook>

Software Subscription and Support does not include assistance for the design and development of applications, your use of programs in other than their specified operating environment, or failures caused by products for which IBM is not responsible under this agreement.

IBM Operational Support Services -- SoftwareXcel

Yes

System i Software Maintenance applies

Yes

Variable charges apply

No

Educational allowance available

Yes. A 15% education allowance applies to qualified education institution customers.

Statement of good security practices

IT system security involves protecting systems and information through prevention, detection, and response to improper access from within and outside your enterprise. Improper access can result in information being altered, destroyed, or misappropriated or can result in misuse of your systems to attack others. Without a comprehensive approach to security, no IT system or product should be considered completely secure and no single product or security measure can be completely effective in preventing improper access. IBM systems and products are designed

to be part of a comprehensive security approach, which will necessarily involve additional operational procedures, and may require other systems, products, or services to be most effective. IBM does not warrant that systems and products are immune from the malicious or illegal conduct of any party.

IBM Electronic Services

Electronic Service Agent™ and the IBM Electronic Support web portal are dedicated to providing fast, exceptional support to IBM Systems customers. The IBM Electronic Service Agent tool is a no-additional-charge tool that proactively monitors and reports hardware events, such as system errors, performance issues, and inventory. The Electronic Service Agent tool can help you stay focused on your company's strategic business initiatives, save time, and spend less effort managing day-to-day IT maintenance issues. Servers enabled with this tool can be monitored remotely around the clock by IBM Support all at no additional cost to you.

Now integrated into the base operating system of AIX® 5.3, AIX 6.1, and AIX 7.1, Electronic Service Agent is designed to automatically and electronically report system failures and utilization issues to IBM, which can result in faster problem resolution and increased availability. System configuration and inventory information collected by the Electronic Service Agent tool also can be viewed on the secure Electronic Support web portal, and used to improve problem determination and resolution by you and the IBM support team. To access the tool main menu, simply type "smitty esa_main", and select "Configure Electronic Service Agent." In addition, ESA now includes a powerful Web user interface, giving the administrator easy access to status, tool settings, problem information, and filters. For more information and documentation on how to configure and use Electronic Service Agent, refer to

<http://www.ibm.com/support/electronic>

The IBM Electronic Support portal is a single Internet entry point that replaces the multiple entry points traditionally used to access IBM Internet services and support. This portal enables you to gain easier access to IBM resources for assistance in resolving technical problems. The My Systems and Premium Search functions make it even easier for Electronic Service Agent tool-enabled customers to track system inventory and find pertinent fixes.

Benefits

Increased uptime: The Electronic Service Agent tool is designed to enhance the Warranty or Maintenance Agreement by providing faster hardware error reporting and uploading system information to IBM Support. This can translate to less wasted time monitoring the "symptoms," diagnosing the error, and manually calling IBM Support to open a problem record. Its 24x7 monitoring and reporting mean no more dependence on human intervention or off-hours customer personnel when errors are encountered in the middle of the night.

Security: The Electronic Service Agent tool is designed to be secure in monitoring, reporting, and storing the data at IBM. The Electronic Service Agent tool securely transmits either via the Internet (HTTPS or VPN) or modem, and can be configured to communicate securely through gateways to provide customers a single point of exit from their site. Communication is one way. Activating Electronic Service Agent does not enable IBM to call into a customer's system. System inventory information is stored in a secure database, which is protected behind IBM firewalls. It is viewable only by the customer and IBM. The customer's business applications or business data is never transmitted to IBM.

More accurate reporting: Since system information and error logs are automatically uploaded to the IBM Support center in conjunction with the service request, customers are not required to find and send system information, decreasing the risk of misreported or misdiagnosed errors. Once inside IBM, problem error data

is run through a data knowledge management system and knowledge articles are appended to the problem record.

Customized support: Using the IBM ID entered during activation, customers can view system and support information in the "My Systems" and "Premium Search" sections of the Electronic Support website at

<http://www.ibm.com/support/electronic>

My Systems provides valuable reports of installed hardware and software using information collected from the systems by Electronic Service Agent . Reports are available for any system associated with the customer's IBM ID. Premium Search combines the function of search and the value of Electronic Service Agent information, providing advanced search of the technical support knowledgebase. Using Premium Search and the Electronic Service Agent information that has been collected from your system, customers are able to see search results that apply specifically to their systems.

For more information on how to utilize the power of IBM Electronic Services, contact your IBM Systems Services Representative, or visit

<http://www.ibm.com/support/electronic>

Prices

For additional information and current prices, contact your local IBM representative.

Order now

To order, contact the Americas Call Centers or your local IBM representative, or your IBM Business Partner.

To identify your local IBM representative or IBM Business Partner, call 800-IBM-4YOU (426-4968).

Phone: 800-IBM-CALL (426-2255)
Fax: 800-2IBM-FAX (242-6329)
For IBM representative: callserv@ca.ibm.com
For IBM Business Partner: pwcs@us.ibm.com
Mail: IBM Teleweb Customer Support
ibm.com® Sales Execution Center, Americas North
3500 Steeles Ave. East, Tower 3/4
Markham, Ontario
Canada
L3R 2Z1

Reference: AE001

The Americas Call Centers, our national direct marketing organization, can add your name to the mailing list for catalogs of IBM products.

Note: Shipments will begin after the planned availability date.

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For the most current information regarding IBM products, consult your IBM representative or reseller, or visit the IBM worldwide contacts page

<http://www.ibm.com/planetwide/us/>

Corrections

(Corrected on November 12, 2013)

The Planning information section was revised.