

Infor XA IDF Technical Planning Guide

SH14412

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Preface

The *Infor ERP XA IDF Technical Planning Guide* provides prerequisite and sizing considerations for XA IDF. The *Infor ERP XA Technical Planning Guide* is designed to prepare customers who are either doing their initial install or migrating to the new release. Unless noted, the information in this document applies to Release 7, 7.8, 9, 9.1, and 9.2.

Viewing the Technical Planning Guide

The *Infor ERP XA IDF Technical Planning Guide* exists in Adobe PDF format and can be viewed and printed using Adobe Reader.

Additional information

Please review the [informational PTFs](#) available for each Release on the InforXtreme Support website.

Release 7.8

Release notes for R7.8 are available on InforXtreme in the Documentation section under XA -> XA Product Manuals -> Miscellaneous -> ERP XA Release Notes.

Release 9/9.1/9.2

Release notes for R9, R9.1, and R9.2 are available on InforXtreme in the Documentation section under XA -> XA Product Manuals -> Miscellaneous -> ERP XA Release Notes.

Source Code

Please refer to the knowledgebase item [KB 781821](#) available on InforXtreme.

XA IDF Considerations

Introduction

IDF evolves the Client Architecture components to the new Java technology so they can be used over the Internet as well as enabling system to system integration using XML. The Java technology helps XA customers improve collaboration with business partners, improve decision-making and responsiveness and protects their long term investment in the IBM i and XA solutions.

The new architecture is highlighting a Java based client-server interface called *Power-Link*, an XML interface called *System-Link* (delivered at release 6 as XA eZ-Link), and a new Thin-client interface called *Net-Link*.

System Planning

Sizing considerations

As seen in technology today, systems are changing regularly. We have as an organization been very considerate when it comes to the needs of your systems. XA IDF is a major technological change that does have some considerations regarding sizing. Initial performance work with the new Java Architecture has been very positive. However, based on your application mix and deployment model, the requirements for both the PC and the IBM i may change. In this guide, we have provided information that will help you determine what is necessary to support the New Architecture.

Note: The quick selection guide is not a substitute for detailed analysis of the complete system workload. RESIZING OF SYSTEM IS MANDATORY.

Steps for moving to IDF

Read all information provided

- Notify your Affiliate
- Performance Analysis
 - Determine number of Power-Link Users
 - Determine number of Net-Link Users
 - Determine number of System-Link Users
 - Determine number of 5250 'Green Screen' Users
- Determine System needs
 - Hardware requirements
 - Software requirements
- Order Hardware Upgrades
- Order Software Upgrades

Skills needed for implementing IDF

Skills needed for installation of base

IBM i OS: general system administration skills, TCP configuration, IFS structure (being able to access folders/files in the IFS), Netserver, how to order and install system PTFs.

Time to install:

Highly dependent on IBM i performance and on the number of applications being installed. For an upgrade, highly dependent on your file sizes. This can take anywhere from half a day to several days.

Skills needed for installation and configuration of XA System-Link and Net-Link:

IBM i OS: general system administration skills, TCP configuration, IFS structure (being able to access folders/files in the IFS), Netserver, how to order and install system PTFs.

INFOR System-Link or Net-Link itself: installation basically only requires following instructions

Time to install:

INFOR System-Link or Net-Link config: about 1 hour each at most.

Skills needed for installation and configuration of Power-Link:

IBM i OS: general system administration skills, TCP configuration, IFS structure (being able to access folders/files in the IFS), Netserver, how to order and install system PTFs

Power-Link itself: installation basically only requires following instructions.

Time to install:

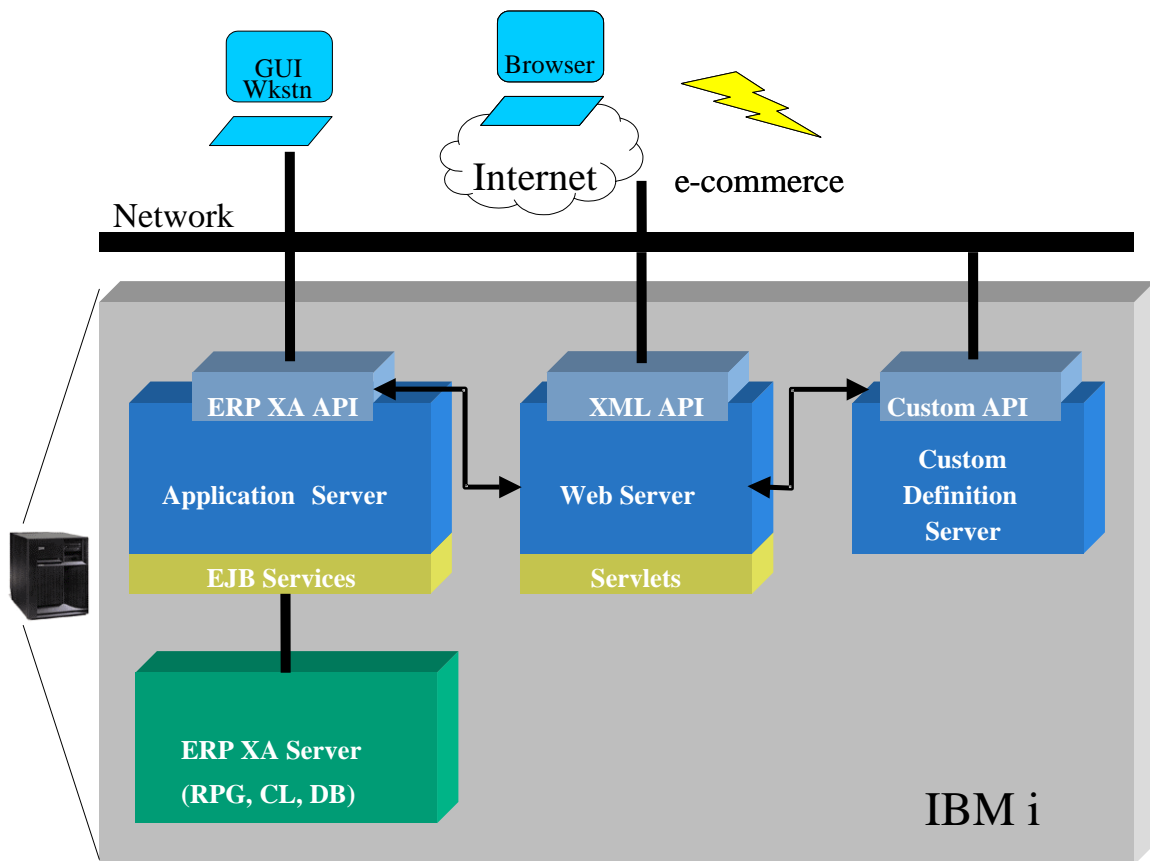
Power-Link config: about 0.5 hour at most

Architecture Information

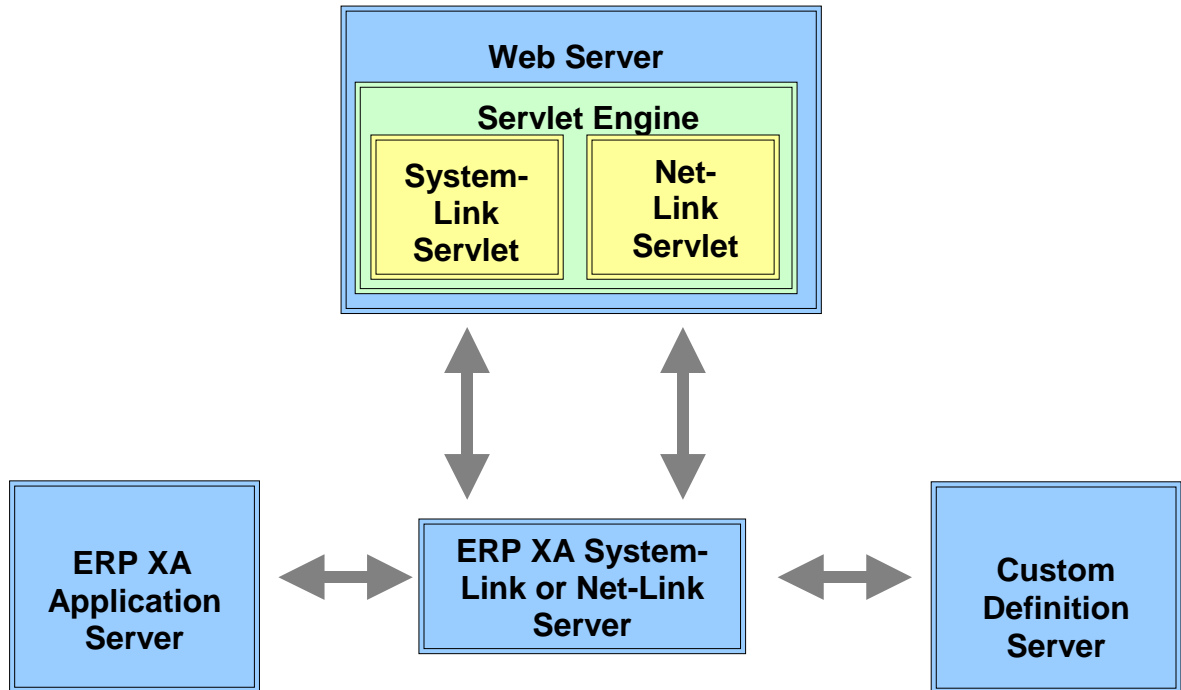
INFOR ERP XA IDF contains the biggest technology evolution in history of the product, introducing the exciting new Java-based Power Architecture. Through the Power Architecture, the XA client applications evolve into the Internet era with industry-leading customization to streamline business processes and make faster decisions. The Power Architecture helps you deploy XA to many different users and devices around the world and is the technology foundation for the future.

The greater part of the development efforts for XA IDF focused on providing the technology foundation for the future. Following is a summary of the architectural changes made for IDF:

- Converted Smalltalk applications to Java.
- Developed IBM i RPG ILE code for programs supporting the Java applications.
- Standardized transaction model for consistent coding of IBM i RPG ILE code.
- Moved Smalltalk based business logic to the IBM i RPG ILE code.
- Created XA System-Link tool to provide XML interface to our client business objects.
- Developed thin-client interface, XA Net-Link, for the casual user.



The diagram below shows the structure of the related servers required to run the new architecture. The diagram below also shows all servers of the architecture running on the IBM i. The Application, Web, and Custom Definition Servers can all be run on other Hardware and Operating systems. The placement of these servers should be determined by the performance requirements needed by your organization.



Web Server	Provides internet access
Servlet Engine	Runs the XA System-Link and Net-Link servlets
Net-Link Servlet	Provides the connection between the web server and the XA Net-Link server
ERP XA Net-Link Server	Translates the requests from the servlet into standard XA transactions
System-Link Servlet	Provides the connection between the web server and the XA System-Link server
ERP XA System-Link Server	Translates the XML requests into standard XA transactions
Custom Definitions Server	Provides views, subsets, sorts, cards, card files, templates and overviews used to tailor the user interface
ERP XA Application Server	Contains the XA business objects. This server will ultimately

process the data requests in exactly the same way that it processes online user transactions.

ERP XA IDF automatically installs and configures a web server with the appropriate servlet support required to run all IDF web and servlet based applications. For more information regarding other web servers see the documents describing how to configure web application servers for use with Net-Link or System-Link.

XA IDF Prerequisites

This section contains the prerequisites to consider when implementing the software for ERP XA IDF.

IBM i OS Prerequisites

The prerequisite IBM i software for XA IDF currently is IBM i OS V6R1 or higher (IBM i OS i7.1 for Release 9.2). New PTFs for the OS are released on a regular basis. It is important to keep current with the latest PTFs for all program products. The following table shows the required IBM i Software requirements to support the new architecture.

Note:

Support for IBM i OS V6R1 will be dropped with XA Release 9.2

Licensed program	OS version	R7.8	R9/R9.1	R9.2
IBM i OS	i 6.1	←	←	N/A
	i 7.1/7.2	5770-SS1	←	←
IBM QShell Interpreter	i 6.1	←	←	N/A
	i 7.1/7.2	5770-SS1 option 30	←	←
IBM Toolbox for Java	i 6.1	←	←	N/A
	i 7.1/7.2	Not needed	←	←
Java Developer Kit	i 6.1	←	←	N/A
	i 7.1	5761-JV1 option 11 (Java SE 6 32 bit)	←	←
	i 7.2	5770-JV1 option 11 (Java SE 6 32 bit)	←	←
TCP/IP Connectivity Utilities for IBM i OS	i 6.1	←	←	N/A
	i 7.1/7.2	5770-TC1	←	←

Note:

- The WDS for IBM i Licensed Program is required for some of the Cross Application Support (CAS) Application Maintenance options (menu AMZM35) and for compiling user exit programs:
 - i 6.1: 5761-WDS *BASE + options 21, 31, 34 and 35
 - i 7.1/7.2: 5770-WDS *BASE + options 21, 31, 34 and 35
- The DB2 Query Manager and SQL Development Toolkit is required for some of the CAS Application Maintenance options and user exit programs when compiling RPG source with embedded SQL:
 - i 6.1: 5761-ST1 *BASE
 - i 7.1/7.2: 5770-ST1 *BASE

- The IBM Query for IBM i OS Licensed Program is required for the Executive Information System (EIS) application:
 - i 6.1: 5761-QU1 *BASE
 - i 7.1/7.2: 5770-QU1 *BASE
- Please read informational PTF [SH15739](#) for important information regarding support for i 7.1.

Additional prerequisites to use System-Link MQ Adapter (for WebSphere MQ):

Note: System-Link MQ Adapter is an optional component of System-Link. Refer to the System-Link User's Guide for more details.

System-Link with WebSphere MQ	
IBM i	
WebSphere MQ for IBM i OS, V6 or V7	5724-H72
WebSphere MQ Java for IBM i OS, V6 or V7	5724-L26
Client	
IBM i Access for Windows	i 6.1: 5761-XE1
	i 7.1/7.2: 5770-XE1
Note: IBM i Access Family XW1 is not required unless PC5250 or Data Transfer functions of XE1 are used (not needed for System-Link)	

IBM i Prerequisites

XA IDF is RISC only. CISC support was dropped at Release 6.

Refer to the "IBM i Sizing Guidelines" section of this document for sizing requirements.

IBM Group PTF levels:

	OS version	Group PTF number	Minimum level
Cumulative PTF Package	i 6.1	SF99610	9111
	i 7.1	SF99710	10229
	i 7.2	SF99720	15135
Database	i 6.1	SF99601	6
	i 7.1	SF99701	4
	i 7.2	SF99702	4
HIPER	i 6.1	SF99609	26
	i 7.1	SF99709	17
	i 7.2	SF99719	6
Java	i 6.1	SF99562	5
	i 7.1	SF99572	4
	i 7.2	SF99716	7

Connectivity and Database Access

Connectivity between the clients and the IBM i can be done only through TCP/IP with the new architecture.

Auxiliary Machine prerequisites

Auxiliary Machines are used so that resource intensive Java processes can be offloaded from the IBM i. See [Auxiliary Machine recommendations \(Java Servers\)](#) on page 30 for more details about Auxiliary Machines.

The minimum recommended hardware to use as an Auxiliary Machine depends on the platform. For Intel-x86 based systems, the minimum recommend is a 1 Ghz and 1 GB RAM.

The Auxiliary Machine will be able to support more System-Link, Net-Link or HPS (for R9 and above only) users as the processor and memory capacity of the server is increased.

The operating systems supported for Auxiliary Machines are Windows Server 2008R2, 2012R2, Linux and Mac OS X.

Note: The HPS (Host Presentation Server) process that is introduced in R9 must run on an Auxiliary Machine. Additionally, the server that runs the Auxiliary Machine must be an Intel-based server with a Windows 2003 Server, Windows Server 2008R2 or 2012R2 (32-bit or 64-bit) Operating System. Recommended hardware specs are x-86 1 Ghz or higher, Minimum 1GB RAM, recommended 2GB+. Each environment HPS process needs about 600MB disk space.

Recommended IBM i settings

System Values

System Value	XA recommended value (Use the WRKSYSVAL command unless otherwise noted)
MAXACT for *BASE pool	Use the WRKSYSSTS command to change this value. Increasing this value will reduce or eliminate thread transitions into the ineligible state. Initial choice of value should be (arbitrarily) high, then as implementation proceeds, monitor and decrease the value if necessary. Consider a separate pool if non-Java work is running in *BASE.
QACTJOB (Initial number of active jobs)	Increase to 400 from default of 20.
QADLACTJ (Additional number of active jobs)	Increase to 50 from default of 10.
QADLTOTJ (Additional number of total jobs)	Increase to 50 from default of 10.
QMAXACTLVL (Maximum activity level of system)	Ensure is at *NOMAX.
QPRCMLTTSK (Processor multi-tasking)	Make sure is set to 1 (On) or 2 (System Controlled).
QTOTJOB (Initial total number of jobs)	Increase to 1000 from default of 35.
QTIMZON (Time Zone)	Set to the value for your time zone. This setting affects how dates appear in Power-Link. For example, for the Eastern US, the value should be set to QN0500EST3; for Central Europe timezone, the value should be set to QP0100CET4.

Prestart Jobs

To prevent locks on Infor XA files that prevent backup from running, make sure that the Maximum number of uses parameters for the QZDASOINIT, QZRCRSRVS, Prestart jobs in the QUSRWRK subsystem are set to 1. Also make sure that the Maximum number of uses parameters for QZDAINIT and QPWFSERVSO Prestart jobs in the QSERVER subsystem are set to 1. Use the Prestart Job Entry command to set this value, as shown in the following examples.

CHGPJE SBS(D)QSYS/QUSRWRK) PGM(QSYS/QZDASOINIT) MAXUSE(1)

CHGPJE SBS(D)QSYS/QUSRWRK) PGM(QSYS/QZRCRSRVS) MAXUSE(1)

CHGPJE SBS(D)QSYS/QSERVER) PGM(QSYS/QZDAINIT) MAXUSE(1)

CHGPJE SBS(D)QSYS/QSERVER) PGM(QSYS/QPWFSERVSO) MAXUSE(1)

Client Details

This section is intended to provide some guidelines to what is required to support individual applications. The requirements for an individual PC may vary, depending on the number of the applications that are installed.

Support for operating systems will vary from application to application. Windows 7 and Windows 8.1 (Professional and Enterprise versions only) are the operating systems that are supported by the XA client applications.

Support for MAC OS and Linux is still being tested for performance. Further details will be available at a later date.

Application Details

The XA Java Architecture applications are:

Application	Available in R7.8	Available in R9	Available in R9.1	Available in R9.2
Enterprise Product Data Management (EPDM)	✓	✓	✓	✓
XA Browser	✓	✓	✓	✓
XA Integrator	✓	✓	✓	✓
Procurement Management (PM)	✓	✓	✓	✓
Product Data Management <i>Plus</i> (PDM<i>Plus</i>)	✓	✓	✓	✓
Accounting Management <i>Plus</i> (AM<i>Plus</i>)	✓	✓	✓	✓
Contract Accounting <i>Plus</i> (CA<i>Plus</i>)	✓	✓	✓	✓
Materials Management (MM)	✓	✓	✓	✓
Order-Based Production Management (OBPM)	✓	✓	✓	✓
Customer Service Management (CSM)	✓	✓	✓	✓
Customer Relationship Management (CRM)	✓	✓	✓	✓
Materials Logistics (ML)		✓	✓	✓
Enterprise General Ledger (EGL)			✓	✓
Enterprise Financials				✓

Prerequisite Client Details

The following sections describe the prerequisites to use when installing and setting up each module for optimum performance.

XA Power-Link (Client Server)

Software	Operating system: XA R7.8 - R9.2: Windows 7 32-bit, Windows 8.1 32-bit and 64-bit
Hardware	Recommended Intel x-86 1 Ghz or better with 1GB of free memory or more.

XA Power-Link IDF Level 1 (R9, R9.1 and R9.2 only)

Software	Same as XA Power-Link
Hardware	Same as XA Power-Link

XA Net-Link (Thin Client)

Software	<p>XA R7.8: Internet Explorer: 8.0 or higher, Firefox Opera: 9, 10 Chrome Safari 4.0, 5.0</p> <p>XA R9 - R9.2: IE: 10 or higher Chrome Firefox Safari: 4 or higher Opera: 11 or higher</p> <p>Operating system For IE 8: Windows XP, 2003, 2008, 2008 R2, Vista, 7 For IE 9: Windows 2008, 2008 R2, Vista, 7 For IE 10: Windows 2008 R2, Windows 7, 8.1 For Firefox: Windows 2008 or later, Mac OS, Linux For Opera, Chrome, Safari: refer to the prerequisites provided by these browsers. Only the desktop versions are supported.</p>
Hardware	See support.microsoft.com

COM_Net

IBM i Software	<p>Network connectivity</p> <p>5716-SS1 - System Openness Includes (No-Charge Feature)</p> <p>5716-SS1 - CPA Toolkit (No-Charge Feature)</p> <p>5716-TC1 - TCP Utilities</p> <p>5716-CX2 - ILE C (required for AS/400 server code modifications)</p> <p>5787-TBF - DCE Base Services</p> <p>Client Access Express V5R1 with latest PTFs</p>
Windows NT Server	<p>Windows NT 4.0 with Service Pack 3 or higher installed</p> <p>96 MB memory minimum</p> <p>2 GB disk minimum</p> <p>Network adapter (Ethernet/Token Ring)</p> <p>Normal PC accessories such as floppy, CD, video, keyboard, monitor</p>
Internet Presence	<p>COM_Net requires a full-time connection to the Internet. You must have a WWW server (such as Microsoft Internet Explorer), a home page, at least a 56 KB leased line to an Internet Service Provider and appropriate security and firewall software.</p>
Notes	<p>See the <i>COM_Net User's Guide</i> for more details on software and hardware requirements.</p>

eWorkPlace (eWP)

Software (server)	<p>Windows XP, Vista, 2003 or 2008</p> <p>TCP/IP installed and active on your server and the Target AS/400</p> <p>Web Server Program: Microsoft Internet Information Server, IBM HTTP Server, Apache or Jetty</p>
Hardware (server)	<p>Pentium IV or above.</p> <p>RAM: 2GB minimum</p> <p>Available hard disk storage: 1 GB</p> <p>Appropriate communications adapter for IBM i</p> <p>Does not support twinax - so only Ethernet or Token Ring cards can be used</p>
Software (client)	<p>One of the following Java enabled web browsers:</p> <p>Microsoft Internet Explorer 6 or higher</p> <p>Mozilla Firefox 2 or higher</p>
Hardware (client)	<p>PC workstation that supports Java.</p> <p>Monitor: SVGA 800X600, 256 color (16-bit high color recommended), small fonts.</p>

Executive Information System (EIS) & Power Vision (PV)

Software	<p>Supports Win NT 4.0 (service pack 4 or higher), Windows 2000, and Win 95/98/ME</p> <p>Client Access (V3R1M2) or CA Netsoft is the supported router for SNA. For TCP/IP, a router is not required</p> <p>AS/400 database access through ODBC.</p> <p>Client Access Express V5R1 with latest PTFs</p>
Hardware	<p>486/66 PC with 8 MB RAM (16 MB is preferred) and 15 MB free disk space is the minimum. Either VGA or SVGA is the prerequisite display, although VGA is preferred.</p>
Notes	<p>Written in Visual Basic</p>

Finite Capacity Planning and Scheduling (FCPS)

Software	<p>Supports Win NT 4.0 (service pack 4 or higher) and Win 95</p> <p>Client Access or CA Netsoft is the supported router for SNA. For TCP/IP, a router is not required</p> <p>AS/400 database access through ODBC</p>
Hardware	<p>PC requirements - Pentium PC with 16 MB RAM and 25 MB free disk space is the minimum. VGA is the prerequisite display, although SVGA is preferred</p>
Notes	<p>32 bit version only</p> <p>The new Windows-based client serves as the <u>only</u> interactive interface to FCPS. FCPS is no longer a 'green screen' application and, therefore, cannot be accessed using 'dumb terminals' or 5250 emulation. Furthermore, the Schedule Management module (SMM) is no longer available -- its functions integrated into the new FCPS client.</p> <p>Gantt chart views of the resource and load schedules are available.</p> <p>If you are tailoring FCPS, then the following are required: Crystal Reports Professional 5.0</p>

FRx/XA Integration and FRx Web Delivery

Clients supporting FRx applications*	
Software	Windows® 9x, Windows NT 4.0® Workstation or Server (service pack 4 or higher) Internet Explorer 5
Hardware	Intel Processor (Pentium, Pentium II, or Pentium III) 200 MHz or higher CPU 32-64 MB RAM 50-90 MB
Notes	*Client stations that are just utilizing the viewing capabilities with the FRx Web Repository do not require FRx software on the workstation. An Internet browser is required to view reports in the FRx Web Repository. Supported browsers include Internet Explorer 4.x, Netscape 4.x, or any other Java-enabled browser.
FRx Web and Report Server	
Software	Windows NT 4.0 Server (service pack 4 or higher) Internet Information Server (IIS) Version 4.0
Hardware	Intel Pentium Pro, Pentium II, or Pentium III Xeon Processor 200 MHz (Pentium Pro) or 450 MHz or higher (Pentium II or Pentium III Xeon) CPU 512 MB RAM 2 GB (space for storing report formats and output files only) 100 MB Network Connectivity (highly recommended)

Jacana

Software	Microsoft Windows 2000, Windows NT 4.0, Windows 9x or Windows ME Requires IWP to be installed on the IBM i server along with an RPG or RPGLE compiler If using APPC or CPIC communications protocol, you also need: Client Access Version 3 or later
Hardware	Pentium level processor 32 MB RAM 20 MB disk space, Additional hard disk space is required for saving report definitions on your PC A communication adapter: i.e. Twinax, Ethernet or Token Ring, modem connection under the Client Access router, or TCP/IP VGA monitor (SVGA recommended)

JacanaForms

Client Workstation	
Software	Microsoft Windows 2000 Professional, or Win NT 4.0 (service pack 5 or higher) If using APPC or CPIC communications protocol, you also need: Client Access Version 3 or later
Hardware	Pentium level processor 128 MB RAM 50 MB disk space A mouse or other pointing device supported by Microsoft A laser printer A communication adapter: i.e. Twinax, Ethernet or Token Ring, modem connection under the Client Access router, or TCP/IP VGA monitor (SVGA recommended)
Microsoft Windows File Server	
Software	Microsoft Windows 2000 Professional, or Win NT 4.0 (service pack 5 or higher)
Hardware	Pentium level processor 64 MB RAM 50 MB disk space, plus 40Mb of temporary space during installation. A communication adapter: i.e. Twinax, Ethernet or Token Ring, modem connection under the Client Access router, or TCP/IP VGA monitor (SVGA recommended)

Manufacturing Data Collection & Communications (MDCC)

Software	<p>Available in both Power Builder and GUIsys versions of the product</p> <p>Supports Win NT 4.0 (service pack 4 or higher), Win 95, Win 98, Win 2k</p> <p>Powerbuilder (PB) Requires Client Access Express V5R1 with latest PTFs</p> <p>Requires PM&C</p> <p>Requires IM for the release of manufacturing orders</p> <p>Job On, Job Off, and the Packing List transaction require PC&C</p> <p>Requires REP for repetitive transactions</p> <p>If MDCC is implemented:</p> <p>On a second AS/400, the only additional software required is OS/400. XA and OfficeVision/400 (we no longer use Office Vision) use the pass through capability of the AS/400 to access information on the host.</p> <p>For the Visual Basic GUISys version of the product using the graphical front end, a run time version of the GUISYS product is required along with the graphical front end to MDCC.</p> <p>The ability to view drawings from the shop floor requires a document-viewing package. For a list of standard packages interfaced by MDCC, contact XA.</p> <p>The ability to view documents requires a Microsoft Windows-based word processing package.</p>
Hardware	<p>Pentium 100 Mhz with 32 MB RAM (GUISys version)</p> <p>Pentium 300 Mhz with 64 MB RAM (PowerBuilder version)</p> <p>100 MB free disk space</p> <p>Color monitor with 800x600 resolution.</p>
Notes	<p>Distributing MDCC on a second AS/400 will:</p> <p>Ensure availability</p> <p>Distribute the MDCC function to a different physical location and / or improve performance and throughput by using the second processor sized to utilize disk mirroring</p>

Quality Reporting Management System (QRMS)

Software	Available in both Power Builder and <u>GUI Sys</u> versions of the product Supports Win NT 4.0 (service pack 4 or higher), Win 95, Win 98, Win 2k Powerbuilder (PB) Requires Client Access Express V5R1 with latest PTFs For the GUI Sys version of the product using the graphical front end, a run time version of the GUI SYS product is required along with the graphical front end to QRMS
Hardware	Pentium 100 Mhz with 32 MB RAM. (GUI Sys version) Pentium 300 Mhz with 64 MB RAM. (PowerBuilder version) 100 MB free disk space Color monitor with 800x600 resolution.

Tool Management & Planning System (TMPS)

Software	Available on the AS/400 GUI Sys Version available with VWP Supports Win NT 4.0 (service pack 4 or higher), Win 95, Win 98, Win 2k For the GUI Sys version of the product using the graphical front end, a run time version of the GUI SYS product is required.
Hardware	Pentium 100 Mhz with 32 MB RAM. (GUI Sys version) 100 MB free disk space Color monitor with 800x600 resolution.

Market Monitoring & Analysis (MMA)

IBM i Server	<p>RPGLE Compiler</p> <p>PDM (Program Development Manager)</p> <p>IBM i Access Family 5722-XW1 or 5761-XW1 (Preferred)</p> <p>SQL Package (recommended, but <i>not</i> required)</p>
Client Workstation	<p>WIN95, WIN98 or WIN/NT4.0 (service pack 4 or higher)</p> <p>Pentium 150 or higher processor speed</p> <p>64 MB RAM Minimum</p> <p>LAN Connection (Ethernet or token ring)</p> <p>Client Access for Window 95/NT4.0 Version 3 Release 2 Modification Level 0 or greater OR Client Access Express (SF 57098) service pack or greater</p> <p>Client Router (IBM or CA Netsoft)</p> <p>ODBC Driver (IBM Only)</p> <p>32 Bit - CWBODBC.DLL 1/2/97 or greater</p> <p>90 MB disk space for MMA client software</p>

Valet

Software	<p>Microsoft Windows 2000, Windows NT 4.0, Windows 9x or Windows ME</p> <p>Requires IWP to be installed on the IBM i (or AS/400) server along with an RPG or RPGLE compiler</p> <p>If using APPC or CPIC communications protocol, you also need: Client Access Version 3 or later</p>
Hardware	<p>Pentium level processor</p> <p>32 MB RAM</p> <p>10 MB disk space</p> <p>A communication adapter: i.e. Twinax, Ethernet or Token Ring, modem connection under the Client Access router, or TCP/IP</p> <p>VGA monitor (SVGA recommended)</p>

ValetMiner

Software	Microsoft Windows 2000, Windows NT 4.0, Windows 9x, or Windows ME If using APPC or CPIC communications protocol, you also need Client Access Version 3 or later
Hardware	Pentium level processor 32 MB RAM 20 MB free disk space – additional hard disk space is required of saving report and model definitions on your PC A communication adapter: i.e. Twinax, Ethernet or Token Ring, modem connection under the Client Access router, or TCP/IP VGA monitor (SVGA recommended)

Workflow

With XA Browser	
Software	Supports Win NT 4.0 (service pack 4 or higher), Win 95, Win 98 and Win 2K. Requires Client Access. Requires XA Browser.
Hardware	P200 PC with 128 MB RAM. 30 MB free disk space minimum. SVGA monitor (XGA recommended), development requires minimum of 800x600 resolution.
Without XA Browser	
Software	Supports Win NT 4.0, Win 95, Win 98 and Win 2K. Requires Client Access.
Hardware	P100 PC with 32 MB RAM (64 MB recommended). 30 MB free disk space minimum. VGA monitor (SVGA recommended), development requires minimum of 800x600 resolution.
Webserver	
Software	Supports Win NT 4.0 only (service pack 4 or higher) or Win 2K. Requires Client Access. Requires either Netscape's Enterprise Server, Version 3.51 or Microsoft Internet Information Server, Version 4.0.
Hardware	P200 PC with 128 MB RAM + 5 MB for each Web Session. 30 MB free disk space minimum. VGA monitor (SVGA recommended), development requires minimum of 800x600 resolution.
Web Client	
Software	One of the following Java enabled web browsers: Microsoft Internet Explorer 4.01 or higher. Netscape Navigator 4.50 or higher. Does not require Client Access.
Hardware	Any platform supporting Java.
Notes	No support for a 16-bit version.

Client PC Software Summary

Application	Client Dev Tool	NT 4.0	Win 2K	XP	Vista	7/8.1
Java Architecture Apps	Java			Y	Y	Y
COM_Net	Java	N/A	Y			
EIS	Visual Basic	Y	Y			
EWP	Jacada for Java			Y	Y	Y
FCPS	Visual Basic	Y	Y			
FRx client		Y				
FRx server		Y				
Jacana	C++	Y	Y			
JacanaForms		Y	Y			
MDCC	Power Builder	Y				
MDCC	GUISys	Y				
MMA	Power Builder	Y				
PV	Visual Basic	Y	Y			
QRMS	Power Builder	Y	Y			
TMPS	GUISys	Y	Y			
Valet	Delphi	Y				
ValetMiner	Delphi	Y				
Workflow	C & Java	Y	Y			

Client PC Hardware Minimum/Recommended Configurations

Application	Min. PC	Rec. PC	Min. Free Memory (MB)	Rec. Free Memory (MB) ¹	Free Disk Space (MB) ²	Min. Display Type	Rec. Display Type	Rec. Display Pixels
Java Architecture Apps	P III 800	P4	512	1024	200 ³	XGA	SXGA	1280x1024
COM_Net			96	96	2GB			
EIS	486/66	P 100	8	16	15	VGA or SVGA	VGA	
eWP web	P 200	P 200	32	32	500			
eWP win	486/66	P 133	16	32	150	SVGA	SVGA	800 x 600
FRx client	P 200		32	64	50-90			
FRx Web sever	P 200	PII 450	512	512	2GB			
FCPS	P 100	P 100	32	16	25	VGA	SVGA	
Jacana (IWP)	P 100	P 200	32	32	20	VGA	VGA or SVGA	800 x 600
JacanaForms server	P 100	P 200	64	64	50	VGA	SVGA	
JacanaForms Client	P 100	P 200	128	128	50	VGA	SVGA	800 x 600
MDCC	PII 300	PII 300	64	64	100	SVGA	SVGA	800 x 600
MMA	P 150		64		90	VGA or SVGA	VGA or SVGA	
PV	486/66	P100	8	16	15	VGA or	VGA	

¹ The applications will run with the minimum listed memory, but will perform much better with the recommended memory. All memory requirements must be evaluated based on all software you have installed on the individual PC.

² Free disk is only the disk space required to install the application. It does not consider virtual memory, or space required for other applications

³ Each additional environment requires an additional 200MB disk space

Application	Min. PC	Rec. PC	Min. Free Memory (MB)	Rec. Free Memory (MB) ¹	Free Disk Space (MB) ²	Min. Display Type	Rec. Display Type	Rec. Display Pixels
						SVGA		
QRMS	P II 300	P II 300	64	64	100	SVGA	SVGA	800 x 600
Valet	P 100	P 100	32	32	10	VGA	SVGA	800 x 600
ValetMiner	P 100	P 200	32	32	20	VGA	SVGA	800 x 600
Workflow with Browser	P 100		32		30	VGA	SVGA	800 x 600
Workflow with Browser	P 200		128		30	SVGA	XGA	1024 x 768
Workflow Web Server	P 200		128 + 5 for each session		30	VGA	SVGA	800 x 600

IBM i Sizing Guidelines

IDF Java Architecture Sizing Guidelines

This section contains general guidelines for setting up a IBM i configuration for running the IDF Java Architecture.

Minimum IBM i hardware recommendations

Below are minimum memory, disk and CPW requirements for running XA IDF client applications. These minimums are applicable for up to about 10 concurrent users. As the number of users increases, more memory, disk and CPW will be needed.

- 8 GB RAM - 4 GB was the recommended memory requirement for running the XAR6 client applications. Because of the additional Java in IDF, we advise a minimum of 8 GB.
- 4 disk drives – The new systems generally have larger and faster disk drives than older IBM i, so in many cases, fewer disk drives are required than in the past. However, less than 4 drives is not recommended.
- 1200 CPW – IBM i with 1200 CPW is the minimum system needed to provide satisfactory performance for just a few users. For most installations with up to 20 users, 2800 CPW is recommended.

Determining whether your system will provide satisfactory performance

INFOR, Inc. can help you determine whether your hardware will be sufficient to provide satisfactory performance running the Java Architecture. In order to do this, you must collect performance data using the performance monitor during a period of heavy activity. The next step will be to send the performance data to Infor via FTP. This data will help determine the impact of running the Java Architecture on your current machine and to simulate what the performance will be if you choose to upgrade to another machine.

Auxiliary Machine recommendations (Java Servers)

While the DB2 database and RPG ILE code must remain on the IBM i, the workload of the Java servers on the IBM i can be spread across one or more IXS, IXA, or PC servers. The number of servers will depend on the number of concurrent users and the amount of workload you want to distribute.

Auxiliary Machines are used so that resource intensive Java processes can be offloaded from the IBM i. When Java processes are run on the IBM i, they sometimes consume so much resource that performance is degraded. All IDF client applications use Java, but the Java used by Net-Link and System-Link use much more resource than the Java used by Power-Link. Most of the Java required by Power-Link is distributed to the various client PCs and has little effect on the IBM i. Therefore an Auxiliary Machine is usually not required for installations that run Power-Link as the only client application.

There are several situations when an Auxiliary Machine should be used with Power-Link:

- An Auxiliary Machine should be used with Power-Link if the IBM i is running at a high CPU utilization and does not have the capacity to run any Java without degrading performance – e.g. the CPU utilization is running at 80% or greater.

- An Auxiliary Machine will also be needed if your IBM i is small – e.g. if your IBM i has less than 1200 CPW.
- The other situation where you might want to use an Auxiliary Machine is when you are running many XA environments. Even though the Java required by Power-Link is small, each environment will run a separate copy of the Java so multiple environments will add to the total Java workload.
- For R9, a new HPS (Host Presentation Server) process was introduced. This process must run on an Auxiliary Machine. Additionally, the Auxiliary Machine that runs the HPS process must be an Intel-based server running Windows 2003 or 2008.

System-Link and Net-Link require much more system resource than Power-Link, so it is usually advisable to offload the Java processes for these applications to an Auxiliary Machine. Newer Power 7 and Power 8 systems provide much more capacity for running Java than earlier systems. Also, IBM OS i 7.2 handles Java better than previous levels of the operating system, so for many customers, the IBM i can handle Java for Net-Link and System-Link without offloading the Java to an Auxiliary Machine

Deployment Modes

The four application interfaces that can be used in IDF are:

- Power-Link: this is the IDF Java equivalent to the R6 SmallTalk client architecture. Most users who have used client architecture (i.e. “heavy client”) applications in R6 will use Power-Link in IDF
- Net-Link: this is a web interface (“thin client”) to the XA applications. This is a new interface for IDF (no equivalent in R6).
- System-Link: this is an XML interface to the XA applications. This is new as well for IDF, and will be used primarily for system-to-system communication (information transfer between disparate systems, communication vehicle between a front-end website and the XA database, etc.).
- 5250 green screen: traditional character based interface.

Each of these application interfaces has different resource requirements. In addition, these requirements vary greatly based on the chosen deployment mode (see below).

The six XA specific process types that are important in this discussion are:

- Registry Server
- XA Application Server
- Custom Definition Server
- System-Link Server
- Net-Link Server

The deployment modes discussed below determine where these process types are executed (on the IBM i, on a PC server, on the client, etc.).

The following deployment modes are available:

- **Embedded mode:** this is the mode that is always used for Power-Link. In this mode, the main java server job runs embedded in the same process as the Power-Link GUI client, i.e. locally on the client PC. In this mode, the CPU utilization on the IBM i will be very similar to the CPU utilization that would be generated in R6 with the client architecture, with the exception of the Registry Server. As a result, **in most cases, if your IBM i was running satisfactorily with R6 client applications, and you upgrade to IDF with the equivalent Power-Link applications, no changes to the IBM i will be required.**
- **Distributed mode:** this mode is recommended for Net-Link and System-Link. In this mode, the process types required for Net-Link or System-Link are distributed to non-IBM i servers (PC server, integrated xSeries server, etc.) or to another IBM i server. This mode is typically used when the IBM i cannot handle the extra workload that is generated by the additional Net-Link or System-Link Servers.
- **Local mode:** this mode can be used for Net-Link and System-Link. In this mode, all process types are running locally on the IBM i. This puts all workload on the IBM i. (Note that this is also the mode used for the 5250 green screen interface – this interface will not be discussed in what follows as it does not require any of the mentioned process types).

Embedded mode

This mode is unique to Power-Link, and it is the only mode in which Power-Link can be executed. In this deployment mode, the XA Application server runs embedded in the same process as the Power-Link GUI client, i.e. locally on the client PC. In this mode, the CPU utilization on the IBM i will be very similar to the CPU utilization that would be generated in XA R6 with the client architecture, with the exception of the Registry Server.

Below are recommended configurations running Power-Link with satisfactory performance. These numbers are taken from XA benchmark tests and performance data from XA customers. The system you select could be different from the one shown in the table. The number of users supported by a configuration can vary widely depending on the mix of applications and non-XA workloads. The table below is only a starting point. A more detailed analysis should be done using the customer's own performance data.

Model	CPW	# of processors	# of users	Memory (GB)	# of disk drives
Power 8	9500	1	10	8	4
		1	20	16	6
		1	50	32	10
Power 8	19500	1 or 2	100	64	10*
		2	200	96	10*

**could be more depending on the amount of historical data and on non-XA related workloads*

Distributed mode

This scenario can be used with Net-Link and System-Link.

For Net-Link and System-Link

With this mode, most of the process types required for Net-Link or System-Link are distributed to non-IBM i servers (PC server, integrated xSeries server, etc.) or to another IBM i server. This mode is typically used when the IBM i cannot handle the extra workload that is generated by the additional Net-Link or System-Link server jobs. By offloading these process types to IXS servers, IXA-connected xSeries servers or external PC servers, more users will be able to run concurrently without negatively impacting the CPU utilization of the IBM i.

A Pentium IV PC with 2.8 Ghz and 1 GB RAM will support up to 120 System-Link users or 60 Net-Link users. Smaller PCs used as auxiliary machines would support fewer numbers of users.

Local mode

Local mode was not recommended prior to the introduction of the Power 7 and Power 8 systems. Unlike older systems, the newer Power 7 and Power 8 systems often have enough capacity to handle the heavy workloads generated by Net-Link and System-Link. Benchmark tests running System-Link on a Power 8 with sufficient capacity provided faster times with the Java running on the Power 8 than when offloaded to an Auxiliary Machine

Caution is advised using Local mode because System-Link and Net-Link servers still consume considerable resource on the IBM i and can impact the performance if sufficient system resource is not available.