

Magic xpa Server for IBM i V2.3 Release Notes

We are pleased to present you with the release of Magic xpa Server 2.3 for the IBM i platform. Please read the information below to learn more about Magic xpa Server for IBM i V2.3.



Please note the PTF requirements for IBM i 6.1.

For information about Magic xpa 2.3, see Magic Software Enterprise's [DevNet](#).



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General Information

Magic xpa for IBM i Server V2.3 lets you deploy Magic xpa applications directly on the IBM i server.

Prerequisites

1. OS/400 V5R4 ,OS i 6.1, or OS i 7.1
2. OS/400 Portable App Solutions Environment (PASE) – IBM License program
 - 5722SS1 option 33 V5R4
 - 5761SS1 option 33 6.1

PTF SI39074 and PTF SI43215 are required for OS I 6.1 (Product 5761SS1). The PTFs can be installed as individual fixes or as part of CUMULATIVE PTF PACKAGE C1256610 or later for IBM i 6.1.

 - 5771SS1 option 33 7.1
3. IBM Java License program (see [Java Requirements](#))
4. TCP/IP configuration for IBM i
5. TCP/IP Interface must be Active
6. Local Host name must be defined in the host table entries
7. Domain Name must be configured
8. Domain Name must be added to host table entries
9. Easycom Host Library: Host 1.3
10. The User profile that will be used by the **MGSERVER** and **MGBROKER** jobs must have ***RWX** rights for most of the IFS directories in the Magic xpa 2.3 installation. After the installation, it can be set using the following commands:


```
CHGAUT OBJ('/MAGICXPA23') USER(USERPRF) DTAUT(*RWX)  
OBJAUT(*ALL) SUBTREE(*ALL).
```

where **USERPRF** is a user name or user group profile that will be used for running the server jobs and **MAGICXPA23** is the server directory.
11. When using the printing functionality of Magic xpa server for IBM i, make sure that the **CCSID** property of the user profile that runs the engine is not set to **65535**. No output will be produced if you work with that CCSID.
12. When using graphical fields (Unicode) in your application, make sure that the user profile of the MGCLIENT job is not set to **65535**.
13. Permanent or Evaluation License PAK

Java Requirements

If you use Java-based functionality in your application, it is necessary to start Magic xpa engines with the Java Virtual Machine. The **STRMGCXPA** command has the **Load JVM** parameter. If you set this parameter to ***Yes**, Java prerequisites are mandatory. When **Load JVM** is set to ***No**, Java Requirements are not relevant. Java license programs are required to be installed on your IBM i server only when the Magic xpa application is designed to utilize Java-based functionality. For example:

- Java functions
- Providing Web services
- Web service consuming
- Using JMS – Java Messaging Server
- Using EJB – Enterprise Java Bean

Below are the Java requirements according to the operating system level:

For V5R4

1. IBM Developer Kit for Java License program 5722JV1 Option *Base
2. J2SE 6.0 32 bit – License program 5722JV1 Option 11
3. Java Group PTF SF99291 level 18 or later

For 6.1

1. IBM Developer Kit for Java License program 5761JV1 Option *Base
2. J2SE 6.0 32 bit – License program 5761JV1 Option 11
3. Java PTF Group SF99562 level 12 or later

For 7.1

1. IBM Developer Kit for Java License program 5761JV1 *Base Option
2. J2SE 6.0 32 bit – License program 5761JV1 Option 11
3. Java PTF Group SF99572 level 3 or later

Installation

1. Execute the **magicxpa23_ibmi.zip** file in your PC's **temp** directory.
2. Extract the **XPA023000** file from the zip archive.
3. Copy the **XPA023000** file into any IFS directory of your IBM i server using one of the methods below:
 - IBM i Client Access
 - IFS Windows network sharing
 - FTP
 - NFS Share
4. Install the product using the **INSMSEPRD** IBM i command.
 - a. If you previously installed the **MSEGPL** library with the **INSMSEPRD** command, type **MSEGPL/INSMSEPRD** from the IBM i command line and press **Enter**.
 - b. If you have not previously installed the **MSEGPL** library with the **INSMSEPRD** command, first follow the steps provided in the [Install MSE Product \(INSMSEPRD\) Tool](#) topic and then run the **MSEGPL/INSMSEPRD** command.
5. The **Install MSE** product display appears. At the Stream file prompt, specify the name of the STMF you downloaded in step 4.
6. Fill in the **Installation Name** parameter, which is the name of the new library and IFS directory, for example: **MAGICXPA23**.
7. Fill in the root of the server's IFS directory. The default is **/**, which means that the server directory will be created in the IFS root, for example: **/MAGICXPA23**.
8. Specify whether you need a CGI directory to be created in **/QOpenSys**. If you are planning to only use Magic xpa as a partitioning engine, there is no need to create a directory in **QOpenSys**.
9. Fill in the **CCSID – ANSI** parameter, which is the CCSID of your environments, for example: 1252 for West European countries or 1250 for East European countries.
10. Sign off of your 5250 in order to clean **QTEMP** after the installation.

It is also possible to install the Magic xpa server without the **INSMSEPRD** command.

- a. Copy **XPA023000** to the IBM i save file (SAVF) using the File Transfer Protocol (FTP) in binary mode.
- b. Restore the content of the save file into the **QTEMP** library.

```
RSTOBJ OBJ(INSTALL*) SAVLIB(PRODUCT) DEV(*SAVF) OBJTYPE(*ALL)
SAVF(QTEMP/PART9999) MBROPT(*ALL) ALWOBJDIF(*ALL)
RSTLIB(QTEMP)
```

- c. Run **QTEMP/INSTALL** and continue from step 6 above.

Installation Components

Library

- Magic xpa Server subsystem, Job Queues, Job Class, Job Descriptions, Message files, data areas
- CLLE interfaces to Magic xpa PASE environment, exit programs, service programs
- Magic xpa Server configuration menu (CFGMGCSVR) and relevant commands
- MGPRINT and MGPRINTC – Printing routine that converts IFS text-based files to spools

IFS Directory

- Magic xpa Server (bin/ mgxparuntime)
- Magic xpa Broker (broker/mgbroker)
- Magic xpa command line requester (broker/mgrqcmdl)
- Magic xpa ISAM DB2/400 gateway (bin/mgeac/mgeacdbcs)
- Magic xpa SQL DB2/400 gateway (bin/mgdb400)
- Magic xpa memory gateway (bin/mgmemory)
- Magic xpa WS MQ gateway (bin/mgmqseries_c)
- Magic xpa CGI requester (cgibin/mgrqcgi023)
- Magic xpa UDF/UDP examples (userproc directory)
- Magic xpa Web utility files used for Browser Client support (web_utils directory)
- Magic xpa Hangul support (language/mglocal.kor)
- Magic xpa SNMP sub-agent (snmp/mgsnmp.so)
- Magic xpa Messaging component (messaging/messaging.ecf)
- Magic xpa license server (FlexLM 7 in license directory)
- Systinet server for Java (web_services directory)

CGI Directory in QOpenSys

- Magic xpa CGI requester (/QOpenSys/.../cgibin/mgrqcgi023)

This product includes software developed by the Apache Software Foundation (<http://www.apache.org/>).

Configuration

You configure and manage the Magic xpa server using the **Server administration** menu. Enter the following commands in the IBM i command line to invoke the Magic xpa **Server administration** menu:

1. Type **CHGCURLIB <New Library name>** and press **ENTER**.
2. Type **CFGMGCSVR** and press **ENTER**.

Subsystem Configuration

1. Configure the Magic xpa server using **Magic Config/Magic Subsystem Config**. At this stage, **JOBQ MGSERVER** and a routing entry for the **MGSERVER** job are added to a selected subsystem description. **MGSERVER JOBQ** is a default **JOBQ** of the server jobs. When you start a server job using **STRMGCXPA**, **STRMAGRUN** or **STRMAGINST**, the job is submitted to **JOBQ MGSERVER**. The routing entry sets a job class and a memory pool of the system main storage where the **MGSERVER** job is going to run. By default, it is set to **MGSERVER** job class and storage pool 1.

The following job properties are controlled by the job class: Run priority, Time slice in milliseconds, Eligible for purge, Default wait time in seconds, Maximum CPU time in milliseconds, Maximum temporary storage in megabytes, and Maximum threads. You can manually change them during the job performance tuning by using the **CHGCLS** IBM i command. For example: **CHGCLS CLS(MAGICXPA23/MGSERVER) RUNPTY(XX) TIMESLICE(XXXX) CPUTIME(*NOMAX) MAXTMPSTG(*NOMAX) MAXTHD(*NOMAX)**.

The routing entry is linked with a job description via the **Compare value** property of the routing entry and the **Routing Data** property of the job description. When the **MGSERVER** job enters the subsystem via **JOBQ**, the system validates the **Routing Data** of the job description against the **Compare value** of the routing entries in the subsystem. When the match is found, the job's memory pool is assigned and the relevant job properties are applied to the job according to the routing entry settings. **Make sure that the server subsystem is not active when you configure it via the menu.** For security reasons, this step is allowed only when the subsystem is not active. **Make sure that you do not have jobs pending in the job queue.**

As an alternative to the configuration menu, you can use the IBM i **ADDJOBQE** or **RMVJOBQE** and **ADDRTGE** or **RMVRTGE** commands for Magic xpa server configuration:

- a. Connect JOBQ to subsystem:

```
ADDJOBQE SBSL(SBSLIB/SBSNAME)  
JOBQ(MAGICXPA23/MGSERVER) MAXACT(5) SEQNBR(10)
```

Where:

SBSLIB – name of the subsystem library

SBSNAME – subsystem name

MAGICXPA23 – name of the server installation

5 – maximum number of concurrently active jobs

10 – job sequence number in subsystem property. The next available number can be found using the **WRKSBSD** command:

```
WRKSBSD SBSLIB/SBSNAME
```

option 5 (Display)

option 6 (Display Job Queue Entries)

- b. Disconnect JOBQ from Subsystem:

```
RMVJOBQE SBS(SBSLIB/SBSNAME)
JOBQ(MAGICXPA23/MGSERVER)
```

- c. Add Routing entry:

```
ADDRTGE SBS(SVRLIB/SBSNAME) SEQNBR(10)
CMPVAL(MAGICXPA23.MGRNT) PGM(QCMD) CLS(SVRLIB/MGSERVER)
```

- d. Remove Routing entry:

```
RMVRTGE SBS(SVRLIB/SBSNAME) SEQNBR(10)
```

2. If there's an error, verify the **joblog** using the **DSPJOB** option **10**.
3. Configure the Magic xpa broker using **Magic Config/Broker Subsystem Config**. At this stage, **JOBQ MGBROKER** and a routing entry for the **MGBROKER** job are added to a selected subsystem description.

MGBROKER JOBQ is a default job for the Magic xpa broker jobs. When you start a broker job using **STRMRBRUN**, the job is submitted to **JOBQ MGBROKER**. The routing entry sets a job class and a memory pool of the system's main storage where the **MGBROKER** job is going to run. By default, it is set for the **MGBROKER** job class and storage pool **1**.

The following job properties are controlled by the job class: Run priority, Time slice in milliseconds, Eligible for purge, Default wait time in seconds, Maximum CPU time in milliseconds, Maximum temporary storage in megabytes, and Maximum threads. You can manually change them during the job performance tuning by using the **CHGCLS** IBM i command.

For example: **CHGCLS CLS(MAGICXPA23/MGBROKER) RUNPTY(XX) TIMESLICE(XXXX) CPUTIME(*NOMAX) MAXTMPSTG(*NOMAX) MAXTHD(*NOMAX)**.

The routing entry is linked with a job description via the **Compare value** property of the routing entry and the **Routing data** property of the job description. When the **MGBROKER** job enters the subsystem via **JOBQ**, the operating system validates the **Routing Data** of the job description against the **Compare value** of the routing entries in the subsystem. When the match is found, the job's memory pool is assigned and the relevant job properties are applied to the job according to the routing entry settings.

Make sure that the subsystem is not active when you configure it via the menu. For security reasons, this step is allowed only when the subsystem is not active.
Make sure that you do not have jobs pending in the job queue.

As an alternative to the configuration menu, you can use the IBM i **ADDJOBQE** or **RMVJOBQE** and **ADDRTGE** or **RMVRTGE** commands for Magic xpa broker configuration.

- a. Connect JOBQ to the subsystem:

```
ADDJOBQE SBS(SBSLIB/SBSNAME)
JOBQ(MAGICXPA23/MGBROKER) MAXACT(1) SEQNBR(20)
```


Where:

SBSLIB – name of the subsystem library

SBSNAME – subsystem name

MAGICXPA23 – name of the Magic xpa 2.3 installation

1 – maximum number of concurrently active jobs

20 – job sequence number in subsystem property. The next available number can be found using the **WRKSBSD** command:

WRKSBSD SBSLIB/SBSNAME

option 5 (Display)

option 6 (Display Job Queue Entries)

- b. Disconnect JOBQ from the Subsystem:
RMVJOBQE SBSD(SBSLIB/SBSNAME)
JOBQ(MAGICXPA23/MGBROKER)
- c. Add a Routing entry:
ADDRTGE SBSD(SVRLIB/SBSNAME) SEQNBR(20)
CMPVAL(MAGICXPA23.MGRNT) PGM(QCMD)
CLS(SVRLIB/MGBROKER)
- d. Remove a Routing entry:
RMVRTGE SBSD(SVRLIB/SBSNAME) SEQNBR(10)

- 3. If there's an error, verify the **joblog** using the **DSPJOB option 10**.

Setting the Magic xpa Configuration File (MAGIC400.INI)

- 1. The MAGIC400.INI file can be edited from the IBM i command line or from any other text editor.
- 2. Do not copy any special characters. This may cause abnormal behavior in the product.
- 3. You can copy the database definition in the **MAGIC_DATABASES** section from the MAGIC.INI file on Windows to the MAGIC400.INI file on IBM i.
- 4. It is highly recommended to back up the MAGIC.INI file before editing.

FQDN (Fully Qualified Domain Name)

The broker and enterprise server should bind using a specific network adapter by specifying a FQDN (instead of an IP address). The requester layer should translate the FQDN to IP and bind using an IP on a specific adapter.

FQDN stands for fully qualified domain name – for example "Power6.mse.corp".

The MGREQ.INI file contains the following entry: **BindFirstIPAddress=Y/[N]**.

- Y – During binding to a port, the server will resolve the host name and will bind to the resolved IP address.
- N – The server will bind to any IP address (*.port – for backwards compatibility).

To enable a Magic xpa engine and broker to work with a specific network adapter (if there are multiple adapters on a machine):

1. Edit the MGREQ.INI file and enable **BindFirstIPAddress** (= Y) and set **MessagingServer** to **FQDN/port**.
2. Edit the MGRB.INI file and set **MessagingServer** to **FQDN/port**.
3. In the MAGIC.INI file, set **TCP/IP = 2, 30, 1500-2000 /LocalHost=FQDN**.
4. In the MAGIC.INI file, set the **Default Broker** to **FQDN/port**.

The table below shows the binding for the server module:

Port-No	BindFirstIPAddress=N */Port-No BindFirstIPAddress=Y IP-address/Port-No
Ip Address/Port-No	IP-Address/Port-No

HTTP Server (Powered by Apache) Configuration

1. Start the administrative server instance by issuing the following command:
STRTCPSVR SERVER(*HTTP) HTTPSVR(*ADMIN)
2. Open the following URL to create the Apache instance:
http://<server_name>:2001
3. The Apache instance directory and its configuration files are created in the **/www** directory. Copy the lines contained in **MAGICXPA23/web_utils/magic.conf** to the Apache configuration file.

Note: The MGREQ.INI file, which is used by Apache, is located in the same directory where the Magic xpa Internet requester program **mgrqcgi023** is located. The default location of the MGREQ.INI file and the Magic xpa Internet requester program **mgrqcgi023** is the **cgibin** directory.

Magic xpa Requester Settings

The following settings in the MGREQ.INI file affect the requester execution:

- **RetryMainTime=nn (default: 5)** – This setting determines the time interval that a requester connected to an alternate Request Broker should try to reconnect to the main Request Broker. If the requester is already connected to the main Request Broker, the **RetryMainTime** setting does not apply. The time interval is specified in minutes.

For example, when **RetryMainTime=15**, the requester tries to reconnect to the main Request Broker every 15 minutes. When the main Request Broker becomes available, the requester connects to it and disconnects from the alternate Request Broker. If the main Request Broker becomes unavailable, the requester returns to the alternate Request Broker and tries to reconnect to the Main Request Broker every 15 minutes.

When **RetryMainTime=0**, the requester does not try to connect to the main Request Broker, but remains connected to the alternate Request Broker.

- **KeepAlive=Y\N (default: N)** – When **KeepAlive=Y**, the Magic xpa Generic Messaging Layer module lets the system administrator use operating-system level settings to control the keep-alive intervals for each open connection. Only a system administrator should determine the settings for the operating system intervals.

Memory Allocation

In the IBM i PASE, the number of segments that a process can use for data is controlled by the **LDR_CNTRL** environment variable. By default it is set to 256MB. The default might not be sufficient for large Magic xpa applications (big ECF files) that use a memory database, parse big XML documents and so on.

In certain conditions, the job might need to exceed the limit. Regardless of the setting of the IBM i **MGSERVER** job description where the ***NOMAX** value is set for the temporary storage size, the PASE process terminates while exceeding the number of allowed memory segments to be used. The **MCH6801 Object** domain, a storage protection error, or a similar error might be seen in the job logs.

To change the default, add one of the following entries to the **etc\mgenv400** file:

- **LDR_CNTRL=MAXDATA=0x10000000** – sets the limit to 256 MB
- **LDR_CNTRL=MAXDATA=0x20000000** – sets the limit to 512 MB
- **LDR_CNTRL=MAXDATA=0x30000000** – sets the limit to 768 MB
- **LDR_CNTRL=MAXDATA=0x40000000** – sets the limit to 1 GB
- **LDR_CNTRL=MAXDATA=0x50000000** – sets the limit to 1.24 GB
- **LDR_CNTRL=MAXDATA=0x60000000** – sets the limit to 1.5 GB
- **LDR_CNTRL=MAXDATA=0x70000000** – sets the limit to 1.75 GB
- **LDR_CNTRL=MAXDATA=0x80000000** – sets the limit to 2 GB

Java Integration

The Java CLASSPATH separator character on IBM i platforms is a colon (:) as opposed to the Windows platform separator character, which is a semicolon (;). For example:
CLASSPATH = /java/MyClasses:/java/OtherClasses

For more information, please refer to the [Java documentation](#).

For V5R4 only:

Make sure that you installed Java Developer Kit 1.6. To set Java 1.6 as your default Java:

- Specify **-Djava.version=1.6** on the Java command or in your **SystemDefault.properties** file; otherwise the Java will default to 1.4.

For V5R4, 6.1 and 7.1:

You can run the 32-bit Java 1.6 by specifying the **JAVA_HOME** environment variable.

Systinet Installation

1. Log on to the OS400 target machine.
2. Run the command:

```
ADDENVVAR ENVVAR(JAVA_HOME)  
VALUE('/QOpenSys/QIBM/ProdData/JavaVM/jdk60/32bit')
```

3. Run the command: **CALL PGM(QP2TERM)**.
4. Go to **<Magic installation directory>\web_services**.
5. Edit the **ssjinstallconfig** file as follows:
 - Change the **dname** parameter from **dname=<MachineName>.<DomainName>** to real machine and domain names such as **dname=POWER6.MSE.COM**.
 - Change the **installation.destination** parameter from **<SSJ installation directory>** to the SSJ installation directory, such as **installation.destination=/MAGICXPA23l/ssj**.
6. Run the command:
java -jar wso2-soa-enablement-server-java-6.6.jar -u ssjinstallconfig
7. Copy the **MgSSJ.jar**, **MgRequester.jar** and **saaj_utils.jar** files from the **support** directory of Magic xpa 2.3 to the **<ssj home>/lib** directory.
8. Start SSJ from the command line:

```
CHGCURLIB SrvLib
```

(where **SrvLib** = Magic xpa server library).

```
SrvLib/STRSTNET SBS(SbsLib/SbsName) SSJ('/ssjdir')  
JAVAHOME('/QOpenSys/QIBM/ProdData/JavaVM/jdk60/32bit/jre')
```

where

SbsLib = Subsystem Library
SbsName = Subsystem Name
ssjdir = SSJ directory

9. Validate the active SSJ service using the following URL: **http://System:6060**.

The SSJ login screen must show up. Please log in using the default SSJ credentials:
admin/changeit.

10. To end SSJ, run:

```
SrvLib/ENDSTNET SBS(SbsLib/SbsName) SSJ('ssjdir')  
JAVAHOME('/QOpenSys/QIBM/ProdData/JavaVM/jdk60/32bit/jre')
```

WebSphere MQ

Magic xpa 2.3 has been created and tested based on WMQ V6. On the IBM i platform, the WebSphere MQ connection can be established in the server mode only. IBM does not provide a “native” WebSphere MQ client.

If you are using a WebSphere MQ Queue manager on IBM i and you have to configure Magic xpa for communication with MQ, you need to set a logical name in the MAGIC400.INI file: **WMQ_ModuleName = C**.

To connect to the WebSphere MQ Queue manager on another IBM i system or on any other platform, you have to interface with WebSphere MQ classes for Java using Magic xpa’s Java integration features.

National Special Characters

The Magic xpa installation is configured by default to generate output in the West European character set: ISO-8859-1, which is equivalent to ANSI 1252. If you have a requirement to support a different character set (such as ISO-8859-2 or ISO-8859-3), please contact our Support department to get assistance in configuring the following:

- MAGIC400.INI
- AS2EB
- ACS400
- Codepage.dat
- IBM i user profile and Job CCSID

Unicode

While working with Unicode BLOBs in Magic xpa, you need to take into account the differences when handling BLOB fields in UTF16 encoding.

- On a Windows-based system, UTF16 is implemented in little-endian encoding: **Microsoft Code Page 1200**.

- On a UNIX-based system, UTF16 is implemented in big-endian encoding:
IBM Code Page 1200.

Please contact our Support department if you require additional details.

Using Colors in Browser Tasks

To properly use colors on IBM i, you must define all the colors that are used as non-system colors. The easiest way to do this is to access the color file in the Magic xpa Studio and define the colors accordingly.

Browser Client

See the Magic xpa Help file for information about working with Browser Client programs.

Server Initialization

As of uniPaaS V1.8SP1, there is a new command available for starting server engines: **STRMGCXPA**. **STRMGCXPA** is the only supported interface for starting Magic xpa server engines on IBM i. The following is a list of server initialization parameters:

Parameter	Values	Type	Description
StartApplication	*INI, Path	Char 256	Project path
Environment File	*DFT, Path	Char 256	Path of the environment file (MGENV400)
INI File	*DFT, Path	Char 256	Path of the ini file
INI Modification (@) File Path	*NONE, Path	Char 256	Path of the @ file
Activate Requests Server	*Yes/*No	Char 4	Connect to broker
Server Instances to Start	Number 1 - 999	Dec 3	Number of engines to start
Log File Path: Name Directory			Path of the log file. No path validation is required.
ANSI CCSID	*DFT, Name	Char 5	Code Page of the IFS files
EBCDIC CCSID	*DFT, Name	Char 5	PASE CCSID
User Parameters	*NONE	Char 500	User string. This string is forwarded to the SBMSVRJOB CL program where it can be parsed and used for defining parameters of the SBMJOB, such as JOBNAME and *JOBQ.
Additional Parameters: 20 sets of three parameters			
INI Section	Name	Char 50	Name of the ini section
INI Entry	Name	Char 50	Name of the ini entry
Value	Name	Char 256	Value of the entry
Load JVM	*Yes/*No	Char 4	Load Java VM during initialization of the server instance
Wait for Server Messages (New parameter)	*Yes/*No	Char 4	Wait for Server job to start. When it is set to *Yes, the calling job waits for the Magic xpa server job to start and registers the job number in the Message Queue.

Open Source Exit Programs

Magic xpa for IBM i includes three open source exit programs where you can change the default settings of the Magic xpa server job.

1. **SBMSVRJOB** – An Exit program where the **SBMJOB** command is executed. By changing/adding exit program logic, you can control all of the **SBMJOB** parameters, such as **Job Name**, **Job Queue**, and **Schedule Date/Time**.
The sources of this Exit program are located in the **SVRLIB/MGCLSRC** source file, where **SVRLIB** is the name of the server library.
2. **SVRJOBSTR** – An Exit program executed before loading the PASE environment. It is executed from the server job just before the load of the Magic xpa engine. It is useful for the development of additional error handling, settings of additional parameters and environment variables, sending system messages, etc.
This Exit program has no source. It is empty by default.
3. **SVRJOBEND** – An Exit program executed after loading the PASE environment. It is called immediately after the Magic xpa engine is terminated while the IBM i server job is still active. It is useful for the development of additional error handling, collection of performance information, sending system messages, etc. This Exit program has no source. It is empty by default.

Server Log File

The Magic xpa log file is created for each server instance. The log file name is set via the **ExternalLogFileName** entry in the **MAGIC.ini** file. The file path is absolute: **/New Library name/logs/LogFileName**.

Start Magic xpa Engine via MGRB.INI

You can now load Magic xpa server engines during the initialization of the Magic xpa broker. For example, by setting the following entry in the **MGRB.INI** you can load three Magic xpa server engines with different parameters.

```
[APPLICATIONS_LIST]
Port      =      STRMGCPXA      INIFILE('etc/TEST.INI')      ACTRQSSVR(*YES)
INSTCNT(3),MAGICXPA23,,,1,0
```

Three Magic xpa engines will start from the **MAGICXPA23** installation using **etc/TEST.INI**.

The user profile that will be used by the **MGBROKER** job must have ***CHANGE** rights for the Magic xpa 2.3 library.

The Auto-load feature works only when IBM i Job Queue **MGSERVER** is released (**Status *RLS**).

Deploying RIA

To be able to deploy a Rich Client application on IBM i platforms:

1. The following files and folders are created when you use the Rich Client Deployment Builder:

```
appname\appname.application  
appname\appname.publish.html  
appname\mgxpaRIA_x_y_z_www\ appname\Images\
```

x_y_z represents the Magic xpa version and **www** is a unique number representing the specific version.

a. Place them in the **MagicRIAApplications /appname** alias on the Web server.

b. Users can access the application from the following URL:

http://appserver/MagicRIAApplications/appname/appname.publish.html

2. Add the following to the **httpd.conf** Apache configuration file in this order:

```
AddType application/x-ms-application .application  
AddType application/x-ms-application .manifest  
AddType application/octet-stream deploy  
AddType application/x-msdownload .dll  
  
AddHandler default-handler .jpg .gif .js .txt .bat .msi
```

3. Manually change the **HTTPCompressionLevel** in the application's **publish.html** file to **None**, since there is no compression when the server is a non-Windows platform.

For example:

```
<body onload="initialize()">  
<xml id="rcExecProps">  
<properties>  
<property key="protocol" val="http"/>  
<property key="server" val="SYSTEM:PORT"/>  
<property key="requester" val="/ServerDir/mgrqcgi023"/>  
<property key="appname" val="frame"/>  
<property key="prgname" val="START"/>  
<property key="arguments" val=""/>  
<property key="envvars" val=""/>  
<property key="UseWindowsXPThemes" val="Y"/>  
<property key="HTTPCompressionLevel" val="None"/>  
<property key="DisplayStatisticInformation" val="N"/>  
<property key="InternalLogLevel" val=""/>  
<property key="InternalLogFile" val=""/>  
<property key="InternalLogSync" val="Session"/>  
<property key="LogClientSequenceForActivityMonitor" val="N"/>  
</properties>  
</xml>  
<table align="center">
```

Where:

SYSTEM:PORT – System Name. Example: "POWER6.MSE.CORP:8080"

ServerDir – Installation directory. Example: MAGICXPA23

Licensing

As of uniPaaS V1.8 SP1, there is no need to install **Easycor** licenses. The new license mechanism for the IBM i server is identical to Windows and UNIX. It is based on the **license.dat** file and license broadcasting. The valid license names for this version are:

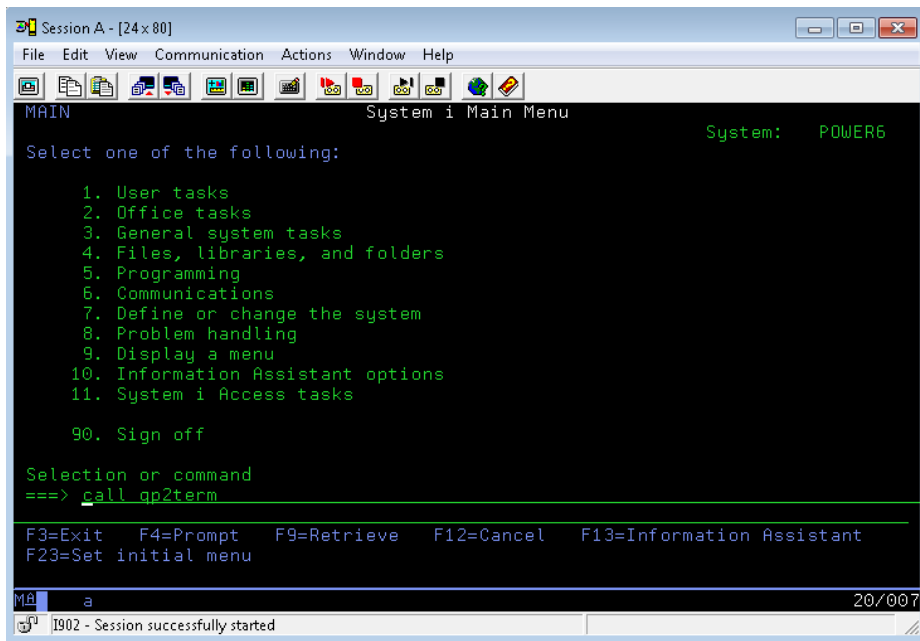
1. **MGPART2** for the Magic xpa Partition Server
2. **MGENT2** for the Magic xpa Enterprise Server
3. **MGRIA** for the Magic xpa RIA Server

You need to obtain new Magic xpa licenses that reflect your current licenses. To obtain Magic xpa licenses, please contact your local Magic Software representative.

Please follow the instructions provided in the license package.

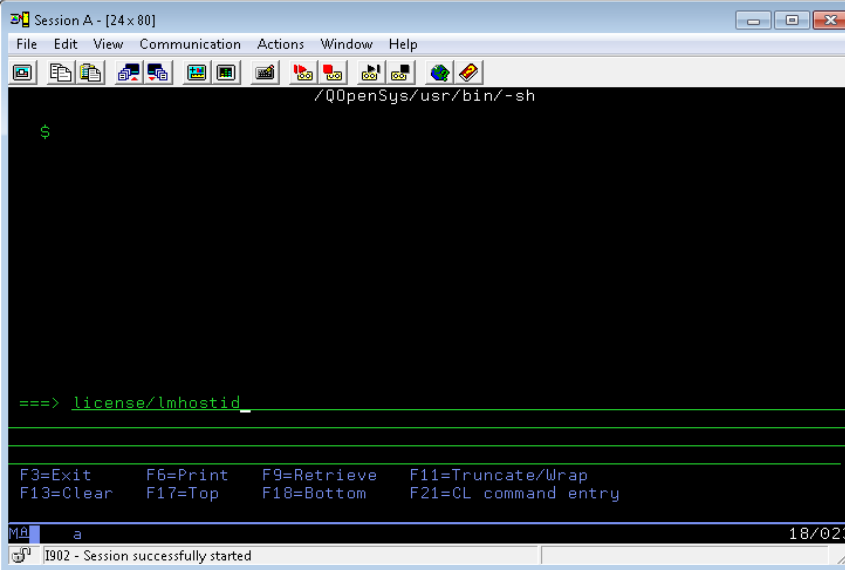
To identify the host name of your IBM i system, follow the steps below.

1. Start the PASE command line.



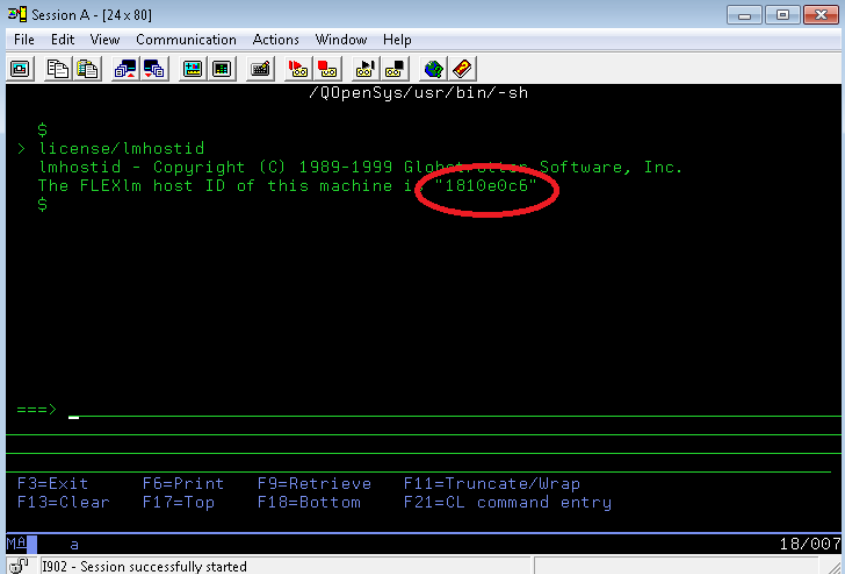
```
Session A - [24 x 80]
File Edit View Communication Actions Window Help
MAIN System i Main Menu System: POWER6
Select one of the following:
1. User tasks
2. Office tasks
3. General system tasks
4. Files, libraries, and folders
5. Programming
6. Communications
7. Define or change the system
8. Problem handling
9. Display a menu
10. Information Assistant options
11. System i Access tasks
90. Sign off
Selection or command
==> call qp2term
F3=Exit F4=Prompt F9=Retrieve F12=Cancel F13=Information Assistant
F23=Set initial menu
MIA a 20/007
I902 - Session successfully started
```

2. Enter the **lmhostid** command.



A terminal window titled "Session A - [24x80]" with a menu bar (File, Edit, View, Communication, Actions, Window, Help) and a toolbar. The prompt is "/QOpenSys/usr/bin/-sh". The user enters the command "license/lmhostid". The terminal shows a green cursor and the command being typed. At the bottom, there is a status bar with "18/023" and "I902 - Session successfully started".

3. The Host ID will be shown as an output.



The same terminal window as above, but now showing the output of the "license/lmhostid" command. The output is: "lmhostid - Copyright (C) 1989-1999 GlobalVista Software, Inc. The FLEXlm host ID of this machine is: '1810e0c6'". The host ID "1810e0c6" is circled in red. The terminal also shows the same status bar as the previous image.

License errors are shown in the server log file. The following are recommendations regarding licensing:

1. Activate server logging during server configuration and initial tests.
2. Make sure that you have a valid license file set in the **LicenseFile** and the **LicenseName** entries of the MAGIC400.ini file.
3. If you have multiple installations of the Magic xpa server on your system, maintain all the licenses in one directory.

Performance – Managing Workload

Magic xpa applications are CPU intensive. Performance tuning of a CPU intensive application on an IBM i platform has always been a complex issue due to the lack of CPU control tools in OS/400 and OS i. CPU intensive applications allocate the maximum number of available CPU resources during runtime, which leads to a loss of performance in other applications. As of OS i 6.1, it is possible to set up a better application isolation at the CPU level. It is applicable for multi-core systems where it is possible to limit the processing requirements of a workload to a subset of processor cores. For more information, click [here](#).

Recommendations

Back up all of the Magic xpa configuration files, such as MAGIC400.INI, MGRB.INI, and MGREQ.INI, before modifying them.

Rebranding

The server package for IBM i was changed to comply with the new Magic xpa branding. Here is a list of what was changed:

- **STRUNISVR** is now **STRMGXPA**. (The **STRUNISVR** command still exists for backward compatibility.)
- Menus and screen elements now display **Magic xpa** instead of **uniPaaS**.
- IFS objects were renamed (like on other UNIX systems).

Fixed Issues

- 160204 – The broker was fixed to include changes made in version 1.9i, which allowed it to start the server as separate jobs on IBM i.
- 296159 – The SSJ library path was fixed to refer to the lib32 directory instead of the lib directory.

Limitations

1. Connectivity to messaging servers via JMS is not supported using the provided messaging component in this version.
2. The Broker Balancing feature is not supported in this version.
3. Encrypted Communication is not supported in this version.
4. If there is abnormal engine termination (ENDJOB, IPL, ENDSBS), some spool files might be left by the server engine. The spool files are produced in the OUTQ of the server job user. To make sure that all these spool files are eventually removed from the system, set the OUTQ parameter of the relevant user profiles to the OUTQs that are included in the cleanup routine. For example: QUSRSYS/QEZJOBLOG.

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