

Oracle Insurance

**Insbridge Rating and
Underwriting
Operating &
Environments Guide**

Release 4.0.1

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Oracle Insurance Insbridge Rating and Underwriting Operating and Environments Guide

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STATEMENT OF PURPOSE

This document describes the preferred operating environments and hardware setup for the Oracle Insurance Insbridge Rating and Underwriting (IBRU) system release 4.0. This is inclusive of Oracle Insurance Insbridge Rating and Underwriting Framework Administrator (IBFA), Oracle Insurance Insbridge Rating and Underwriting RateManager (RateManager), Oracle Insurance Insbridge Rating and Underwriting SoftRater (SoftRater), and the associated database(s).

Some of the main considerations to keep in mind when selecting a setup are:

- Performance
- Environments
- Resources

PERFORMANCE

If the ability to return rates quickly with minimal lag time is the main consideration, the requirements should depend upon usage:

- **Minimum** – a minimum configuration may work best in an environment with a low number of users where RateManager and IBFA/SoftRater for Windows are on one machine and a SQL Server database is on a separate machine.
- **Standard** – a standard configuration may be required when the number of users goes beyond 10. RateManager, SoftRater and the databases should reside on separate machines. A Java version of SoftRater may be used and another database in addition to SQL Server may also be utilized.
- **Optimal** – an optimal configuration may suit a larger company or a company that handles commercial lines. Commercial lines may require more processor time and have larger data files than non-commercial lines and may benefit from having an optimal system configuration. RateManager, SoftRater and the databases would reside on separate machines. A Java version of SoftRater may be used and another database in addition to SQL Server may also be utilized.

When selecting a system, the requirements should be based on transactional rating and/or batch needs as well as the physical requirements to be made on the machines. A low number of users that processes large files may benefit from a more powerful hardware environment. Likewise, a low number of users with smaller rating/batch needs may be able to use the minimum.

Performance can also be combined with environment needs. For example, if you have a small number of users who will be creating programs on a machine that will not be rating, that group may be fine with a minimum setup. Most likely, there will not be a great demand placed on the machine. If you have a production group that will be generating large quantities of rates/renewals, that group may require an optimal setup to accommodate their needs.

NOTE: *It is possible to have RateManager, IBFA/SoftRater for Windows and the SQL Server database all reside on the same machine. This configuration is not recommended due to security and performance issues. However, if this configuration is the only option, an optimal configuration would be recommended because of the load placed on the machine.*

ENVIRONMENTS

Another factor to consider when selecting a hardware/software configuration is the number of physical environments that you want. A physical environment generally refers to a physical machine where a specific activity is performed. For example, a physical environment called development could be created where users only build ratings. Another physical environment called QA could be created where users only test ratings. There is no limit to the number of physical environments you can have.

It is recommended that three physical environments be setup; one for development, one for testing and one for production. Each physical environment will have space and hardware requirements.

There are a few possible combinations of RateManager, IBFA/SoftRater for Windows, IBSS/SoftRater for Java, MS SQL Server along with other database platforms, such as IBM DB2, that can be implemented. These configurations may require more equipment, may require more space and/or have additional hardware costs.

RESOURCES

If resources are the main consideration, the configuration you choose will depend upon the setup you currently running, the available space you have, the existing equipment that you own, and the usage that you anticipate.

RateManager is not a processor heavy application and the database is not transaction heavy. This means that existing hardware equipment may be used. Depending upon the condition of the machines, the current demands the machine is under and the available space on the machine.

For the setup options:

- **Database** – RateManager and IBFA require a SQL Server database. SoftRater can use a SQL Server, Oracle or DB2 database or a combination of databases. SQL Server may be the only database system used. No other database system is required; however another database system can be used in the IBRU setup if desired, for example an Oracle database can be utilized.

If you chose to use an Oracle or IBM DB2 database, please follow the hardware/software requirements recommended by the manufacturer.

- **Operating Systems** – RateManager and IBFA must run on a Windows Server machine. No other operating environment will be required. SoftRater can be run on a non-Windows machine if a compatible application server platform such as WebLogic, WebSphere, or JBoss is running as well. If a non-Windows machine is used for SoftRater, a Java version of SoftRater will be required. The Java version of SoftRater will need to be loaded onto the machine with the compatible application server platform. Existing equipment can be used and space requirements would not be excessive.

Additional Information

For further assistance, please contact an Oracle Insurance Insbridge Rating and Underwriting sales representative.

CLIENT CONFIGURATION SIZING QUESTIONS

The following questions may help you define the usage and demands that will be placed on the Insbridge system. This may also help to get a clearer understanding of all the areas where the Insbridge system may be utilized. Overall, it is very beneficial to get an idea of the anticipated environments, and identify the peak and average activities around rate loading, testing, pricing analytics, and rating before selecting a hardware/software configuration.

RateManager

1. How many concurrent users will be accessing the RateManager design-time tool?
2. Will an N-Tier environment be utilized with a separate database and application server for RateManager?
3. What kind of actuarial activities will Insbridge be used with? How big of a book of business will be used for testing? When will these pricing activities be done?

SoftRater Engine

1. What is the peak and average production rating engine traffic?
2. Will there be a nightly batch cycle (for renewals, endorsements, etc.)? If so, what size will the batch cycles be? Is there a time window involved?
3. What database will be used in that environment? I.e. will a J2EE version of the rating engine be used in production?
4. Will an N-Tier environment be utilized with a separate database and application server for RateManager?

General

1. Is the hardware designated for the Insbridge product exclusive to Insbridge, or will it be shared with other products?
2. What will the change control environment architecture look like? I.e. will there be DEV, QA, UAT, PROD environments?

NOTE: *Requirements may change without notice. The requirements listed in this document are current as of the publication date found on the first and last pages of this document.*

QUICK VIEW

The table below shows at a glance, what operating systems, application server platforms, and databases can be utilized with the IBRU system.

IBRU System Component	Operating System	Application Server	Database
RateManager	Microsoft Windows Server 2003, Standard	IIS 6.0	SQL Server 2005 SP/2 SQL Server 2008 SP/1
	Microsoft Windows Server 2003, Enterprise		
	Microsoft Windows Server 2003, Data Center		
	Microsoft Windows Server 2008, Standard	IIS 7.0	
	Microsoft Windows Server 2008, Enterprise		
	Microsoft Windows Server 2008, Datacenter		
IBFA/SoftRater for Windows	Microsoft Windows Server 2003, Standard	IIS 6.0	SQL Server 2005 SP/2 SQL Server 2008 SP/1
	Microsoft Windows Server 2003, Enterprise		
	Microsoft Windows Server 2003, Data Center		
	Microsoft Windows Server 2008, Standard (32-bit or 64-bit)	IIS 7.0	
	Microsoft Windows Server 2008, Enterprise (32-bit or 64-bit)		
	Microsoft Windows Server 2008, Datacenter (32-bit or 64-bit)		
IBSS/SoftRater for Java	Please see NOTE	Oracle WebLogic 10.3.1	Oracle 10g, 11g DB2 9.1
		IBM WebSphere 6.0.x, 6.1.x	SQL Server 2005 SP/2
		JBoss by Red Hat 4.2.3 GA	SQL Server 2008 SP/1

NOTE: JBoss, WebLogic and WebSphere operate in a variety of environments. As long as the application server is compatible with the operating system, then SoftRater for Java also will be compatible. SoftRater for Java is installed and functions within application server. The external resources that the application server resides in will not affect SoftRater for Java.

SERVER

The primary focus of the following hardware recommendations is performance. The hardware requirements for Windows based machines are divided according to the usage that has the least effect on performance:

- **Minimum** – a minimum configuration may work best in an environment with a low number of users where RateManager and IBFA/SoftRater for Windows are on one machine and the SQL Server database is on a separate machine. This is a straight Microsoft Windows environment with no other database included.
- **Standard** – a standard configuration may be required when the number of users goes beyond 10. RateManager and IBFA/SoftRater for Windows would be on one machine and the SQL Server database would be on a separate machine. A standard setup also allows for another database type and a Java version of SoftRater to be included in the setup.
- **Optimal** – an optimal configuration may suit a larger company or a company that handles commercial lines. Commercial lines may require more processor time and have larger data files than non-commercial lines and may benefit from having an optimal system configuration.

Minimum

Below is a listing of the minimum operating environment recommended for the IBRU system. These are general guidelines with the assumption of a maximum of 10 RateManager users where RateManager and IBFA/SoftRater for Windows are on one machine and the SQL Server database is on a separate machine. This is a straight Microsoft Windows environment with no other database included.

Processor:	Dual processor 1.8 GHz or greater
Memory:	4 GB ECC RAM or greater
Hard Drive:	500 GB SCSI Hardware RAID or greater
Graphics:	1280 x 1024
Network:	100b T NIC or greater

Standard

Below is a listing of the standard operating environment recommended for the IBRU system. These are general guidelines with the assumption of a more than 10 RateManager users where RateManager and IBFA/SoftRater for Windows would be on one machine and the SQL Server database would be on a separate machine. This setup also allows for another database type and a Java version of SoftRater to be included.

Processor:	2x Quad Core 2.0 GHz
Memory:	8 GB ECC RAM

Hard Drive:	1.5 TB SAS 15,000 RMP Hardware RAID 0+1
Graphics:	1280 x 1024
Network:	1000b T NIC

Optimal

Below is a listing of the optimal operating environment for the IBRU system. These are general guidelines with the assumption of more than 10 RateManager users, or a high volume of data is being processed, where RateManager and IBFA/SoftRater for Windows would be on one machine and the SQL Server database would be on a separate machine. This setup also allows for another database type and a Java version of SoftRater to be included.

Processor:	4x Quad Core 2.93 GHz
Memory:	16 GB EEC RAM
Hard Drive:	1.5 TB SAS 15,000 RMP Hardware RAID 0+1
Graphics:	1280 x 1024
Network:	1000b T NIC

Server Software

RateManager and IBFA/SoftRater for Windows must be installed in a Windows environment. The software requirements are standard for any IBRU configuration, regardless of whether you are running a minimum configuration or an optimal configuration.

Microsoft Windows:	Microsoft Windows Server 2003, Standard
	Microsoft Windows Server 2003, Enterprise
	Microsoft Windows Server 2003, Data Center
	Microsoft Windows Server 2008, Standard (32-bit or 64-bit)
	Microsoft Windows Server 2008, Enterprise (32-bit or 64-bit)
	Microsoft Windows Server 2008, Data Center (32-bit or 64-bit)
This software must be installed and running in every Windows environment.	MSXML 4 or above
	Microsoft IIS 6.0 in Windows 2003 Server
	Microsoft IIS 7.0 in Windows 2008 Server
	Microsoft .NET Framework 3.5
	MDAC Version 2.8 or above
	MSMQ

DATABASE SYSTEM SUPPORTED

The Insbridge Rating and Underwriting System has been tested with:

- Microsoft SQL Server 2005 SP/2
- Microsoft SQL Server 2008 SP/1
- Oracle Release 10g
- Oracle Release 11g
- IBM DB2 9.1

RateManager and IBFA require a SQL Server database. SoftRater supports multiple databases platforms and can utilize a SQL Server, Oracle or DB2 database or a combination of databases. IBFA acts as a SoftRater in a Windows environment. When used in a Windows environment, SQL Server is the only database that can be used. If another database type is needed, a Java version of SoftRater is required.

Depending on the load expected on the web server, the database can be placed on a separate server that can either be independent or shared. It is recommended that the database be separate for performance and security reasons.

MS SQL Server should not be installed on the same machine where the Insbridge web applications reside. If the MS SQL Server resides on a separate host from the IBRU web front end, a properly configured network connection from the web server front end to MS SQL Server must exist.

Hardware

All settings are relevant on a MS SQL Server 2005 SP/2 and a 2008 SP/1 instance. These settings may be used as a guideline when setting up other database systems.

Processor:	1.8 GHz or greater
Memory:	4 GB RAM
Hard Drive:	500 GB SCSI Hardware RAID or greater (This may be smaller or larger, depending upon the total volume expected to be used)
Graphics:	1280 x 1024
Network:	1000b T NIC
These settings will need to be in place.	Mixed Mode Authentication
	Default SQL Server collation and sort order plus case sensitivity using Latin1_General_BIN as the server collation.
	NT Fibers must not be enabled
	SQL Server Client

If you chose to use an Oracle or IBM DB2 database, please follow the hardware/software requirements recommended by the distributor.

NOTE: *SQL Server, Oracle and DB2 are the databases that were certified and tested by Oracle Insurance. Any ANSI compliant database may be able to function with a Java version of SoftRater. Please contact an Oracle Insurance sales representative for further information.*

SOFTRATER JAVA CONFIGURATIONS

A non-Windows machine requires a Java version of SoftRater. SoftRater for Java will work within a JBoss, WebLogic or WebSphere application server.

The Insbridge Rating and Underwriting SoftRater for Java has been tested on:

- JBoss 4.2.3 GA
- Oracle WebLogic 10.3.1
- IBM WebSphere 6.1

JBoss, WebLogic and WebSphere operate in a variety of environments. SoftRater for Java is installed and functions within application server. The operating system of the machine where the application server resides will not affect SoftRater for Java. For example, it does not matter if WebLogic 10.3.1 is installed on a Linux machine, an HP-UNIX machine or a Windows machine. If WebLogic works in that operating system, then SoftRater for Java should work within WebLogic.

OPERATING ENVIRONMENT – JBOSS by RED HAT

SoftRater for JBoss Application Server by Red Hat Version 4.2.3 GA.

Version: 4.2.3.GA (build: SVNTag=JBoss_4_2_3_GA date=200807181418)

Version Name: Trinity

Built on: July 18 2008

For minimum operating system and hardware requirements for Red Hat JBoss Version 4.2.3 GA., please see: <http://www.jboss.com/products/platforms/application/supportedconfigurations/#JEAP4.2>

NOTE: *To connect to SQL Server 2008 SP/1, JRE 1.5 is required.*

OPERATING ENVIRONMENT – ORACLE WEBLOGIC 11gR1 (10.3.1)

For minimum operating system and hardware requirements for Oracle WebLogic Server release 11gR1 (10.3.1), please see:

http://www.oracle.com/technology/software/products/ias/files/oracle_wls_certification_10gr3_matrix.xls

OPERATING ENVIRONMENT – IBM WEBSHERE

For minimum operating system and hardware requirements for IBM WebSphere Version 6.1, please see:

<http://www-01.ibm.com/software/webservers/appserv/was/requirements/>

CLIENT

Below is a listing of the minimum operating environment recommended for RateManager clients. These are general guidelines with the assumption that the client machine is under normal working conditions and not performing multiple high use tasks. Client machines with greater demands will require increased computing power.

Hardware

The following hardware configuration is recommended for average client usage.

Processor:	Pentium 1.8 GHz or greater
Memory:	1 GB RAM or greater
Hard Drive:	10 GB open hard drive space or more
Graphics:	1024x768 minimum resolution or higher
Network:	100b T or 1000b T NIC or greater

Software

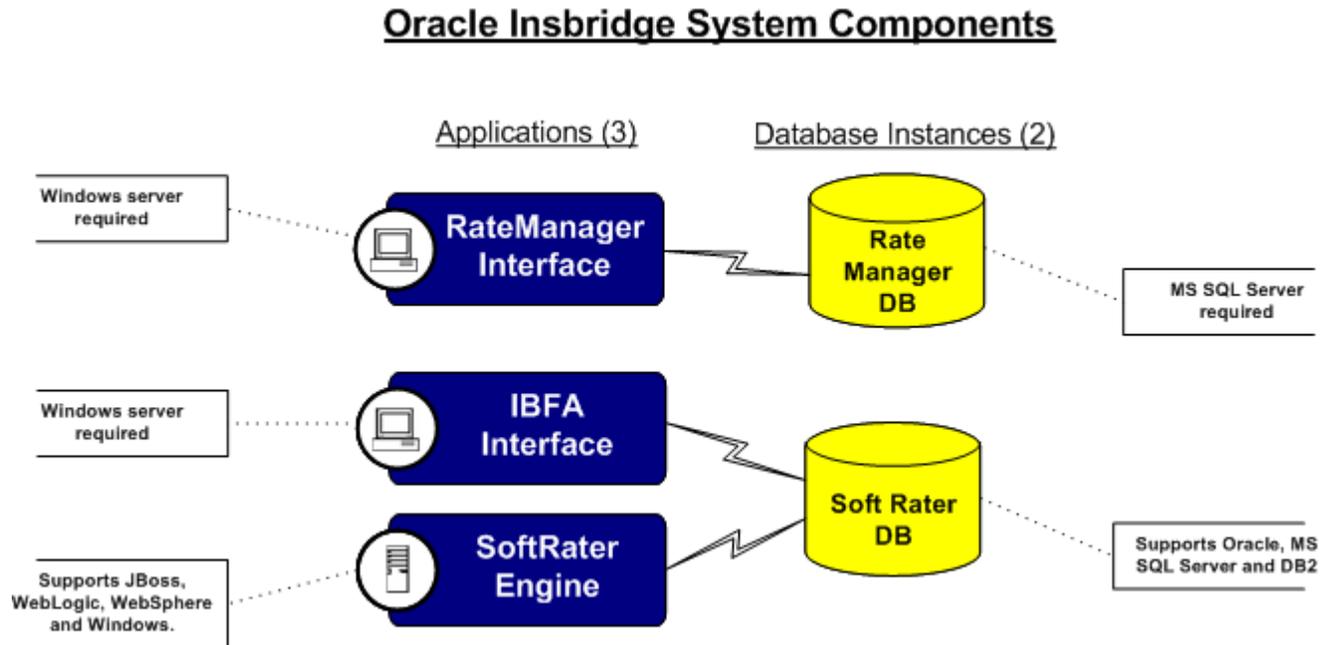
The following software is recommended for clients.

Microsoft:	Internet Explorer 6.0, 7.0 or 8.0
Adobe:	Adobe Acrobat Reader v9.0

NOTE: *IBRU requires Microsoft Internet Explorer. Other browsers are not compatible at this time.*

INSBRIDGE HARDWARE CONFIGURATION EXAMPLES

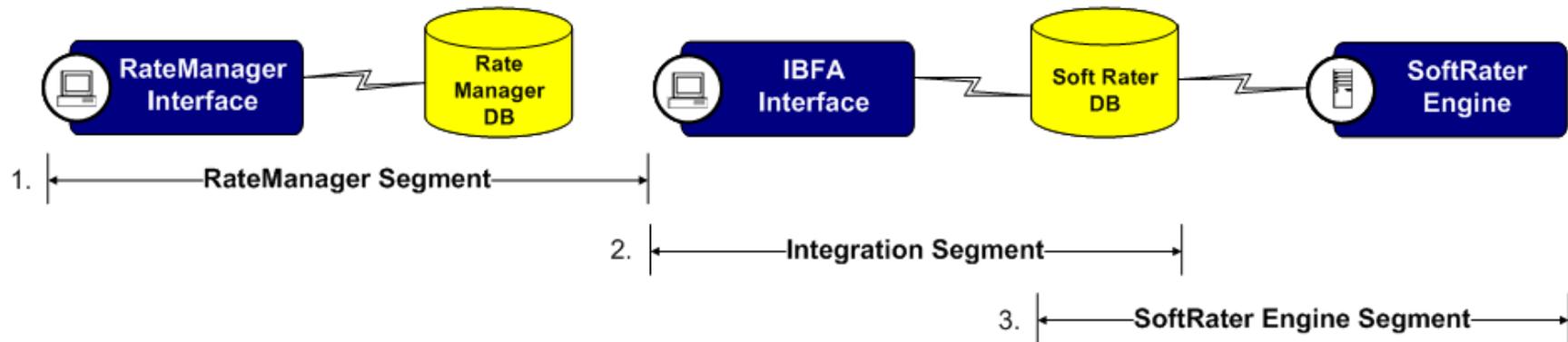
This artifact provides examples of Minimum, Standard, and Optimal configurations for Oracle Inbridge Rating and Underwriting.



INSBRIDGE CONFIGURATION SEGMENTS

The configuration examples provided are broken down into system configuration segments.

Oracle Insbridge Configuration Segments

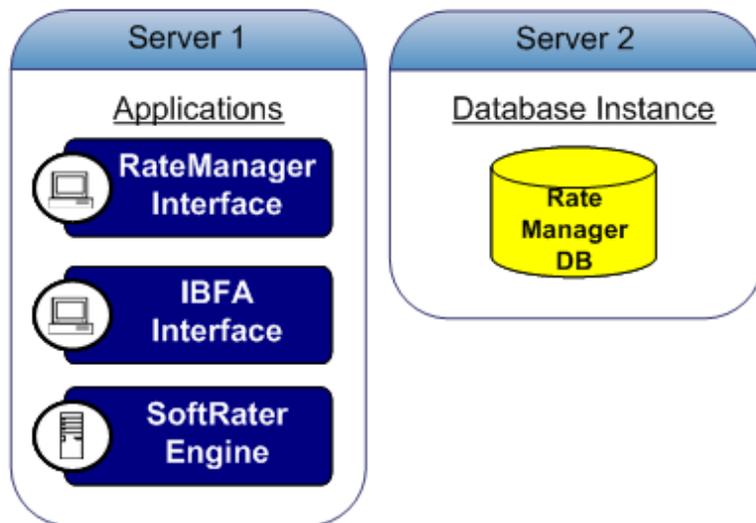


INSBRIDGE RATEMANAGER OPTIONS

Configuration – Option A

- RateManager, IBFA and SoftRater on an instance separate from SoftRater DB instance.
- This is a very common client configuration.

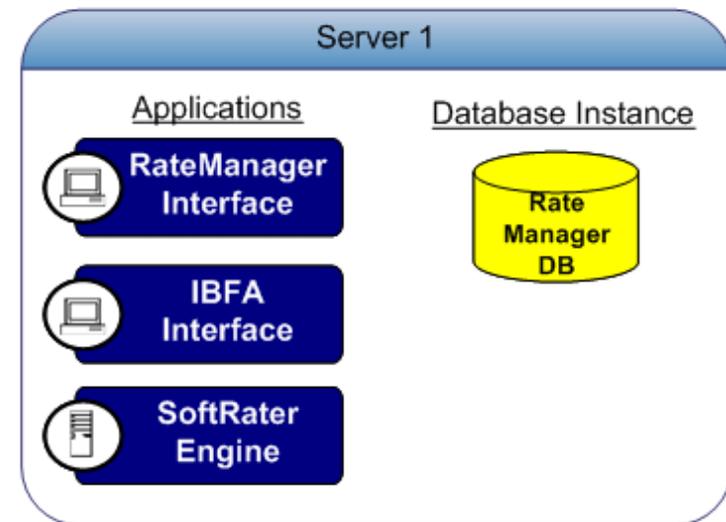
Configuration	Recommendation
Virtual Server Usage	Optional
Development	Standard
QA	Standard
Pre-Production	Standard
Production	Mininum



Configuration – Option B

- All Apps and DB instances on one server.
- Not a recommended configuration.

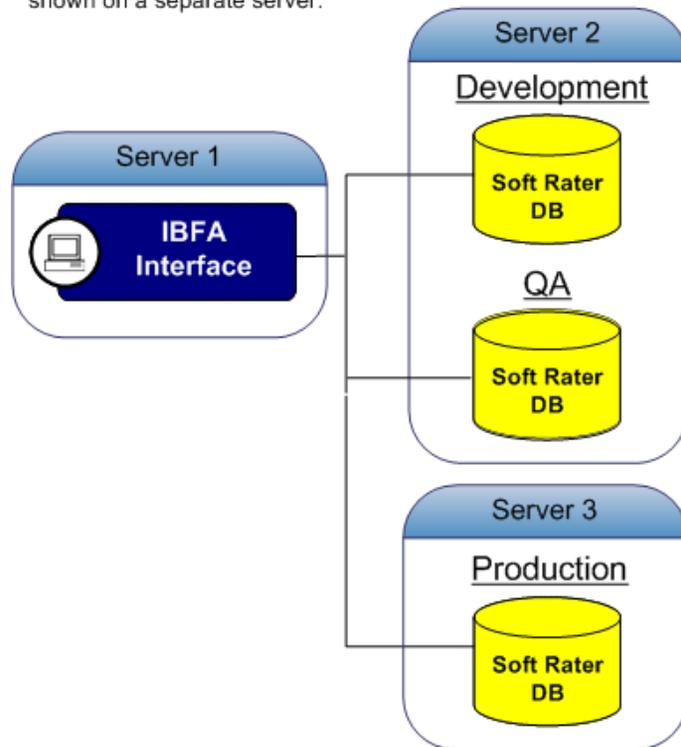
Configuration	Recommendation
Virtual Server Usage	Optional
Development	Minimum
QA	Minimum
Pre-Production	Minimum
Production	Not Recommended



INSBRIDGE INTEGRATION OPTIONS

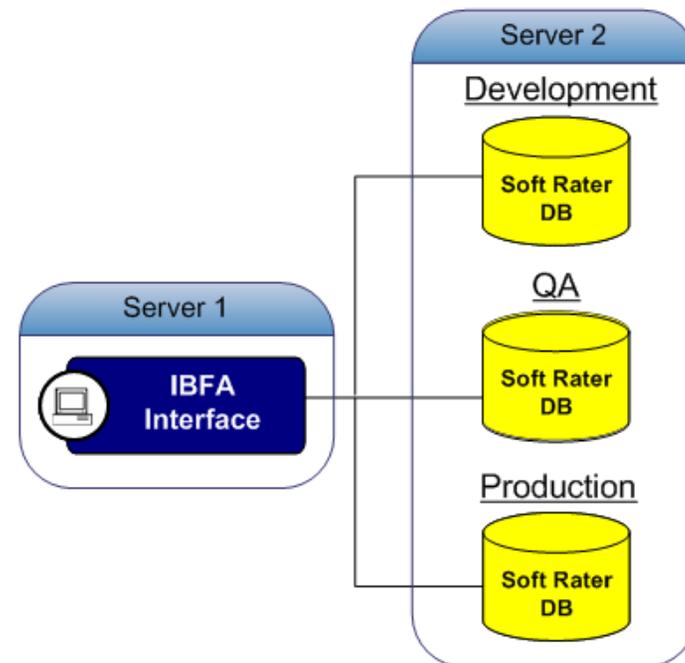
Configuration – Option A

- The IBFA (Framework Administrator) is used to migrate content from RateManager (as an SRP) to the SoftRater database.
- Numerous configurations can be set up to accommodate content deployment.
- The example below shows how one IBFA can be used to deliver content to all SoftRater database instances (Dev, QA, and Production). Production is shown on a separate server.



Configuration – Option B

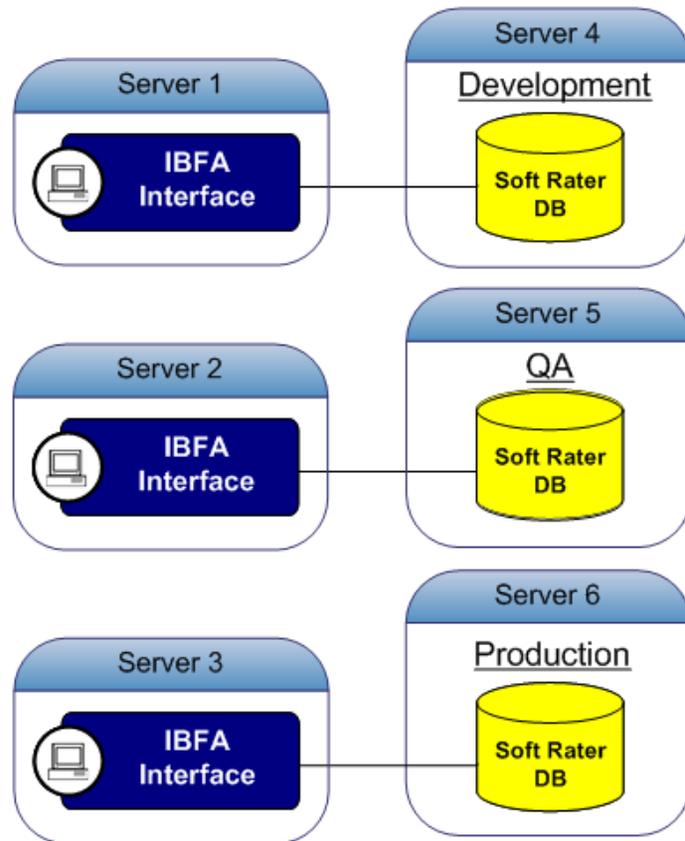
- One server can be used to house all SoftRater database instances (Dev, QA, and Production).



INSBRIDGE INTEGRATION OPTIONS

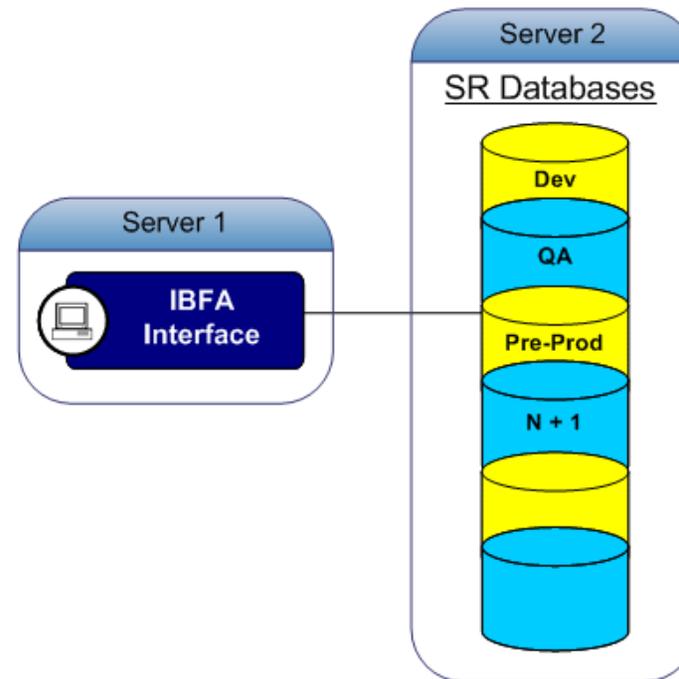
Configuration – Option C

- Numerous servers can be used to house each SoftRater database instances (Dev, QA, and Pre-Production).
- The IBFA can be configured to support 1 to 1 or 1 to N SoftRater DB instances.
- This is a very common client configuration.



Configuration – Option D

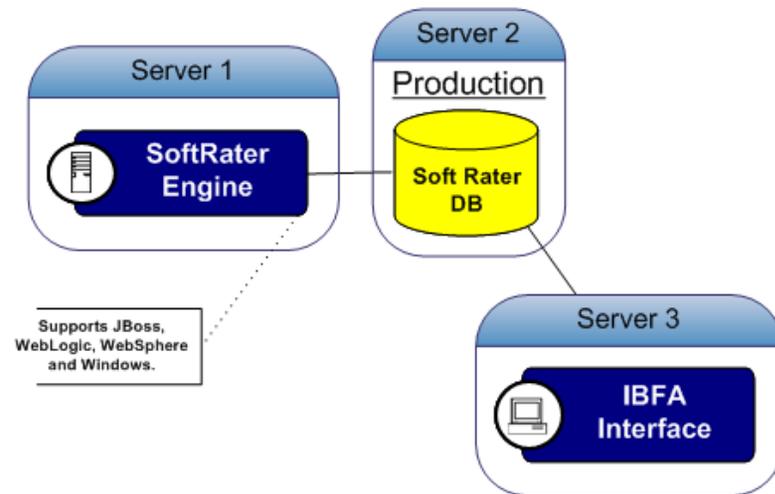
- One database can be used to house all SoftRater database schema instances (Dev, QA, and Pre-Production).



INSBRIDGE SOFTRATER ENGINE OPTIONS

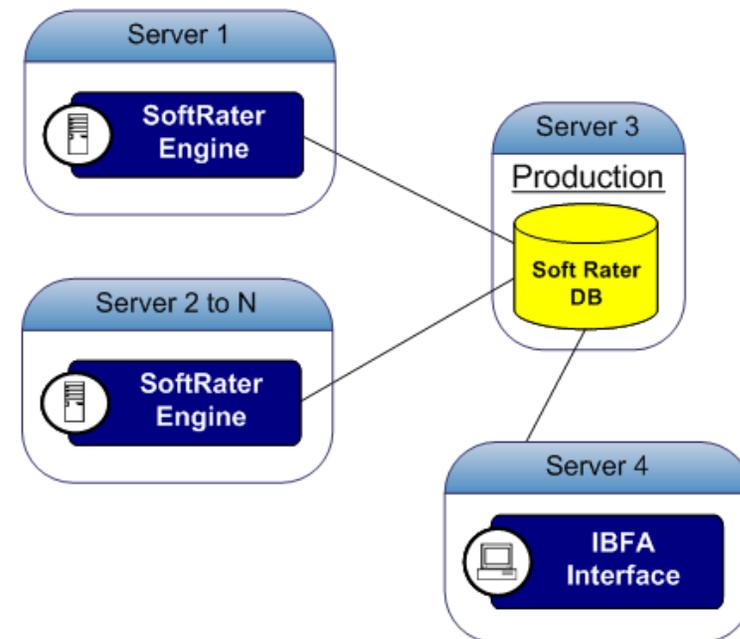
Configuration – Option A

- The SoftRater Engine can be implemented in a number of configurations to meet various business performance needs.
- The SoftRater Engine can be duplicated numerous times to form an engine farm. The SoftRater DB can also be duplicated numerous times to enable x number of engines to be running.
- When multiple SoftRater DB instances are configured, the customer must make sure the exact data content is loaded to all DB instances.
- The example below shows the SoftRater Engine and SoftRater DB broken out on two servers.



Configuration – Option B

- SoftRater Engine running multiple instances and accessing a single SoftRater DB. 1 to N instances of the SoftRater engine can be deployed in a farm type configuration for load balancing.
- This configuration can also be leveraged in Development and QA environments, not just production.



INSBRIDGE SOFTRATER ENGINE OPTIONS

Configuration – Option C

- SoftRater Engine running multiple instances and accessing a single SoftRater DB. 1 to N instances of the SoftRater engine and 1 to N instances of the SoftRater DB can be deployed in a farm type configuration for load balancing.
- The SoftRater DB instance content must be identical in this configuration.
- The SoftRater Engine can run multiple environments at one time.

