



BLR BOSS

Hardware, Software and Configuration Specifications

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BLR Technologies, Inc.
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Revision History

Version	Date	Description
1.0	April 11 th , 2008	Document creation by Leo
1.1	April 17 th , 2008	Modifications according to suggestions from engineers
1.2	October 17 th , 2008	Modifications by Leo in order to update hardware and software technology
1.3	November 20, 2008	Modifications by Leo, 64 bit and core specs for processors
1.4	January 20 th , 2009	Modifications by Leo, adding Partner Backoffice and other minor changes

Glossary

Term	Description
SATA	Serial Advanced Technology Attachment is a computer bus primarily designed for transfer of data between a computer and mass storage devices such as hard disk drives and optical drives.
RAID	Redundant Arrays of Inexpensive Disks is a technology that employs the simultaneous use of two or more hard disk drives to achieve greater levels of performance, reliability, and/or larger data volume sizes

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1. Introduction

This document describes the specifications for hardware, software and configuration info in order to install and run BLR BOSS Information Systems.

General hardware requirements: All servers should comply with:

- SATA hard drives technology or newer (in case of database server, having some sort of RAID system is mandatory)
- Intel 1 Gigabit network cards adapters (if 1 Gigabit backbone exists, which is recommended)

General software requirements: All servers should comply with:

- Operating system with all service packs and hot fixes applied
- Microsoft Internet Information Services installed in all Web servers
- Microsoft .Net Framework 1.1, 2.0, 3.0 and 3.5 (latest release existing)
- Adobe Flash Player installed
- Adobe Acrobat PDF Reader installed
- Antivirus software installed with virus list up to date
- Microsoft Queue Services installed in all servers and workstations

General configuration requirements

- Time zones and server time correctly set in all servers. Also, a mechanism to synchronize the time with an atomic clock and keep it updated is mandatory, especially for BOSS Racebook product
- A Windows domain user called "*netadmin*" has to be created with Administrator permissions
- A public Microsoft Windows Queue called "*betmonitorqueue*" has to be created in the primary domain controller
- All Web servers should have Internet access, and clustering of at least two servers per application set is recommended for load balancing and redundancy
- All servers should be registered in the Windows domain
- Remote access has to be provided, and credentials with proper access permissions have to be sent in order to install and configure

2. Hardware and Software Requirements

2.1. BLR BOSS Core Components

<i>Software Component</i>	<i>Hardware / Software Needs</i>
BOSS Databases	<p>Hardware</p> <p>Small operation</p> <ul style="list-style-type: none"> - One 64 bit, two cores, Intel, 2.0 Ghz processor - 4 GB RAM <p>Small-to-Mid-size operation</p> <ul style="list-style-type: none"> - Two 64 bit, two cores per processor, Intel, 3.0 Ghz processors - 8 GB RAM <p>Mid-to-Big-size operation</p> <ul style="list-style-type: none"> - Four 64 bit, two cores per processor, Intel, 3.0 Ghz processors - 16 GB RAM <p>Very-big-size operation</p> <ul style="list-style-type: none"> - Eight 64 bit, two cores per processor, Intel, 3.0 Ghz processors - 32 GB RAM <p>Software</p> <ul style="list-style-type: none"> - Microsoft Windows 2003 Server Enterprise Edition - Microsoft SQL Server 2005
BOSS Redundant Databases (backup)	According to main DB server specs and client's Continuity Plan
Domain Controller	Specs according to the size of network (workstations, servers and domain users)
BOSS Control Center Applications, BOSS Racebook Call-Center Wagering, BOSS Partner Backoffice	<p>One server per 100 concurrent connections</p> <ul style="list-style-type: none"> - One 64 bit, two cores, Intel 2.0 Ghzs processor - 4 GB RAM <p>Software</p> <ul style="list-style-type: none"> - Microsoft Windows 2003 Server Enterprise Edition

2.2. BLR BOSS Sportsbook

Software Component	Hardware / Software Needs
BOSS Sportsbook Call-Center Wagering Cache and Connection Management Services (aka RQ or CCM)	<p>One server per 60 workstations</p> <ul style="list-style-type: none"> - Single 64 bit Intel 2.0 Ghz processor - 2 GB RAM <p>Software</p> <ul style="list-style-type: none"> - Microsoft Windows 2003 Server
BOSS Sportsbook Internet Wagering	<p>One server per 400 concurrent connections</p> <ul style="list-style-type: none"> - One 64 bit, two cores, Intel 3.0 Ghz processors - 3 GB RAM <p>Software</p> <ul style="list-style-type: none"> - Microsoft Windows 2003 Server Enterprise Edition
BOSS Sportsbook Server Utilities <ul style="list-style-type: none"> - Sport-Lines Publishing Services (aka LineSender) 	<p>Hardware</p> <ul style="list-style-type: none"> - Single 64 bit, Intel, 2.0 Ghz processor - 3 GB RAM <p>Software</p> <ul style="list-style-type: none"> - Microsoft Windows 2003 Server
BOSS Sportsbook Call-Center Clients <ul style="list-style-type: none"> - BetManager - BetCenter - BetSpy 	<p>Hardware</p> <ul style="list-style-type: none"> - Single 64 bit, Intel, 2.0 Ghz processor - 1 GB RAM <p>Software</p> <ul style="list-style-type: none"> - Microsoft Windows 2000, XP

2.3.BLR BOSS Racebook

<i>Software Component</i>	<i>Hardware / Software Needs</i>
BOSS Racebook Internet Wagering	<p>One server per 250 concurrent connections</p> <ul style="list-style-type: none"> - One 64 bit, Intel, two cores, 3.0 Ghz processors - 3 GB RAM <p>Software</p> <ul style="list-style-type: none"> - Microsoft Windows 2003 Server Enterprise Edition
BOSS Racebook Feed Services	<p>Hardware</p> <ul style="list-style-type: none"> - Single 64 bit, Intel, 2.0 Ghz processor - 2 GB RAM <p>Software</p> <ul style="list-style-type: none"> - Microsoft Windows 2003 Server
BOSS Racebook Wagering Services	<p>One server per 250 concurrent connections</p> <ul style="list-style-type: none"> - One 64 bit, Intel, two cores, 3.0 Ghz processors - 3 GB RAM <p>Software</p> <ul style="list-style-type: none"> - Microsoft Windows 2003 Server Enterprise Edition

2.4. BLR BOSS Casino

<i>Software Component</i>	<i>Hardware / Software Needs</i>
BOSS Casino Gaming Engine	One server per 300 concurrent connections <ul style="list-style-type: none">- One 64 bit, Intel, two cores, 3.0 Ghz processors- 3 GB RAM Software <ul style="list-style-type: none">- Microsoft Windows 2003 Server Enterprise Edition

3. Web Clustering Configuration

All of the BLR BOSS Internet wagering products allow Web clustering through Microsoft NLB (Network Load Balance). Be sure to have these settings:

- Method must be Multicast
- Filtering must be Multiple Host
- Affinity must be Single

Each server in the cluster must have two network adapters:

- One network adapter with a private IP address connected to an internal switch
- One network adapter with a virtual (public) IP address connected to the external switch that goes to Internet

Tip: For AOL customers, a separate server (not in NLB) has to be provided in order to access Internet wagering and gaming products when using clustering. This is so because of three factors: 1) BLR BOSS Internet wagering and gaming products are session oriented in the web tier, 2) NLB filtering has to be set as Multiple Host in order to comply with the session oriented characteristic of the system, 3) AOL clients don't support NLB Multiple Host filtering.

Specific information on how to configure Microsoft NLB for any version of Microsoft Windows can be found at <http://support.microsoft.com>, just search for '*Configure Microsoft Network Load Balance*'.

4. Database considerations to determine hardware requirements

Next factors should be considered when determining database server hardware needs:

1. Expected database sizes in three years from now (in gigabytes)
2. Hard drives RPM preference (10000 or 15000)
3. Expected number of transactions per minute
4. Expected number of concurrent application/user connections
5. Expected size for tempdb database
6. Expected target processor utilization percentage
7. Database separations preference (usually tempdb database is created in a separate hard drive)

In order to find out the server you need when buying from Dell check out this URL:

http://www.dell.com/content/topics/global.aspx/sitelets/alliances/microsoft/sql_advisor_tool?c=us&cs=555&l=en&s=biz&-section=sql_advisor