



## BLR BOSS

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Hardware, Software and Configuration Specifications

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BLR Technologies, Inc.  
[www.BLRTech.com](http://www.BLRTech.com)

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## Revision History

Version	Date	Description
1.0	April 11 <sup>th</sup> , 2008	Document creation by Leo
1.1	April 17 <sup>th</sup> , 2008	Modifications according to suggestions from engineers
1.2	October 17 <sup>th</sup> , 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 <sup>th</sup> , 2009	Modifications by Leo, adding Partner Backoffice and other minor changes
1.5	November 25 <sup>th</sup> , 2009	Updating hardware and software requirements
1.6	February 23 <sup>th</sup> , 2010	Special Consideration added by Bea
1.7	August 16 <sup>th</sup> , 2010	Broken link to Dell web site eliminated along with some other modifications
1.8	August 3 <sup>rd</sup> , 2011	Versions of Operating Systems were updated and application names were updated

## 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 hardware, software and configuration specifications in order to install and run BLR BOSS products.

General **hardware** requirements: All servers should comply with:

- SATA hard drives technology or best
  - o For database servers, having some sort of RAID or any other mirroring system is mandatory
  - o Database server must have at least 500 GB for data partition
    - RPM preferred will be 10000 or 15000
  - o All servers should have at least 100 GB for the operating system partition
- 1 Gigabit network card adapters
  - o If Microsoft NLB is to be used, all Web servers must have at least two network cards
- 1 Gigabit backbone network

General **software** requirements: All servers should comply with:

- Microsoft Windows Server 2008 x64 or x32 operating system with all service packs, hot/security fixes and updates applied
- Microsoft Internet Information Services 7.0 installed in all Web servers
- Microsoft .Net Framework 1.1, 2.0, 3.0 and 3.5
- Adobe Flash Player installed in all Web and application servers
- Adobe Acrobat PDF Reader installed in all Web and application servers
- Antivirus software installed with virus list up to date
  - Symantec End Point is not recommended
- Microsoft SQL Server 2005/2008 Standard Edition installed in database server along with SQL Server Management Studio client software

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 must be created, the name assigned to it is irrelevant
- All servers must be registered in the Windows domain
- A Windows domain user called "*netadmin*" has to be created with Administrator permissions
- For all Web servers clustering of at least two servers per application set is recommended for load balancing and redundancy
- Remote access to BLR Support Team has to be provided, and credentials with proper access permissions have to be sent in order to install and configure (Windows Remote Desktop is recommended)

- All servers must have at least two hard drive partitions: One of 80 GB for the operating system, and the remaining space for the data and applications
- All servers should be placed in the same network segment (avoiding switch cascades)

## 2. Hardware and Software Requirements

### 2.1. BLR BOSS Core Components

<i>Software Component</i>	<i>Hardware / Software Needs</i>
BOSS Databases	<p><b>Hardware</b></p> <p>Small operation (up to 10 thousand bets per hour)</p> <ul style="list-style-type: none"> <li>- One 64 bit, two cores, Intel, 2.0 Ghz processor</li> <li>- 4 GB RAM</li> </ul> <p>Small-to-Mid-size operation (up to 30 thousand bets per hour)</p> <ul style="list-style-type: none"> <li>- Two 64 bit, two cores per processor, Intel, 3.0 Ghz processors</li> <li>- 8 GB RAM</li> </ul> <p>Mid-to-Big-size operation (up to 60 thousand bets per hour)</p> <ul style="list-style-type: none"> <li>- Four 64 bit, two cores per processor, Intel, 3.0 Ghz processors</li> <li>- 16 GB RAM</li> </ul> <p>Very-big-size operation (up to 120 thousand bets per hour)</p> <ul style="list-style-type: none"> <li>- Eight 64 bit, two cores per processor, Intel, 3.0 Ghz processors</li> <li>- 32 GB RAM</li> </ul> <p><b>Software</b></p> <ul style="list-style-type: none"> <li>- Microsoft Windows 2008 Server</li> <li>- Microsoft SQL Server 2005/2008 Standard Edition and SQL Server Management Studio</li> </ul>
Database server redundancy	According to main DB server specs and client's IT 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><b>One server per 600 concurrent connections</b></p> <ul style="list-style-type: none"> <li>- One 64 bit, two cores, Intel 3.0 Ghzs processor</li> <li>- 4 GB RAM</li> </ul> <p><b>Software</b></p> <ul style="list-style-type: none"> <li>- Microsoft Windows 2008 Server</li> </ul>

## 2.2.BLR BOSS Sportsbook

<b>Software Component</b>	<b>Hardware / Software Needs</b>
BOSS Sportsbook Call-Center Wagering Cache and Connection Management Services (aka RQ or CCM)	<b>One server per 60 workstations</b> <ul style="list-style-type: none"> <li>- Single 64 bit Intel 2.0 Ghz processor</li> <li>- 3 GB RAM</li> </ul> <b>Software</b> <ul style="list-style-type: none"> <li>- Microsoft Windows 2008 Server</li> </ul>
BOSS Sportsbook Internet Wagering	<b>One server per 400 concurrent connections</b> <ul style="list-style-type: none"> <li>- One 64 bit, two cores, Intel 3.0 Ghz processors</li> <li>- 3 GB RAM</li> </ul> <b>Software</b> <ul style="list-style-type: none"> <li>- Microsoft Windows 2008 Server</li> </ul>
BOSS Sportsbook Server Utilities <ul style="list-style-type: none"> <li>- Sport-Lines Publishing Services</li> </ul>	<b>Hardware</b> <ul style="list-style-type: none"> <li>- Single 64 bit, Intel, 2.0 Ghz processor</li> <li>- 3 GB RAM</li> </ul> <b>Software</b> <ul style="list-style-type: none"> <li>- Microsoft Windows 2008 Server</li> </ul>
BOSS Sportsbook Call-Center Clients <ul style="list-style-type: none"> <li>- Line Manager</li> <li>- Phone BetTaker</li> <li>- Bet Monitor</li> </ul>	<b>Hardware</b> <ul style="list-style-type: none"> <li>- Single 64 bit, Intel, 2.0 Ghz processor</li> <li>- 1 GB RAM</li> </ul> <b>Software</b> <ul style="list-style-type: none"> <li>- Microsoft Windows XP, 7 or Vista</li> </ul>

### **2.3.BLR BOSS Racebook**

<b>Software Component</b>	<b>Hardware / Software Needs</b>
BOSS Racebook Internet Wagering	<b>One server per 400 concurrent connections</b> <ul style="list-style-type: none"><li>- One 64 bit, Intel, two cores, 3.0 Ghz processors</li><li>- 3 GB RAM</li></ul> <b>Software</b> <ul style="list-style-type: none"><li>- Microsoft Windows 2008 Server</li></ul>
BOSS Racebook Feed Services	<b>Hardware</b> <ul style="list-style-type: none"><li>- One 64 bit, Intel, two cores, 3.0 Ghz processor</li><li>- 3 GB RAM</li></ul> <b>Software</b> <ul style="list-style-type: none"><li>- Microsoft Windows 2008 Server</li></ul>

## **2.4.BLR BOSS Casino**

<b>Software Component</b>	<b>Hardware / Software Needs</b>
BOSS Casino Gaming Engine	<b>One server per 400 concurrent connections</b> <ul style="list-style-type: none"><li>- One 64 bit, Intel, two cores, 3.0 Ghz processors</li><li>- 3 GB RAM</li></ul> <b>Software</b> <ul style="list-style-type: none"><li>- Microsoft Windows 2008 Server</li></ul>

### 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**

You might want to take into account these factors when deciding which database hardware to buy:

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)

## **5. Special Considerations**

1. Symantec End Point Protection antivirus software is not recommended by BLR as it might create conflict with Microsoft ASP.NET and some BLR products (especially due to network disconnections)
2. When 32 bit Microsoft SQL Server is provided on a 64 bit operating system, AWE option should be enabled from SQL Server Management options