



MRI

Version 10.4 System Requirements

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Every released version of MRI products gets its own release notes. However, guides are only updated when changes have been made to product features that require changes to documentation. If there is no guide specific to your version, use the most recent corresponding document (which may refer to an earlier version of the software).

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This chapter provides hardware and software requirements for preparing your network to run MRI for Windows.

These configurations are for typical installations. For multiple-server or other special installations, contact MRI Global Professional Services.

Installation Components

The table below describes the major required components for an MRI installation.

Component	Description
File server	The file server hosts MRI program files.
Database server	<p>The database server processes database queries and hosts the following types of MRI databases:</p> <ul style="list-style-type: none">▪ System database—Stores system information, such as licensing, security, and configuration.▪ Application database—Stores property and accounting information. You can have one or more application databases.
Note	
For best system performance, MRI Software recommends you host databases on a dedicated database server.	
Workstations	Workstations provide users access to MRI applications.
Terminal server (Optional)	The terminal server provides remote access to MRI for Windows using Terminal Services.

File Server Requirements

Component	Requirement
Operating system	<p>One of the following server operating systems:</p> <ul style="list-style-type: none"> ▪ Windows Server 2008 R2 all editions ▪ Windows Server 2012 R2 all editions <p>Note</p> <p>MRI Software performs the majority of functional and regression testing on the latest released versions. At the time of this release, the following are the latest versions:</p> <ul style="list-style-type: none"> ▪ Windows Server 2008 R2 SP1 ▪ Windows Server 2012 R2
Processor and memory	<p>For minimum requirements, refer to the system requirements for your server's operating system.</p> <ul style="list-style-type: none"> ▪ For Windows Server 2008 R2, refer to http://technet.microsoft.com/en-US/library/dd379511. ▪ For Windows Server 2012 R2, refer to http://technet.microsoft.com/en-us/library/dn303418.aspx. <p>Note</p> <p>Requirements increase as the number of concurrent users increases. More memory, processors, and higher speed will likely improve performance.</p>
Available disk space	<p>Disk space requirements are based on the amount of stored data and reports.</p>
Drive type	<p>Enterprise class storage, such as SCSI, SATA, or SSD.</p> <p>Note</p> <p>Disk subsystems can have dramatic impact on SQL Server performance and should be scaled to compensate for additional users and database loads.</p>

Database Server Requirements

Caution!

MRI Software does not support SQL Server on a domain controller or messaging system.

Component	Requirement
Operating system	<p>MRI 10.4 is supported on the following server operating systems:</p> <ul style="list-style-type: none"> ▪ Windows Server 2008 R2 all editions ▪ Windows Server 2012 R2 all editions <p>Note</p> <p>MRI Software performs the majority of functional and regression testing on the latest released versions. At the time of this release, the following are the latest versions:</p> <ul style="list-style-type: none"> ▪ Windows Server 2008 R2 SP1 ▪ Windows Server 2012 R2
Database system	<p>MRI 10.4 is supported on the following database systems:</p> <ul style="list-style-type: none"> ▪ Microsoft SQL Server 2012 all editions ▪ Microsoft SQL Server 2014 all editions <p>Note</p> <p>MRI Software performs most functional and regression testing on the latest released versions. At the time of this release, the following are the latest versions:</p> <ul style="list-style-type: none"> ▪ Microsoft SQL Server 2012 SP1 ▪ Microsoft SQL Server 2014 SP2
Processor and memory	<p>For minimum requirements, refer to the system requirements for your SQL Server version.</p> <ul style="list-style-type: none"> ▪ For SQL Server 2012, refer to http://msdn.microsoft.com/en-us/library/ms143506(v=sql.110).aspx. ▪ For SQL Server 2014, refer to https://msdn.microsoft.com/en-us/library/ms143506(v=sql.120).aspx. <p>Note</p> <p>Requirements increase as the number of concurrent users increases. More memory, processors, and higher speed will likely improve MRI performance.</p>

(Continued)

Component	Requirement
Available disk space	Disk space requirements are based on the amount of stored data and reports.
Drive type	Enterprise class storage, such as SCSI, SATA, or SSD.
	<p>Note</p> <p>Disk subsystems can have a dramatic impact on SQL Server performance and should be scaled to compensate for additional users and database loads.</p>

Network Workstation Requirements

Component	Requirement
Operating system	<p>MRI 10.4 is supported on the following operating systems:</p> <ul style="list-style-type: none"> ▪ Windows 7 Professional, Enterprise, or Ultimate (32-bit and 64-bit) ▪ Windows 8.1 Basic, Pro, or Enterprise (64-bit) ▪ Windows 10 Home, Pro, or Enterprise (64-bit) <p>Note</p> <p>Panini check scanners are only supported on Windows 7.</p>
Additional components	<ul style="list-style-type: none"> ▪ Microsoft .NET Framework 4.5.2 ▪ Microsoft Windows Installer 3.1 ▪ Microsoft Data Access Components (MDAC) 2.8 ▪ Microsoft Core XML Services (MSXML) 6.0 ▪ Microsoft SQL Server 2008 Native Client ▪ Microsoft SQL Server 2008 Management Objects ▪ Microsoft SQL Server 2012 Management Objects ▪ Microsoft SQL Server System CLR Types <p>Note</p> <p>Workstations connecting to MRI through Citrix do not require these components. However, these components are required on the Citrix server.</p>

(Continued)

Component	Requirement
Processor	<p>2 GHz recommended</p> <p>For minimum requirements, refer to the Microsoft system requirements for your operating system.</p> <ul style="list-style-type: none"> ▪ For Windows 7, refer to http://windows.microsoft.com/en-US/windows7/products/system-requirements. ▪ For Windows 8.1, refer to http://windows.microsoft.com/en-us/windows-8/system-requirements. ▪ For Windows 10, refer to https://www.microsoft.com/en-us/windows/windows-10-specifications.
Memory	<p>MRI Software recommends 2 GB or more of memory.</p> <p>For minimum requirements, refer to the Microsoft system requirements for your operating system.</p> <ul style="list-style-type: none"> ▪ For Windows 7, refer to http://windows.microsoft.com/en-US/windows7/products/system-requirements. ▪ For Windows 8.1, refer to http://windows.microsoft.com/en-us/windows-8/system-requirements. ▪ For Windows 10, refer to https://www.microsoft.com/en-us/windows/windows-10-specifications. <p>Note</p> <p>Memory requirements increase as additional applications are installed. Increasing memory on the workstation provides the greatest performance gain.</p>
Available disk space	<p>For minimum requirements, refer to the Microsoft system requirements for your operating system.</p> <ul style="list-style-type: none"> ▪ For Windows 7, refer to http://windows.microsoft.com/en-US/windows7/products/system-requirements. ▪ For Windows 8.1, refer to http://windows.microsoft.com/en-us/windows-8/system-requirements. ▪ For Windows 10, refer to https://www.microsoft.com/en-us/windows/windows-10-specifications. <p>Disk space requirements are based on the amount of stored data and reports.</p>
Connection to SQL Server	100 megabits per second (Mbps).

Terminal Server Requirements

Component	Requirement
Server operating system	<p>MRI 10.4 is supported on the following server operating systems:</p> <ul style="list-style-type: none"> ▪ Windows Server 2008 R2 all editions ▪ Windows Server 2012 R2 all editions <p>Note</p> <hr/> <p>Citrix can be used for additional functionality. MRI Software performs the majority of functional and regression testing on the latest released versions. At the time of this release, the following are the latest versions:</p> <ul style="list-style-type: none"> ▪ Windows Server 2008 R2 SP1 ▪ Windows Server 2012 R2
Additional components	<ul style="list-style-type: none"> ▪ Microsoft .NET Framework 4.5.2 ▪ Microsoft Windows Installer 3.1 ▪ Microsoft Data Access Components (MDAC) 2.8 ▪ Microsoft Core XML Services (MSXML) 6.0 ▪ Microsoft SQL Server 2008 Native Client ▪ Microsoft SQL Server 2008 Management Objects ▪ Microsoft SQL Server 2012 Management Objects ▪ Microsoft SQL Server System CLR Types <p>Note</p> <hr/> <p>Workstations connecting to MRI through Citrix do not require these components. However, the components are required on the Citrix server.</p>
Processor and memory	<p>For minimum requirements, refer to the Microsoft system requirements for your operating system.</p> <ul style="list-style-type: none"> ▪ For Windows Server 2008 R2, refer to http://technet.microsoft.com/en-US/library/dd379511. ▪ For Windows Server 2012 R2, refer to http://technet.microsoft.com/en-us/library/dn303418.aspx. <p>Note</p> <hr/> <p>Requirements increase as the number of concurrent users increases. More memory, processors, and higher speed will likely improve MRI performance.</p>
Drive type	Enterprise class storage, such as SCSI, SATA, or SSD.

Additional Tools

You may need to download the following programs for various purposes:

- For any system used to manage the MRI database server, download Microsoft SQL Server Management Studio or SQL Server Management Studio Express.
- To view MRI user guides or PDF report exports, download Adobe Reader.
- For any machine that will be generating or opening Microsoft Excel reports, download Excel 2007, 2010, or 2013.
- For any machine that will be generating or opening Microsoft Word reports, download Word 2007, 2010, or 2013.

This chapter provides hardware and software requirements for preparing your network to run MRI 10.4 for the Web and MRI•GO.

Note

MRI•GO is a feature of MRI for the Web powered by the MRI Search service. This document includes information about requirements for the MRI Search service.

These configurations are for typical web installations. For multiple-server or other special installations, contact MRI Global Professional Services.

Server Requirements

This section covers the minimum requirements for web servers, single servers, primary application servers, secondary application servers, API servers, and MRI Search servers.

Component	Requirement
Operating system	<p>MRI 10.4 is supported on the following server operating systems:</p> <ul style="list-style-type: none">Windows Server 2008 R2 all editionsWindows Server 2012 R2 all editions <p>Note</p> <p>MRI Software performs the majority of functional and regression testing on the latest released versions. At the time of this release, the following are the latest versions:</p> <ul style="list-style-type: none">Windows Server 2008 R2 SP1Windows Server 2012 R2
Processor and memory	<p>For minimum requirements, refer to the Microsoft system requirements for your server's operating system.</p> <ul style="list-style-type: none">For Windows Server 2008 R2, refer to http://technet.microsoft.com/en-US/library/dd379511.For Windows Server 2012 R2, refer to http://technet.microsoft.com/en-us/library/dn303418.aspx. <p>Note</p> <p>Requirements increase as the number of concurrent users increases. More memory, processors, and higher speed will likely improve MRI performance.</p>
Drive type	Enterprise class storage, such as SCSI, SATA, or SSD.

Workstation Requirements

Component	Requirement
Web browser for accessing MRI for the Web	MRI 10.4 is supported on the following browsers: <ul style="list-style-type: none">▪ Internet Explorer—Version 11▪ Chrome—Latest two versions▪ Firefox—Latest two versions▪ Safari—Latest two versions▪ Microsoft Edge
Device with web browser for accessing MRI	MRI 10.4 is supported on the following devices and respective browsers: <ul style="list-style-type: none">▪ iPad 2 (iOS 7) and later with Mobile Safari▪ Android tablet with the latest two versions of Chrome▪ Windows 8 RT with Internet Explorer 11
Display magnification	MRI Software recommends setting your operating system and browser at 100% magnification.

Note

Panini check scanners are only supported on Windows 7.

Additional Software Requirements

Refer to the table below for software requirements pertaining to each of the following server types:

- Single servers
- Web servers
- Primary application servers
- Secondary application servers
- API servers

Application	Action
Microsoft Internet Information Services (IIS) 7.X or 8.X	<p>Note</p> <p>This requirement does not apply to primary or secondary application servers.</p> <hr/> <p>The installer checks your server for IIS, and if it is not present, you will be directed to install it before continuing. IIS can be installed from the Windows Server installation file.</p> <p>If you use Windows Server 2008 R2 on your web server, you must ensure IIS 7.5 is installed with specific role services, such as ASP.NET and IIS 6.0 metabase compatibility. For more information, refer to the <i>Installation Guide</i>.</p>
Microsoft Message Queuing Center (MSMQ)	The installer checks your server for MSMQ. If MSMQ is not present, you will be directed to install it before continuing.
.NET Framework 4.5.2	The required version of .NET Framework is included with the installation file. If your server does not have the correct version of .NET Framework or does not have .NET Framework at all, you can have the correct version installed on a server as part of the installation process.
Microsoft Data Access Components (MDAC) version 2.8 or later	This application is required for database connectivity. The installer checks your server for MDAC, and if it is not present, you will be directed to install it before continuing.

Single Sign-On (SSO) Requirements

3

SSO is an optional feature for the web version of MRI that requires a WS-Federation identity provider (IdP).

Component	Requirement
WS-Federation IdP	<p>MRI SSO supports the following IdPs:</p> <ul style="list-style-type: none">▪ Microsoft Active Directory Federation Services (AD FS) 3.1, running on Windows Server 2012 R2▪ Microsoft Azure Active Directory▪ Okta <p>Note</p> <hr/> <p>HTTPS is required for both the IdP and the MRI web servers.</p> <p>Clients with Resident Connect or Access 24/7 should install the Resident Connect Password Reset plug-in, which allows MRI users to update their Resident Connect and Access 24/7 passwords. For more information about installing this plug-in, refer to the <i>Installation Guide</i>.</p> <hr/>

MRI offers a highly scalable software platform with many different environment deployment options to meet the individual needs of clients. Choosing the most appropriate hardware and server deployment options for an MRI environment requires the consideration of various system requirements, basing many of the specific implementation details on client preference, existing system infrastructure, established IT policies and procedures, and so on.

The system deployment options outlined in this chapter each represent a single MRI environment. Each option is designed to meet the most common requirements for various sizes of MRI implementations. To meet certain IT, security, or business process requirements, you may need to deploy additional MRI environments. For example, separate MRI environments can be created for development, testing, or preproduction purposes.

Note

The specific design requirements for optimal system performance vary based on usage characteristics and the amount of data managed by the system. The design options in this chapter are guidelines and should be validated by performing preproduction load and performance tests.

Considerations

MRI Software recommends scaling web, application, and search roles horizontally, using multiple systems with relatively lower specifications in a load-balanced configuration. This method of adding resources is especially important for Elasticsearch servers, which are designed specifically for a horizontal scaling model.

Storage performance is a very large factor in the overall performance of an MRI environment. If you are experiencing performance issues, make sure that both Microsoft SQL and Elasticsearch servers have a fast storage configuration.

When determining the most appropriate MRI environment deployment option, you should also consider the following:

- Sophistication of the internal IT function
- Complexity of existing business applications and IT infrastructure elements
- Current and projected number of MRI users
- Projected size of the MRI application databases
- Security or remote access requirements, such as the use of a perimeter network or isolated network segment

Option 1: MRI Single Server

This deployment option is the minimal deployment of MRI for the Web. It is commonly used for small MRI implementations or small-scale testing environments. This MRI environment design consists of one server.

You should consider this option if you meet the following criteria:

- Between 1 and 5 MRI users
- Less than 10-GB database
- No requirements for high system availability
- Minimal growth expectations

Components

MRI Server

The MRI server is the physical or virtual system that runs all elements of the MRI environment. In addition to the MRI recommended requirements for this server type, MRI recommends the following specifications:

System Specification	Recommendation
Memory	8 or more GB
CPU/vCPU cores	2 or more
Available storage	50 or more GB

You will need to install the following MRI components on your MRI server:

Note

For more information about installing these components, refer to the *Installation Guide*.

- MRILogin
- MRI Administration Console
- Single server configuration of MRI for the Web

Note

When installing MRI for the Web, you can select the **Single Server** option or the **Single Server with External Report Storage** option.

- All components of the MRI Search service
- Microsoft SQL Server that is hosting the MRI system database, MRI application database, and the MRI Search database

Option 2: Dedicated SQL Server

Similar to Option 1, this deployment option for MRI for the Web is commonly used for small MRI implementations or small-scale testing environments. Including a dedicated Microsoft SQL Server system provides improved performance and flexibility for system operation. This MRI environment design consists of two servers.

You should consider this option if you meet the following criteria:

- Between 5 and 30 MRI users
- Database between 10 and 20 GB
- Need for additional MRI application databases, such as an MRI application test database
- No requirements for high system availability
- Minimal growth expectations

Components

MRI Server

This MRI server is the system that runs all elements of the MRI environment, except for Microsoft SQL databases. In addition to the MRI recommended requirements for this server type, MRI recommends the following specifications:

System Specification	Recommendation
Memory	8 or more GB
CPU/vCPU cores	2 or more
Available storage	50 or more GB

You will need to install the following MRI components on your MRI server:

Note

For more information about installing these components, refer to the *Installation Guide*.

- MRILogin
- MRI Administration Console

- Single server configuration of MRI for the Web

Note

When installing MRI for the Web, you can select the **Single Server** option or the **Single Server with External Report Storage** option.

- All components of the MRI Search service

Microsoft SQL Server

This server hosts the MRI system database, any MRI application databases, and the MRI Search database. In addition to the MRI recommended requirements for this server type, MRI recommends the following specifications:

System Specification	Recommendation
Memory	8 or more GB
CPU/vCPU cores	2 or more
Available storage	50 or more GB

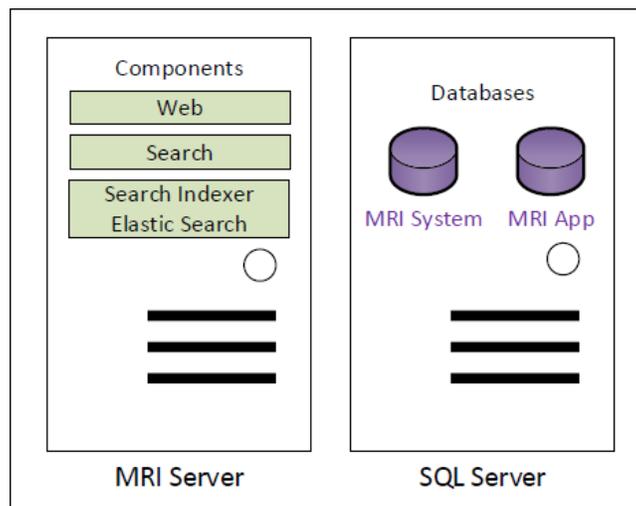


Figure 4-1. Dedicated SQL Server Design

Option 3: MRI for the Web Farm, Tier 1

This deployment option for MRI for the Web provides a starting point for a scalable MRI environment. It is commonly used for small to medium MRI implementations or environments where usage growth is expected. This MRI environment design consists of three or more MRI servers. MRI Software recommends using a dedicated SQL server.

You should consider this option if you meet the following criteria:

- Between 20 and 50 MRI users
- Database between 10 and 40 GB
- Need for additional MRI application databases, such as an MRI application test database
- Need for improved performance for more MRI users and report processing
- Some anticipated growth

Components

MRI Application Server

The MRI application server is the system that hosts the MRI for Windows network installation location (MRICMN) and has the Primary Application Server server type, which is selected during the MRI for the Web installation. In addition to the MRI recommended requirements for this server type, MRI recommends the following specifications:

System Specification	Recommendation
Memory	8 or more GB
CPU/vCPU cores	2 or more
Available storage	50 or more GB

You will need to install the following MRI components on your MRI server:

Note

For more information about installing these components, refer to the *Installation Guide*.

- MRILogin
- MRI Administration Console

- MRI for the Web farm with the Primary Application Server configuration
- The MRI Search indexer service and Elasticsearch

Note

Additional configuration will be required to support MRI Search. If you need assistance with this configuration, contact MRI Global Client Support.

MRI Web Server

This server is the system that has the Web Server server type, which is selected during the MRI for the Web installation. In addition to the MRI recommended requirements for this server type, MRI recommends the following specifications:

System Specification	Recommendation
Memory	8 or more GB
CPU/vCPU cores	2 or more
Available storage	50 or more GB

You will need to install the following MRI components on your MRI web server:

Note

For more information about installing these components, refer to the *Installation Guide*.

- MRI for the Web farm with the Web Server configuration
- MRI Search API website

Microsoft SQL Server

This server hosts the MRI system database, any MRI application databases, and the MRI Search database. In addition to the MRI recommended requirements for this server type, MRI recommends the following specifications:

System Specification	Requirements
Memory	16 or more GB
CPU/vCPU cores	4 or more
Available storage	100 or more GB

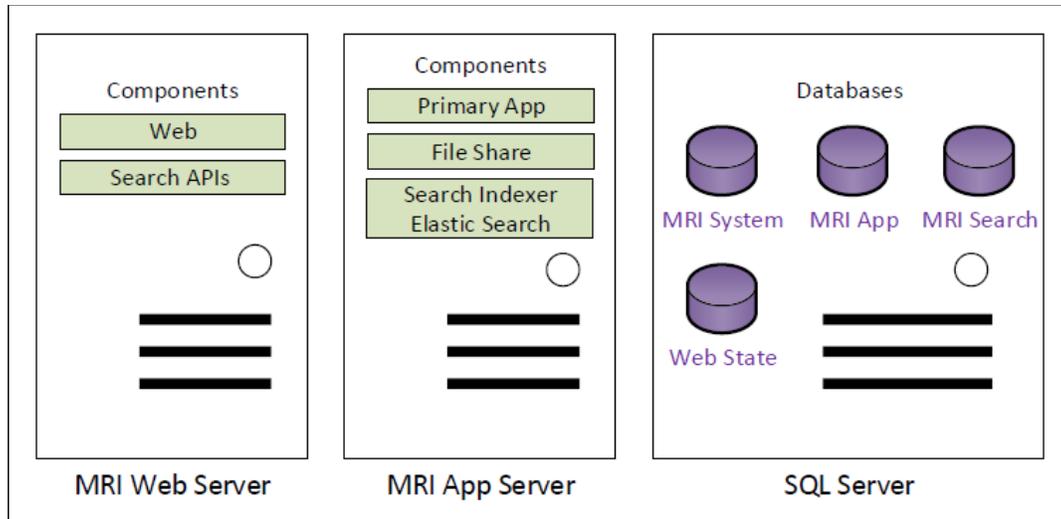


Figure 4-2. MRI Web Farm—Tier 1

Option 4: MRI for the Web Farm, Tier 2

This deployment option for MRI for the Web is commonly used for medium to large MRI implementations or environments where usage growth is expected. This MRI environment design consists of five or more MRI servers.

You should consider this option if you meet the following criteria:

- Between 50 and 200 MRI users
- Medium to large MRI application databases
- Need for additional MRI application databases, such as an MRI application test database
- Need for improved performance for more MRI users and report processing
- Large anticipated growth

Components

MRI Application Server

The MRI application server is the system that hosts the MRI for Windows network installation location (MRICMN) and has the Primary Application Server server type, which is selected during the MRI for the Web installation. In addition to the MRI recommended requirements for this server type, MRI recommends the following specifications:

System Specification	Recommendation
Memory	8 or more GB
CPU/vCPU cores	2 or more
Available storage	50 or more GB

You will need to install the following MRI components on your MRI server:

Note

For more information about installing these components, refer to the *Installation Guide*.

- MRILogin
- MRI Administration Console
- MRI for the Web farm with the Primary Application Server configuration
- The MRI Search indexer service and Elasticsearch

Note

Additional configuration will be required to support MRI Search. If you need assistance with this configuration, contact MRI Global Client Support.

Secondary Application Server

This server is the system that has the Secondary Application Server server type, which is selected during the MRI for the Web installation. MRI secondary application servers are used to process asynchronous tasks, such as report processing. Although you only need one secondary application server for this option, you can add more servers to scale out this system based on processing demand. In addition to the MRI recommended requirements for this server type, MRI recommends the following specifications:

System Specification	Recommendation
Memory	8 or more GB
CPU/vCPU cores	2 or more
Available storage	50 or more GB

You will need to install the following MRI components on your MRI server:

Note

For more information about installing these components, refer to the *Installation Guide*.

- MRI for the Web farm with the Secondary Application Server configuration
- The MRI Search indexer service and Elasticsearch

MRI Web Server

This server is the system that has the Web Server server type, which is selected during the MRI for the Web installation. For this option, you will need at least two MRI web servers. These servers should each be scaled to support approximately 75 to 100 concurrent user sessions. MRI Software recommends a load-balanced configuration with at least N+1 redundancy. In addition to the MRI recommended requirements for this server type, MRI recommends the following specifications:

System Specification	Recommendation
Memory	8 or more GB
CPU/vCPU cores	2 or more
Available storage	50 or more GB

You will need to install the following MRI components on your MRI web server:

Note

For more information about installing these components, refer to the *Installation Guide*.

- MRI for the Web farm with the Web Server configuration
- MRI Search API website

Microsoft SQL Server

This server hosts the MRI system database, any MRI application databases, and any MRI Search databases. You can also separate these databases across different SQL servers. To achieve high availability, MRI Software recommends setting up failover clustering. In addition to the MRI recommended requirements for this server type, MRI recommends the following specifications:

System Specification	Recommendation
Memory	16 GB
CPU/vCPU cores	4 or more
Available storage	High performance storage configuration, following Microsoft best practices for SQL Server

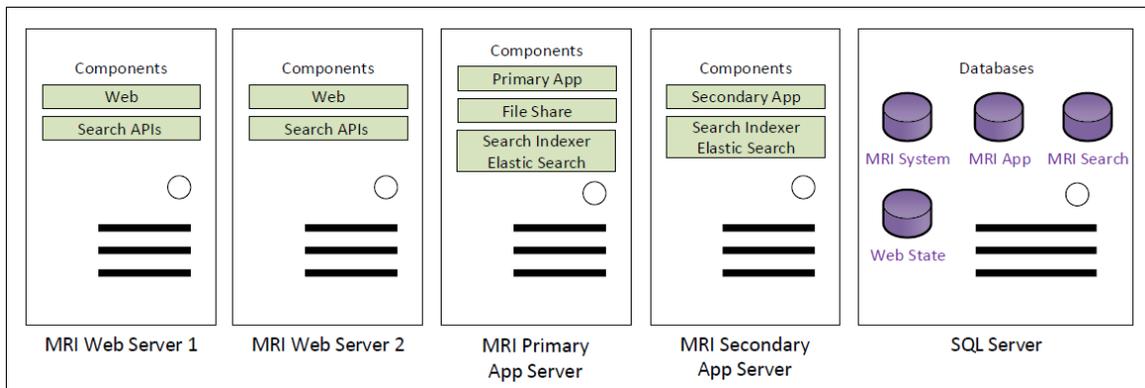


Figure 4-3. MRI Web Farm—Tier 2

Option 5: MRI for the Web Farm, Tier 3

This highly scaled deployment option for MRI for the Web is intended for large or enterprise-level MRI implementations and provides maximum scalability, performance, and availability. This MRI environment design consists of 12 or more MRI servers.

You should consider this option if you meet the following criteria:

- 300 or more MRI users
- Large MRI application databases
- Need for additional MRI application databases, such as an MRI application test database
- Need for high performance and scalability, including scalable report processing
- Large anticipated growth

Components

MRI Application Server

The MRI application server is the system that hosts the MRI for Windows network installation location (MRICMN) and has the Primary Application Server server type, which is selected during the MRI for the Web installation. In addition to the MRI recommended requirements for this server type, MRI recommends the following specifications:

Note

To provide the highest levels of system availability, MRI Software recommends using a virtual system with a high availability solution, such as VMware High Availability (HA).

System Specification	Recommendation
Memory	8 or more GB
CPU/vCPU cores	2 or more
Available storage	50 or more GB

You will need to install the following MRI components on your MRI server:

Note

For more information about installing these components, refer to the *Installation Guide*.

- MRILogin
- MRI Administration Console
- MRI for the Web farm with the Primary Application Server configuration

Note

High volume MRI queue workers should be set to **0** on the primary application server to force processing to occur on the secondary application servers.

Secondary Application Server

This server is the system that has the Secondary Application Server server type, which is selected during the MRI for the Web installation. MRI secondary application servers are used to process asynchronous tasks, such as report processing. Although you only need two secondary application servers for this option, you can add more servers to scale out this system based on processing demand. In addition to the MRI recommended requirements for this server type, MRI recommends the following specifications:

System Specification	Recommendation
Memory	8 or more GB
CPU/vCPU cores	2 or more
Available storage	50 or more GB

On this MRI server, you will only need to install MRI for the Web in a farm with the Secondary Application Server configuration.

Note

For more information about installing this component, refer to the *Installation Guide*.

MRI Web Server

This server is the system that has the Web Server server type, which is selected during the MRI for the Web installation. For this option, you will need at least four MRI web servers. These servers should each be scaled to support approximately 75 to 100 concurrent user sessions. MRI Software recommends a load-balanced configuration with at least N+1 redundancy. In addition to the MRI recommended requirements for this server type, MRI recommends the following specifications:

System Specification	Recommendation
Memory	8 or more GB
CPU/vCPU cores	2 or more
Available storage	50 or more GB

You will need to install the following MRI components on your MRI web server:

Note

For more information about installing these components, refer to the *Installation Guide*.

- MRI for the Web farm with the Web Server configuration
- MRI Search API website

Microsoft SQL Server

This server hosts the MRI system database, any MRI application databases, and any MRI Search databases. You can also separate these databases across different SQL servers. To achieve high availability, MRI Software recommends setting up failover clustering. In addition to the MRI recommended requirements for this server type, MRI recommends the following specifications:

System Specification	Recommendation
Memory	16-32 GB
CPU/vCPU cores	8 or more
Available storage	High performance storage configuration, following Microsoft best practices for SQL Server

MRI Search Service Server

This server is the system that has the MRI Search service installed. For this option, you will need at least three MRI Search servers running Elasticsearch.

Note

- MRI Search API servers must be reachable by the web browser on client systems. For environments that are accessible from the Internet, the API servers can be located in a perimeter network.
- You can separate Elasticsearch, the MRI Search indexer service, and the MRI Search API website onto their own servers. You can also separate the Elasticsearch cluster roles (Master, Client, and Data) onto different servers.

In addition to the MRI recommended requirements for this server type, MRI recommends the following specifications:

System Specification	Recommendation
Memory	8-16 GB
CPU/vCPU cores	2-4
Available storage	50 or more GB

On this MRI server, you will only need to install the MRI Search indexer service and Elasticsearch.

Note

For more information about installing these components, refer to the *Installation Guide*.

File Server

This server provides a dedicated storage solution for report output files, software installation files, and so on. To achieve high availability, MRI Software recommends setting up failover clustering. In addition to the MRI recommended requirements for this server type, MRI recommends the following specifications:

System Specification	Recommendation
Memory	4 GB
CPU/vCPU cores	2 or more
Disk storage	100 or more GB
	Note
	Disk storage is based on report archival requirements.

You will need to install the following MRI components on your MRI file server:

Note

For more information about installing these components, refer to the *Installation Guide*.

- MRI for Windows network installation location (MRICMN)
- Document and report storage shares

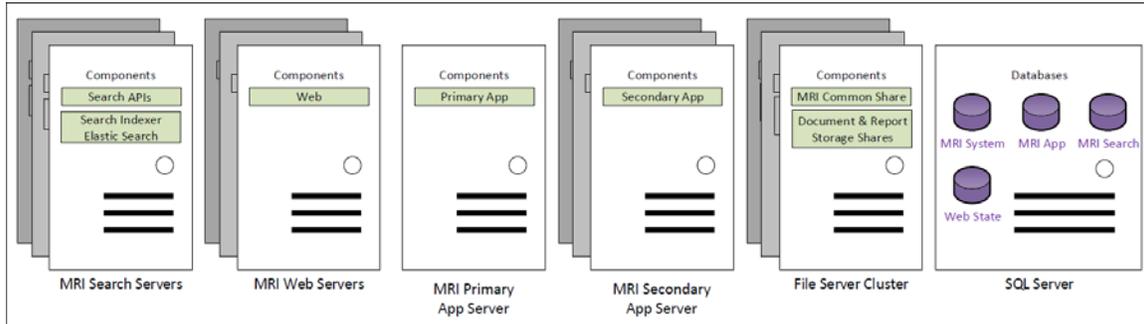


Figure 4-4. MRI Web Farm—Tier 3

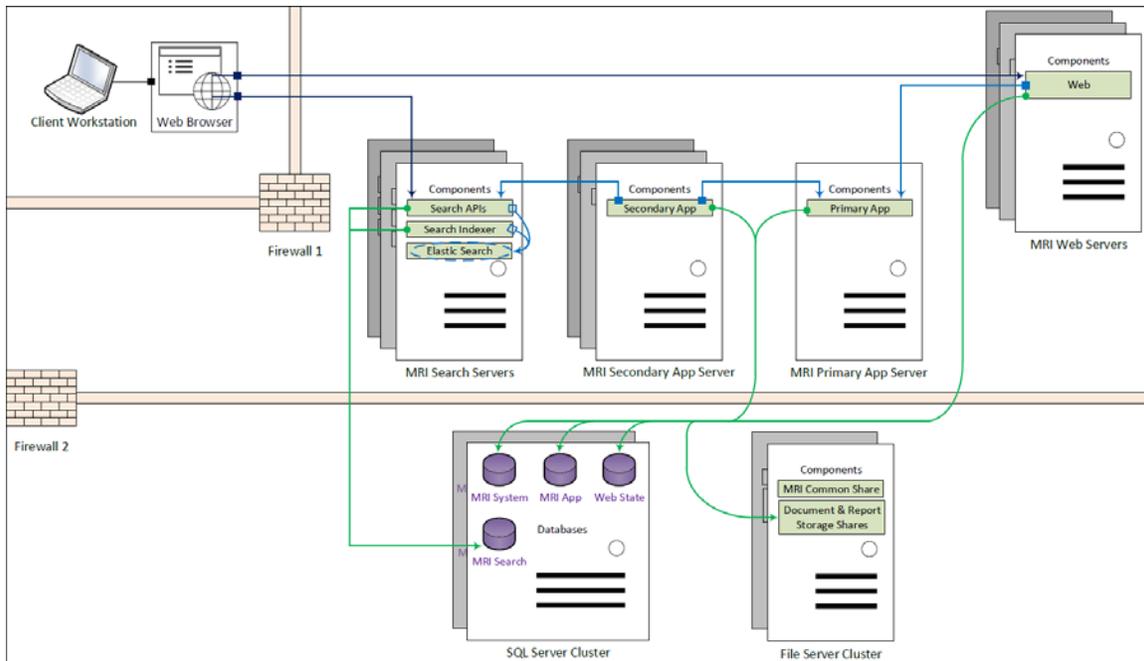


Figure 4-5. MRI Web Farm—Tier 3 Data Flow