

IncidentMonitor™

Server Specification Datasheet

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IncidentMonitor™ Requirements

In order to run the IncidentMonitor™ system, you will require the following hardware and software pieces outlined in this document. The hardware platform to run IncidentMonitor™ is recommended to be something on the Microsoft Windows Server 2016, 2012, 2008 Hardware Compatibility List (HCL). The specific server configuration options are outlined below in the following sections. The number of users that your environment needs to support will drive the exact configuration recommendation. Keep in mind that these are minimum specifications that will provide a system that is reasonable from a performance perspective. Although 18Gb disk drives are specified below, this is used to represent a minimum disk configuration. You can substitute 18Gb for whatever minimum disk drives are available. For example, at the time of this writing you can't buy 18Gb disk drives anymore, 36Gb disk drives are the minimum that can be purchased.

Single Server Installation – Hardware

This configuration is well suited to environments where there are up to 50 resources of moderate use supporting a user community of 1,500 light to moderate users. Refer to the Determining Server(s) and Disk Configuration section below for specific information.

Single Server - Fault Resilient

A minimum server configuration that can sustain server component failures (fault resilient) should be equipped as follows:

- Intel or compatible (XEON 3Ghz or higher) dual processor server
- 6 Gb memory (data set size and number of users may require more memory, ask for details)
- RAID disk controller with 32Mb of cache or better with write back cache enabled
 - RAID 5 – 3 x 18Gb disk drives, or
 - RAID 1 – 2 x 18Gb disk drives, or
 - RAID 1/0 – 4 x 18Gb disk drives
- 2 x 100Mbps network card or better

Multiple Server Installation – Hardware

This configuration is well suited to environments where a single server setup may not be sufficient for the number of resources or user community that may use the system. Sizing of these systems is really based on your environment. Refer to the Determining Server(s) and Disk Configuration section below for specific information.

Database Server

This is one of the critical items in the configuration and therefore should be designed to provide sufficient performance and tolerance to component failures within the server. A minimum server configuration should be equipped as follows:

- Intel or compatible (XEON 3Ghz or higher) dual processor server
- 16 Gb memory (data set size and number of users may require more memory, ask for details)
- RAID disk controller with 64Mb of cache or better with write back cache enabled
 - RAID 1 – 2 x 18Gb disk drives for operating system
 - RAID 1 – 2 x 18Gb disk drives for the transaction log
 - RAID 1/0 – 4 or more 18Gb for the data storage
- 100Mbps network card



Web Server / Transaction Server

A minimum server configuration should be equipped as follows:

- Intel or compatible (XEON 3Ghz or higher) dual processor server
- 8 Gb memory
- RAID disk controller with 32Mb of cache or better with write back cache enabled
 - RAID 1 – 2 x 18Gb disk drives for operating system
- 100Mbps network card

High Availability Multiple Server Installation – Hardware

This configuration is well suited to environments where 7x24 operations are a must even in times of server failures. In addition, this configuration allows you to add servers into the environment to handle a large number of users. Sizing of these systems is really based on your environment. Optionally, you can configure the database server as a cluster to provide maximum availability.

Database Server

This is one of the critical items in the configuration and therefore should be designed to provide sufficient performance and tolerance to component failures within the server. A minimum configuration would include two servers equipped as follows in a cluster configuration:

- Intel or compatible (XEON 3Ghz or higher) dual processor server
- 32 Gb (data set size and number of users may require more memory, ask for details)
- Shared RAID disk system with RAID controllers using 64Mb of cache or better with write back cache
 - enabled (if shared disk sub system supports it)
 - RAID 1 – 2 x 18Gb disk drives for operating system
 - RAID 1 – 2 x 18Gb disk drives for the transaction log
 - RAID 1/0 – 4 or more 18Gb for the data storage
- 2 x 100Mbps network card

Web Server / Transaction Server

For high availability environments, using multiple web servers and transaction servers coupled with Windows Load Balancing Services (WLBS) will produce an environment that can sustain complete individual server failures and still keep on functioning on the remaining servers. A minimum server configuration should be equipped as follows:

- Intel or compatible (XEON 3Ghz or higher) dual processor server
- 8 Gb memory
- RAID disk controller with 32Mb of cache or better with write back cache enabled
 - RAID 1 – 2 x 18Gb disk drives for operating system
- 100Mbps network card



Software Requirements

Server – Software Requirements

- Windows Server 2016, 2012, 2008, Windows 2008 R2
- For high availability environments, Windows Load Balancing Services (WLBS) and Microsoft Cluster
- Services (MSCS) for Windows 2008/2012/2016 operating systems that offer these features
- SQL Server 2016, 2014, 2012, 2008, SQL Server 2005 SP2 or above with cumulative hot fixes
- IIS 6.0 or above with SMTP Service
- Appropriate licenses for products and configuration (ask for details)
- Microsoft x86 .NET Framework 2.0
- Microsoft Data Access Components (MDAC) version 2.71 or above

Client – Hardware Minimum Requirements

- Intel or compatible (Pentium IV 1Ghz or higher) processor
- Required memory in accordance with the operating system specifications + 50 Mb
- 50 Mb free disk space
- 1280 x 1024 screen resolution recommended, 1024 x 768 screen resolution requires scrolling on some screens

Client – Software Requirements

- Windows 10, Windows 8.X, Windows 7,
- Internet Explorer 10.x or above
- Chrome version 32.x and above



Disk Considerations – RAID Technology

The most important disk consideration in an IncidentMonitor™ implementation is the database server. If your environment is going to be all on one server, then it is the Web/database server disk system that should be designed properly. When it comes to sizing the disk system in your server, you should consider the following points:

- Disk space required for data storage.
- Number of drives required to sustain the required data throughput (read and write operations) for your system taking into consideration the type of Redundant Array of Inexpensive Disks (RAID) that you will use.
- The number and type of disk failures that you want to protect against when it comes to avoiding data loss and system outages.
- Amount of memory on the RAID controller card for data caching operations. Most RAID controllers today have a minimum of 64Mb on board memory for disk caching.
- Make sure the RAID controller supports write back cache (faster writes). You should use a controller that has a battery backup module on the controller to protect data that is in the controller's memory.

The following chart outlines the common types of RAID that are used in the industry today and the strengths and weaknesses of each.

RAID Level	Minimum Number of Drives	Description	Strengths	Weakness
RAID 0	2	Data striping without redundancy	Highest performance	No data protection; One drive fails, all data is lost
RAID 1	2	Disk mirroring	Very high performance; Very high data protection; Very minimal penalty on write performance	High redundancy cost overhead; Because all data is duplicated, twice the storage capacity is required
RAID 5	3	Block-level data striping with distributed parity	Best cost/performance for transaction-oriented networks; Good performance, reasonable data protection; Supports multiple simultaneous reads and writes;	Write performance is slower than RAID 0 or RAID 1; the more drives in the array the higher the probability of multiple disk failures in the array causing total drive failure
RAID 1/0	4	Combination of RAID 0 (data striping) and RAID 1 (mirroring)	Highest performance, highest data protection (can tolerate multiple drive failures in different matched drives)	High redundancy cost overhead; Because all data is duplicated, twice the storage capacity is required



Determining Server(s) and Disk Configuration

The following chart outlines the number of resource licenses in IncidentMonitor™ and the recommended server(s) and drive system configuration for your database server or if all on one server, the Web/database server. To find your configuration, look down the left column and locate the number of resources for your environment. Then look across the row to the column that matches your desired cost/performance and data protection requirement. The number in the column represents the number of drives to be used and the RAID configuration for your system. The Web Servers, MTS Servers and DB Servers columns represent the number of the specific type of server for your implementation. In certain cases all services can be performed by a single server. If you see Combined in the list it means the server functions from the columns can be combined onto a single server.

Resources	Maximum Performance Maximum Data Protection RAID 1/0	High Performance High Data Protection RAID 1	Best Cost/Performance Good Data Protection RAID 5	Web Servers	MTS Servers	DB Servers
10	4	2	3	1 – combined		
20	4	2	3	1 – combined		
50	4	4	3	1 – combined		
100	6	4	4	1 – combined		1
250	6	Use RAID 1/0	Use RAID 1/0	1 – combined		1
500	8	Use RAID 1/0	Use RAID 1/0	1	1	1

