Operating Environment Requirements:
Parity™ Version 6.0.2

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This document describes the specific site and environmental requirements for the Bit9 Parity environment. *It is a summary only.* For a successful installation, you must use the *Installing Parity* manual for detailed descriptions of installation requirements and procedures.

Parity Server System Requirements:

- Windows Server OS: See the architecture tables for supported versions
  Note: To support more than 2000 clients, a 64-bit OS is required to take full advantage of installed RAM.
- A clean operating system installation; recommend patching to current level
- Microsoft IIS corresponding to your Windows Server choice; configured as described in the *Installing Parity* guide; recommend patching to current level
- Microsoft .NET 3.5 SP1 installed and patched to current level
- Microsoft Installer version 4.5 or newer
- Static IPv4 IP address only (no DHCP) with an assigned FQDN or alias;
- 1 Gbps connection required on both ParityServer and SQL Server (Note: See additional conditions for "Very Large" deployment on two-tier system)
- Syslog/SIEM manager (optional)
- Reliable backup mechanism, such as access to a remote network share
- Server must be a member of a domain if AD integration is utilized
- Xeon/i7 processors/cores running at least 3GHz (or AMD processor equivalent)
- Dedicated SQL Server or SQL instance configured to use 80% of installed RAM
  See the architecture tables for supported versions
- Browsers: Microsoft Internet Explorer Version 8.0 or higher, Mozilla Firefox 6.0 or higher and Chrome 14.0 or higher are supported for Parity Console, the interface to Parity Server

Parity Server Communication Ports:

- From Parity Server outbound to Parity Knowledge Service on TCP port 443 (SSL)
  ° Allow connection to **services.bit9.com** (Proxy connections are supported)
- From Parity Console inbound to Parity Server on TCP port 443
- (Optional) Syslog/SIEM connections outbound from Parity Server on UDP port 514 (configurable)

Note About Dynamic Endpoint Environments:

Parity endpoints that contain more than 20,000 interesting files and/or are modifying more than 400 files per day are considered to be "dynamic". Dynamic endpoints require more Parity Server resources to maintain, and are therefore considered to occupy more than one endpoint per OER requirements.
Some examples of dynamic endpoints:
- Software developer machine
- Virtual machine, frequently going back to its snapshot
- File server
As a rule of thumb, count dynamic endpoints as two endpoints when sizing your hardware.

Parity Server Architecture:

Parity Server can be deployed in 1-tier or 2-tier architecture. You may choose to use the 2-tier architecture even if you have fewer than 5000 clients to improve performance or plan for future growth.

One Tier

Deployment	Endpoints	SQL Server * SQL Edition	1-Tier Parity Server + SQL Server		
			Platform **	Memory	CPU Cores
Small	1 - 300	Express R2	32-bit	4 GB	1
Medium	300 - 5,000	Standard	64-bit	16 GB	2
Large	5,000 - 15,000	Standard	64-bit	32 GB	8
Very Large	15,000 - 40,000	Enterprise	64-bit	64 GB	10

- * Supported versions of SQL server are: 2005 (SP4 and above), 2008 (SP3 and above) and 2008 R2(SP1 and above)
- ** Platform assumes Windows 2003 or better for 32-bit machine, and Windows 2008 R2 for 64-bit machine

Two Tier

Deployment	Endpoints	SQL Server* SQL Edition	2-Tier					
			Parity Server			SQL Server		
			Platform **	Memory	CPU Cores	Platform **	Memory	CPU Cores
Medium	300 - 5,000	Standard	32-bit	4 GB	2	64-bit	16 GB	2
Large	5,000 - 15,000	Standard	64-bit	4 GB	4	64-bit	32 GB	4
Very Large***	15,000 - 40,000	Enterprise	64-bit	8 GB	6	64-bit	64 GB	10

- * Supported versions of SQL sewer are: 2005 (SP4 and above), 2008 (SP3 and above) and 2008 R2(SP1 and above)
- ** Platform assumes Windows 2003 or better for 32-bit machine, and Windows 2008 R2 for 64-bit machine
- *** Requires dual NIC's; one for agent to server and second for server to SQL
- Latency between Parity server and SQL server less than 1ms with network throughput greater than 800 Mb/s

SQL Storage

General notes:
- OS and paging file must be on separate drives from SQL data
- Any AV software has to be configured to exclude SQL data directories
- Backups should be done off working hours (after 2AM to avoid conflicts with other server maintenance tasks)
- DAS (Direct attached storage) is strongly recommended
- When using SAN, provided numbers assume bandwidth that is dedicated to Parity database

Deployment	Endpoints	Database Size (GB)	DAS (Locally attached)			SAN		
			Spindle count	RAID	Min RPM	Min IOPS	Read vs. Write %	Avg. Write Size
Small	1 - 300	4	2	1	15K	500	40:60	8 KB
Medium	300 - 5,000	50	8	1+0	15K	3,000		
Large	5,000 - 15,000	150	12	1+0	15K	*Contact Bit9 Sales Engineering*		
Very Large	15,000 - 40,000	400	18	1+0	15K			

Parity Server Virtualization:

- Bit9 supports the minimum hardware configurations, listed above, in a virtualized environment using VMware ESX Server 4.01+; recommend patching to current level
- Memory meeting the hardware configurations must be allocated as "reserved"
- A minimum of dual virtual processors is required for all configurations
- For virtualized servers underlying disk architecture must still meet aforementioned minimum requirements

Parity Agent Operating System Requirements

- Windows XP SP3 or greater (32-bit)
- Windows Server 2003 SP2 or greater (32-bit)
- Windows Server 2003 SP2 (64-bit) – does not support Parity's memory protection rules
- Windows Vista SP2 or greater (32-bit or 64-bit)
- Windows Server 2008 SP2 or greater (32-bit or 64-bit)
- Windows Server 2008 R2 SP1 (64-bit)
- Windows 7 SP1 or greater (32-bit or 64-bit)
- WePOS SP2 or higher (filter manager, **fltMgr.sys**, required)
- Windows Embedded POSReady 2009 (filter manager, **fltMgr.sys**, required)
- Windows XP Embedded SP2 with FP 2007 or SP3 (filter manager, **fltMgr.sys**, required)

Parity Agent Hardware Recommendations

Agent systems should be in compliance with all hardware requirements for the OS you are running. Consider all processes you run on the agent systems when determining hardware configuration.

- **RAM:** Parity Agent normally uses 25-50MB of RAM. Systems running WePOS, POSReady or XP Embedded should have at least 512MB of RAM; other supported Windows OSs should have at least 1GB of RAM.
- **Disk Space:** Parity Agent requires at least 200MB of free disk space on the system volume of each agent computer; 500MB is recommended. Actual storage requirements depend on factors such as the number of files on the computer and the Parity Server configuration. If Parity is installed to a location other than the system volume, 100MB of free space must be available on the installation volume.

Parity Agent Communication Ports

- From Parity Agent inbound to Parity Server on TCP ports 41000 and 41002 (configurable)
- From Parity Agent inbound to Parity Server on TCP port 443 for Parity Agent upgrade
    - ° (Optional) Can be configured to use a Windows file server instead