



Enterprise Edition Technology Overview

The Scholastic Achievement Manager, SAM, is the management system and technology platform for all Scholastic Enterprise Edition (EE) applications. Previous versions of Scholastic products were supported by the Scholastic Management System (SMS).

The Enterprise Edition takes advantage of advances in technology, addresses the needs of schools created by the introduction of NCLB, and provides a platform for the district-wide implementation of Scholastic products.

SAM provides administrators with the ability to implement and monitor applications on a district-wide basis. It provides administrators and technology directors with an improved product based on smarter, faster, more scalable technology, and provides teachers with improved data-driven instruction. It also provides district-wide capabilities such as district reporting, AYP demographic grouping and reporting, and AYP demographic filtering.

SAM Technology Platform

SAM is built using Internet and industry-standard technology such as MySQL and JBoss in order to provide for high levels of concurrent usage within the bounds of typical school infrastructures and capabilities.

Recommended Server

Based on concurrency testing done using our recommended server and a T3 line (45 Mbps), we can support the following number of users:

Windows -Xeon Dual-Core 3.2 GHz CPU, 2 GB RAM, Win 2003 Server Mac – Dual G5 2 GHz CPU, 2 GB RAM, Mac OS X v10.4.11 PPC/Intel Server

- READ 180 750 concurrent users
- SRI 1000 concurrent users
- SRC! 1000 concurrent users
- ReadAbout 1000 concurrent users
- FASTT Math 1000 concurrent users
- System 44 750 concurrent users

For the reading programs, this represents approximately 45 READ 180 classrooms using Enterprise applications at the same time. The exact performance you can expect will be affected by many factors, including:

1. Available Bandwidth
2. Bandwidth Utilization
3. Firewalls
4. Processor Speed
5. Available Memory

Server performance is comparable on Macintosh, Windows, and Linux servers.

Concurrency testing usage was done using a gigabit Ethernet switch and 100BaseT connections to all workstations. No changes to default installation settings are needed to reach these capacity levels. Be sure to consult with Scholastic Technical Support at 1-800-283-5974 about your particular usage and infrastructure when planning to deploy the Enterprise Edition.

The Enterprise Edition uses standard Internet components that simplify setup and optimize issues surrounding student access to servers. Clients connect to application servers via the server IP Address. This eliminates the need to set permissions, to map to servers, or to provide student access to restricted machines. All permissions are handled at the application level within SAM as part of each user's administrator, teacher, and student profile.

Recommended Technology

The following are the typical hardware requirements for district-wide deployment:

Student Workstation	Windows XP Pro or Mac OS X 10.4.11 Operating System, P4/1.6 GHz or G4/1.25 GHz Processor, and 512 MB Memory.
System 44 Student Workstation	Windows XP Pro or Mac OS X 10.4.11 Operating System, P4/ 2.8 GHz, 512 MB Memory or G4/1.8 GHz Processor, and 1GB Memory.
Teacher Workstation	Windows XP Pro or Mac OS X 10.4.11 Operating System, P4/1.6 GHz or G4/1.25 GHz Processor, and 512 MB Memory.
Application and Data Aggregation Server	Windows 2003 Server or Mac OS X 10.4.11 Operating System, Dual-Core Xeon 3.2 GHz and 2048 MB Memory for high levels of concurrent usage on an application server—a single processor server for lower levels of concurrent usage.

A more complete requirements table can be found at the end of this document.

The Enterprise Edition also provides options for the location of program content. In SMS versions 1.6 and earlier, this content was provided through the use of Topic CDs. With the Enterprise Edition, you can deploy content by copying the Topic Software CDs onto each student workstation. Alternatively, you can use a media server (file server or NAS device) residing on the same LAN as the student workstations, or copy the Topic Software CDs to the application server. Any media that is shared over your network will affect available bandwidth.

SAM provides a searchable database of more than 2000 instructional resources, which enables teachers and administrators to search for skills-based teaching materials such as lesson plans, practice pages, reading passages, and graphic organizers. Internet access from the teacher workstation is required for access to the database. In some cases, if a teacher connects to the Internet through a proxy server, he or she may still not be able to access the Resources database.

District-Wide Deployment

Depending on your needs and the capabilities of your infrastructure, you can deploy SAM and the Enterprise Edition applications in many different ways. The number and location of application servers and the timing of the data aggregation in a district configuration can be tailored to the needs of the district.

There are four types of computers that are required to deploy SAM in a district configuration. A typical installation will involve a classroom containing multiple student workstations with a single teacher workstation. These will be networked to an application server, from which student data can be sent to a data aggregation server for district-wide reporting. (If aggregation is not desired, or all schools are supported by one application server, no aggregation server is needed.)

An application server that meets the required specifications is capable of supporting multiple classrooms simultaneously. If you have a high-speed network with sufficient bandwidth, it is possible to locate one or more servers centrally and to service multiple schools with multiple classrooms from one of the centralized servers. If your district intranet or WAN is not the equivalent of a T-3 connection (45 Mbps), we recommend that you deploy local servers at the building level. Application servers should be dedicated to SAM and the Enterprise Edition applications to ensure the best possible performance.

Data aggregation is the process of transferring the data from two or more individual SAM Enterprise Edition application servers to an aggregation server. Data aggregation servers do not need to be dedicated to SAM—i.e. they can also be used as a file server or to run other applications when not being used to aggregate data.

The Enterprise Edition provides a data aggregation wizard that allows you to export student data for aggregation from an application server. At the aggregation server, the export files from each application server are imported using the import wizard. Beginning with the Enterprise Edition v1.4a release, you can set up the aggregation process so that an aggregation server will automatically transfer data from a specified list of application servers at a recurring time.

Several factors should be considered when determining deployment. These include bandwidth and infrastructure, hardware CPU and memory, and the estimated level of concurrent usage.

Option A- Local Application Server(s) and no Data Aggregation Server This option is recommended for single schools or districts that do not have high-speed infrastructures. There are no data aggregation capabilities, since this option does not include a data aggregation server.

Option B- Local Application Servers and Centralized Data Aggregation Server This option is recommended for schools that prefer to deploy application servers locally. The SAM aggregation tools can be used to consolidate data from the multiple application servers into a single district aggregated database at the centralized location.

Option C- Single Centralized Application Server and no Data Aggregation Server This option is recommended for districts with high-end infrastructures. A single centralized application server is capable of supporting multiple schools. Depending on concurrency, multiple centralized application servers may need to be employed.

Option D- Centralized Application Servers and Centralized Data Aggregation Server This option is also recommended for districts with high-end infrastructures. Multiple centralized application servers are each capable of supporting multiple schools on a single server. The data from the multiple aggregation servers is then aggregated to a single district-wide aggregated database on the data aggregation server.

Option E- Remotely hosted Application Server and no Data Aggregation Server This option (available in May 2009) moves the district's application servers to Scholastic's own data center. With this option, you still set up the client workstations as in other deployment options, but there is no need for any SAM servers in the district. The student and teacher workstations connect over the Internet to a SAM Server hosted by Scholastic. This option is ideal for districts that are looking to eliminate the cost of installing and maintaining their own local servers. It is also recommended for Novell districts or any district moving toward an ASP deployment model.

See the chart on the following page for a graphical display of these options



Data Handling Capabilities

SAM includes a broad array of data handling features as described below.

Migration—This process allows districts running READ 180 version 1.6, Scholastic Reading Inventory (SRI) 3.x and/or Scholastic Reading Counts! (SRC!) 3.x to move some student data from the previous management system, SMS, to the current management system, SAM. This makes it easier for schools and districts to move to the new version at any time without waiting for a new school year or a semester break to move key legacy data. Data moved includes:

- Student profile data
- Number and name of segments completed for READ 180
- Complete history for both Scholastic Reading Counts! and SRI tests
- Quizzes, teacher created quizzes, and modified quiz values for Scholastic Reading Counts! Since FASTT Math and System 44 were not available with SMS, districts cannot migrate data for those products.

Aggregation-This process allows schools and districts to combine data from multiple SAM application servers to run district-wide reports. The data aggregated includes student and teacher profile data, student performance data, and school “structure” data (the relationships between teachers, classes, groups, and students).

Import-This process allows student or teacher rosters to be imported into SAM from a Student Information System or grade book program. Import includes profile data such as name, demographics, and unique identification numbers.

Export-This process allows Scholastic data to be combined with data from other sources for analysis and reporting purposes using third-party data analysis tools. SAM provides the ability to export student profile data, a subset of READ 180 performance data, complete SRI and Scholastic Reading Counts! test histories, and a subset of performance data from ReadAbout, FASTT Math, and System 44 in CSV format.

Transfer-This process allows a student to be moved from one SAM server to another within the district without the loss of any data. This is especially important for districts with high levels of student mobility. The transfer process provides for transfer of complete individual student records. This includes the student profile and the performance data from all or selected applications (NOT including voice recordings from READ 180).

Backup-This process allows the SAM MySQL database to be backed up for data security and archiving purposes. Complete student profile data, complete student performance data (excluding recordings), and complete school structure data are stored in a backup file in a MySQL native format.

**Please contact Technical Support at 1-800-283-5974
if you would like additional information.**

Enterprise Edition System Requirements for Different Levels of Concurrent Usage

Computer	Platform	Operating System (with latest Service Packs)	Processor	Memory	Free Hard Disk Space	Other	Internet Access Required?
All EE products Student Workstation	Windows	Windows 2000	Pentium III, 800 MHz	512 MB	200MB** (60 MB for SRC! or SRI)	QuickTime, 16-bit sound card, headphones, and microphones** Analog headsets are recommended	Only for Scholastic Hosted Model
		Windows XP Pro	Pentium 4, 1.6 GHz				
		Windows Vista	Pentium 4, 2.4 GHz				
	Macintosh	Mac OS X 10.4.11 PPC / Intel	G4, 1.25 GHz / Intel Dual-Core, 1.6 GHz	512 MB			
		Mac OS X 10.5 PPC / Intel	G5, 1.6 GHz / Intel Dual-Core, 1.6 GHz				
System 44 Student Workstation	Windows	Windows 2000	Pentium 4, 2.8 Ghz	512 MB	2.5 GB	QuickTime, 16-bit sound card, Adobe Air, headphones, and microphones** Analog headsets are recommended	
		Windows XP Pro	Pentium 4, 2.8 GHz	1 GB			
		Windows Vista	Pentium 4, 2.8 GHz				
	Macintosh	Mac OS X 10.4.11 PPC / Intel	G4, 1.66 GHz / Intel Dual-Core 1.8 GHz	1GB			
		Mac OS X 10.5 PPC / Intel	G5, 1.8 GHz / Intel Dual-Core 1.8 GHz				
Teacher Workstation	Windows	Windows 2000	Pentium III, 800 MHz	512 MB	500 MB (or 60 MB for SRC! or SRI)	QuickTime, 16-bit sound card, Acrobat Reader, and headphones**	Yes, to access optional online teacher resources and for Scholastic Hosted Model
		Windows XP Pro	Pentium 4, 1.6 GHz	1 GB			
		Windows Vista	Pentium 4, 2.4 GHz				
	Macintosh	Mac OS X 10.4.11 PPC / Intel	G4, 1.25 GHz / Intel Dual-Core, 1.6 GHz	512 MB			
		Mac OS X 10.5 PPC / Intel	G5, 1.6 GHz / Intel Dual-Core, 1.6 GHz				
Application Server, Small*	Windows	Windows 2000 Server	Pentium III, 800 MHz	2 GB	5 GB per ReadAbout or READ 180 stage (60 users)		No
		Windows 2003 Server	Pentium 4, 1.6 GHz				
	Macintosh	Mac OS X Server 10.4.11 PPC / Intel	G5, 1.6 GHz / Dual-Core Xeon, 1.6 GHz				
		Mac OS X Server 10.5 PPC / Intel					
Novell	OES Linux SLES 10	Pentium 4, 1.6 GHz					
Application Server, Medium*	Windows	Windows 2000 Server	Pentium 4, 1.6 GHz	2 GB	5 GB per ReadAbout or READ 180 stage (60 users)		No
		Windows 2003 Server	Pentium 4, 2.4 GHz				
	Macintosh	Mac OS X Server 10.4.11 PPC / Intel	G5, 2 GHz / Dual-Core Xeon, 1.6 GHz				
		Mac OS X Server 10.5 PPC / Intel					
	Novell	OES Linux SLES 10	Pentium 4, 2.4 GHz				

Enterprise Edition System Requirements, 12/10/2008

Enterprise Edition System Requirements for Different Levels of Concurrent Usage

Application Server, Recommended*	Windows	Windows 2000 Server Windows 2003 Server	Dual-Core Xeon, 3.2 GHz	2 GB	10 GB per ReadAbout or <i>READ 180</i> stage (60 users)	No
	Macintosh	Mac OS X Server 10.4.11 PPC / Intel Mac OS X Server 10.5 PPC / Intel	Dual G5, 2 GHz / Dual-Core Xeon, 3.2 GHz			
	Novell	OES Linux SLES 10	Dual-Core Xeon, 3.2 GHz			
Data Aggregation Server	Windows	Windows 2000 Server Windows 2003 Server	Dual-Core Xeon, 3.2 GHz	2 GB (4 GB if aggregating more than 10,000 students)	1 GB average per school (Does not include student recordings)	No
	Macintosh	Mac OS X Server 10.4.11 PPC / Intel Mac OS X 10.5 PPC / Intel	Dual G5, 2 GHz / Dual-Core Xeon, 3.2 GHz			
	Novell	OES Linux SLES 10	Dual-Core Xeon, 3.2 GHz			
Media Server (for ReadAbout only)	Windows	Windows 2003 Server	Dual-Core Xeon, 3.2 GHz	1 GB	4 GB	No
NOTE: Every server or workstation requires a CD-ROM drive. A DVD drive is optional for the ReadAbout Media Server, but is not required for any other server or workstation.						
*The size of the server represents the number of concurrent users for each product, assuming that the server is handling only one product at a time: Small = 50 <i>READ 180</i> , 50 <i>System 44</i> , 100 <i>SRI</i> , 100 <i>SRC!</i> , or 100 ReadAbout Medium = 100 <i>READ 180</i> , 100 <i>System 44</i> , 300 <i>SRI</i> , 150 <i>SRC!</i> , or 300 ReadAbout users Recommended = 750 <i>READ 180</i> , 750 <i>System 44</i> , 1000 <i>SRI</i> , 1000 <i>SRC!</i> , 1000 ReadAbout, or 1000 <i>FASTT Math</i> users						
**You will need approximately 5 GB free hard disk space if you choose to copy the topic CDs to each local workstation. Note: These technical requirements were accurate as of the date of print, 11//2008. Technical requirements change frequently as a result of new hardware and system software releases by Apple, Microsoft, Adobe, and other companies. Check the Scholastic Web site at www.scholastic.com/READ180techspecs or the FASTT Math Web site at www.tomsnyder.com/fasttmath/tech_support.html for the latest updates.						
*** <i>FASTT Math</i> does not require QuickTime; <i>SRI</i> and <i>SRC!</i> do not require a 16-bit sound card, headphones, or microphones.						

Important Reminders

If you use hardware that just meets the system requirements, the application will run correctly; however, it may run somewhat slower than desired. All features will be present and function properly.

Using hardware below the system requirements is not recommended or supported. Using this hardware may cause the program to run too slowly or prevent certain features (such as voice recording or video playback) from functioning properly.

Thin Client Computing

Thin Client computing is currently not recommended for Scholastic's Enterprise Programs. The media-rich technology on which our Enterprise applications are built require more local processing capacity than thin client solutions typically provide. Thin Client computing is a technology Scholastic continues to monitor and may support in the future when processing capacity improves.

New MacBooks Incompatibility issue with *READ 180*.

Some recent MacBooks use the new GMA X3100 video card. This video card uses shared memory and as a result, only supports the Millions of colors option. *READ 180* requires that the computer preferences be set to thousands or 256 colors. This setting is not available on certain MacBooks (also referred to as the Santa Rosa version). Scholastic is committed to supporting new technology and will continue to work on a resolution to this incompatibility.

Enterprise Edition System Requirements, 12/10/2008

Enterprise Edition System Requirements for Different Levels of Concurrent Usage

1. Workstations and Servers require a Network Interface Card supporting TCP/IP. Wireless networks (802.11a or 802.11g) are supported, but application performance may be limited by the bandwidth capacity of your wireless network.
2. Media (CD or DVD-based content) can be copied to the hard drives on the student workstations, installed on the Application Server or installed on a Media Server (any NAS device). The server requires approximately 5 GB of disk space for the READ 180 Topic CDs and 4 GB for ReadAbout Media DVDs.
3. Access to a color printer is recommended for teacher & student workstations.
4. A television and DVD player are recommended for READ 180 classrooms in order to watch the rBook anchor videos.
5. The number of concurrent users able to be supported will be heavily influenced by factors such as available network bandwidth.
6. For school-level deployments, Scholastic strongly recommends that ReadAbout Media be installed on a dedicated media server or loaded onto each individual student workstation. In smaller class-level deployments, it may be feasible to use a single server for both application and media hosting purposes.
7. The ReadAbout Media may be installed using either the single DVD installer disc or the multi-CD installer set. Both the single DVD installer disc and the multi-CD installer set will install an identical instance of the ReadAbout Media.
8. The following workstation operating systems are not supported: Windows 95, 98, 98SE, CE, NT, ME, XP Home, 2000 Home; Mac OS 8.0 to 9.x & Mac OS X 10.0–OS 10.3.9.
9. The following server operating systems are not supported: Windows NT; AppleShareIP, Mac OS X Server 10.0 – 10.3.9; Novell NetWare. For more information on our Enterprise Edition solution for Novell Netware users, please visit www.scholastic.com/read180/netware.
10. SAM Servers require a fixed IP address. Please reference the READ 180 Installation and Troubleshooting Guide for information on configuring SAM when using DHCP.
11. Scholastic strongly recommends that SAM be installed on a dedicated server that is not used by other applications. If SAM is installed on a server shared with other applications, overall system performance will vary based on the use of the other programs. All concurrency testing of Enterprise applications was conducted using dedicated servers.
12. The following Internet browsers are supported (required for performing certain administrative tasks involving data import and export): On Windows, Internet Explorer 6.x and 7.x. On Mac OS X, Safari 1.2 and 2.0.
13. Scholastic fully supports and recommends using the Dual Core Intel processors for workstations and servers on both the Windows and Macintosh platforms
14. Scholastic fully supports the Vista Business operating systems for 32-bit processors.
15. Installing the Scholastic Reading Counts! quizzes will take up an estimated 285 MB of disk space.
16. For optimal performance Scholastic recommends using Analog headsets.

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