



# Hardware and Software Requirements for eSchoolPlus 21.4

PowerSchool eSchoolPlus SIS

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This edition applies to Release 21.4.0.0 of the PowerSchool eSchoolPlus SIS software and to all subsequent releases and modifications until otherwise indicated in new editions or updates.

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# Contents

<b>Introduction .....</b>	<b>4</b>
<b>General Requirements .....</b>	<b>5</b>
<b>Securing PowerSchool eSchoolPlus SIS Data .....</b>	<b>7</b>
<b>Hardware Specifications.....</b>	<b>8</b>
Database Servers .....	8
Application Servers .....	8
Task Servers .....	8
Home Access Servers.....	9
<b>Document Management and Storage Planning .....</b>	<b>15</b>
<b>General Recommendations .....</b>	<b>16</b>
<b>Client Software Support .....</b>	<b>16</b>
Tablets.....	16
Mobile Devices.....	19
Laptops and Personal Computers.....	19
<b>Whiteboard .....</b>	<b>19</b>
<b>Notes.....</b>	<b>19</b>
Virtualization of PowerSchool eSchoolPlus SIS Environments .....	19
Disk Space Requirements .....	20

## Introduction

This document contains the hardware and software requirements for implementing eSchoolPlus 21.4. The equipment and resources listed herein are required to ensure proper system usability and the highest quality user experience possible.

PowerSchool eSchoolPlus SIS 21.4 requires 64-bit, server class hardware using a 64-bit Windows operating system running at minimum Windows Server 2012 R2 and a SQL Server 2012 database.

For districts larger than 150,000 enrolled students, a more tailored configuration may be warranted. For consultative assistance with PowerSchool eSchoolPlus SIS configurations of this nature, or to learn more about PowerSchool's hardware packages and services for all enrollments, please contact your PowerSchool sales representative at 877-873-1550, or email [TSGHelpDesk@PowerSchool.com](mailto:TSGHelpDesk@PowerSchool.com).

## General Requirements

The following requirements must be implemented with every PowerSchool eSchoolPlus SIS configuration.

- **Dedicated Hardware:** All servers in the production environment must be dedicated solely to operation of the PowerSchool eSchoolPlus SIS product and its complementary components, such as Teacher Access Center and Home Access.
- **Server Class:** All hardware referenced in this document must be server class hardware, except user workstations.
- **Database Instance:** PowerSchool eSchoolPlus SIS supports accessing SQL Server databases only. The minimum requirement is SQL Server 2012 SP3. The SQL Server instance can also be SQL Server 2016, SQL Server 2017, or SQL Server 2019. However, when using one of these SQL instances, the compatibility level for all databases accessed by PowerSchool eSchoolPlus SIS within these instances must be set to SQL Server 2012, SQL Server 2016, SQL Server 2017, or SQL Server 2019. If using a compatibility of 2016 or higher the Query Optimizer Fixes option should be turned on to prevent known SQL Server performance problems.
- **Dynamic Port ranges:** The default dynamic port range is in compliance with Microsoft Windows Server 2012 R2 requirements.
- For proper function, all PowerSchool eSchoolPlus SIS servers within the same PowerSchool eSchoolPlus SIS instance must be configured within the same VLAN/subnet.
- **File Share Server:** All environments must include a file share server to serve the report and log files in PowerSchool as well as a location for sharing student picture files, district created report templates for things such as report cards and transcripts. The file share may be configured on the same server that hosts the databases for the environment.
- **Load Balancing:** Server Array environments of two or more application nodes must be served by a load balancer. A properly configured load balancer will appropriately distribute incoming user traffic to the multiple IIS application node servers, allowing for optimized performance and scalability. The load balancer must be configured to ensure requests from a single user are always distributed to the server on which they started. Additionally, the load balancer can provide the ability to offload the SSL/TLS transactions, as well as cache static PowerSchool eSchoolPlus SIS content. For more information, please refer to the *Load Balancer Requirements and Configuration Guide* available on PowerSource.
- **Windows Operating System:** The entire PowerSchool eSchoolPlus SIS deployment, inclusive of all application nodes and the database server, must run on the same version and edition of Windows Server. PowerSchool eSchoolPlus SIS supports Microsoft Windows Server 2012 R2, Microsoft Windows Server 2016, Microsoft Windows Server 2019, and Microsoft Windows Server 2022. Windows 2019 licensing allows you downgrade rights to install Windows 2012 R2.

**Note:** The Server Core installation option is not supported.

Microsoft licensing provisions require specific licenses when most users connect to a Windows server. A Client Access License (CAL) is required for each teacher and administrator who accesses PowerSchool eSchoolPlus, since Microsoft considers them internal users. The CAL can be either a "Device" CAL to cover the number of workstations used by teachers and administrators who access PowerSchool eSchoolPlus, or a "User" CAL to cover each individual teacher and administrator who accesses PowerSchool eSchoolPlus. An External Connector License (ECL) is required for each PowerSchool eSchoolPlus SIS server that serves parents, guardians, and students since they are considered external users by Microsoft.

#### Hardware and Software Requirements for PowerSchool eSchoolPlus 21.4

Exceptions to these two guidelines include the following:

- PowerSchool Hosting Software as a Service customers (PowerSchool procures Microsoft licensing for the hosted environment as part of the PowerSchool Hosting Software as a Service offering).
- Districts that have previously procured district wide Windows 2012 R2/Windows 2016 CALs to support other applications such as Microsoft Active Directory that include CALs for intended internal PowerSchool eSchoolPlus SIS users.

PowerSchool eSchoolPlus SIS recommends that you contact Microsoft or your district's third-party software vendor for details regarding Microsoft software licensing.

- Microsoft .NET Framework 4.7.2 or greater is required, but will be installed by the eSchoolPlus Update Utility if the minimum requirement is not met. Note: The install of .NET Framework 4.7.2 will require a reboot of the server.
- Cognos Server: Districts that use Cognos for ad-hoc reporting will require a separate server for running Cognos. If using Cognos version 10.2.2, the operating system supported by IBM is Microsoft Windows Server 2012 R2. If using Cognos version 11, the operating system supported by IBM is Microsoft Windows Server 2016.

## Securing PowerSchool eSchoolPlus SIS Data

The security of Personally Identifiable Information (PII) pertaining to students, parents, and staff is one of our greatest concerns at PowerSchool. While we take extra measures to ensure our solutions are secure, such as security vulnerability scanning, PowerSchool strongly recommends that all customers take the following additional and deliberate measures to secure their PowerSchool eSchoolPlus SIS deployment.

- Scrutinize the physical security of your PowerSchool eSchoolPlus SIS environment. Access to PowerSchool eSchoolPlus SIS server(s), client machines utilized by students and staff, and your wireless network should all be highly controlled.
- Implement a strong password management regiment based on the robust capabilities available in PowerSchool eSchoolPlus SIS. For the admin and teacher portals, by default, the password requirements are controlled within the Active Directory the district's PowerSchool eSchoolPlus SIS environment is configured to authenticate against. Guardian and Student password requirements are managed in the Password Management section on the HAC District Configuration page.
- While the default authentication behavior for the Teacher and Admin portals is to be managed by active directory, PowerSchool eSchoolPlus SIS supports the use of the OIDC (Open ID Connect) standard using Google or Microsoft Azure. Other OIDC implementations may work, but have not been verified.
- Implement Transport Layer Security (TLS) for encryption of Data In Transit. TLS is the successor of Secure Sockets Layer (SSL) and is the standard security technology for establishing an encrypted link between a web server and a web browser and ensures that all data passed between them remains secure and private. PowerSchool supports Transport Layer Security (TLS) v1.2 with x.509-formatted certificates.

**Important Note:** If your PowerSchool eSchoolPlus SIS instance is hosted by PowerSchool, TLS has already been implemented and there is no further action needed. Similarly, PowerSchool eSchoolPlus SIS instances managed within an EMS subscription that have been provided certificates require no additional action. Customers interested in purchasing TLS-capable certificates and integration services should send an email [TSGHelpDesk@PowerSchool.com](mailto:TSGHelpDesk@PowerSchool.com).

## Hardware Specifications

For new customers purchasing new hardware, or existing customers seeking to refresh their hardware, the following recommended specifications will provide better than acceptable performance without requiring excessive resources. The recommended specifications allow room for growth as your district needs grow and as new PowerSchool eSchoolPlus SIS versions and features become available in the next few years.

For new or existing customers seeking to repurpose previously purchased hardware for a PowerSchool eSchoolPlus SIS deployment, the minimum requirements identify the absolute lowest value that is acceptable for a given resource. A production deployment will experience acceptable performance with servers that meet these minimum requirements. PowerSchool eSchoolPlus SIS does not support operating a production environment with less than the minimum requirements for any resource.

For production environments, it is recommended that separate hardware is used for application servers, task servers, Home Access servers, and database servers. Customers may choose to set up a non-production environment for various purposes such as training, testing, development and off-line/snapshot reporting. Since these environments typically are not receiving significant user load, you may configure these environments as a combined application, task, and Home Access server while either sharing the production database servers or having a dedicated database server.



## Database Servers

**Note:** High availability and Clustering considerations as well as Always On Availability Groups should be considered for All SQL server installations.

### Hardware:

Students	Servers	Minimum # of Cores	Recommended # of Cores	RAM (GB)	DB Version
< 10K	1	8	12	36	Standard
10 - 20K	1	10	12	48	Standard
21 - 28K	1	12	18	48	Standard
29 - 50K	1	16	24	64	Standard
51 - 80K	1	24	32	128	Standard
81 - 100K	1	24	32	192	Enterprise
101 - 130K	1	32	48	256	Enterprise
130 - 150K	1	32	48+	256	Enterprise
> 150K	By Consult				

### Disk Sizing:

All sizes are in GB

Drive Letter	Purpose	< 50K	< 100K	< 150K	> 150K
C	Operating System	140	140	140	140
D	Application	50	50	50	50
E	SQL Data	500	1,024	1,536	By Consult
F	SQL Log	300	500	750	By Consult
G	Temp DB	100	100	100	By Consult
H	Backup	1,024	1,536	2,048	By Consult
I	eSchoolShare	100	200	350	By Consult

	<b>Small</b>
	<b>Medium</b>
	<b>Large</b>
	<b>X-Large</b>

# Application Servers

## Hardware:

Students	Servers	Minimum # of Cores	Recommended # of Cores	RAM	Notes
< 13K	2	6	12	12	*
13 - 20K	2	8	12	12	
21 - 28K	3	8	12	12	
29 - 50K	3	8	12	12	
51 - 75K	4	12	16	16	
76 - 100K	5	12	16	16	
101 - 120K	6	12	16	16	
121 - 150K	7	12	16	16	
> 150K	By Consult				

\* - A single server would handle load, two would provide redundancy in case of HW failure.

- Small**
- Medium**
- Large**
- X-Large**

## Disk Sizing:

All sizes are in GB

Drive Letter	Purpose	Size
C	Operating System	100
D	Application	40

# Task Servers

## Hardware:

Students	Servers	Minimum # of Cores	Recommended # of Cores	RAM	Notes
< 20K	2	6	12	12	
21 - 28K	2	8	12	12	
29 - 50K	3	8	12	12	
51 - 75K	4	12	16	16	
76 - 100K	5	12	16	16	
101 - 120K	6	12	16	16	
121 - 150K	7	12	16	16	
> 150K	By Consult				

- Small
- Medium
- Large
- X-Large

## Disk Sizing:

All sizes are in GB

Drive Letter	Purpose	Size
C	Operating System	100
D	Application	40

# Home Access Servers

## Hardware:

Students	Servers	Minimum # of Cores	Recommended # of Cores	RAM	Notes
< 20K	2	4	4	12	*
21 - 28K	2	4	4	12	*
29 - 50K	2	4	4	12	*
51 - 75K	2	4	4	12	*
76 - 100k	2	8	8	16	
101 - 120K	2	8	8	16	
121 - 150K	2	8	8	16	
> 150K	By Consult				

\* - A single server would handle load, two would provide redundancy in case of HW failure.

	<b>Small</b>
	<b>Medium</b>
	<b>Large</b>
	<b>X-Large</b>

## Disk Sizing:

All sizes are in GB

Drive Letter	Purpose	Size
C	Operating System	100
D	Application	40

## Document Management and Storage Planning

PowerSchool eSchoolPlus SIS Document Management enables administrators to attach documents to the student record in the administrator portal of PowerSchool eSchoolPlus SIS. The PowerSchool eSchoolPlus SIS stores the documents in a SQL Server database. If you intend to utilize this feature, you will need to consider the impact on your data storage and network bandwidth needs. To estimate your **basic** storage needs, there are three primary considerations:

- Estimated number of documents to be attached per student
- Estimated size of documents to be attached
- 5 percent allocation for attachment metadata files

For example, if your district has 1,000 students, you anticipate an average of 10 attachments per student, and you anticipate the average attachment file size to be 300 KB, then you would need a minimum of approximately 3 GB of storage for the attachment of documents to the student record:

### Example Calculation

Total Attachments	Estimated Storage
10 attachments x 300 KB attachment size	3,000 KB per student
3,000 KB x 1,000 students	3,000,000 KB for all students
$(3,000,000 \text{ KB} / 1,048,576 \text{ KB per GB}) * (1 + 5\% \text{ for attachment metadata})$	3 GB storage

To calculate your **true** storage needs, there are additional factors to consider:

- Annual rate of increase of student population
- Attachment retention and archival policy (for example, the number of years after graduation that an attachment saved)

These factors should be considered to ensure a seamless and uninterrupted utilization of PowerSchool eSchoolPlus SIS Document Management. PowerSchool eSchoolPlus SIS also recommends that you review your network bandwidth if implementing this feature, since files of varying sizes being uploaded and downloaded throughout a typical day may demand increased network bandwidth.

## General Recommendations

The following recommendations are not required for a successful implementation of PowerSchool eSchoolPlus SIS but are **recommended** for reasons pertaining to data security, redundancy, performance, efficiency and support accessibility.

- Redundancy and Performance with RAID: Redundant Array of Independent Disks (RAID) is a standard technology that provides increased storage reliability through redundancy, and in some configurations results in increased performance. PowerSchool recommends a RAID 10 (disk mirroring with disk striping) for increased redundancy and performance on the database server for SQL Server database files and SQL Server logs.
- Install Chrome on PowerSchool eSchoolPLUS SIS Web servers: With Internet Explorer reaching end of life, servers no longer come installed with a supported web browser. Having a supported web browser installed on the servers allows for a more efficient support experience. Not having access to a browser on the machines could result in a delay when researching support tickets - if on server debugging or diagnostics are required.

## Client Software Support

### Tablets

PowerSchool eSchoolPlus SIS 21.4 supports the following tablets for standard delivered web pages.

Device	Operating System	Browser
iPad, iPad Mini, iPad Air, iPad Pro	iOS 13, iOS 14	Latest two Safari versions
7" – 10" Android Tablets 1024dp × 768dp minimum resolution	Android 7.x, 8.x, 9.x, 10.x, 11.x	Latest five Chrome versions
Microsoft Surface Tablets 1024dp × 768dp minimum resolution	Windows 8.1, 10	Latest two Edge versions Internet Explorer 11 (not in compatibility view)
Chromebooks	Latest two versions	Latest five Chrome versions

**Note:** Amazon Kindle Fire and Barnes & Noble Nook are currently not supported. Additionally, the PowerSchool eSchoolPlus SIS feature Whiteboard, our optional interactive schedule builder, requires Microsoft Windows operating system, but Internet Explorer 11 is no longer required.

## Mobile Devices

PowerSchool eSchoolPlus SIS 21.4 supports the following mobile devices for the native Admin and Family Apps.

<b>Android Devices</b>
Latest 2 versions of Android
<b>iOS Devices</b>
Latest two versions of iOS

## Laptops and Personal Computers

PowerSchool eSchoolPlus SIS 21.4 supports the following browsers. Older browser and operating system combinations may continue to operate properly but are no longer supported.

<b>Windows Browsers</b>
Latest two versions of Edge
Latest five versions of Chrome
<b>Mac Browsers</b>
Latest two versions of Safari
Latest five versions of Chrome
<b>Chromebook</b>
Latest five versions of Chrome

## Whiteboard

For districts using Whiteboard, our optional interactive schedule builder, a Microsoft Windows operating system is required, but Internet Explorer 11 is no longer required.

## Notes

### Virtualization of PowerSchool eSchoolPlus SIS Environments

Server virtualization is software technology that uses a physical server and divides its total resources across many virtual machines (VMs). Server virtualization allows technology administrators to consolidate physical resources, simplify deployment and administration of resources and environments, improve disaster recovery, and reduce power and cooling requirements.

**Note:** PowerSchool does not recommend or endorse any server virtualization software. For support, please contact the manufacturer of the server virtualization software that you choose to implement.

**Note:** PowerSchool provides application support for PowerSchool eSchoolPlus SIS when it is deployed within a virtualized server environment. However, PowerSchool does not provide direct support for the configuration and performance of virtualization technology environment itself within the definition of PowerSchool Technical Support.



## Disk Space Requirements

The minimum required disk space listed in this document on the server containing the SQL Server database, data-files, and backups is calculated based on the following factors, which are applicable to all districts regardless of student enrollment:

- Daily accumulation of district data for the current school year.
- Five previous school years of complete historical data.
- Five previous school years of partial historical data (grade information).
- Disk will eventually contain five years of data for future school years.
- Disk space requirements for installations of Microsoft Windows operating system and SQL Serve.
- Standard logging configuration and backup regimen.