



Pearson PowerSchool

Deployment Guide

UPDATED: 27 July 2023

© 2022 Progress Software Corporation and/or one of its subsidiaries or affiliates. All rights reserved.

These materials and all Progress® software products are copyrighted and all rights are reserved by Progress Software Corporation. The information in these materials is subject to change without notice, and Progress Software Corporation assumes no responsibility for any errors that may appear therein. The references in these materials to specific platforms supported are subject to change.

#1 Load Balancer in Price/Performance, 360 Central, 360 Vision, Chef, Chef (and design), Chef Habitat, Chef Infra, Code Can (and design), Compliance at Velocity, Corticon, Corticon.js, DataDirect (and design), DataDirect Cloud, DataDirect Connect, DataDirect Connect64, DataDirect XML Converters, DataDirect XQuery, DataRPM, Defrag This, Deliver More Than Expected, DevReach (and design), Driving Network Visibility, Flowmon, Inspec, Ipswitch, iMacros, K (stylized), Kemp, Kemp (and design), Kendo UI, Kinvey, LoadMaster, MessageWay, MOVEit, NativeChat, OpenEdge, Powered by Chef, Powered by Progress, Progress, Progress Software Developers Network, SequeLink, Sitefinity (and Design), Sitefinity, Sitefinity (and design), Sitefinity Insight, SpeedScript, Stylized Design (Arrow/3D Box logo), Stylized Design (C Chef logo), Stylized Design of Samurai, TeamPulse, Telerik, Telerik (and design), Test Studio, WebSpeed, WhatsConfigured, WhatsConnected, WhatsUp, and WS_FTP are registered trademarks of Progress Software Corporation or one of its affiliates or subsidiaries in the U.S. and/or other countries.

Analytics360, AppServer, BusinessEdge, Chef Automate, Chef Compliance, Chef Desktop, Chef Workstation, Corticon Rules, Data Access, DataDirect Autonomous REST Connector, DataDirect Spy, DevCraft, Fiddler, Fiddler Classic, Fiddler Everywhere, Fiddler Jam, FiddlerCap, FiddlerCore, FiddlerScript, Hybrid Data Pipeline, iMail, InstaRelinker, JustAssembly, JustDecompile, JustMock, KendoReact, OpenAccess, PASOE, Pro2, ProDataSet, Progress Results, Progress Software, ProVision, PSE Pro, Push Jobs, SafeSpaceVR, Sitefinity Cloud, Sitefinity CMS, Sitefinity Digital Experience Cloud, Sitefinity Feather, Sitefinity Thunder, SmartBrowser, SmartComponent, SmartDataBrowser, SmartDataObjects, SmartDataView, SmartDialog, SmartFolder, SmartFrame, SmartObjects, SmartPanel, SmartQuery, SmartViewer, SmartWindow, Supermarket, SupportLink, Unite UX, and WebClient are trademarks or service marks of Progress Software Corporation and/or its subsidiaries or affiliates in the U.S. and other countries. Java is a registered trademark of Oracle and/or its affiliates. Any other marks contained herein may be trademarks of their respective owners.

Please refer to the NOTICE.txt or Release Notes – Third-Party Acknowledgements file applicable to a particular Progress product/hosted service offering release for any related required third-party acknowledgements.

Table of Contents

1 Introduction	4
1.1 Document Purpose	4
1.2 Intended Audience	4
2 Template	5
3 Architecture	6
4 Configure the LoadMaster	7
4.1 Enable Subnet Originating Requests Globally	7
4.2 Enable Check Persist Globally	8
4.3 Create the PowerSchool Virtual Services	9
4.3.1 Create a Pearson PowerSchool HTTPS Virtual Service	9
4.3.2 Create a Pearson PowerSchool Scheduler Virtual Service	11
4.3.3 Create a Pearson PowerSchool PowerTeacher Virtual Service	12
4.3.4 Create a Pearson PowerSchool Report Virtual Service	13
4.3.5 Create a Pearson PowerSchool Database Images Virtual Service	15
4.3.6 Create a Pearson PowerSchool Database ODBC Virtual Service	16
4.3.7 Create a Pearson PowerSchool Database RDB Virtual Service	18
References	20
Last Updated Date	21

1 Introduction

PowerSchool was established in 1997 and acquired by Pearson Education in 2006. After a school purchases PowerSchool, accounts can be set up for administrators, counsellors, office staff, teachers, students and parents. PowerSchool makes it easy for teachers to record grades, take attendance, and check student profiles. Also, it is convenient for parents to check all of their child's grades as soon as they are posted.

The Kemp LoadMaster is used to load balance the Pearson PowerSchool workload. The LoadMaster offers advanced Layer 4 and Layer 7 server load balancing, SSL Acceleration and a multitude of other advanced Application Delivery Controller (ADC) features. The LoadMaster intelligently and efficiently distributes user traffic among the application servers so that users get the best experience possible.

1.1 Document Purpose

This document provides the recommended LoadMaster settings used when load balancing the Pearson PowerSchool workload. The Kemp Support Team is available to provide solutions for scenarios not explicitly defined. The Kemp support site can be found at:

<https://support.kemptechnologies.com>

1.2 Intended Audience

This document is intended to be read by anyone who is interested in configuring the LoadMaster to optimize the Pearson PowerSchool server.

2 Template

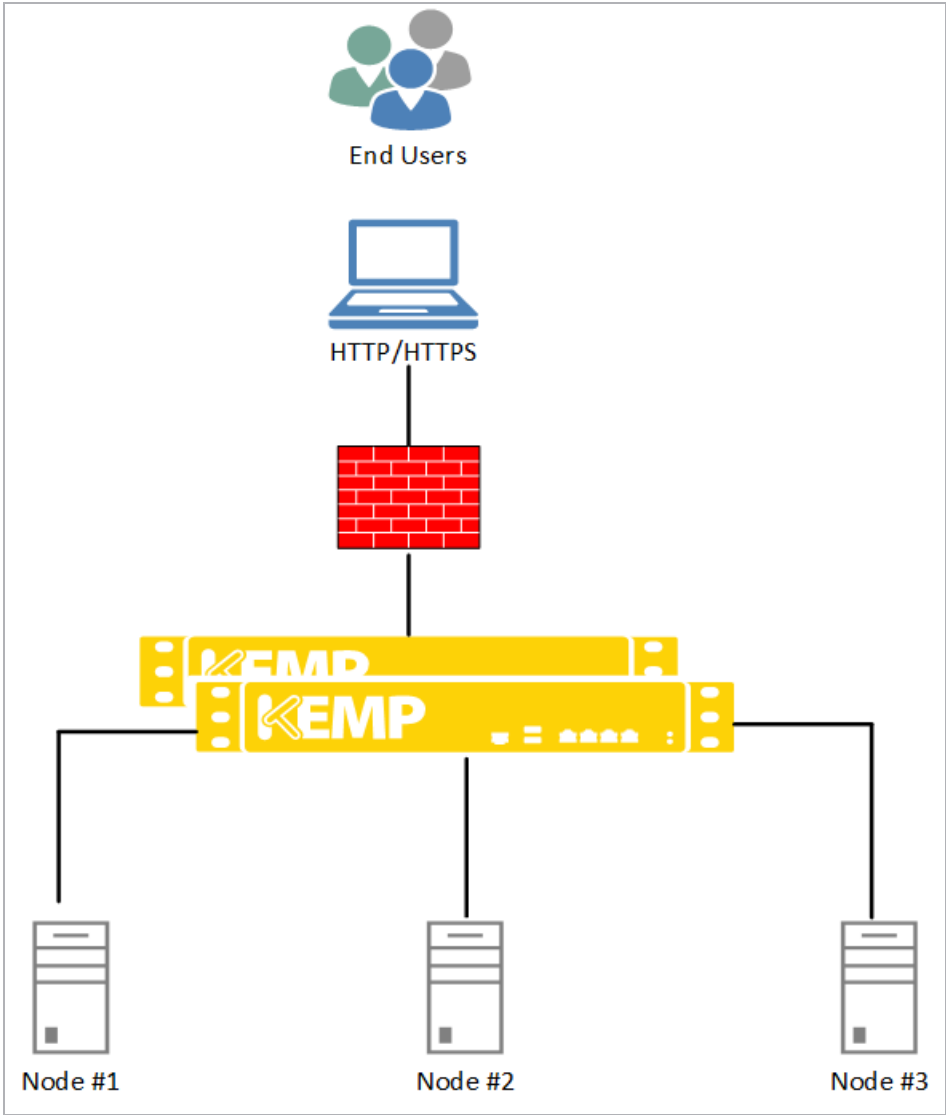
Kemp has developed a template containing our recommended settings for this workload. You can install this template to help create Virtual Services (VSs) because it automatically populates the settings. You can use the template to easily create the required VSs with the recommended settings. For some workloads, additional manual steps may be required such as assigning a certificate or applying port following, these steps are covered in the document, if needed.

You can remove templates after use and this will not affect deployed services. If needed, you can make changes to any of the VS settings after using the template.

Download released templates from the following page: [LoadMaster Templates](#).

For more information and steps on how to import and use templates, refer to the [Virtual Services and Templates, Feature Description](#) on the Kemp Documentation page.

3 Architecture



4 Configure the LoadMaster

The deployed Pearson PowerSchool environment determines which of the following setups is used.

4.1 Enable Subnet Originating Requests Globally

It is best practice to enable the **Subnet Originating Requests** option globally.

In a one-armed setup (where the Virtual Service and Real Servers are on the same network/subnet) **Subnet Originating Requests** is usually not needed. However, enabling **Subnet Originating Requests** should not affect the routing in a one-armed setup.

In a two-armed setup where the Virtual Service is on network/subnet A, for example, and the Real Servers are on network B, **Subnet Originating Requests** should be enabled on LoadMasters with firmware version 7.1-16 and above.

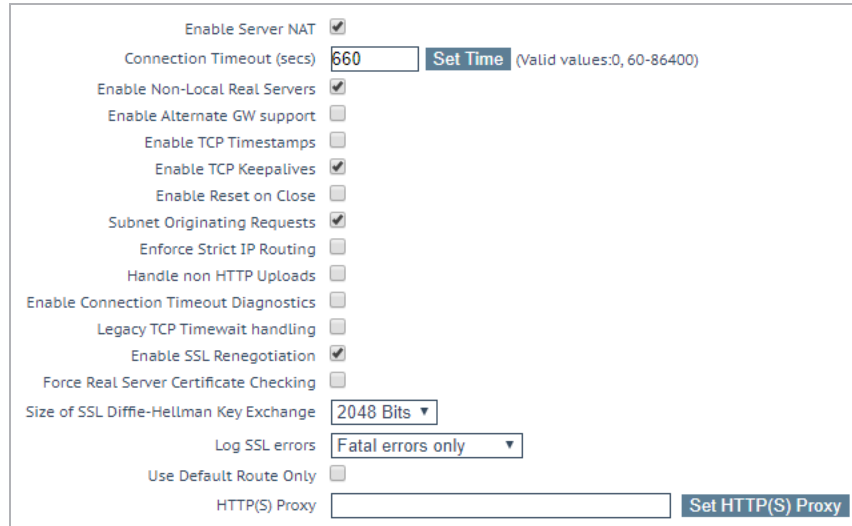
When **Subnet Originating Requests** is enabled, the LoadMaster routes traffic so that the Real Server sees traffic arriving from the LoadMaster interface that is in that network/subnet.

When **Subnet Originating Requests** is enabled globally, it is automatically enabled on all Virtual Services. If the **Subnet Originating Requests** option is disabled globally, you can choose whether to enable **Subnet Originating Requests** on a per-Virtual Service basis.

To enable **Subnet Originating Requests** globally, follow the steps below:

1. In the main menu of the LoadMaster Web User Interface (WUI), go to **System Configuration > Miscellaneous Options > Network Options**.

4 Configure the LoadMaster



The screenshot shows a configuration window with the following settings:

- Enable Server NAT: ☒
- Connection Timeout (secs): 660 [Set Time] (Valid values: 0, 60-86400)
- Enable Non-Local Real Servers: ☒
- Enable Alternate GW support: ☐
- Enable TCP Timestamps: ☐
- Enable TCP Keepalives: ☒
- Enable Reset on Close: ☐
- Subnet Originating Requests: ☒
- Enforce Strict IP Routing: ☐
- Handle non HTTP Uploads: ☐
- Enable Connection Timeout Diagnostics: ☐
- Legacy TCP Timewait handling: ☐
- Enable SSL Renegotiation: ☒
- Force Real Server Certificate Checking: ☐
- Size of SSL Diffie-Hellman Key Exchange: 2048 Bits ▼
- Log SSL errors: Fatal errors only ▼
- Use Default Route Only: ☐
- HTTP(S) Proxy: [] [Set HTTP(S) Proxy]

2. Select the **Subnet Originating Requests** check box.

4.2 Enable Check Persist Globally

It is recommended that you change the **Always Check Persist** option to **Yes – Accept Changes**. Use the following steps:

1. Go to **System Configuration > Miscellaneous Options > L7 Configuration**.

4 Configure the LoadMaster

Allow connection scaling over 64K Connections	<input type="checkbox"/>
Always Check Persist	Yes - Accept Changes ▼
Add Port to Active Cookie	<input type="checkbox"/>
Conform to RFC	<input checked="" type="checkbox"/>
Close on Error	<input type="checkbox"/>
Add Via Header In Cache Responses	<input type="checkbox"/>
Real Servers are Local	<input type="checkbox"/>
Drop Connections on RS failure	<input checked="" type="checkbox"/>
Drop at Drain Time End	<input checked="" type="checkbox"/>
L7 Connection Drain Time (secs)	300 Set Time (Valid values:0, 60 - 86400)
L7 Authentication Timeout (secs)	30 Set Timeout (Valid values:30 - 300)
L7 Client Token Timeout (secs)	120 Set Timeout (Valid values:60 - 300)
Additional L7 Header	X-Forwarded-For ▼
100-Continue Handling	RFC-7231 Compliant ▼
Allow Empty POSTs	<input type="checkbox"/>
Allow Empty HTTP Headers	<input type="checkbox"/>
Force Complete RS Match	<input type="checkbox"/>
Least Connection Slow Start	0 Set Slow Start (Valid values:0 - 600)
Share SubVS Persistence	<input type="checkbox"/>
Log Insight Message Split Interval	10 Set Log Split Interval (Valid values:1 - 100)
Include User Agent Header in User Logs	<input type="checkbox"/>
Use CEF Log Format	<input type="checkbox"/>

2. Click the **Always Check Persist** drop-down arrow and select **Yes – Accept Changes**.

4.3 Create the PowerSchool Virtual Services

The following sections describe the recommended settings for the Pearson PowerSchool Virtual Services.

4.3.1 Create a Pearson PowerSchool HTTPS Virtual Service

The following are the steps involved and the recommended settings to configure the Pearson PowerSchool HTTPS Virtual Service:

1. In the main menu of the LoadMaster Web User Interface (WUI), go to **Virtual Services > Add New**.

4 Configure the LoadMaster

Please Specify the Parameters for the Virtual Service.

Virtual Address

Port

Service Name (Optional)

Use Template

Protocol

2. Type a valid **Virtual Address**.
3. Type **443** as the **Port**.
4. Enter a recognizable **Service Name**, such as **Pearson PowerSchool HTTPS Virtual Service**.
5. Click **Add this Virtual Service**.
6. Configure the settings as recommended in the following table:

Section	Option	Value	Comment
Standard Options	Persistence Mode	Active Cookie	
	Timeout	6 Hours	
	Cookie name	PowerSchool_SSL	
	Scheduling Method	least connection	
SSL Properties	Cipher Set	BestPractices	
Advanced Properties	Add a Port 80 Redirector VS	https://%h%s	Click Add HTTP Redirector.
Real Servers	URL	/admin/pw.html	

7. Add the Real Servers:
 - a) Expand the **Real Servers** section.
 - b) Click **Add New**.
 - c) Enter the address of the relevant real server.

4 Configure the LoadMaster

- d) Complete the other fields as required.
- e) Click **Add this Real Server** then click **OK** to the pop-up message.
- f) Repeat the steps above to add more Real Servers as needed, based on your environment.

Create a Pearson PowerSchool HTTPS Redirect Virtual Service

Clicking the **Add HTTP Redirector** button automatically creates a port 80 redirect Virtual Service. This is optional, but the purpose of this Virtual Service is to redirect any clients who have connected using HTTP to the HTTPS Virtual Service. Kemp also recommends changing the **Persistence Mode** to **None**.

4.3.2 Create a Pearson PowerSchool Scheduler Virtual Service

The following are the steps involved and the recommended settings to configure the Pearson PowerSchool Scheduler Virtual Service:

1. In the main menu of the LoadMaster WUI, go to **Virtual Services > Add New**.

Please Specify the Parameters for the Virtual Service.

Virtual Address

Port

Service Name (Optional)

Use Template

Protocol

2. Type a valid **Virtual Address**.
3. Type **2000** as the **Port**.
4. Enter a recognizable **Service Name**, such as **Pearson PowerSchool Scheduler Virtual Service**.
5. Click **Add this Virtual Service**.
6. Configure the settings as recommended in the following table:

4 Configure the LoadMaster

Section	Option	Value	Comment
Standard Options	Force L7	Disabled	
	Persistence Option	Source IP Address	
	Timeout	8 Hours	
	Scheduling Method	Least connection	

7. Add the Real Servers:

- Expand the **Real Servers** section.
- Click **Add New**.
- Enter the address of the relevant Real Server.
- Complete the other fields as required.
- Click **Add this Real Server** then click **OK** to the pop-up message.
- Repeat the steps above to add more Real Servers as needed, based on your environment.

4.3.3 Create a Pearson PowerSchool PowerTeacher Virtual Service

The following are the steps involved and the recommended settings to configure the Pearson PowerSchool PowerTeacher Virtual Service:

- In the main menu of the LoadMaster WUI, go to **Virtual Services > Add New**.

Please Specify the Parameters for the Virtual Service.

Virtual Address

Port

Service Name (Optional)

Use Template

Select a Template

▼

Protocol

tcp

▼

Cancel

Add this Virtual Service

- Type a valid **Virtual Address**.

4 Configure the LoadMaster

3. Type **5443** as the **Port**.
4. Enter a recognizable **Service Name**, such as **Pearson PowerSchool PowerTeacher Virtual Service**.
5. Click **Add this Virtual Service**.
6. Configure the settings as recommended in the following table:

Section	Option	Value
Standard Options	Transparency	Enabled
	Persistence Mode	Source IP Address
	Timeout	6 Hours
	Scheduling Method	least connection
SSL Properties	SSL Acceleration	Enabled
	Cipher Set	BestPractices
Real Servers	Checked Port	80

7. Add the Real Servers:
 - a) Expand the **Real Servers** section.
 - b) Click **Add New**.
 - c) Enter the address of the relevant Real Server.
 - d) Complete the other fields as required.
 - e) Click **Add this Real Server** then click **OK** to the pop-up message.
 - f) Repeat the steps above to add more Real Servers as needed, based on your environment.

4.3.4 Create a Pearson PowerSchool Report Virtual Service

The following are the steps involved and the recommended settings to configure the Pearson PowerSchool Report Virtual Service:

1. In the main menu of the LoadMaster WUI, go to **Virtual Services > Add New**.

4 Configure the LoadMaster

Please Specify the Parameters for the Virtual Service.

Virtual Address

Port

Service Name (Optional)

Use Template

Protocol

2. Type a valid **Virtual Address**.
3. Type **8443** as the **Port**.
4. Enter a recognizable **Service Name**, such as **Pearson PowerSchool Report Virtual Service**.
5. Click **Add this Virtual Service**.
6. Configure the settings as recommended in the following table:

Section	Option	Value
Basic Properties	Service Type	HTTP/HTTPS
Standard Options	Transparency	Enabled
	Persistence Mode	Active Cookie
	Timeout	6 Hours
	Cookie name	PowerSchool_SSL
	Scheduling Method	least connection
SSL Properties	SSL Acceleration	Enabled
	Cipher Set	Best Practices
Real Servers	Checked Port	7980

7. Add the Real Servers:
 - a) Expand the **Real Servers** section.

4 Configure the LoadMaster

- b) Click **Add New**.
- c) Enter the address of the relevant Real Server.
- d) Complete the other fields as required.
- e) Click **Add this Real Server** then click **OK** to the pop-up message.
- f) Repeat the steps above to add more Real Servers as needed, based on your environment.

4.3.5 Create a Pearson PowerSchool Database Images Virtual Service

The following are the steps involved and the recommended settings to configure the Pearson PowerSchool Report Virtual Service:

1. In the main menu of the LoadMaster WUI, go to **Virtual Services > Add New**.

Please Specify the Parameters for the Virtual Service.

Virtual Address

Port

Service Name (Optional)

Use Template

Protocol

2. Type a valid **Virtual Address**.
3. Type **443** as the **Port**.
4. Enter a recognizable **Service Name**, such as **Pearson PowerSchool Database Images Virtual Service**.
5. Click **Add this Virtual Service**.
6. Configure the settings as recommended in the following table:

Section	Option	Value	Comments
Standard Options	Persistence Mode	Active Cookie	

4 Configure the LoadMaster

Section	Option	Value	Comments
	Timeout	6 Minutes	
	Cookie name	PowerSchool_Images	
SSL Properties	SSL Acceleration	Enabled	
	Cipher Set	Best Practices	
Real Servers	Checked Port	7980	
Advanced Properties	Add a Port 80 Redirector VS		Click Add HTTP Redirector

7. Add the Real Servers:

- Expand the **Real Servers** section.
- Click **Add New**.
- Enter the address of the relevant Real Server.
- Complete the other fields as required.
- Click **Add this Real Server** then click **OK** to the pop-up message.
- Repeat the steps above to add more Real Servers as needed, based on your environment.

Create a Pearson PowerSchool Database Images HTTP Redirect Virtual Service

Clicking the **Add HTTP Redirector** button automatically creates a port 80 redirect Virtual Service. This is optional, but the purpose of this Virtual Service is to redirect any clients who have connected using HTTP to the HTTPS Virtual Service. Kemp also recommends changing the **Persistence Mode** to **None**.

4.3.6 Create a Pearson PowerSchool Database ODBC Virtual Service

The following are the steps involved and the recommended settings to configure the Pearson PowerSchool Report Virtual Service:

1. In the main menu of the LoadMaster WUI, go to **Virtual Services > Add New**.

4 Configure the LoadMaster

Please Specify the Parameters for the Virtual Service.

Virtual Address	<input type="text" value="10.154.11.143"/>
Port	<input type="text" value="1521"/>
Service Name (Optional)	<input type="text" value="Pearson PowerSchool"/>
Use Template	<input type="text" value="Select a Template"/>
Protocol	<input type="text" value="tcp"/>

2. Type a valid **Virtual Address**.
3. Type **1521** as the **Port**.
4. Enter a recognizable **Service Name**, such as **Pearson PowerSchool Database ODBC Virtual Service**.
5. Click **Add this Virtual Service**.
6. Configure the settings as recommended in the following table:

Section	Option	Value
Standard Options	Force L7	Disabled
	Persistence Mode	Source IP Address
	Timeout	6 Minutes

7. Add the Real Servers:
 - a) Expand the **Real Servers** section.
 - b) Click **Add New**.
 - c) Enter the address of the relevant Real Server.
 - d) Complete the other fields as required.
 - e) Click **Add this Real Server** then click **OK** to the pop-up message.
 - f) Repeat the steps above to add more Real Servers as needed, based on your environment.

4.3.7 Create a Pearson PowerSchool Database RDB Virtual Service

The following are the steps involved and the recommended settings to configure the Pearson PowerSchool Database RDB Virtual Service:

1. In the main menu of the LoadMaster WUI, go to **Virtual Services** > Add New.

Please Specify the Parameters for the Virtual Service.

Virtual Address

Port

Service Name (Optional)

Use Template

Protocol

2. Type a valid **Virtual Address**.
3. Type **3389** as the **Port**.
4. Enter a recognizable **Service Name**, such as **Pearson PowerSchool Database RDB Virtual Service**.
5. Click Add this Virtual Service.
6. Configure the settings as recommended in the following table:

Section	Option	Value
Standard Options	Transparency	Enabled
	Timeout	4 Hours
Scheduling Method		least connection

7. Add the Real Servers:
 - a) Expand the **Real Servers** section.
 - b) Click **Add New**.
 - c) Enter the address of the relevant Real Server.

4 Configure the LoadMaster

- d) Complete the other fields as required.
- e) Click **Add this Real Server** then click **OK** to the pop-up message.
- f) Repeat the steps above to add more Real Servers as needed, based on your environment.

References

Unless otherwise specified, the following documents can be found at <http://kemptechnologies.com/documentation>.

Virtual Services and Templates, Feature Description

Last Updated Date

This document was last updated on 27 July 2023.