Progress®
Kemp® LoadMaster®

Deployment Guide Pearson Powerschool

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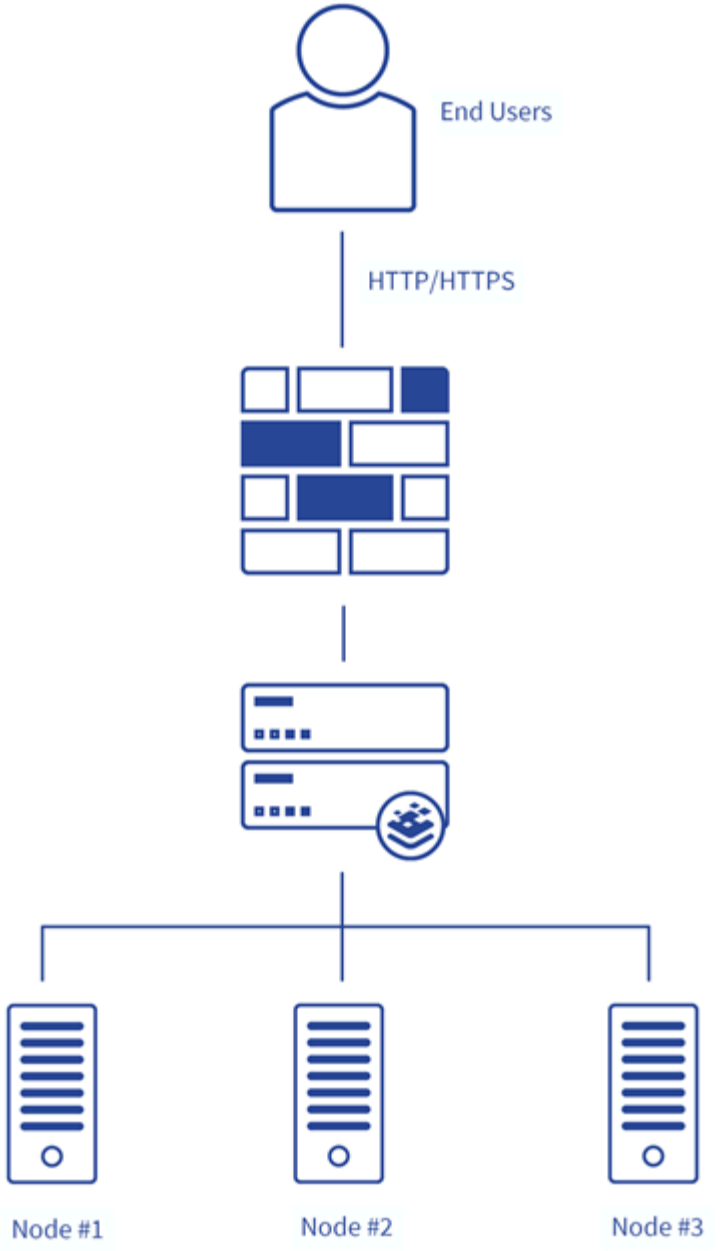
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Introduction

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 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.

Document Purpose

This document provides the recommended LoadMaster settings used when load balancing the Pearson PowerSchool workload. The Progress Kemp Support Team is available to provide solutions for scenarios not explicitly defined. For further details, refer to the: LoadMaster Support and Learning Hub.

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Template

Progress 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.

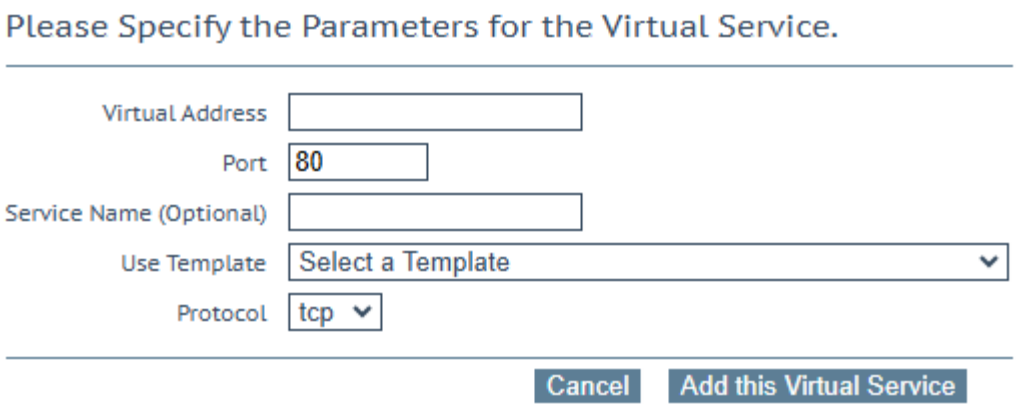
You can remove templates after use and this will not affect deployed services. If needed, you can make changes to any of the VS settings after using the template.

Download released templates from the following page: LoadMaster Templates.

You can import templates to the LoadMaster through the **Manage Templates** page under **Virtual Services** in the main menu of the LoadMaster User Interface (UI).

Click **Choose File**, select the template to install and click **Add New Template**. The template will then be available to select when you are adding a new Virtual Service.

To begin the process of creating a new Virtual Service, click **Virtual Services** and **Add New** in the main menu.



This opens the Virtual Service parameters page which prompts to enter the Virtual IP (VIP) address of the Virtual Service, the port, and the name to give the service and the protocol. You can select a previously-imported template in the **Use Template** drop-down list.

For more information and steps on how to use templates, refer to the Virtual Services and Templates, Feature Description.

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Configure the LoadMaster

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

Contents

- Enable Subnet Originating Requests Globally
- Enable Check Persist Globally
- Create the PowerSchool Virtual Services

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 Real Server sees traffic originating from 10.20.20.21 (LoadMaster eth1 address) and responds correctly in most scenarios.

With **Subnet Originating Requests** disabled, the Real Server sees traffic originating from 10.0.0.15 (LoadMaster Virtual Service address on **eth0**) and responds to **eth0** which could cause asymmetric routing.

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 User Interface (UI), go to **System Configuration > Miscellaneous Options > Network Options**.
2. Select the **Subnet Originating Requests** check box.

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

Create the PowerSchool Virtual Services

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

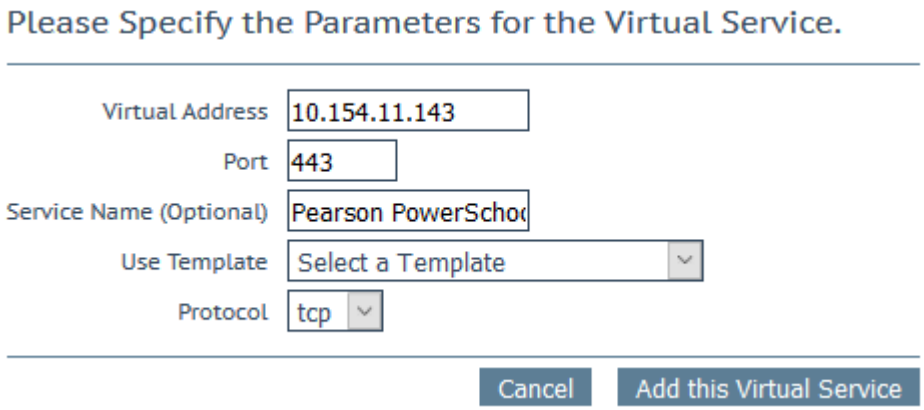
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- Create a Pearson PowerSchool HTTPS Virtual Service
- Create a Pearson PowerSchool Scheduler Virtual Service
- Create a Pearson PowerSchool PowerTeacher Virtual Service
- Create a Pearson PowerSchool Report Virtual Service
- Create a Pearson PowerSchool Database Images Virtual Service
- Create a Pearson PowerSchool Database ODBC Virtual Service
- Create a Pearson PowerSchool Database RDB Virtual Service

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**.



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	https://%h%s	Click Add HTTP

Section	Option	Value	Comment
	VS		Redirector.
Real Servers	URL	/admin/pw.html	

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

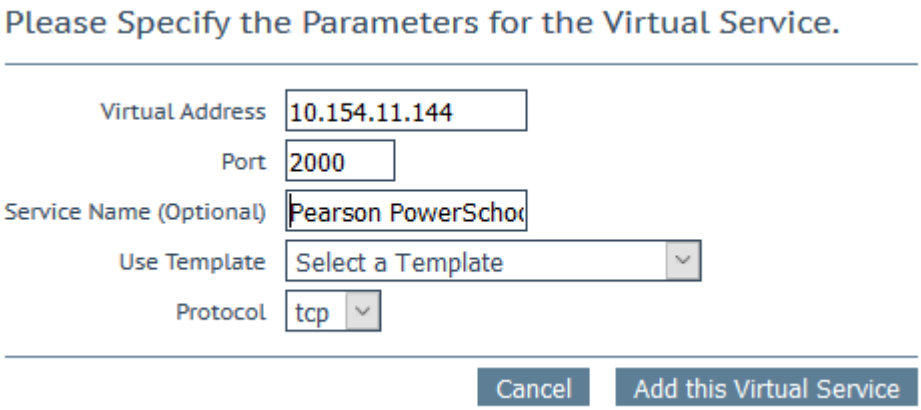
Create a Pearson PowerSchool HTTPS Redirect Virtual Service

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. Progress Kemp also recommends changing the **Persistence Mode** to **None**.

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**.



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:

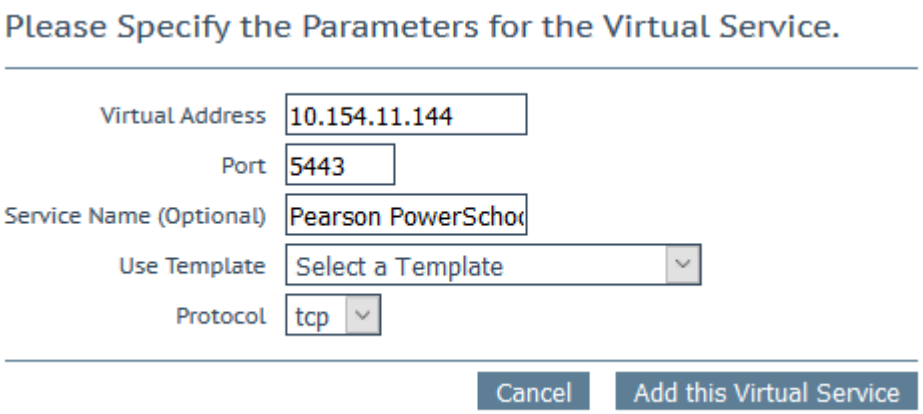
Section	Option	Value	Comment
Standard Options	Force L7	Disabled	
	Persistence Option	Source IP Address	
	Timeout	8 Hours	
	Scheduling Method	Least connection	

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

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:

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



2. Type a valid **Virtual Address**.
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:

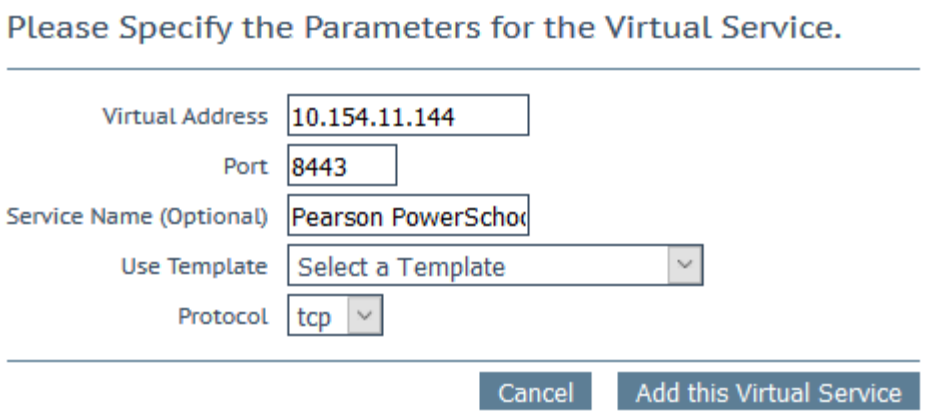
Section	Option	Value
Standard Options	Transparency	Enabled
	Persistence Mode	Source IP Address
	Timeout	6 Hours
	Scheduling Method	least connection
SSL Properties	SSL Acceleration	Enabled
	Cipher Set	BestPractices
Real Servers	Checked Port	80

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

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**.



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

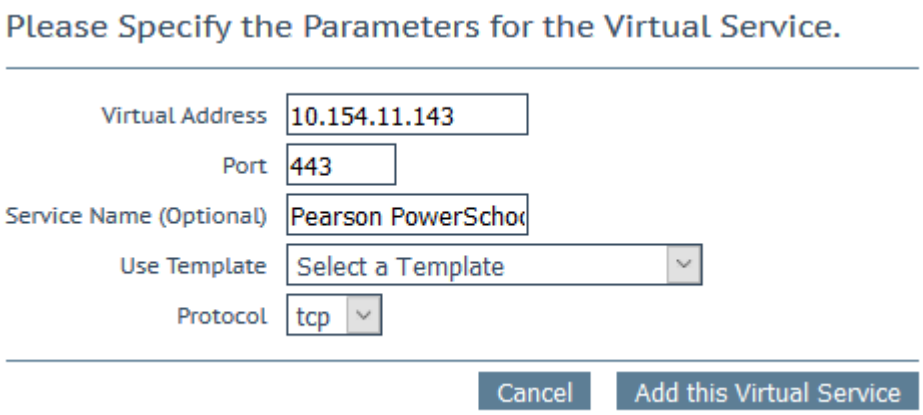
Section	Option	Value
Real Servers	Checked Port	7980

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

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**.



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

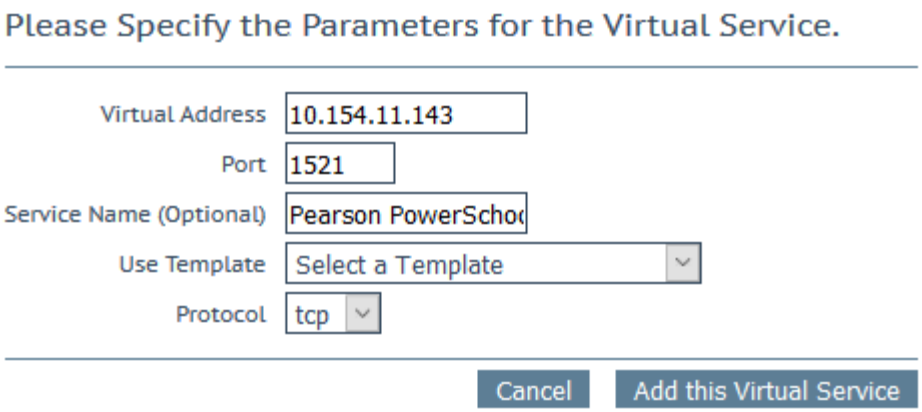
Create a Pearson PowerSchool Database Images HTTP Redirect Virtual Service

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. Progress Kemp also recommends changing the **Persistence Mode** to **None**.

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**.



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:

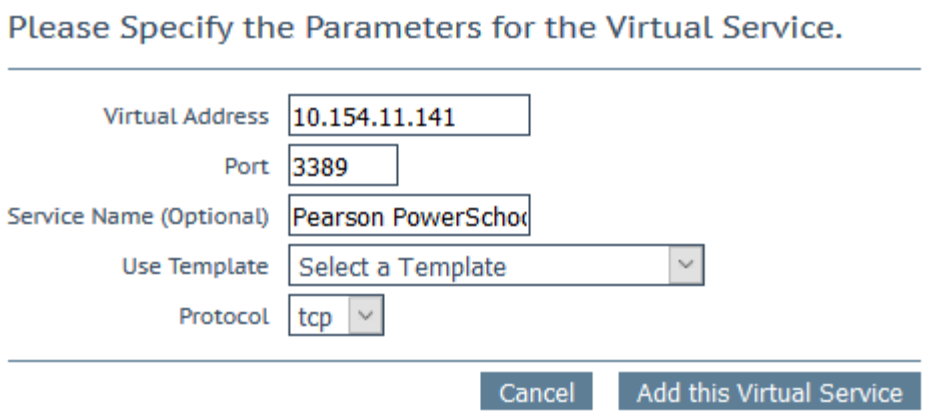
Section	Option	Value
Standard Options	Force L7	Disabled
	Persistence Mode	Source IP Address
	Timeout	6 Minutes

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

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.



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

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References

For further details on Virtual Services and Templates, refer to the following document:

Virtual Services and Templates Feature Description