

OverDrive

ProjectServer Redundant System Configuration Guide

Version 24.3

ROSS

Thank You for Choosing Ross

You've made a great choice. We expect you will be very happy with your purchase of Ross Technology. Our mission is to:

1. Provide a Superior Customer Experience
 - offer the best product quality and support
2. Make Cool Practical Technology
 - develop great products that customers love

Ross has become well known for the Ross Video Code of Ethics. It guides our interactions and empowers our employees. I hope you enjoy reading it below.

If anything at all with your Ross experience does not live up to your expectations be sure to reach out to us at solutions@rossvideo.com.



David Ross
CEO, Ross Video
dross@rossvideo.com

Ross Video Code of Ethics

Any company is the sum total of the people that make things happen. At Ross, our employees are a special group. Our employees truly care about doing a great job and delivering a high quality customer experience every day. This code of ethics hangs on the wall of all Ross Video locations to guide our behavior:

1. We will always act in our customers' best interest.
2. We will do our best to understand our customers' requirements.
3. We will not ship crap.
4. We will be great to work with.
5. We will do something extra for our customers, as an apology, when something big goes wrong and it's our fault.
6. We will keep our promises.
7. We will treat the competition with respect.
8. We will cooperate with and help other friendly companies.
9. We will go above and beyond in times of crisis. *If there's no one to authorize the required action in times of company or customer crisis - do what you know in your heart is right. (You may rent helicopters if necessary.)*

ProjectServer Redundant System

· Configuration Guide

- Ross Part Number: **4900DR-004-24.3**
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Patents

Patent numbers US 7,034,886; US 7,508,455; US 7,602,446; US 7,802,802 B2; US 7,834,886; US 7,914,332; US 8,307,284; US 8,407,374 B2; US 8,499,019 B2; US 8,519,949 B2; US 8,743,292 B2; GB 2,419,119 B; GB 2,447,380 B; and other patents pending.

Notice

The material in this manual is furnished for informational use only. It is subject to change without notice and should not be construed as commitment by Ross Video Limited. Ross Video Limited assumes no responsibility or liability for errors or inaccuracies that may appear in this manual.

Important Regulatory and Safety Notices to Service Personnel

Before using this product and any associated equipment, read all the Important Safety Instructions listed below so as to avoid personal injury and to prevent product damage.

The OverDrive system makes use of a number of individual component products to make up a complete turnkey system. The Important Safety Instructions section of this manual is intended to compliment individual OEM product manuals and the User must refer to, and heed, any safety instruction outline in these supplementary product manuals. Separate manuals are included for the following component products:

- Server PC(s)
- LCD Flat Screen Display(s) & Power Supply

This system may also require specific equipment, and /or installation procedures be carried out to satisfy certain other regulatory compliance requirements. Notices have been included in this publication to call attention to these specific requirements.

Symbol Meanings



Protective Earth — This symbol identifies a Protective Earth (PE) terminal, which is provided for connection of the supply system's protective earth (green or green/yellow) conductor.



This symbol on the equipment refers you to important operating and maintenance (servicing) instructions within the Product Manual Documentation. Failure to heed this information may present a major risk of damage or injury to persons or equipment.



Warning — The symbol with the word “**Warning**” within the equipment manual indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



Caution — The symbol with the word “**Caution**” within the equipment manual indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.



Warning Hazardous Voltages — This symbol is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product enclosure that may be of sufficient magnitude to constitute a risk of shock to persons.



ESD Susceptibility — This symbol is used to alert the user that an electrical or electronic device or assembly is susceptible to damage from an ESD event.

Important Safety Instructions

- Read these instructions.
- Keep these instructions.
- Heed all warning.
- Follow all instructions.



Warning

The safe operation of this product requires that a protective earth connection be provided. A grounding conductor in the equipment's supply cord provides this protective earth. To reduce the risk of electrical shock to the operator and service personnel, this ground conductor must be connected to an earthed ground.

Use only power cords specified for this product and certified for the country of use. Refer to the Product Power Cord Requirement Section that follows.

Do not defeat safety purpose of the grounding-type plug. A grounding type plug has two blades and a third grounding prong. The third prong is provided for your safety. If the provided plug does not fit in to your outlet, consult an electrician for replacement of the obsolete outlet.

Protect the power cord from being walked on or pinching particularly at plugs, convenience receptacles, and point where they exit from the apparatus.



Warning

Indoor Use: “WARNING – TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPARATUS TO RAIN OR MOISTURE”

Do not use this apparatus near water.

Do not block any ventilation openings. Install in accordance with manufacturer's instructions.

Do not install near heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

Only use attachments/accessories specified by the manufacturer.

Unplug this apparatus during lightning storms or when unused for long periods of time.

Clean only with a dry cloth.



Warning

Refer all servicing to qualified personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug damage, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.



Caution

To reduce the risk of fire, replacement fuses must be the same type and rating.



Warning

This product contains safety critical parts, which if incorrectly replaced may present a risk of fire or electrical shock. Components contained within the product's power supplies and power supply area, are not intended to be customer serviced and should be returned to the factory for repair

Product Power Cord Requirements



Warning North American Line Voltages 100 - 120 Volt

This product is supplied with certified 10A/125V SVT type supply cords.

Conductors are color coded white (neutral), black (line) and green or green/yellow (ground).

Operation of this equipment at line voltages exceeding 130V requires that alternative supply cords with appropriate voltage and current ratings be used.



Warning International Line Voltages 200 - 240 Volt

This product has been designed for use with certified IEC 320- C13 10A/250V - H03 VV-F3G 1.00mm² type line cord.

International product orders are supplied with a certified 10A/250V line cords, utilizing a molded 3-pin IEC 320-C13 type connector at one end and stripped conductors on the other. One line cord is provided. Conductors are CEE color coded; blue (neutral), brown (line), and green/yellow (ground).

Installation by a qualified Electrician, of an appropriately approved A/C wall plug certified for the country of use, is required.

Alternatively, other IEC 320 C-13 type power cords may be used, provided that they meet the necessary safety certification requirements for the country in which they are to be used. Refer to the correctly specified line cord above.

EMC Notices

US FCC Part 15

This equipment has been tested and found to comply with the limits for a class A Digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a Commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.



Notice Changes or modifications to this equipment not expressly approved by Ross Video Ltd. could void the user's authority to operate this equipment.

CANADA

This Class "A" digital apparatus complies with Canadian **ICES-003**.

Cet appareil numérique de la classe "A" est conforme a la norme **NMB-003** du Canada.

EUROPE

This equipment is in compliance with the essential requirements and other relevant provisions of **CE Directive 93/68/EEC**.

INTERNATIONAL

This equipment has been tested to **CISPR 22:1997** along with amendments **A1:2000** and **A2:2002** and found to comply with the limits for a Class A Digital device.



Notice This is a Class A product. In domestic environments, this product may cause radio interference, in which case the user may have to take adequate measures.

Warranty and Repair Policy

The OverDrive Live and OverDrive News systems are backed by a comprehensive one-year warranty on all components.



Notice — *Changes or modifications to this equipment not expressly approved by Ross Video Limited could void the user's authority to operate this equipment.*

If an item becomes defective within the warranty period Ross will repair or replace the defective item, as determined solely by Ross.

Warranty repairs will be conducted at Ross, with all shipping FOB Ross dock. If repairs are conducted at the customer site, reasonable out-of-pocket charges will apply. At the discretion of Ross, and on a temporary loan basis, plug in circuit boards or other replacement parts may be supplied free of charge while defective items undergo repair. Return packing, shipping, and special handling costs are the responsibility of the customer.

This warranty is void if products are subjected to misuse, neglect, accident, improper installation or application, or unauthorized modification.

In no event shall Ross Video Limited be liable for direct, indirect, special, incidental, or consequential damages (including loss of profit). Implied warranties, including that of merchantability and fitness for a particular purpose, are expressly limited to the duration of this warranty.

This warranty is TRANSFERABLE to subsequent owners, subject to Ross' notification of change of ownership.

Extended Warranty

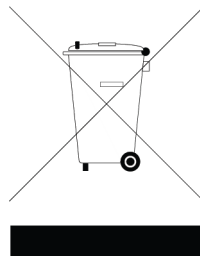
For customers that require a longer warranty period, Ross offers an extended warranty plan to extend the standard warranty period by one year increments. For more information about an extended warranty for your OverDrive system, contact your regional sales manager.

Environmental Information

The equipment that you purchased required the extraction and use of natural resources for its production. It may contain hazardous substances that could impact health and the environment.

To avoid the potential release of those substances into the environment and to diminish the need for the extraction of natural resources, Ross Video encourages you to use the appropriate take-back systems. These systems will reuse or recycle most of the materials from your end-of-life equipment in an environmentally friendly and health conscious manner.

The crossed-out wheeled bin symbol invites you to use these systems.



If you need more information on the collection, reuse, and recycling systems, please contact your local or regional waste administration.

You can also contact Ross Video for more information on the environmental performances of our products.

Use of Hazardous Substances in Electrical and Electronic Products (China RoHS)

Ross Video Limited has reviewed all components and processes for compliance to:

“Management Methods for the Restriction of the Use of Hazardous Substances in Electrical and Electronic Products” also known as China RoHS.

The “Environmentally Friendly Use Period” (EFUP) and Hazardous Substance Tables have been established for all products. We are currently updating all of our Product Manuals.

The Hazardous substances tables are available on our website at:

<http://www.rossvideo.com/about-ross/company-profile/green-practices/china-rohs.html>

电器电子产品中有害物质的使用

Ross Video Limited 按照以下的标准对所有组件和流程进行了审查:

“ 电器电子产品有害物质限制使用管理办法 ” 也被称为中国 RoHS。

所有产品都具有 “ 环保使用期限 ” (EFUP) 和有害物质表。目前, 我们正在更新我们所有的产品手册。

有害物质表在我们的网站:

<http://www.rossvideo.com/about-ross/company-profile/green-practices/china-rohs.html>

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Introduction

Thank you, and congratulations on choosing the OverDrive Automated Production Control System. With extensive experience in external device control united with over 30 years of production switcher design and manufacturing, Ross Video is proud to present the next evolution in production control systems. As you read through this guide, you will discover that Ross Video has again broken new ground with OverDrive.

OverDrive Overview

Ross Video developed the OverDrive system for live events, including sports, faith-based, and live entertainment productions. Using an intuitive touch screen Graphical User Interface (GUI), OverDrive allows operators direct control over production devices including the production switcher, DVEs, video and audio servers, robotic cameras, audio mixers, and more. A unique advantage of OverDrive is its ability to be used in semi or fully automated productions, while still allowing full manual access to the production equipment. Productions are cleaner, more consistent and staffing can be optimized for each production to suit requirements.

The OverDrive MOS newsroom interface provides a LiveLink™ between the Newsroom Control System (NRCS) and the OverDrive rundown. Any changes made in the newsroom rundown will automatically and instantly update the rundown in OverDrive, providing continuity and the ability to bring last second changes to air. Stories can be floated, dropped or changed, and OverDrive automatically reassigns all resources associated with the shot.

Warning messages are provided to indicate upcoming events that may require additional user input, such as a video server clip name, allowing the operator to correct for errors before they make it to air, always ensuring a clean production. The centralized control of production devices combined with the newsroom interface in one intuitive GUI allows the operator to focus on the quality of the on-air product, leaving management of resources to OverDrive.

About This Guide

This guide contains the following chapters that cover the installation and configuration of ProjectServer software:

1. **“Introduction”** summarizes this guide and provides information about important terms, conventions, and features.
2. **“System Requirements”** provides the recommended minimum hardware and software requirements to ensure that the ProjectServer Redundant System functions correctly.
3. **“ProjectServer Software Installation”** provides instructions for installing ProjectServer software on the ProjectServer computers in a ProjectServer Redundant System.
4. **“Database Software Installation”** provides instructions for installing and configuring database software on the three MariaDB Servers in a ProjectServer Redundant System.
5. **“ProjectServer File Replication on a Server Shared with RPM”** provides instructions for configuring Syncthing software when you install ProjectServer on the same computer that runs the Ross Platform Manager.
6. **“PostgreSQL to MariaDB Migration”** provides instruction for upgrading a standalone ProjectServer v23.3 or older system to a ProjectServer Redundant system.
7. **“File Synchronization”** provides information about database and file synchronization in a ProjectServer Redundant System.
8. **“Load Balancer Configuration”** provides instruction to configure a load balancer in a ProjectServer Redundant System.

If you have questions pertaining to the operation of the Ross Video product, please contact us at the numbers listed in the section **“Contacting Technical Support”** on page 1–2. Our technical staff is always available for consultation, training, or service.

Documentation Conventions

Special text formats are used in this guide to identify parts of the user interface, text that a user must enter, or a sequence of menus and sub-menus that must be followed to reach a particular command.

Interface Elements

Bold text is used to identify a user interface element such as a dialog box, menu item, or button. For example:

In the **RundownControl** section, click **Install License**.

User Entered Text

Courier text is used to identify text that a user must enter. For example:

1. In the **Open** box, enter the following application name:

```
services.msc
```

Referenced Guides

Italic text is used to identify the titles of referenced guides, manuals, or documents. For example:

- using **RapidRestore** to archive and backup OverDrive rundowns and settings, refer to the chapter “**RapidRestore™**” on page 16–1 in the *OverDrive User Guide*.

Menu Sequences

Menu arrows are used in procedures to identify a sequence of menu items that you must follow. For example, if a step reads “**File > Exit**,” you would click the **File** menu and then click **Exit**.

Important Instructions

Star icons are used to identify important instructions or features. For example:

- ★ After installing OverDrive software, licenses must be obtained from Ross Video Technical Support before using OverDrive features.

Getting Help

The OverDrive Online Help system can be accessed from any of the components of OverDrive. Online Help opens in a Microsoft Internet Explorer® window.

The OverDrive Online Help system displays, by default, the **Contents** pane. To access the **Index** or **Search** panes, click the **Index** or **Search** button on the top toolbar in the Online Help system.

Contacting Technical Support

Technical Support is staffed by a team of experienced specialists ready to assist you with any question or technical issue.

Ross Video has technical support specialists strategically located around the globe to ensure a prompt response to technical inquiries. Our primary technical support center is located in Ottawa, Ontario, Canada. In addition, we have offices in The United Kingdom (London), Australia (Sydney), and Singapore with satellite locations in New York City, The Netherlands, and China. As we expand our presence globally, we are constantly evaluating other key locations to have a local technical support specialist in order to better service our customers.

North America

Our North America center located in Ottawa, Ontario, Canada and is open Monday to Friday 8:30 a.m. to 6:00 p.m. EST, with 24/7/365 on-call service after hours.

Our telephone number is: +1-613-686-1557

Toll free within North America: +1 833-859-0499

EMEA

Our EMEA center is open Monday to Friday 8:30 a.m. to 5:00 p.m. GMT. After hours support is provided by our North America location.

International toll free: +800 3540 3545

If the local support specialist is not available, your call will be transferred automatically to our North America center.

Australia

Our Sydney, Australia office is located in Alexandria, NSW.

Our local support telephone number is: 1300 007 677

If the local support specialist is not available, your call will be transferred automatically to our North America center.

Online

E-mail: techsupport@rossvideo.com

Website: open a support request using the link <https://support.rossvideo.com/> to open a support request.

OverDrive Community

The OverDrive Community is an exciting benefit available to OverDrive customers. This forum is designed specifically for OverDrive users and enthusiasts to communicate, share ideas, and browse valuable product information. Please visit the forum often and feel free to participate, share experiences, and offer expertise.

- <https://rossvideo.community/search?s=tags%3A%22OverDrive%22&executesearch=true>

System Requirements

The Ross Video OverDrive ProjectServer Redundant System is based on mainstream PC hardware and virtual machines running the Windows® and Linux operating systems, along with a load balancer. To ensure that your ProjectServer Redundant System functions correctly, verify that the computers in your system and the installed software meet the recommended minimum requirements described in this chapter.

This chapter discusses the following topics:

- ProjectServer Redundant System
- Computer System Requirements
- Ports

ProjectServer Redundant System

A ProjectServer Redundant System contains two ProjectServers, a load balancer, and three MariaDB Servers. OverDrive Servers access the ProjectServer through the load balancer. The load balancer spreads OverDrive Servers between the two ProjectServers in the system. The results of ProjectServer actions on both ProjectServer Servers are saved in the MariaDB Cluster. The data is automatically replicated between the three MariaDB Servers in the cluster.

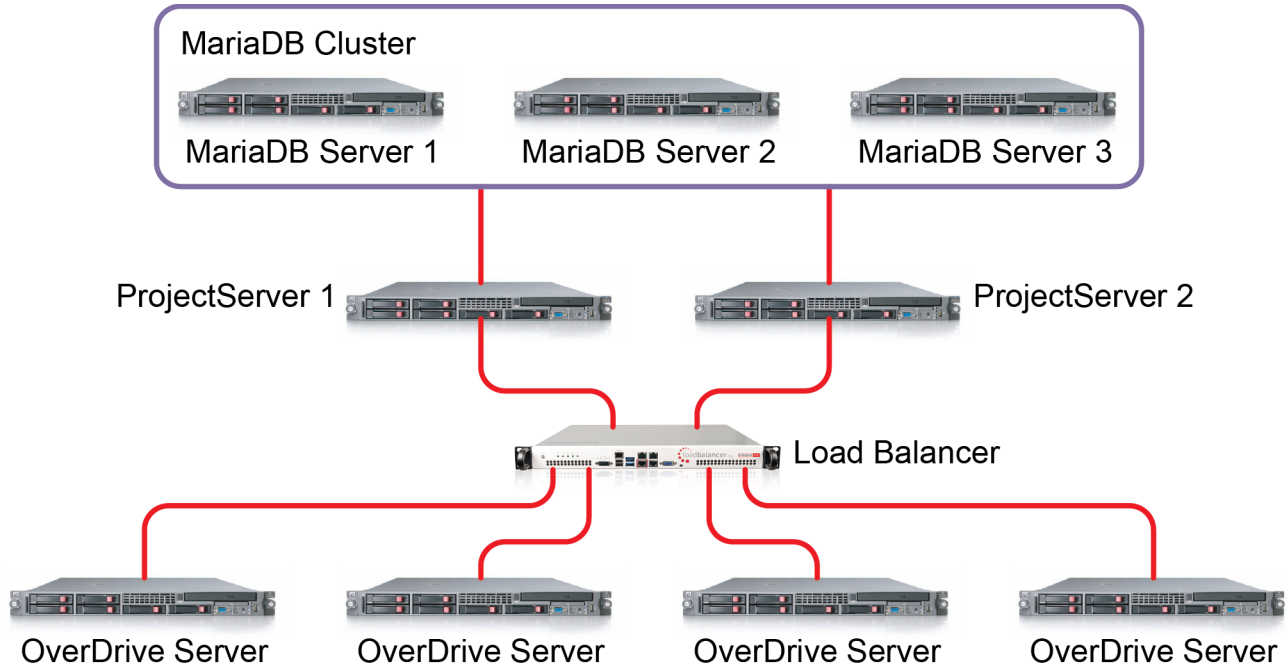


Figure 2.1 ProjectServer Redundant System

If one of the ProjectServers falters, the load balancer automatically directs users to the other ProjectServer Server. If one of the MariaDB Servers falters, the other MariaDB Servers in the MariaDB Cluster can enable ProjectServer to continue operation.

★ Ross Video recommends repairing faulty components of a ProjectServer Redundant System as soon as possible.

Computer System Requirements

To ensure the proper function of a ProjectServer Redundant System, verify that the computers in the system meets the requirements described in the following sections:

ProjectServer Hardware

Ross Video recommends the following computer hardware configuration to run ProjectServer software:

Table 2.1 Dell R350XE PowerEdge OverDrive Server Specifications

CPU	Intel® Xeon® E-2378G 2.8GHz, 16M Cache, 8C/16T, Turbo (80W), 3200MT/s
RAM	32GB (4x8GB) UDIMM, 3200MT/s, ECC
Storage	2 x 480GB SSD SATA 6Gbps 515 2.5in Hot-plug AG Drive (Hardware Raid 1)
RAID Controller	PERC H355 Raid Controller
LAN	Broadcom 5720 Dual Port 1Gb On-Board LOM
Power Supply	Dual, Hot-Plug, Redundant Power Supply (1+1), 600W
Operating System	Windows 2022 Server 64-bit
Trusted Platform Module	TPM 2.0 V3

MariaDB Server Hardware

Ross Video recommends the following computer hardware configuration for each computer in the MariaDB cluster:

Table 2.2 Dell R350XE PowerEdge OverDrive Server Specifications

CPU	Quad-core Intel(R) Xeon(R) Gold 6338 CPU @ 2.00GHz
RAM	8GB
Storage	64 GB (minimum), 128 GB (recommended)
LAN	1 GB/s

Operating System

Ross Video recommends the following minimum computer software configuration to run OverDrive software:

Table 2.3 OverDrive Computer Software

ProjectServer	Microsoft® Windows Server 2019 or 2022 with the latest patches. Windows Server 2022 is recommended.
MariaDB Server	Ubuntu 22.04.5 LTS

- ★ Ensure that the operating system is updated with all necessary security patches and service packs before installing ProjectServer software on a computer.

Ports

The information provided in the following table lists the ports used by ProjectServer:

Table 2.4 Project Server Ports

Port	Protocol	Purpose	Can be Disabled
8059	TCP	ProjectServer Thinned Web Client and WebSockets	No
5432	TCP	PostgreSQL Database	No
3306	TCP	MariaDB client connections and sometimes SST via mysqldump	No
4567	TCP + UDP	Main Galera replication traffic	No
4568	TCP	IST (Incremental State Transfer)	No
4444	TCP	SST (State Snapshot Transfer)	No
8384	TCP	Synthing Web Client (Configurable)	No
22000	TCP	Synthing Listen Port	No

ProjectServer Software Installation

This chapter provides instructions for installing ProjectServer software on the ProjectServer computers in a ProjectServer Redundant System.

This chapter discusses the following topics:

- Before You Install ProjectServer Software
- Install ProjectServer Software
- Next Step

Before You Install ProjectServer Software

Before you install database software on the ProjectServer computers in a ProjectServer Redundant System, perform the following tasks:

- Have a qualified Ross Video technician perform any required maintenance or repairs on the computers in your ProjectServer Redundant System.
- Exit all other Windows® programs currently running on the computers in your ProjectServer Redundant System.
- Temporarily disable anti-virus software running on the computers in your ProjectServer Redundant System. Some heuristic-based intrusion detection systems prevent the installation of ProjectServer database software. Re-enable anti-virus software after installing ProjectServer database software.

Contact a Ross Video sales representative for information about ProjectServer Commissioning, Training, and Update services.

For More Information on...

- contacting Ross Video Technical Support, refer to the section “**Contacting Technical Support**” on page 1–2.

Install ProjectServer Software

You need to install ProjectServer software on both the ProjectServer computers in your ProjectServer Redundant System. Install the ProjectServer on a the same computer as the OverDrive Server from which you will publish show and global system configurations. An OverDrive Server must be able to connect to the ProjectServer to deploy show and global system configurations to the OverDrive system.

- ★ The ProjectServer software major and minor version must match the OverDrive software major and minor installed on each OverDrive node in your system. For example, you must install ProjectServer v23.4.X to work with OverDrive v23.4.X. The X in the example ProjectServer and OverDrive software version numbers does not need to match.

ProjectServer 1

- ★ Other than for Ross Platform Manager, do not install additional Synching processes on the ProjectServer 1 computer.

Different ports can be used for ProjectServer and Ross Platform Manager Synching processes to enable both processes to run on the same computer without disruption. When running ProjectServer on the same computer as Ross Platform Manager, refer to the chapter “**ProjectServer File Replication on a Server Shared with RPM**” on page 5–1.

To install ProjectServer software on the ProjectServer 1 computer

1. When installing **ProjectServer** software on a computer that is running **Ross Platform Manager**, complete the procedure “**To change the Sync Protocol Listen port used by Ross Platform Manager**” on page 5–2 before you install **ProjectServer** software.
2. Contact Ross Video Technical Support to obtain the **ProjectServer** software installer that matches the OverDrive version installed on the OverDrive nodes in your system.

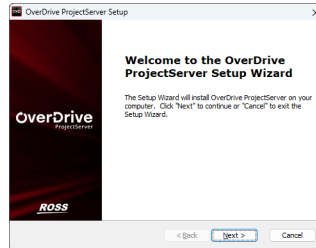
ProjectServer major and minor versions must match all of the OverDrive nodes in the system. For example, you must install ProjectServer v23.4.x to work with OverDrive v23.4.x. The x in the example version numbers does not need to be the same across OverDrive nodes.

3. Log in to the **ProjectServer 1** computer as an **administrator**.
4. On the **ProjectServer 1** computer, exit all currently running Windows® applications.
5. Temporarily disable antivirus software running on the ProjectServer 1 computer.
Some heuristic-based intrusion detection systems prevent the installation of ProjectServer software.

6. Copy the **ProjectServer** software installer obtained from Ross Video Technical Support to your **ProjectServer 1** computer.
7. Navigate to the folder where you copied the **ProjectServer** software installer.
8. Double-click **OverDriveProjectServer-23.4.X-.msi**.

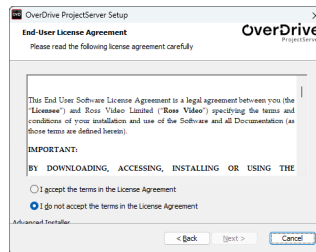
If a **Security Warning** message displays, click **Run**.

The **OverDrive ProjectServer Setup** wizard opens.



9. Click **Next**.

The **End-User License Agreement** screen opens.

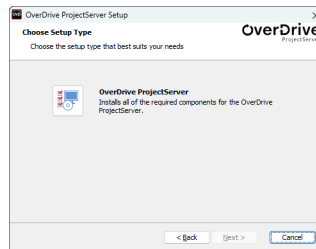


10. Read the **END USER SOFTWARE LICENSE AGREEMENT**.

11. Select the **I accept the terms in the License Agreement** option.

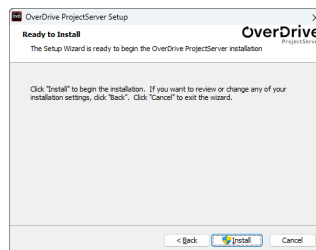
12. Click **Next**.

The **Choose Setup Type** screen opens.



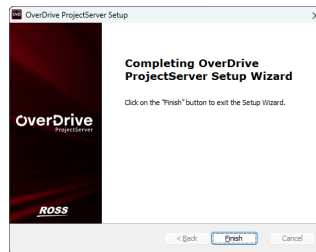
13. Click the **OverDrive ProjectServer** icon.

The **Ready to Install** screen opens.



14. Click **Install**.

After the ProjectServer installation completes, the **Installation Complete** screen opens.



15. Click **Finish**.

The **OverDrive ProjectServer Setup** wizard closes and adds the **OverDrive ProjectServer** icon to the Desktop. The ProjectServer starts automatically after the installation of the OverDrive ProjectServer software.

16. Re-enable antivirus software.

17. After installing **ProjectServer** software on a computer running **Ross Platform Manager**, complete the procedure “**To change the Sync Protocol Listen port used by Ross Platform Manager**” on page 5–2.

ProjectServer 2

★ Other than for Ross Platform Manager, do not install additional Synching processes on the ProjectServer 2 computer.

Different ports can be used for ProjectServer and Ross Platform Manager Synching processes to enable both processes to run on the same computer without disruption. When running ProjectServer on the same computer as Ross Platform Manager, refer to the chapter “**ProjectServer File Replication on a Server Shared with RPM**” on page 5–1.

To install ProjectServer software on the ProjectServer 2 computer

1. When installing **ProjectServer** software on a computer that is running **Ross Platform Manager**, complete the procedure “**To change the Sync Protocol Listen port used by Ross Platform Manager**” on page 5–2 before you install **ProjectServer** software.
2. Log in to the **ProjectServer 2** computer as an **administrator**.
3. On the **ProjectServer 2** computer, exit all currently running Windows® applications.
4. Temporarily disable antivirus software running on the ProjectServer 2 computer.
Some heuristic-based intrusion detection systems prevent the installation of ProjectServer software.
5. Copy the **ProjectServer** software installer obtained from Ross Video Technical Support to your **ProjectServer 2** computer.
6. Navigate to the folder where you copied the **ProjectServer** software installer.
7. Double-click **OverDriveProjectServer-23.4.X-.msi**. to install ProjectServer software on the ProjectServer 2 computer.
8. Follow steps 9 to 16 in the procedure “**To install ProjectServer software on the ProjectServer 1 computer**” on page 3–2 to complete the ProjectServer installation on the ProjectServer 2 computer.

Next Step

Installing ProjectServer also installs the MariaDB Galera Cluster Setup script that you will use to install the MariaDB database software and configure the MariaDB Galera Cluster across the three MariaDB Servers in your ProjectServer Redundant System. After setting up the MariaDB Galera Cluster, you can configure the ProjectServer installed on your ProjectServer 1 and ProjectServer 2 computers to connect to the MariaDB Galera Cluster.

Continue setting up your ProjectServer Redundant System by completing the procedures in the chapter “**Database Software Installation**” on page 4-1.

Database Software Installation

This chapter provides instructions for installing and configuring database software on the three MariaDB Servers in a ProjectServer Redundant System.

This chapter discusses the following topics:

- Database Software Installation Requirements
- Pre-installation Tasks
- Install ProjectServer Redundant System Database Software
- Connect Your ProjectServers to the Database Cluster
- License Your ProjectServer Software

Database Software Installation Requirements

Before you install database software on the ProjectServers in a ProjectServer Redundant System, ensure that your ProjectServer Redundant System meets the following requirements:

- **Three Available Machines** — a ProjectServer Redundant System requires that at least three servers or virtual machines are prepared for use to install the MariaDB Galera Cluster.
- **Operating System** — each intended MariaDB node machine must have the Ubuntu 22.04 LTS operating system installed and running.
- **Network Connectivity** — all ProjectServer and MariaDB node machines are configured with static IP addresses and are reachable over the network with proper hostname resolution.
- **Internet Access (Setup Only)** — all MariaDB node machines require internet access required during the initial setup process, which includes package installation and configuration of MariaDB services within the `setup_galera.sh` script. Internet access can be restricted or disabled after the database software installation is complete.

Pre-installation Tasks

Before you install database software on the ProjectServer and MariaDB node machines in a ProjectServer Redundant System, perform the following tasks:

- Have a qualified Ross Video technician perform any required maintenance or repairs on the computers or virtual machines in your ProjectServer Redundant System.
- Exit all other programs currently running on the ProjectServers in your ProjectServer Redundant System.
- Temporarily disable antivirus software running on the ProjectServers in your ProjectServer Redundant System. Some heuristic-based intrusion detection systems prevent the installation of ProjectServer database software. Re-enable antivirus software after installing ProjectServer database software.

Contact a Ross Video sales representative for information about ProjectServer Commissioning, Training, and Update services.

For More Information on...

- contacting Ross Video Technical Support, refer to the section “**Contacting Technical Support**” on page 1–2.

Install ProjectServer Redundant System Database Software

A ProjectServer Redundant System uses a cluster of three MariaDB Servers to store and manage ProjectServer data for the ProjectServers in a ProjectServer Redundant System. The MariaDB Servers can run on a computer or a virtual machine running the Ubuntu 22.04.5 LTS operating system.

Before you start installing software, it is a good idea to have the following information ready:

- Hostnames and IP addresses of each computer that you will use in your MariaDB Galera Cluster.
- The MariaDB account username and password.

MariaDB Server 1 - Bootstrap Node

The first MariaDB Server computer or virtual machine that you setup up using the MariaDB Galera Cluster Setup script will act as the bootstrap node in your cluster.

To setup the bootstrap MariaDB node in a ProjectServer Redundant System

1. Log in to the **MariaDB Server 1** computer or virtual machine as an **administrator**.
2. From one of your **ProjectServer** computers, copy the `setup_galera.sh` script from the following folder to your **MariaDB Server 1** computer or virtual machine:

```
C:\Program Files\Ross Video\Overdrive Project Server\utilities\database\mariadb-galera-cluster
```

3. Open a **Terminal** window.
4. Navigate to the folder where you copied the **setup_galera.sh** script.
5. At the prompt, enter the following command to make the **setup_galera.sh** script executable:


```
chmod a+x setup_galera.sh
```
6. At the prompt, enter the following command to start the **setup_galera.sh** script for the bootstrap node:


```
sudo ./setup_galera.sh --bootstrap \
```
7. At the displayed **>** prompt, enter the following command where **<Node_1_IP_address>** is the IP address of this node:


```
--node-ip <Node_1_IP_address> \
```
8. At the displayed **>** prompt, enter the following command where **<Node_1_IP_address>**, **<Node_2_IP_address>**, and **<Node_3_IP_address>** is comma-separated list of the cluster node the IP addresses:


```
--cluster-ips <Node_1_IP_address>,<Node_2_IP_address>,<Node_3_IP_address> \
```
9. At the displayed **>** prompt, enter the following command where **<Node_1_Hostname>** is the hostname of this node.


```
--node-name <Node_1_Hostname> \
```

This name must be unique for each node in your MariaDB Galera Cluster.
10. At the displayed **>** prompt, enter the following command where **<MariaDB_username>** is the MariaDB username used to access the ProjectServer database:


```
--db-user <MariaDB_username> \
```

The MariaDB username is same for all nodes in your MariaDB Galera Cluster.
11. At the displayed **>** prompt, enter the following command where **<MariaDB_password>** is the password for the MariaDB username used to access the ProjectServer database:


```
--db-pass <MariaDB_password> \
```

The MariaDB password is same for all nodes in your MariaDB Galera Cluster.
12. At the displayed **>** prompt, enter the following comma to set the name of the ProjectServer database.


```
--db-name overdriveprojectserver
```
13. At the **[sudo] password** prompt, enter your **sudo password**.

The MariaDB Galera Cluster Setup script starts running using your entered information.
14. At the following prompt, press the **Enter**.

Adding repository.

Press [ENTER] to continue or Ctrl-C to cancel

MariaDB Galera Cluster Setup script continues. When the script ends, it displays the following information about the bootstrap node in your MariaDB cluster:

```
+-----+-----+
| Variable_name      | Value |
+-----+-----+
| wsrep_cluster_size | 1     |
+-----+-----+
? Setup complete for MariaDB1
```

MariaDB Server 2

Running the MariaDB Galera Cluster Setup script on the second MariaDB Server computer or virtual machine adds the node to your MariaDB cluster.

To setup the second MariaDB node in a ProjectServer Redundant System

1. Log in to the **MariaDB Server 2** computer or virtual machine as an **administrator**.
2. From one of your **ProjectServer** computers, copy the **setup_galera.sh** script from the following folder to your **MariaDB Server 2** computer or virtual machine:

```
C:\Program Files\Ross Video\Overdrive Project Server\utilities\database\mariadb-galera-cluster
```

3. Open a **Terminal** window.
4. Navigate to the folder where you copied the **setup_galera.sh** script.
5. At the prompt, enter the following command to make the **setup_galera.sh** script executable:

```
chmod a+x setup_galera.sh
```

6. At the prompt, enter the following command to start the **setup_galera.sh** script for the bootstrap node:

```
sudo ./setup_galera.sh \
```

7. At the displayed > prompt, enter the following command where <Node_2_IP_address> is the IP address of this node:

```
--node-ip <Node_2_IP_address> \
```

8. At the displayed > prompt, enter the following command where <Node_1_IP_address>, <Node_2_IP_address>, and <Node_3_IP_address> is comma-separated list of the cluster node the IP addresses:

```
--cluster-ips <Node_1_IP_address>,<Node_2_IP_address>,<Node_3_IP_address> \
```

9. At the displayed > prompt, enter the following command where <Node_2_Hostname> is the hostname of this node.

```
--node-name <Node_2_Hostname> \
```

This name must be unique for each node in your MariaDB Galera Cluster.

10. At the displayed > prompt, enter the following command where <MariaDB_username> is the MariaDB username used to access the ProjectServer database:

```
--db-user <MariaDB_username> \
```

The MariaDB username is same for all nodes in your MariaDB Galera Cluster.

11. At the displayed > prompt, enter the following command where <MariaDB_password> is the password for the MariaDB username used to access the ProjectServer database:

```
--db-pass <MariaDB_password> \
```

The MariaDB password is same for all nodes in your MariaDB Galera Cluster.

12. At the displayed > prompt, enter the following comma to set the name of the ProjectServer database.

```
--db-name overdriveprojectserver
```

13. At the [sudo] password prompt, enter your **sudo password**.

The MariaDB Galera Cluster Setup script starts running using your entered information.

- At the following prompt, press the **Enter**.

```
Adding repository.  
Press [ENTER] to continue or Ctrl-C to cancel
```

MariaDB Galera Cluster Setup script continues. When the script ends, it displays the following information about the second node in your MariaDB cluster:

```
+-----+-----+  
| Variable_name | Value |  
+-----+-----+  
| wsrep_cluster_size | 2 |  
+-----+-----+  
? Setup complete for MariaDB1
```

MariaDB Server 3

Running the MariaDB Galera Cluster Setup script on the third MariaDB Server computer or virtual machine adds the node to your MariaDB cluster.

To setup the third MariaDB node in a ProjectServer Redundant System

- Log in to the **MariaDB Server 3** computer or virtual machine as an **administrator**.
- From one of your **ProjectServer** computers, copy the **setup_galera.sh** script from the following folder to your **MariaDB Server 2** computer or virtual machine:

```
C:\Program Files\Ross Video\Overdrive Project Server\utilities\database\mariadb-galera-cluster
```

- Open a **Terminal** window.
- Navigate to the folder where you copied the **setup_galera.sh** script.
- At the prompt, enter the following command to make the **setup_galera.sh** script executable:

```
chmod a+x setup_galera.sh
```
- At the prompt, enter the following command to start the **setup_galera.sh** script for the bootstrap node:

```
sudo ./setup_galera.sh \
```
- At the displayed **>** prompt, enter the following command where **<Node_3_IP_address>** is the IP address of this node:

```
--node-ip <Node_3_IP_address> \
```
- At the displayed **>** prompt, enter the following command where **<Node_1_IP_address>**, **<Node_2_IP_address>**, and **<Node_3_IP_address>** is comma-separated list of the cluster node the IP addresses:

```
--cluster-ips <Node_1_IP_address>,<Node_2_IP_address>,<Node_3_IP_address> \
```
- At the displayed **>** prompt, enter the following command where **<Node_3_Hostname>** is the hostname of this node.

```
--node-name <Node_3_Hostname> \
```

This name must be unique for each node in your MariaDB Galera Cluster.

- At the displayed **>** prompt, enter the following command where **<MariaDB_username>** is the MariaDB username used to access the ProjectServer database:

```
--db-user <MariaDB_username> \
```

The MariaDB username is same for all nodes in your MariaDB Galera Cluster.

11. At the displayed > prompt, enter the following command where <MariaDB_password> is the password for the MariaDB username used to access the ProjectServer database:

```
--db-pass <MariaDB_password> \
```

The MariaDB password is same for all nodes in your MariaDB Galera Cluster.

12. At the displayed > prompt, enter the following comma to set the name of the ProjectServer database.

```
--db-name overdriveprojectserver
```

13. At the [sudo] password prompt, enter your **sudo password**.

The MariaDB Galera Cluster Setup script starts running using your entered information.

14. At the following prompt, press the **Enter**.

```
Adding repository.
```

```
Press [ENTER] to continue or Ctrl-C to cancel
```

MariaDB Galera Cluster Setup script ends and displays the following information about the bootstrap node in your MariaDB cluster:

```
+-----+-----+
| Variable_name | Value |
+-----+-----+
| wsrep_cluster_size | 3 |
+-----+-----+
? Setup complete for MariaDB1
```

Connect Your ProjectServers to the Database Cluster

After successfully setting up your MariaDB Galera Cluster, you must connect the ProjectServers in your ProjectServer Redundant System the database cluster.

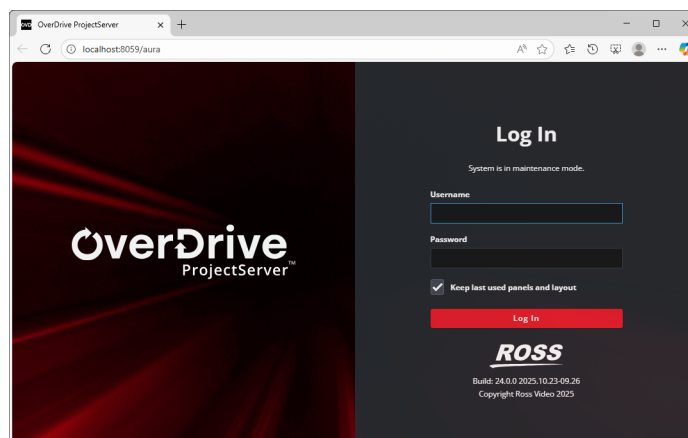
ProjectServer 1

The ProjectServer installed on the ProjectServer 1 computer must be connected to your MariaDB Galera Cluster.

To connect the ProjectServer on the ProjectServer 1 computer to the MariaDB Galera Cluster

1. Log in to the **ProjectServer 1** computer as an **administrator**.
2. On the **ProjectServer 1** computer, use one of the following methods to open the **ProjectServer** web page:
 - On the Desktop, double-click the **OverDrive ProjectServer** icon.
 - Use the **Start** menu to select **All Programs > OverDrive ProjectServer > OverDrive ProjectServer**.

The **Log In** web page opens in **maintenance mode**.

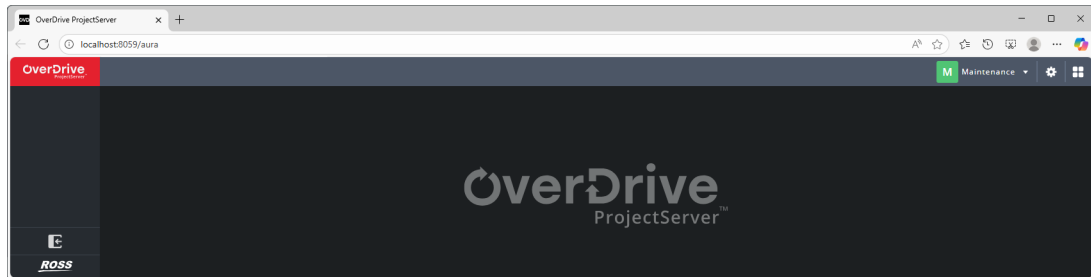


3. In the **Log In** section, enter the following login credentials:

- **Username** — maintenance
- **Password** — <maintenance_password>

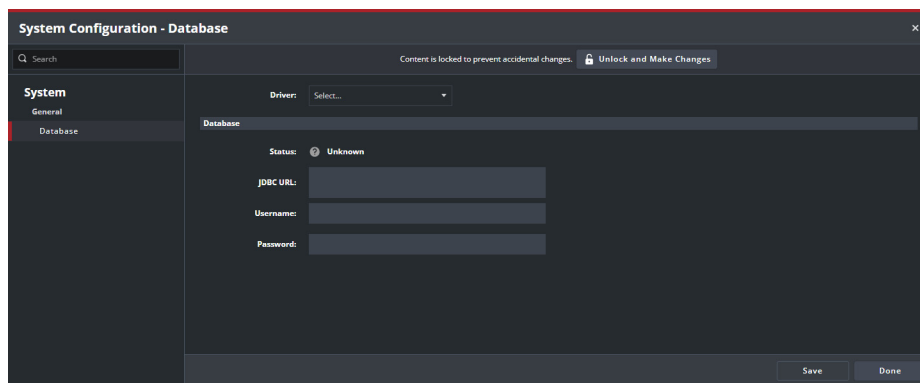
4. Click **Log In**.

The **OverDrive ProjectServer** opens.



5. On the main toolbar, click the  **System Configuration** icon.

The **System Configuration** window opens displaying the **Database** panel.



6. To edit the database configuration, click **Unlock and Make Changes** at the top of the panel.

7. Use the **Driver** list to select **MariaDB Galera Cluster**.

8. In the **JDBC URL** box, replace the contents with the following JDBC URL where <Node_1_IP_address>, <Node_2_IP_address>, and <Node_3_IP_address> IP addresses the MariaDB nodes in the cluster:

```
jdbc:mariadb:sequential://<Node_1_IP_address>,<Node_2_IP_address>,<Node_3_IP_address>/overdriveprojectserver?galeraAllowedState=4
```

9. In the **Username** box, enter the username that you set for the bootstrap MariaDB node in step 10 on page 4-3.

10. In the **Password** box, enter the password that you set for the bootstrap MariaDB node in step 11 on page 4-3.

11. Click **Save**.

ProjectServer saves the set database configuration. You must restart the **OverDrive ProjectServer** service for database configuration changes to take effect.

12. Click **Done**.

The **System Configuration** window closes.

13. Use the **User** menu at the right-side of the title bar to select **Logout**.

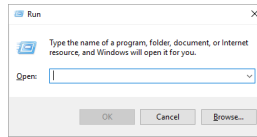
An **Alert** dialog box opens.

14. Click **Logout**.

ProjectServer logs you out.

15. Close the web browser.
16. From the Windows desktop, press **Windows Key R**.

The **Run** dialog box opens.

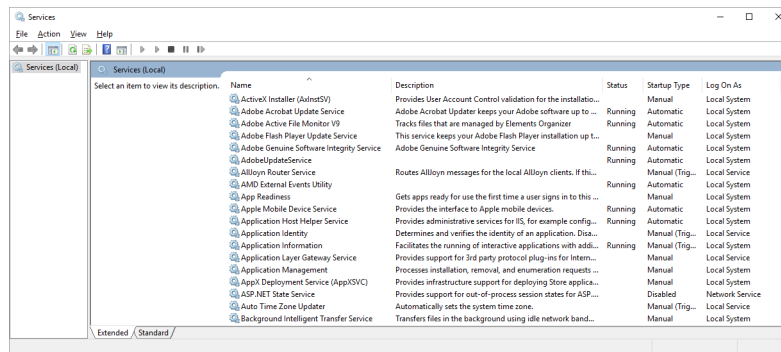


17. In the **Open** box, type the following application name:

`services.msc`

18. Click **OK**.

The **Services** window opens.



19. In the **Services** list, locate and select the **OverDrive ProjectServer** service.
20. Click **Restart** for the **OverDrive ProjectServer** service.
21. Use the **File** menu to select **Exit**.

The **Services** dialog box closes.

ProjectServer 2

The ProjectServer installed on the ProjectServer 2 computer must be connected to your MariaDB Galera Cluster.

To connect the ProjectServer on the ProjectServer 2 computer to the MariaDB Galera cluster

1. Log in to the **ProjectServer 2** computer as an **administrator**.
2. On the **ProjectServer 2** computer, use one of the following methods to open the **ProjectServer** web page:
 - On the Desktop, double-click the **OverDrive ProjectServer** icon.
 - Use the **Start** menu to select **All Programs > OverDrive ProjectServer > OverDrive ProjectServer**.

The **Log In** web page opens in **maintenance** mode.

3. To connect the **ProjectServer** installed on the **ProjectServer 2** computer to your MariaDB Galera cluster, complete steps 3 to 21 in the procedure “**To connect the ProjectServer on the ProjectServer 1 computer to the MariaDB Galera Cluster**” on page 4–6.

License Your ProjectServer Software

Ross Video uses a product key to control access to OverDrive ProjectServers. You must license the ProjectServer software installed on both of the ProjectServer computers in your ProjectServer Redundant System.

To license the ProjectServer software installed on the two ProjectServers in your ProjectServer Redundant System, follow the procedures in the section “**License Your OverDrive ProjectServer Software**” on page 4–34 of the *OverDrive Installation and Configuration Guide*.

ProjectServer File Replication on a Server Shared with RPM

ProjectServer and Ross Platform Manager (RPM) both use the Syncting to synchronize files. This chapter provides instructions for configuring Syncting software when you install ProjectServer on the same computer that runs the Ross Platform Manager.

This chapter discusses the following topics:

- Before You Install ProjectServer
- After You Install ProjectServer

Before You Install ProjectServer

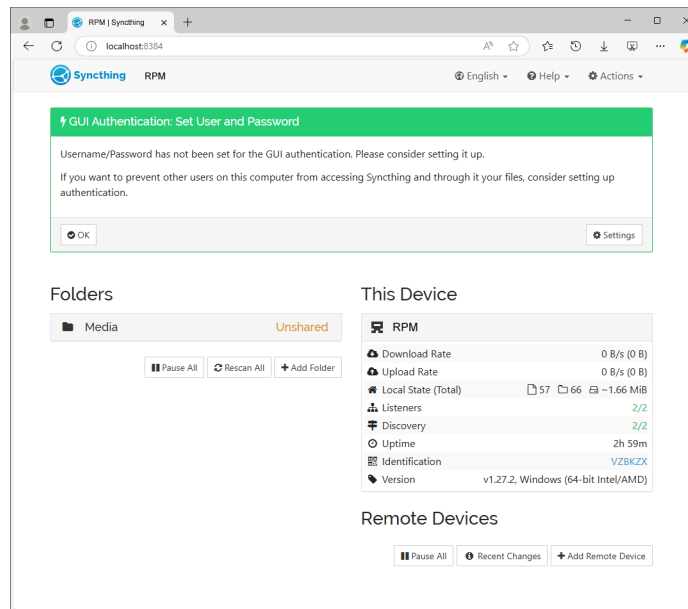
ProjectServer and Ross Platform Manager both use the Syncthing to synchronize files. By default, Syncthing is configured to use the same Sync Protocol Listen port for ProjectServer and Ross Platform Manager. Before you install ProjectServer software on a computer that is running the Ross Platform Manager, you must change the Sync Protocol Listen port used by the Ross Platform Manager to prevent port conflicts.

To change the Sync Protocol Listen port used by Ross Platform Manager

1. Log in to the **Ross Platform Manager** computer that you want to share with **ProjectServer**.
2. Use a web browser to open the **Syncthing** web page at the following **URL**:

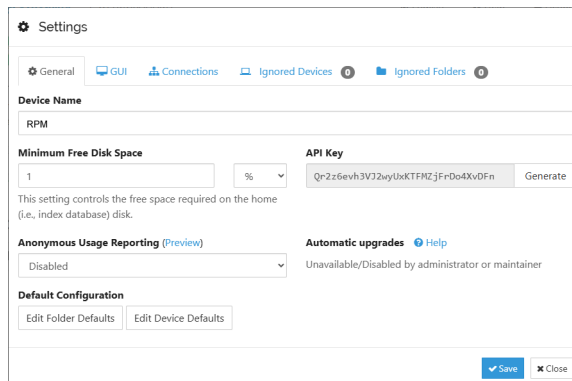
`http://localhost:8384/`

The **Syncthing** web page opens.



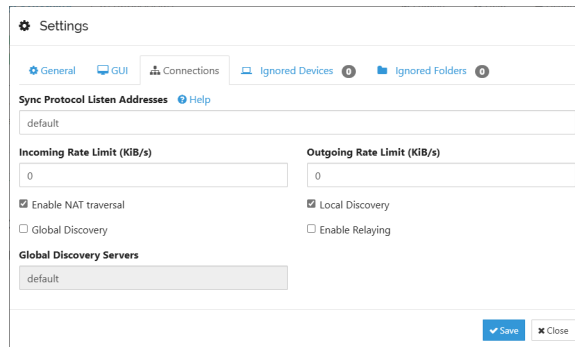
3. Click **Settings**.

The **Settings** panel opens.



- Click the **Connections** tab.

The **Connections** tab opens.



- In the **Sync Protocol Listen Addresses** box, enter a different **listen port** then what the **ProjectServer Syncthing** process will use. For example: `tcp://0.0.0.0:22001`, where 22001 is the new listen port.

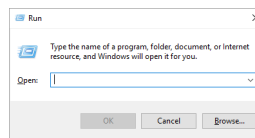
- Click **Save**.

The **Connections** tab closes.

- Complete the following steps to stop the **Ross Platform Manager** service:

- From the Windows desktop, press **Windows Key R**.

The **Run** dialog box opens.

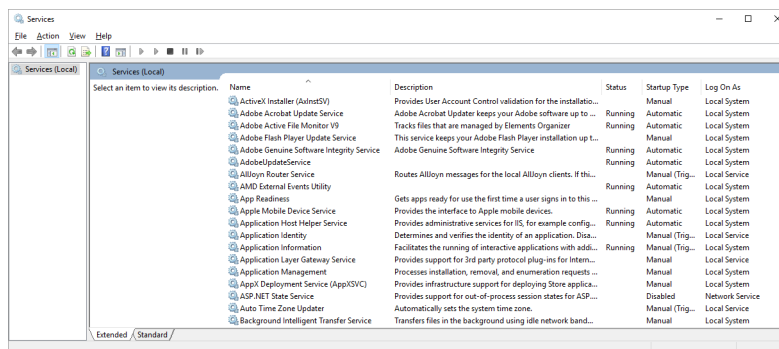


- In the **Open** box, type the following application name:

`services.msc`

- Click **OK**.

The **Services** window opens.



- In the **Services** list, locate and select the **Ross Platform Manager** service.

- Click **Stop** for the **Ross Platform Manager** service.

The **Ross Platform Manager** service stops. Use the **Task Manager** to confirm all Syncthing processes have stopped. If your Ross Platform Manager is an older version, it may still be running in the background even after stopping the Ross Platform Manager service.

- Install the **ProjectServer** software on the **Ross Platform Manager** computer.

After You Install ProjectServer

After you install ProjectServer software on a computer that is running Ross Platform Manager, you must change the Synthing GUI Listen port used by ProjectServer to prevent port conflicts. You must change the Synthing GUI Listen port for every ProjectServer node in a cluster.

To change the Synthing GUI Listen port used by ProjectServer

1. Log in to the **ProjectServer** computer shared with **Ross Platform Manager**.

2. Use a web browser to open the **Synthing** web page at the following **URL**:

`http://localhost:8384/`

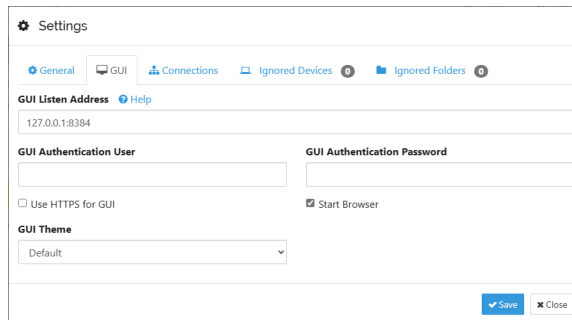
The **Synthing** web page opens.

3. Click **Settings**.

The **Settings** panel opens.

4. Click the **GUI** tab.

The **GUI** tab opens.



The screenshot shows the 'Settings' window with the 'GUI' tab selected. The 'GUI Listen Address' field contains '127.0.0.1:8384'. There are fields for 'GUI Authentication User' and 'GUI Authentication Password'. There are checkboxes for 'Use HTTPS for GUI' (unchecked) and 'Start Browser' (checked). A 'GUI Theme' dropdown menu is set to 'Default'. At the bottom right, there are 'Save' and 'Close' buttons.

5. In the **GUI Listen Address** box, enter a **listen port** that does not conflict with **Ross Platform Manager Synthing** GUI port. For example: `127.0.0.1:9596`, where `127.0.0.1` is the localhost address and `9596` is the new listen port. Click **Save**.

6. Click **Save**.

The **Connections** tab closes and Synthing automatically restarts to configure the node with in the cluster.

7. For each **ProjectServer** computer in the cluster, complete steps 1 to 6. Enter the same **GUI Listen Address** for each **ProjectServer** computer

PostgreSQL to MariaDB Migration

When upgrading a standalone ProjectServer v23.3 or older system to a ProjectServer Redundant system, you must migrate the existing ProjectServer database from the PostgreSQL database to a MariaDB Galera Cluster database.

This chapter discusses the following topics:

- Before You Start Database Migration
- Migrate the ProjectServer Database

Before You Start Database Migration

Before you can run the batch file to migrate ProjectServer data from a PostgreSQL database to a MariaDB Galera Cluster database, your ProjectServer Redundant System must be in the following state:

- ProjectServer software installed on both of the ProjectServer computers in your ProjectServer Redundant System. For more information, refer to the section “**Install ProjectServer Software**” on page 3–2.
- A MariaDB Galera Cluster database created for your ProjectServer Redundant System. For more information, refer to the section “**Install ProjectServer Redundant System Database Software**” on page 4–2.
- Both ProjectServers in your ProjectServer Redundant System connected to the MariaDB Galera Cluster database. For more information, refer to the section “**Connect Your ProjectServers to the Database Cluster**” on page 4–6.
- The ProjectServer software installed on both of the ProjectServers in your ProjectServer Redundant System is licensed. For more information, refer to the section “**License Your OverDrive ProjectServer Software**” on page 4–34 of the *OverDrive Installation and Configuration Guide*.

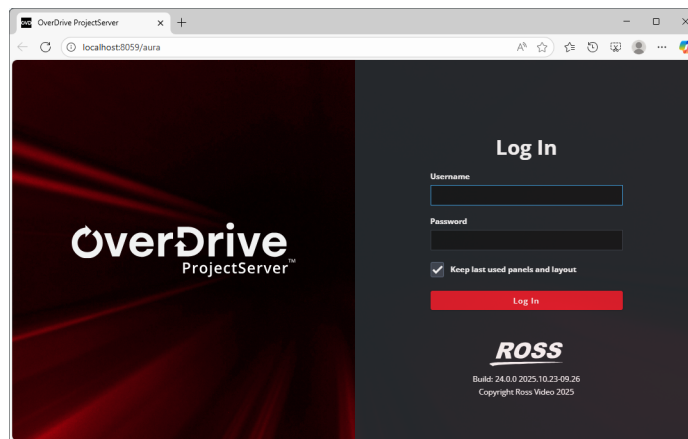
Migrate the ProjectServer Database

With your ProjectServer Redundant System ready for database migration, you can run the supplied batch file to migrate ProjectServer data from a PostgreSQL database to a MariaDB Galera Cluster database.

To migrate a ProjectServer PostgreSQL database to a MariaDB Galera Cluster database

1. Log in to the **ProjectServer 1** or **ProjectServer 2** computer as an **administrator**.
2. Complete the following steps to deactivate the ProjectServer license:
 - a. On the **ProjectServer 1** computer, use one of the following methods to open the **ProjectServer** web page:
 - On the Desktop, double-click the **OverDrive ProjectServer** icon.
 - Use the **Start** menu to select **All Programs > OverDrive ProjectServer > OverDrive ProjectServer**.

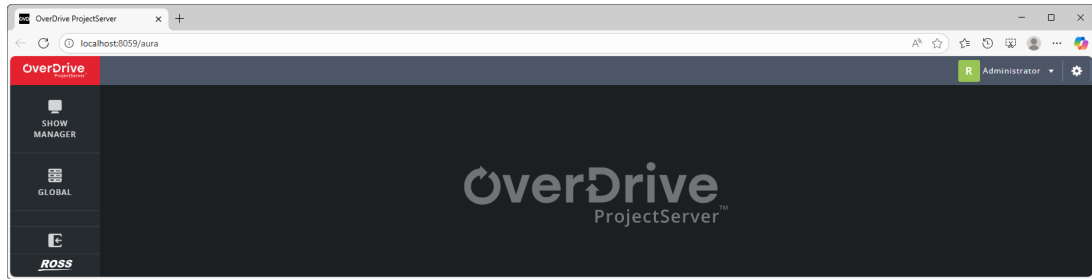
The **Log In** web page opens.



- b. In the **Log In** section, enter the login credentials of an OverDrive user with administrator privileges in the **Username** and **Password** boxes.

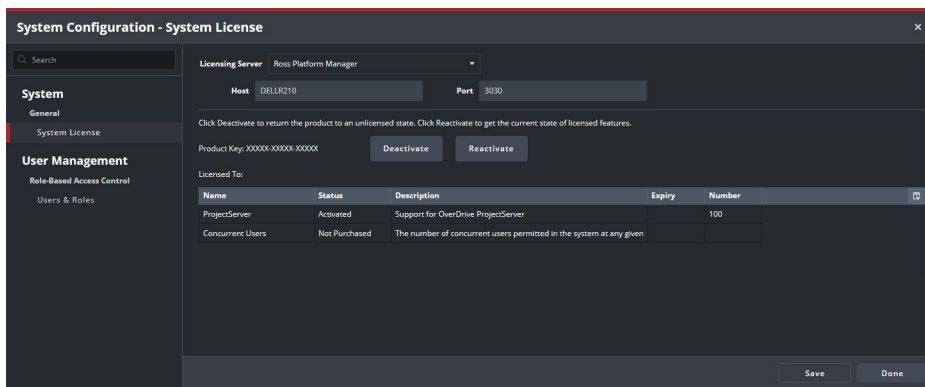
- c. Click **Log In**.

The **OverDrive ProjectServer** opens.



- d. On the main toolbar, click the  **System Configuration** icon.

The **System Configuration** window opens displaying the **System License** panel.



- e. Click **Deactivate**.

The current ProjectServer license deactivates.

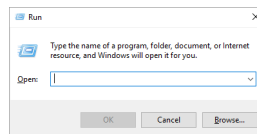
- f. Click **Done**.

The **System License** panel closes.

3. Complete the following steps to **stop** the ProjectServer process:

- a. From the Windows desktop, press **Windows Key R**.

The **Run** dialog box opens.

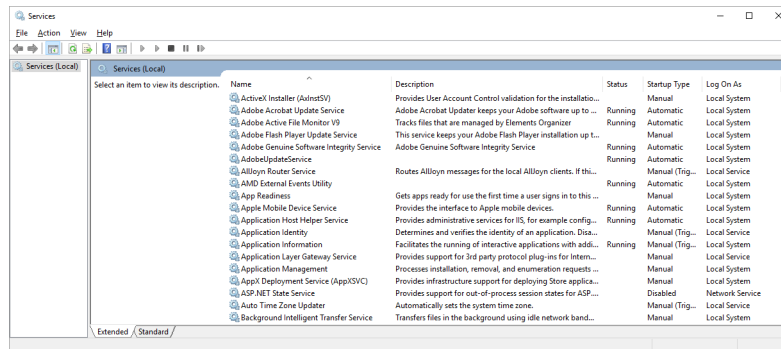


- b. In the **Open** box, type the following application name:

`services.msc`

c. Click **OK**.

The **Services** window opens.



d. In the **Services** list, locate and select the **OverDrive ProjectServer** service.

e. Click **Stop** for the **OverDrive ProjectServer** service.

f. Use the **File** menu to select **Exit**.

The **Services** dialog box closes.

4. Navigate to the following folder:

```
C:\Program Files\Ross Video\Overdrive Project Server\utilities\database\odps-postgres2mariadb
```

5. Double-click the **run.bat** file to start migrating your ProjectServer PostgreSQL database to a MariaDB Galera Cluster database.

The following prompts displays:

```
Source Schema (overdriveprojectserver)?
```

6. Press **Enter** to select the default PostgreSQL database name.

The following prompts displays:

```
Source Username (postgres)?
```

7. Enter your **PostgreSQL database user name** or press **Enter** to select the default user name displayed in the brackets.

The following prompts displays:

```
Source Password (postgres)?
```

8. Enter the **password** for your PostgreSQL database user name or press **Enter** to select the default password displayed in the brackets.

The following prompts displays:

```
Source URL (jdbc:postgresqlmariadb://localhost)?
```

9. Press **Enter** to select the default PostgreSQL URL.

The following prompts displays:

```
Destination Schema (overdriveprojectserver)?
```

10. Press **Enter** to select the default PostgreSQL database name.

The following prompts displays:

```
Destination Username (root)?
```

11. Enter your **MariaDB database user name** or press **Enter** to select the default user name displayed in the brackets.

The following prompts displays:

```
Destination Password (password)?
```

12. Enter the **password** for your MariaDB database user name or press **Enter** to select the default password displayed in the brackets.

The following prompts displays:

```
Destination URL (jdbc:mariadb://localhost)?
```

13. Enter one of the database names that was entered in the **JDBC URL** box in the **Database** panel of the **System Configuration** window.

Database names of the MariaDB Galera Cluster were set in step 8 on page 4-7 of the **To connect the ProjectServer on the ProjectServer 1 computer to the MariaDB Galera Cluster** procedure. The replication process will copy the data to the other nodes during the migration.

The **System License** panel closes.

14. Complete the following steps to **start** the ProjectServer process:

- a. From the Windows desktop, press **Windows Key R**.

The **Run** dialog box opens.

- b. In the **Open** box, type the following application name:

```
services.msc
```

- c. Click **OK**.

The **Services** window opens.

- d. In the **Services** list, locate and select the **OverDrive ProjectServer** service.

- e. Click **Start** for the **OverDrive ProjectServer** service.

- f. Use the **File** menu to select **Exit**.

The **Services** dialog box closes.

15. Re-license the ProjectServer software installed on the two ProjectServers in your ProjectServer Redundant System.

For more information, refer to the section “**License Your OverDrive ProjectServer Software**” on page 4-34 of the *OverDrive Installation and Configuration Guide*.

File Synchronization

In a ProjectServer Redundant System, the MariaDB Galera Cluster and Synthing software keeps the two ProjectServer nodes synchronized. The MariaDB Galera Cluster keeps database information synchronized and Synthing keeps files synchronized.

This chapter discusses the following topics:

- File Synchronization Configuration
- Synthing Installation
- ProjectServer Synthing Process

File Synchronization Configuration

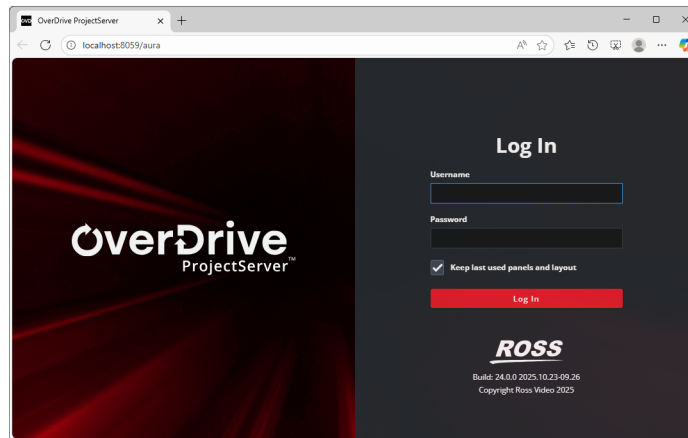
With a correctly configured MariaDB Galera Cluster, ProjectServer uses the configured file synchronization and Synthing software to replicate files between the two ProjectServer nodes in your ProjectServer Redundant System. ProjectServer administrative users can manage file synchronization through the File Synchronization panel of the Configuration window.

When Ross Product Manager is not running on the same computer as your ProjectServer, you do not need to modify the Synthing port configuration.

To manage ProjectServer file synchronization

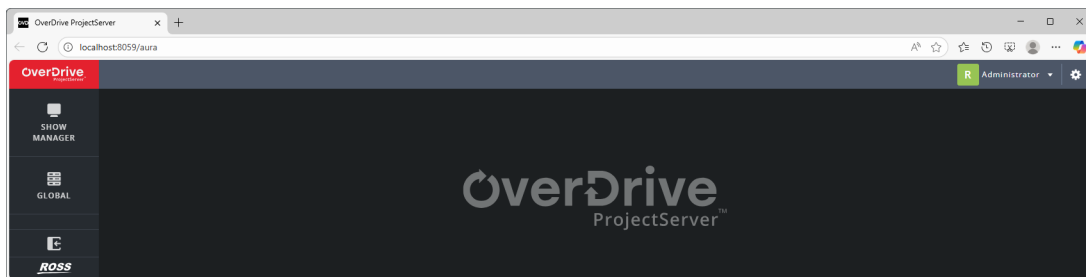
1. Use one of the following methods to open the **OverDrive ProjectServer** web page:
 - On the desktop, double-click the **Ross OverDrive ProjectServer** icon.
 - Use the **Start** menu to select **Ross OverDrive ProjectServer > Ross OverDrive ProjectServer**.
 - On a computer connected to the same subnetwork as your OverDrive ProjectServer computer, use a supported web browser to open `http://<OverDrive ProjectServer>:8059/`. In the URL, `<OverDrive ProjectServer>` is the hostname or IP address of the OverDrive ProjectServer in your OverDrive System.

The **Log In** web page opens.



2. In the **Log In** section, enter the login credentials of a **ProjectServer** user with **administrator** privileges in the **Username** and **Password** boxes.
3. Click **Log In**.

The **OverDrive ProjectServer** opens.

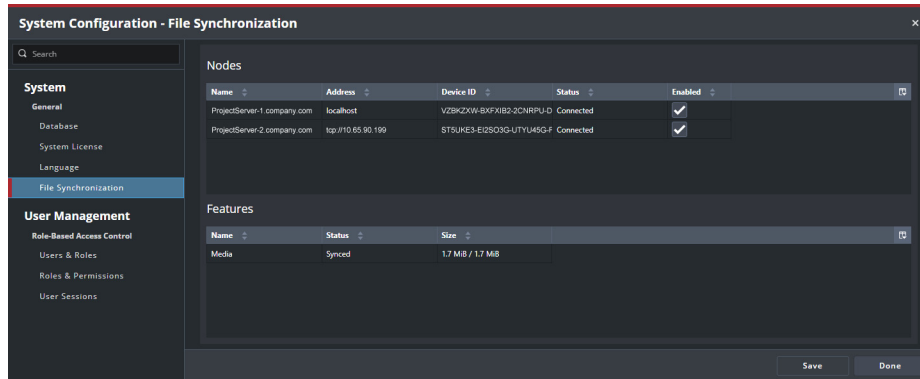


4. On the main toolbar, click the  **System Configuration** icon.

The **System Configuration** window opens.

5. In the **System** section of the side navigation, click **File Synchronization**.

The **File Synchronization** panel opens.



The **Nodes** section displays the file synchronization status of the ProjectServer nodes in your ProjectServer Redundant System. The **Features** section lists the folders being synchronized.

6. Use the check box in the **Enabled** column to control the ProjectServer nodes being synchronized as follows:

- **Enable** — select the check box.
- **Disable** — clear the check box.

★ Do not change the **Enabled** column check box state unless instructed to do so by Ross Video Technical Support.

7. Click **Save**.

ProjectServer saves the set file synchronization configuration.

8. Click **Done**.

The **System Configuration** window closes.

Synthing Installation

You do not have to separately install Synthing software on the same server on which ProjectServer is running.

Using multiple Synthing processes at once for file replication is not supported as it may disrupt application databases. When running ProjectServer on the same computer as Ross Platform Manager, refer to the chapter “**ProjectServer File Replication on a Server Shared with RPM**” on page 5–1.

ProjectServer Synthing Process

When file replication is enabled on a ProjectServer node of a ProjectServer Redundant System, the Task Manager Processes tab will display a Synthing process.

★ Stopping the Synthing process will disrupt file replication. You should not stop the Synthing process unless instructed to do so by Ross Video Technical Support.

Restarting the ProjectServer process also restarts Synthing process and file replication.

Synching Process Ownership

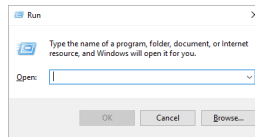
When running ProjectServer on the same computer as Ross Product Manager, you can use the Task Manager to verify that the Synching process is owned by ProjectServer.

- ★ Do not use the **Task Manager** to manually end the **Synching - Open Source Continuous File Synchronization** task.

To verify that the **Synching** process is owned by **ProjectServer**

1. From the Windows desktop, press **Windows Key R**.

The **Run** dialog box opens.



2. In the **Open** box, type the following application name:

taskmgr.exe

3. Click **OK**.

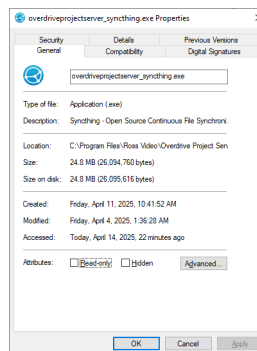
The **Services** window opens displaying the **Processes** tab.

Name	Status	21% CPU	83% Memory	2% Disk	0% Network	1% GPU	GPU engine	Power usage	Power usage trend
Apps (12)									
Adobe FrameMaker 2022 (4)		0.9%	74.8 MB	0.6 MB/s	0 Mbps	0%		Low	Very low
Adobe Photoshop Elements 9 (32 bit)		0%	6.3 MB	0 MB/s	0 Mbps	0%		Very low	Very low
Microsoft Edge (21)		0.9%	386.5 MB	0.1 MB/s	0 Mbps	0.3%	GPU 0 - 3D	Low	Very low
Microsoft Outlook (5)		0%	81.5 MB	0 MB/s	0 Mbps	0%		Very low	Very low
Microsoft Teams (10)		0%	287.7 MB	0 MB/s	0 Mbps	0%		Very low	Very low
Task Manager		0.3%	33.2 MB	0 MB/s	0 Mbps	0%		Very low	Very low
VirtualBox Manager		0%	3.4 MB	0 MB/s	0 Mbps	0%		Very low	Very low
VirtualBox Virtual Machine		0%	65.8 MB	0.1 MB/s	0 Mbps	0%		Very low	Very low
VirtualBox Virtual Machine		0.2%	64.6 MB	0.1 MB/s	0 Mbps	0%		Very low	Very low
VirtualBox Virtual Machine		0.2%	66.9 MB	0.1 MB/s	0 Mbps	0%		Very low	Very low
Windows Command Processor (2)		0%	0.2 MB	0 MB/s	0 Mbps	0%		Very low	Very low
Windows Explorer (4)		0%	94.0 MB	0 MB/s	0 Mbps	0%		Very low	Very low
Background processes (188)									
Acrobat Collaboration Synchronizer 25.1		0%	4.8 MB	0 MB/s	0 Mbps	0%		Very low	Very low
Acrobat Collaboration Synchronizer 25.1		0%	1.3 MB	0 MB/s	0 Mbps	0%		Very low	Very low
Acrobat Update Service (32 bit)		0%	0.1 MB	0 MB/s	0 Mbps	0%		Very low	Very low

4. In the **Name** list, locate the **Synching - Open Source Continuous File Synchronization** task.

5. Right-click the **Synching - Open Source Continuous File Synchronization** task and select **Properties** from the shortcut menu.

The **Synching Properties** dialog box opens.



6. When the Synthing process is owned by ProjectServer, the box at the top of the **General** tab displays the following name:

overdriveprojectserver_synthing.exe

The Synthing process is not owned by ProjectServer if the box displays any other name.

Load Balancer Configuration

A ProjectServer Redundant System contains two ProjectServers, a load balancer, and three MariaDB Servers. OverDrive Servers access the ProjectServer through the load balancer. The load balancer spreads OverDrive Server connections between the two ProjectServers in the system. The results of ProjectServer actions on both ProjectServer Servers are saved in the MariaDB Cluster. The data is automatically replicated between the three MariaDB Servers in the cluster.

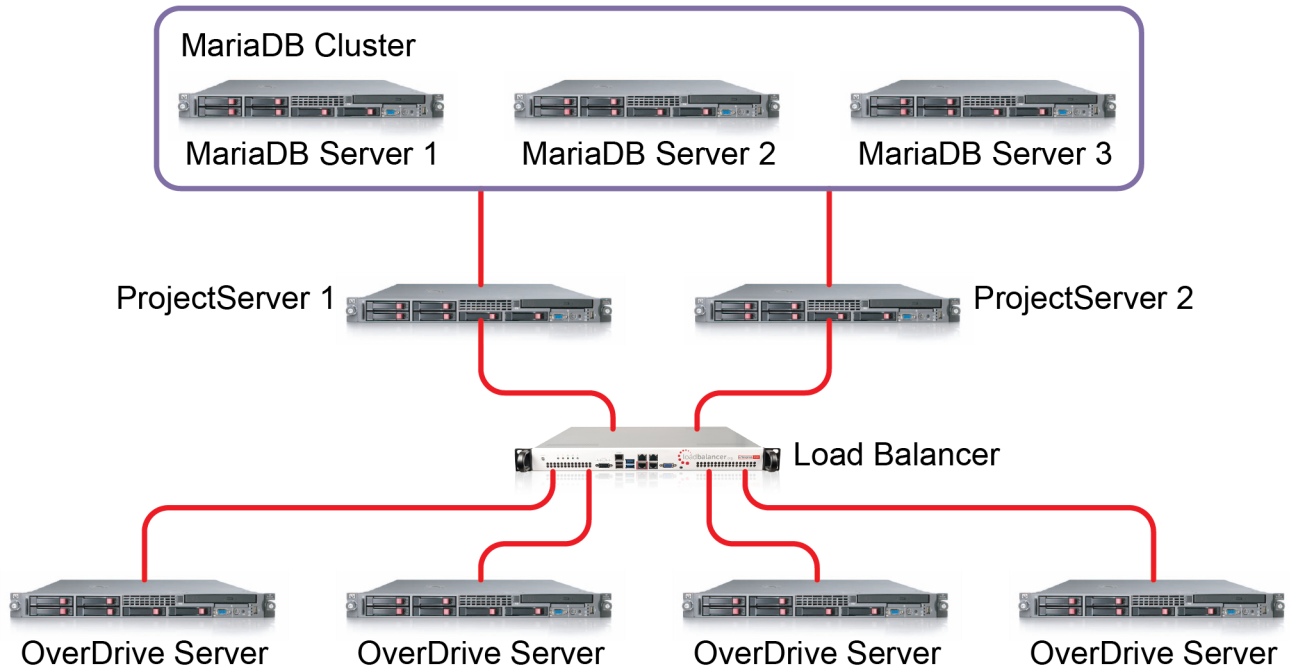


Figure 8.1 ProjectServer Redundant System

If one of the ProjectServers falters, the load balancer automatically directs users to the other ProjectServer Server. If one of the MariaDB Servers falters, the other MariaDB Servers in the MariaDB Cluster can enable ProjectServer to continue operation.

★ Ross Video recommends repairing faulty components of a ProjectServer Redundant System as soon as possible.

This chapter discusses the following topics:

- Load Balancer First Time Log In
- Configure Required Load Balancer Settings

Load Balancer First Time Log In

The first time you log in to your load balancer you must configure the load balancer to work with the ProjectServer Servers in your system.

Configuration Methods

Use one of the following methods to connect to and configure the load balancer in your ProjectServer Redundant System:

- **Direct Connection** — to perform initial configuration directly on the load balancer, complete the following steps:
 - a. Connect a keyboard, mouse, and monitor directly to the load balancer or through a KVM switch.
 - b. Complete the procedure “**To configure the load balancer through the console**” on page 8–2.
- **Network Connection** — to perform initial configuration over the network, complete the following steps:
 - a. Connect a network cable from the load balancer **eth0** port (outlined in red) to a network switch or a computer.
 - b. Complete the procedure “**To configure the load balancer over the network**” on page 8–3.

Console Configuration

With a keyboard, mouse, and monitor connected to the load balancer you are ready to use the console to configure the load balancer.

To configure the load balancer through the console

1. Log in to the load balancer at the **lbmaster** login prompt using the following credentials:
 - **Username** — `setup`
 - **Password** — `setup`
2. Follow the prompts to enter the required details to connect to the network. The prompts automatically advance after you enter a setting value and press **ENTER**.

The following is an example of a load balancer configuration”

```
Loadbalancer.org basic network set up

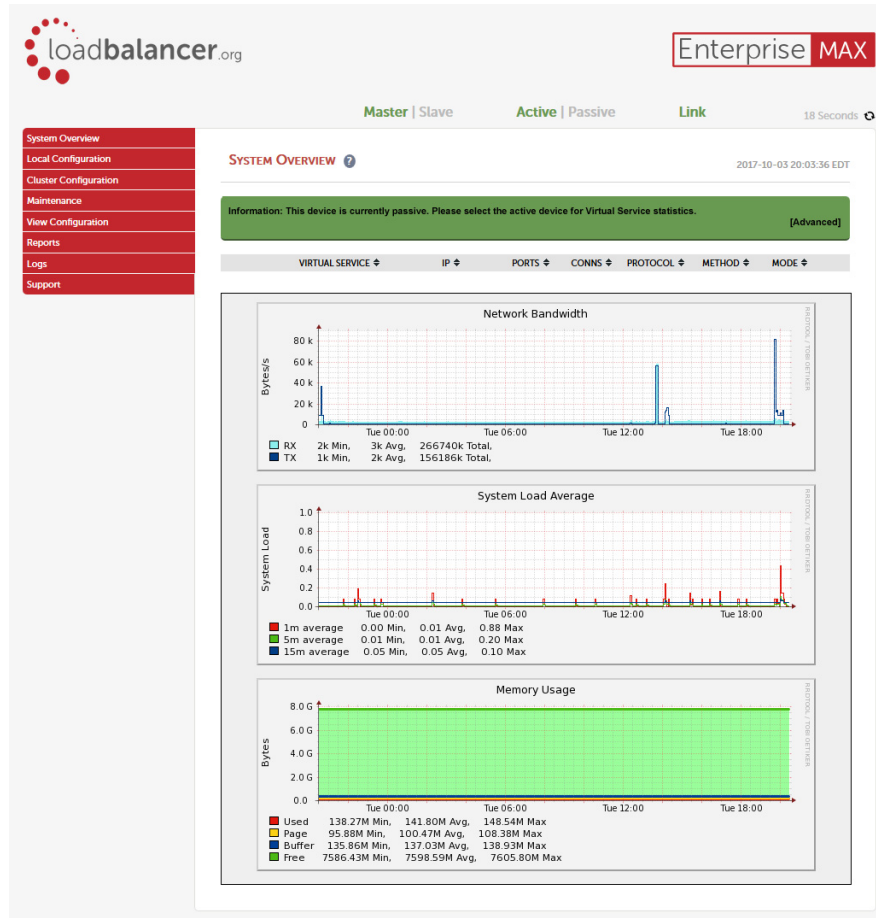
This will overwrite the current configuration.
If you do not wish to proceed please enter CTRL + c.

Static IP address (eg. 192.168.0.26)   : 192.168.1.20
Interface netmask (eg. 24)             : 24
VLAN tag ID (Press enter to skip) (eg. 10) : 120
Default gateway (eg. 192.168.0.1)     : 192.168.1.254
DNS Servers
  Primary (eg. 192.168.0.250)         : 8.8.8.8
  Secondary (Leave blank to omit)     : -
```

3. Common netmasks are as follows:
 - 255.255.255.0 = 24
 - 255.255.254.0 = 23
 - 255.255.0.0 = 16
 - 255.0.0.0 = 8
4. Most networks do not use a VLAN tag directly on the load balancer. Press **ENTER** to skip entering a VLAN unless a network engineer provides a VLAN.

5. When prompted **Are you recovering from a node failure?** press the **N** key.
6. On a computer connected to the same network as the load balancer, use a web browser to open the one of the following URLs:
 - `http://<ip_of_loadbalancer>:9080`
 - `https://<ip_of_loadbalancer>:9443`
7. Use the following credentials to log in to the load balancer:
 - **Username** — `loadbalancer`
 - **Password** — `loadbalancer`

The load balancer **Utility** page opens.



8. Continue with the procedure “**To configure the virtual service**” on page 8–5.

Network Configuration

With a the load balancer connected to the network you are ready to configure the load balancer over the network.

To configure the load balancer over the network

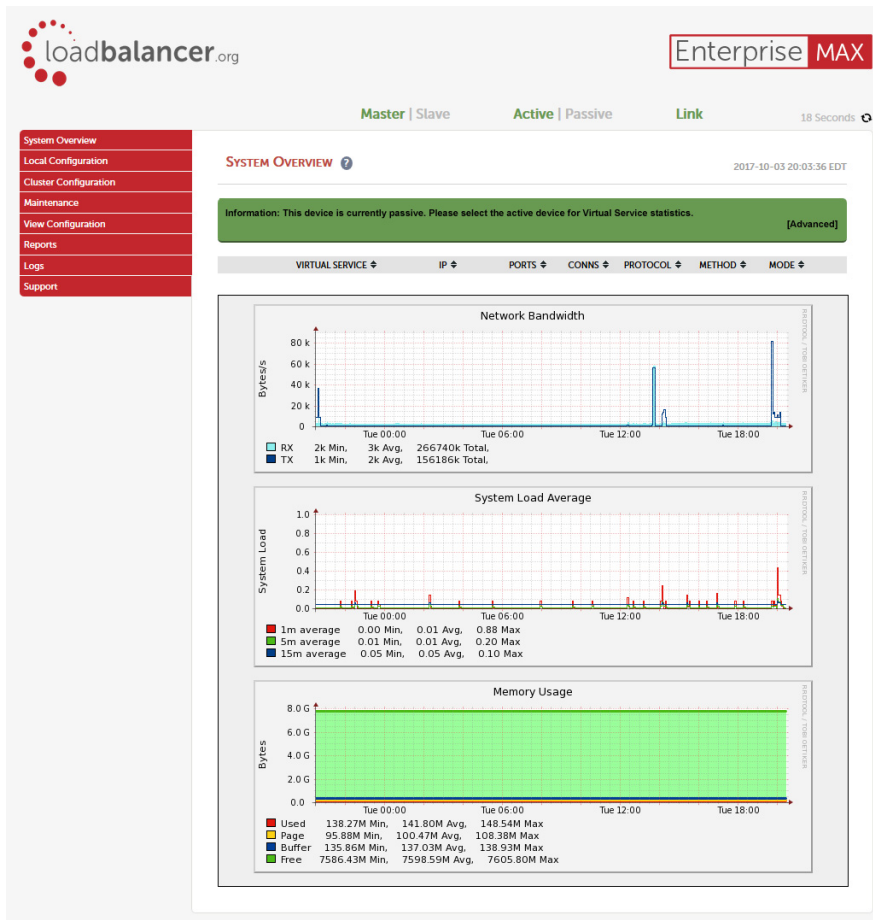
1. Configure the computer connected to the load balancer **eth0** port with an **IP** in the `192.168.2.1` range with a **netmask** of `255.255.255.0`.
2. Use a web browser to open the one of the following URLs:
 - `http://192.168.2.21:9080`
 - `https://192.168.2.21:9443`

An **Authentication** dialog box opens.

3. Use the following credentials to log in to the load balancer:

- **Username** — loadbalancer
- **Password** — loadbalancer

The load balancer **Utility** page opens.



4. Select **Local Configuration > Hostname & DNS**.

The **Hostname & DNS** page opens.

5. In the **Hostname** box, enter a hostname for the load balancer.

ProjectServer users will use the set hostname to connect to a ProjectServer Server through the load balancer.

6. In the **Domain Name Server** section, enter the IP address of your primary Domain Name Server in the **Primary** box.

7. In the **Secondary** box, enter the IP address of your secondary Domain Name Server.

8. Click **Update**.

9. Select **Local Configuration > Network Interface Configuration**.

The **Network Interface Configuration** page opens.

10. In the **IP Address Assignment** section, use CIDR notation (IP/MASK) to enter the load balancer IP address in the **eth0** box. Common MASK values include: 24 (255.255.255.0), 16 (255.255.0.0), and 8 (255.0.0.0).

The screenshot shows the 'IP Address Assignment' configuration page. It features a red header bar with the title 'IP Address Assignment'. Below the header, there are four network interface icons labeled eth0, eth1, eth2, and eth3. The eth0 icon includes the text '1 GB/s'. Each interface has a corresponding text input field for the IP address. The eth0 field contains the CIDR notation '172.16.8.40/16'. To the right of each input field is an 'MTU' field, all set to '1500 bytes'. At the bottom right, there is a green button labeled 'Configure Interfaces'.

11. Click **Configure Interfaces**.

The **Modifying IP address assignments...** opens displaying your new IP address assignment.

12. Select **Local Configuration > Routing**.

The **Routing** page opens.

13. In the **Default Gateway** section, enter the IP address of your default IP v4 gateway in the **IP v4** box.

14. Continue with the procedure “**To configure the virtual service**” on page 8–5.

Initial Virtual Service Configuration

With the initial load balancer configuration complete you are ready to configure the virtual service.

To configure the virtual service

1. Select **Local Configuration > License Key**.

The **Install License Key** page opens.

2. Verify that the correct license key is activated on your load balancer.

If license key is not activated for your load balancer, use the **License Key** page to load a license key file.

3. Select **Cluster Configuration > Setup Wizard**.

The **Setup Wizard** page opens.

4. Click **General Layer 7 Virtual Service**.

The **Setup Wizard - General Layer 7 Virtual Service** page opens.

SETUP WIZARD - GENERAL LAYER 7 VIRTUAL SERVICE

		Master	Slave
Hostname		lbmaster	lbslave
Static IP Addresses	eth0	172.16.8.40/16	172.16.8.41/16
Floating IP Addresses		172.16.8.42 172.16.8.43 172.16.8.38	

Create a new Layer 7 Virtual Service

Label

Virtual Service IP Address

Ports

Layer 7 Protocol

5. In the **Label** box, enter a name for the virtual service.

Usually PROJECTSERVER is used for this label.

6. In the **IP Address** box, enter the virtual service IP address.

This is the IP used by ProjectServer users to connect to the ProjectServer Redundant System.

7. In the **Ports** box, enter 80 as the port number on which to listen.

8. Use the **Layer 7 Protocol** list to select **HTTP Mode**.

9. Click **Create Virtual Service**.

The **Attach Real Servers** section opens.

Create a new Layer 7 Virtual Service

Label

Virtual Service IP Address

Ports

Layer 7 Protocol

Information: New Virtual Service added.

Attach Real Servers

Label

IP Address

Port

Weight

10. In the **Attach Real Servers** section, enter the following settings to add your **ProjectServer Server 1** to the virtual service:

- **Label:** ProjectServer Server 1
- **IP Address:** <ProjectServer Server 1 IP Address>
- **Port:** 80
- **Weight:** 100

11. Click Add Real Server.

A new **Real Server** row opens in the **Attach Real Servers** section.

12. In the new Real Server row, enter the following settings to add your ProjectServer Server 2 to the virtual service:

- **Label:** ProjectServer Server 2
- **IP Address:** <ProjectServer Server 2 IP Address>
- **Port:** 80
- **Weight:** 100

13. Repeat steps 11 and 12 for each additional real server in your ProjectServer Redundant System.

14. Click Add Real Servers to add your newly created ProjectServer Servers to the virtual service.

15. Click Continue.

The **Layer 7 - Virtual Services** page lists your new virtual service.

16. In the Commit changes section, click Reload HAProxy to complete the initial configuration of the load balancer in your ProjectServer Redundant System.

17. Continue with the section “Configure Required Load Balancer Settings” on page 8–7.

Configure Required Load Balancer Settings

After you complete the initial configuration of your load balancer, you must configure Virtual Service and Advance Configuration settings before users can start accessing your ProjectServer Redundant System through the load balancer.

To configure required load balancer settings

1. Select Cluster Configuration > Layer 7 – Virtual Services.

The **Layer 7 - Virtual Services** page displays a table of the virtual services defined on your load balancer.

2. In the table, click the Modify button associated with the virtual service you created for your ProjectServer Redundant System.

The **Layer 7 - Modify Virtual Services** page opens.

3. Use the Persistence Mode list to select Source IP.

4. Click Edit HTTP Headers.

The **HTTP Header Control** dialog box opens.



5. Use the Type list to select Request.

6. Use the Option list to select Set.

7. In the Header Name box, enter X-Forwarded-Port.

8. In the Header Value box, enter %[dst_port].

9. Click Add.

10. Click Save.

The **HTTP Header Control** dialog box closes.

11. Use the Health Checks list to select Negotiate HTTP (GET).

12. Set **Check Port** to **80**.
13. In the **Request to send** box, enter `common.rwp/SystemLoad/Object/Status.js`.
14. In the **Fallback Server** section make the following changes:
 - **IP Address** — set to the **IP of the first node**.
 - **Port** — set to **80**.
15. Under **Persistence Mode** select **Application Cookie**.
16. Set the **Application Cookie Name** to `JSESSIONID`.
17. Click **Update**.

The **Layer 7 - Modify Virtual Services** page displays the new settings.

Balance Mode	Weighted Least Connectors	
Persistence Mode	Source IP	
Persistence	Timeout	30
	Table size	10240
	Clear Stick on Drain	<input type="checkbox"/>
	Feedback Method	None
Fallback Server	IP Address	10.0.2.25
	Port	80
	Fallback Persistence	<input type="checkbox"/>
	Encrypt Connection	<input type="checkbox"/>
Health Checks	Negotiate HTTP (GET)	
Check Port	80	
Request to send	rwp/SystemLoad/Object	
Response expected		
Host Header		
Username		
Password*		

18. Select **Cluster Configuration > Layer 7 – Advanced Configuration**.

The **Layer 7 – Advanced Configuration** page opens.

19. In the **Connection Timeout** box, enter `1800000`.
20. In the **Client Timeout** box, enter `1800000`.
21. In the **Real Server Timeout** box, enter `1800000`.
22. Click **Update**.

The settings in the **Layer 7 – Advanced Configuration** page updates.

23. In the **Commit changes** section, click **Reload HAProxy** to complete the configuration of the load balancer in your ProjectServer Redundant System.

ProjectServer users can now use the IP address or hostname of the load balancer virtual service to open ProjectServer.

Optional SSL Offloading Setting Configuration

Some customers may wish to use a HTTPS connection between their end users and ProjectServer. HTTPS is a required configuration for the customers planning to have ProjectServer accessible from the public internet.

Add an SSL Certificate

The first step is to add an SSL certificate to the load balancer in your ProjectServer Redundant System.

To add an SSL certificate to the load balancer.

1. Use a web browser to open the one of the following URLs:

- `http://192.168.2.21:9080`
- `https://192.168.2.21:9443`

An **Authentication** dialog box opens.

2. Use the following credentials to log in to the load balancer:

- **Username** — `loadbalancer`
- **Password** — `loadbalancer`

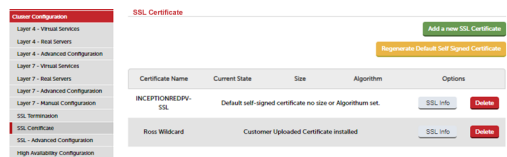
The load balancer **Utility** page opens.

3. Click **Cluster Configuration**.

The **Cluster Configuration** section opens.

4. In the **Cluster Configuration** section, click **SSL Certificate**.

The **SSL Certificate** section opens.



5. Click **Add a new SSL Certificate**.

The **Add a new SSL Certificate** section opens.

6. Depending on the type of SSL certificate you are adding, complete one of the following procedures:

- **Existing SSL Certificate** — to add an existing certificate such as a wild card certificate, complete the procedure “**To add an existing SSL certificate**” on page 8–9.
- **New SSL Certificate** — to add a completely new certificate, complete the procedure “**To add an existing SSL certificate**” on page 8–9.

Existing SSL Certificate

When you already have an SSL certificate you can add it to the load balancer in your ProjectServer Redundant System

To add an existing SSL certificate

1. In the **Add a new SSL Certificate** section, select the **Upload prepared PEM/PFX file** option.

The **Add a new SSL Certificate** section displays the upload settings.

Add a new SSL Certificate

I would like to:

- Upload prepared PEM/PFX file
- Create A New SSL Certificate (CSR)

Label:

File to upload: wildcard.pfx

PFX File Password:

[Upload Certificate](#)

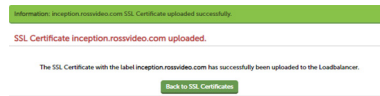
2. In the **Label** box, enter a unique name for the SSL certificate.
3. Click **Choose File**.

4. Use the file browser to navigate to and select an existing SSL certificate file.

The SSL certificate file must contain any intermediate and root certificates needed as well as the private key for the server certificate it contains. The SSL certificate file can be in pem or pfx format.

5. In the **PFX File Password** box, enter the password for the selected SSL certificate file.
6. Click **Upload Certificate**.

The **Information** screen displays after the successful upload of the selected SSL certificate uploads to the load balancer.



7. Click **Back to SSL Certificate**.

The **Information** screen closes.

8. Continue with the procedure “**To configure SSL termination settings**” on page 8–11.

New SSL Certificate

If you do not have an SSL certificate you must create a new SSL certificate for the load balancer.

To create a new SSL certificate

1. In the **Add a new SSL Certificate** section, select the **Create a new SSL Certificate (CSR)** option.

The **Add a new SSL Certificate** section displays the create settings.

A screenshot of a web form titled "Add a new SSL Certificate". The form has a radio button selected for "Create a new SSL Certificate (CSR)". The fields are: Label (Inception Demo), Domain (CN) (inception.rossvideo.com), Organisation (O) (Ross Video Ltd), Organisation unit (OU) (IT), City (L) (Ottawa), State or Province (ST) (Ontario), Country code (C) (Canada), Email address (techsupport@rossvideo.com), and CSR Key Length (2048 bits). A green "Create CSR" button is at the bottom right.

2. In the **Label** box, enter a unique name for the SSL certificate.
3. In the **Domain (CN)** box, enter the URL that ProjectServer users use to access ProjectServer Redundant System. For example: `projectserver.rossvideo.com`.
4. In the **Organisation (O)** box, enter the name of the organization. For example: `Ross Video Ltd`.
5. In the **Organisational Unit (OU)** field enter the name of the department or group responsible for the SSL certificate. For example: `IT`.
6. In the **City (L)** box, the name of the city in which the SSL certificate is used.
7. In the **State or Province (ST)** box, enter the name of the state or province in which the city entered in step 6 is located.
8. Use the **Country code (C)** list to select the country in which the state or province entered in step 7 is located.
9. In the **Email address** box, enter the email address of the person or group responsible for the SSL certificate.
10. Use the **CSR Key Length** list to elect the required CSR key length for the SSL certificate.

A key length of **2048** bits is sufficient for most signing authorities. A more secure key length of **4096** bits is also available.

11. Click Create CSR.

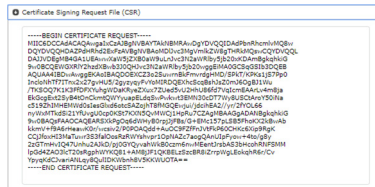
The **Add a new SSL Certificate** section closes to return you to the **SSL Certificate** section.

12. Click the Modify button associated with the SSL certificate you just created.

You entered the name of the new SSL certificate in step 2.

13. Click the line labeled Certificate Signing Request File (CSR) to get your CSR.

The CSR displays.



14. Copy the displayed CSR and paste it into a file with the extension .csr.

15. Send your .csr file to your signing authority.

You require a signed certificate in **pem** format. A certificate designed for Apache or Nginx should be in the **needed** format.

16. After you receive your SSL certificate from your signing authority, enter the server certificate contents in the Your Certificate section.

If you received an **intermediate certificate**, enter the server certificate contents in the **Intermediate Certificate** section.

17. Enter the root certificate contents in the Root Certificate section.

18. Click Update.

19. Continue with the procedure “To configure SSL termination settings” on page 8–11.

SSL Termination

After uploading an existing SSL certificate to your load balancer or created a new SSL certificate for it, you are ready to configure SSL termination settings.

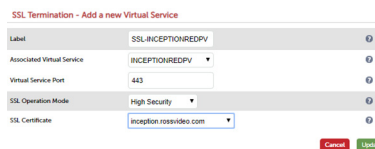
To configure SSL termination settings

1. In the Cluster Configuration section, click SSL Termination.

The **SSL Termination** section opens.

2. Click Add a new Virtual Service.

The **SSL Termination - Add a new Virtual Service** section displays the add settings.



3. Use the Associated Virtual Service list to select the virtual service to add to the SSL termination.

The following settings update after you select a virtual service:

- **Label** — automatically set from the selected virtual service.
- **Virtual Service Port** — should remain set to **443**.
- **SSL Operation Mode** — should remain set to **High Security**.

4. Use the **SSL Certificate** list to select the SSL certificate added in the section “**Existing SSL Certificate**” on page 8–9 or created in the section “**New SSL Certificate**” on page 8–10.
5. Click **Update**.

The **Commit changes** alert opens.



6. Click **Reload STunnel**.

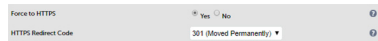
The **Commit changes** alert closes.

7. Under the virtual service you are adding to the SSL termination, select the **Yes** option for the **Force to HTTPS** setting.

This setting enables to X-Forwarded-Proto header needed for proper operation.

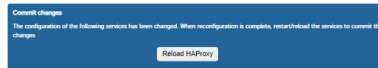
8. Verify that the **HTTPS Redirect Code** is set to **301 (Moved Permanently)**.

SSL Termination settings.



9. Click **Update**.

The **Commit changes** alert opens.



10. Click **Reload HAProxy**.

The **Commit changes** alert closes.

11. On one of the ProjectServer Servers, use a text editor to edit the following file:

```
C:\Program Files\Ross Video\ProjectServer\Configuration\http.cnf
```

12. Change the **SSL Offload Configuration** to **true** as follows:

```
#####
# SSL Offloading Configuration #
#####
wrapper.java.additional.60=-Dorg.eclipse.equinox.http.jetty.https.offload=true
```

13. Save the **http.conf** file.

14. Restart the ProjectServer Server.

15. Repeat steps 11 to 14 on all remaining ProjectServer Servers in your ProjectServer Redundant System.

16. Configure all HTML5 based ProjectServer plugins to use HTTPS.

ProjectServer users should to connect using HTTPS. All connections to HTTP should automatically redirect to HTTPS.

★ You must configure HTML5 based ProjectServer plugins to use HTTPS in order for them to work properly.

Redundant Load Balancer Setup

When a ProjectServer Redundant System contains two load balancers to provide redundancy you must set one as the Master and the other as the Peer. Physical connections and initial network configuration of both load balancers are identical except that the procedures in the Configure Required Load Balancer Settings section should only be done on the Master load balancer. After configuring the pair of redundant load balancers all of the settings from the Master load balancer are automatically replicated on the Peer load balancer as changes are saved and on initial clustering.

To set the Master load balancer

1. Use a web browser to open the one of the following URLs:

- `http://192.168.2.21:9080`
- `https://192.168.2.21:9443`

An **Authentication** dialog box opens.

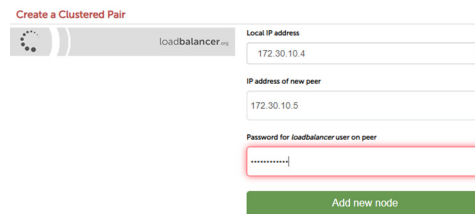
2. Use the following credentials to log in to the load balancer:

- **Username** — `loadbalancer`
- **Password** — `loadbalancer`

The load balancer **Cluster Configuration** page opens.

3. In the **Cluster Configuration** section, click **High Availability Configuration**.

The **Create a Clustered Pair** section opens.



The screenshot shows the 'Create a Clustered Pair' form. It has a header with a cluster icon and the text 'Create a Clustered Pair'. Below the header is a table with one row: 'loadbalancer...'. To the right of the table are three input fields: 'Local IP address' with a dropdown menu showing '172.30.10.4', 'IP address of new peer' with a text box containing '172.30.10.5', and 'Password for loadbalancer user on peer' with a masked text box. At the bottom is a green button labeled 'Add new node'.

4. Verify that the IP address displayed in the **Local IP address** box is the same as the load balancer management IP address configured in the section “**Load Balancer First Time Log In**” on page 8–2.

5. In the **IP address of new peer** box, enter the management IP address of the Peer load balancer.

6. In the **Password for loadbalancer user on peer** box, enter the password for the **loadbalancer** user.

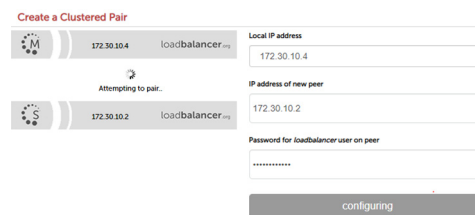
The default password for the **loadbalancer** user is `loadbalancer`.

7. Click **Add new node**.

An alert opens informing you that this process will overwrite the configuration of the selected peer.

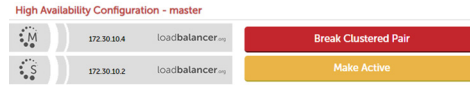
8. Click **OK**.

A screen similar to the following displays while the two load balancers synchronize:

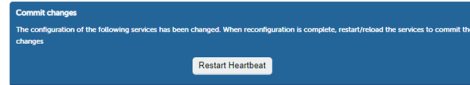


The screenshot shows the 'Create a Clustered Pair' form during synchronization. It has a header with a cluster icon and the text 'Create a Clustered Pair'. Below the header is a table with two rows: '172.30.10.4 loadbalancer...' and '172.30.10.2 loadbalancer...'. Between the two rows is the text 'Attempting to pair...'. To the right of the table are three input fields: 'Local IP address' with a dropdown menu showing '172.30.10.4', 'IP address of new peer' with a text box containing '172.30.10.2', and 'Password for loadbalancer user on peer' with a masked text box. At the bottom is a grey button labeled 'configuring'.

A screen similar to the following displays after the synchronization completes:



Finally the **Commit changes** alert opens.



9. Click Restart Heartbeat.

The **Commit changes** alert closes. The Master load balancer automatically connects to the Peer load balancer to update the configuration of the Peer load balancer based on the configuration of the Master load balancer. From this point on ALL configuration is done on the Master load balancer. The cluster automatically synchronizes the two load balancers.

Database Cluster Recovery

In the case of an unexpected outage of all three database nodes at once in a Maria Galera Cluster, you must follow a specific recovery procedure to prevent data loss. After recovering the Maria Galera Cluster, you can restart the ProjectServers in your ProjectServer Redundant System.

This chapter discusses the following topics:

- MariaDB Galera Cluster Recovery Procedure

MariaDB Galera Cluster Recovery Procedure

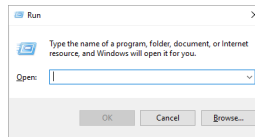
When recovering a MariaDB Galera Cluster, you must follow a specific procedure to prevent data loss.

To recover a Maria Galera Database Cluster after an outage of all database nodes

1. On each **ProjectServer** computer connected to your **Maria Galera Database Cluster**, complete the following steps to **stop** the **ProjectServer** process:

- a. Log in to the **ProjectServer** computer as an **administrator**.
- b. From the Windows desktop, press **Windows Key R**.

The **Run** dialog box opens.

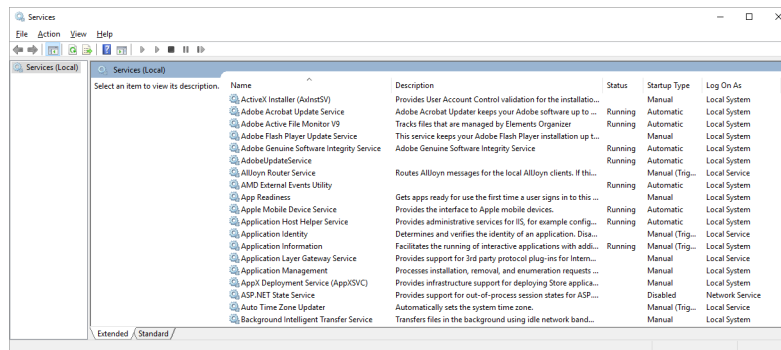


- c. In the **Open** box, type the following application name:

```
services.msc
```

- d. Click **OK**.

The **Services** window opens.



- e. In the **Services** list, locate and select the **OverDrive ProjectServer** service.
- f. Click **Stop** for the **OverDrive ProjectServer** service.

The **OverDrive ProjectServer** service stops.

2. Restart all **three database node** computers or virtual machines in your **Maria Galera Database Cluster**.
3. The last **database node** or computer that turned off will become the new **bootstrap node** when recovering your **Maria Galera Database Cluster**. On each **database node** computer, complete the following steps to find out which computer or virtual machine was the last to turn off:

- a. Log in to a **database node** computer or virtual machine as an **administrator**.

- b. Open a **Terminal** window.

- c. At the prompt, enter the following command to check if the current computer or virtual machine was the last to turn off:

```
sudo cat /var/lib/mysql/grastate.dat
```

The output of the command displays the last saved state of database node. If the output contains the following text, the current database node computer or virtual machine was the last to turn off and is your new **bootstrap node**:

```
safe_to_bootstrap: 1
```

- On the new **bootstrap node** of your **Maria Galera Database Cluster**, complete the following steps to backup the ProjectServer data on the node:

- At the prompt in the **Terminal** window, enter the following command to create a backup directory named **odps_backups**:

```
sudo mkdir /odps_backups
```

- At the prompt, enter the following command to backup your **ProjectServer** data:

```
sudo tar czvf /odps_backups/odps_mysql_backup_$(date +%F).tar.gz /var/lib/mysql
```

- On each **database node** computer or virtual machine in your **Maria Galera Database Cluster**, complete the following steps to **stop** the **MariaDB** process:

- Log in to a **database node** computer or virtual machine as an **administrator**.

- Open a **Terminal** window.

- At the prompt, enter the following command to **stop** the **MariaDB** process:

```
sudo systemctl stop mariadb
```

- On the new **bootstrap node** of your **Maria Galera Database Cluster**, complete the following steps to **start** **MariaDB**:

- At the prompt in the **Terminal** window, enter the following command to set a new value for the **_WSREP_NEW_CLUSTER** environment variable:

```
sudo systemctl set-environment _WSREP_NEW_CLUSTER="--wsrep-new-cluster"
```

- At the prompt, enter the following command to **start** **MariaDB** on the bootstrap node:

```
sudo systemctl start mariadb
```

- At the prompt, enter the following command to verify that the bootstrap node is properly set up where **<DB_U>** is your **MariaDB username** and **<DB_P>** is the **password** for you MariaDB username:

```
sudo mariadb -u "<DB_U>" -p"<DB_P>" -e "SHOW STATUS LIKE 'wsrep_cluster_size';"
```

Your bootstrap node is properly set up when the command displays the following output:

```
+-----+-----+
| Variable_name      | Value |
+-----+-----+
| wsrep_cluster_size | 1     |
+-----+-----+
```

With your bootstrap node set up, you can start MariaDB on the other database nodes.

- On each **remaining database node** computer or virtual machine in your **Maria Galera Database Cluster**, enter the following command at the prompt in a **Terminal** window to **start** **MariaDB** on the database node:

```
sudo systemctl start mariadb
```

With all three database nodes running, you can restart the ProjectServer processes.

- On each **ProjectServer** computer connected to your **Maria Galera Database Cluster**, complete the following steps to **start** the **ProjectServer** process:

- Log in to the **ProjectServer** computer as an **administrator**.

- From the Windows desktop, press **Windows Key R**.

The **Run** dialog box opens.

- In the **Open** box, type the following application name:

```
services.msc
```

- d. Click **OK**.

The **Services** window opens.

- e. In the **Services** list, locate and select the **OverDrive ProjectServer** service.

- f. Click **Start** for the **OverDrive ProjectServer** service.

The **OverDrive ProjectServer** service starts. The restarted ProjectServers will re-synchronize the Maria Galera Cluster.