
LANrev Disaster Recovery Guide

 **HEAT** software

www.heatsoftware.com

September, 22 2016

LANrev Disaster Recovery Guide – Documentation Release 8

This document, as well as the software described in it, is confidential and contains proprietary information protected by nondisclosure and license agreements. No part of this document may be reproduced in any form or disclosed to any party without the express written consent of HEAT Software USA Inc.

HEAT Software USA Inc. reserves the right to revise this document, and to periodically make changes in the content hereof without notice of such changes, unless required to do so by prior agreement.

Information contained herein is provided solely for guidance in product usage and not as a warranty of any kind. HEAT Software USA Inc. assumes no responsibility for use of this information, nor for any infringements of patents or other rights of third parties resulting from the use of this information.

HEAT Software USA Inc., 490 N. McCarthy Blvd., Milpitas, California USA 95035.

© 2009–2016 FrontRange Solutions Inc. All rights reserved.

This product is protected by US patents 7,818,557, 8,234,359, 9,009,857, and 9,081,639. Additional patents are pending.

Contents

1 About this guide.....	4
Audience	4
Using this guide	4
Conventions used in this guide	5
Contacting HEAT Software support.....	5
2 Restoring your LANrev system to a macOS platform	6
Restoring a LANrev server to a macOS platform	6
Importing server settings on mac.....	7
Restoring the LANrev databases from backup	8
Restoring the LANrev SSL certificates.....	9
Restoring the MDM server.....	9
Restoring the admin application on a macOS platform	9
Restoring the distribution points.....	10
Resolving a master distribution point failure	10
Resolving a secondary mirror distribution point failure.....	11
3 Restoring your LANrev system to a Windows platform	12
Restoring a LANrev server to a Windows platform	12
Importing server settings on Windows.....	13
Restoring the LANrev databases from backup	14
Restoring the LANrev SSL certificates.....	15
Restoring the MDM server.....	15
Restoring the Admin application on Windows platforms.....	16
Restoring the distribution points.....	16
Resolving a master distribution point failure	17
Resolving a secondary mirror distribution point failure.....	18
Glossary.....	19
Index	21

Chapter 1 *About this guide*

The LANrev suite of applications is a client management solution for managing all of your Windows and macOS computers (traditional laptops and desktops), as well as Android, iOS, and Windows Phone mobile devices, from a single, unified Administration application (Admin). You can mix and match LANrev components, including the server and Admin. For example, you can install LANrev on macOS or Windows, and manage traditional and mobile devices from either platform.

Every organization needs a disaster recovery plan in the event of a major failure of their IT infrastructure. Implementing a disaster recovery plan, including one for your LANrev system, requires both forethought and preparation. With adequate planning and the correct setup, both of which are described in the *LANrev User Guide* "Initial configuration of LANrev Server" and the *LANrev Optimization Guide*, you can ensure that your LANrev system is up and running again as soon as possible, sometimes within minutes of a catastrophic failure.

To strengthen your disaster recovery plan we recommend that you complete the tasks provided in the *LANrev Optimization Guide*. Doing so helps you minimize downtime and guarantee maximum availability of LANrev features.

This guide outlines some basic strategies for configuring LANrev to implement the built-in, fail-safe features for recovering from a major failure.

This chapter provides information on the following topics:

- [Audience](#)
- [Using this guide](#)
- [Conventions used in this guide](#)
- [Contacting HEAT Software support](#)

Audience

This guide provides instructions for advanced users of LANrev who are designated to implement their organizations' disaster recovery process in the event of a major failure. This guide presumes that advanced users have a high level of familiarity with LANrev.

If you do not have a technical resource that fulfills this requirement, consider engaging HEAT Professional Services to have a technical consultant assist you by sending an e-mail message to lanrev.services@heatsoftware.com.

Using this guide

The LANrev LANrev Disaster Recovery Guide is comprised of the following chapters:

- [Chapter 1: "About this guide" on page 4](#) (this chapter) provides an overview about this document.
- [Chapter 2: "Restoring your LANrev system to a macOS platform" on page 6](#) provides instructions about how to restore information for your LANrev server, LANrev Admin, and agents from backups on a macOS platform.
- [Chapter 3: "Restoring your LANrev system to a Windows platform" on page 12](#) provides instructions about how to restore information for your LANrev server, LANrev Admin, and agents from backups from backups on a Windows platform.

- The [Glossary](#) provides definitions for specific terms used in LANrev Disaster Recovery Guide this guide.

Conventions used in this guide

The following conventions are used throughout this guide:

- Directory names, file names, field names, and UI objects are represented using bold; for example:
 - In Windows XP, the **notepad.exe** file is located in the **windows\system32** directory.
 - **UserID** – enter your user identification number in this field.
 - Click **Apply**.
- When using checkboxes:
 - Click an empty checkbox to activate it.
 - Click an activated checkbox to clear it (ensure there is nothing in the checkbox), which deactivates it.
- Cross references to other locations within this user guide are indicated in green text with an underscore; for example: see [Conventions used in this guide](#). Clicking a cross reference takes you to that location in the guide.
- References to other locations in the guide are expressed in one of following possible ways:
 - For more information, see – indicates that there is information that provides more context on this topic.
 - See – indicates there is more information, but it's not required to understand what is presented here.
 - See the task – indicates where to find specific instructions.
- References to other documents are shown in italic text and the heading is surrounded by quotation marks, as follows:

For more information, see the *LANrev User Guide*, under the heading "Initial configuration of LANrev Server".

Contacting HEAT Software support

If you have difficulty using LANrev or installing agents, contact HEAT Support at <http://www.heatsoftware.com/support>. We welcome your questions, comments, and feature requests.

Chapter 2 *Restoring your LANrev system to a macOS platform*

NOTE The instructions in this chapter are based on the tasks in the *LANrev Optimization Guide*, specifically the chapter titled “Backing up your LANrev system.” If you have followed the guidance provided for backing up your entire LANrev system to a network drive, a removable hard drive, or a USB stick, restoring your system in the event of a catastrophic failure should be relatively straightforward.

This chapter provides the following tasks to help you restore your LANrev system’s data and settings:

- [Restoring a LANrev server to a macOS platform](#)
- [Restoring the LANrev databases from backup](#)
- [Restoring the LANrev SSL certificates](#)
- [Restoring the MDM server](#)
- [Restoring the admin application on a macOS platform](#)
- [Restoring the distribution points](#)

IMPORTANT You cannot restore the LANrev server, SSL certificates, or databases without first stopping the server.

Restoring a LANrev server to a macOS platform

When you restore the LANrev server, you need to do so on a new machine and ensure that the new LANrev server resides at the same DNS name as the older server.

If you want to migrate a LANrev Server installation from one computer to another, most of the data, such as the database tables, can be transferred easily by copying the relevant files from the LANrev Server folder.

This folder is found at **/Library/ Application Support/LANrev Server** on macOS systems. Transferring custom field definitions and server settings is straightforward – you can copy the # **/Library/Preferences/com.polepositionsw.lanrev_server** file.

There is a command line option that lets you save the server settings and custom field definitions as an XML file, and then you can import that file into any other server instance.

To restore the LANrev server to a macOS platform:

1. Install LANrev Server on the new machine and set the DNS name to the same name as the old LANrev server.
2. Restore the server settings and custom field definitions to a server installed on macOS as follows:
 - a) On the computer on which the server is installed, start the **Terminal**.
 - b) On the **Terminal** window, enter this command:
sudo /Library/Application\ Support/LANrev\ Server/LANrev\ Server.app/Contents/MacOS/LANrev\ Server --ImportPreferences /LANrevServerSettings.plist

where **LANrevServerSettings.plist** is the path and name of the settings file you want to import.

Press **Enter**.

- c) When prompted, enter the **password** to run the command with **superuser** (OS root user) privileges.

The specified settings file is imported, and the existing server settings and custom field definitions are overwritten.

3. Stop your LANrev server by opening the **Extras** folder and selecting **Stop LANrev Server.command**.
4. Restore the following backed up databases (*.dbbackup) and rename them with a **.db** file extension:
 - **ServerCommandDatabase.db**
 - **ServerDatabase.db**
 - **AgentRequestCache.db**
 - **SoftwareLicenseControl.db**
 - **MobileDevices.db**
 - **EnumValues.db**

Depending on the server backup settings (**Server Center > Server Settings > General** tab) you've defined, it may be possible that the recovered database may be aged one day or more.

For more information, see the task [“Restoring the LANrev databases from backup” on page 8](#).

5. If you defined any dynamic custom information items based on executable or script files, you also need to copy the **CustomFieldScriptFiles** folder to the same relative location from which it was backed up, as follows:

/Library/Application Support/LANrev Server/CustomFieldScriptFiles

Importing server settings on mac

To import server settings and custom field definitions into a server installed on macOS:

1. On the computer on which the server is installed, start the **Terminal**.
2. On the **Terminal** window, enter this command:
sudo /Library/Application\ Support/LANrev\ Server/LANrev\ Server.app/Contents/MacOS/LANrev\ Server --ImportPreferences /LANrevServerSettings.plist
where **LANrevServerSettings.plist** is the path and name of the settings file you want to import.
Press **Enter**.
3. When prompted, enter the **password** to run the command with **superuser** (OS root user) privileges.
The specified settings file is imported, and the existing server settings and custom field definitions are overwritten.

Restoring the LANrev databases from backup

If you are unable to log in to the LANrev server or receive error messages about the database's integrity, as a first step restart the server. This restart forces a maintenance on the database structure, which could potentially resolve the database integrity error. If this does not resolve the issue, you need to explore recovering your database from a backup. For information about configuring database backups, see the instructions in the *LANrev User Guide*, "Configuring database backup and maintenance."

To restore your databases from a backup:

1. Stop your LANrev server by opening the **Extras** folder and selecting **Stop LANrev Server.command**.
2. Rename the current copies of the databases by adding a **.bak** extension to them.
3. Copy the latest backups (**.dbbackup**) of the databases to **/Library/Application Support/LANrev Server**.
4. Remove any extensions from the copied backups to ensure that they are named as follows:
 - **ServerCommandDatabase.db**
 - **ServerDatabase.db**
 - **AgentRequestCache.db**
 - **SoftwareLicenseControl.db**
 - **MobileDevices.db**
 - **EnumValues.db**
5. Start the LANrev Server service on the server by opening the **Extras** folder and selecting **Start LANrev Server.command**.
6. Log in to your Admin application and verify that your database problem is resolved.
7. To verify database integrity, run a manual database maintenance by opening the **Server Center > Server Settings > General** tab, going to the **Database Maintenance** section, and clicking **Run**.
8. If you're still having trouble with database integrity after restoring the **.dbbackup** file set, repeat this task in its entirety (steps 1 through 7) for as many database backup sets as you have.
9. If you get to the point of restoring the oldest backup database set and you still encounter database integrity problems, contact HEAT Support immediately at www.heatsoftware.com/support.

Restoring the LANrev SSL certificates

Server certificates are used to validate and secure traffic from the Agents. Therefore, after you install (or restore) a new server, you must restore the backed up set of server certificates (over the newly installed certificates) if you want your new server to accept traffic from your existing Agents.

To restore the SSL certificates for the LANrev server:

1. When restoring to a new server, you need to execute the LANrev Server installer. Click the **LANrev Server.pkg** installer file.
2. Follow the on-screen prompts to install a new version of the LANrev server on your new machine. This procedure installs new certificates that you want to replace with your backed up certificates.
3. Stop your new LANrev server by opening the **Extras** folder and selecting **Stop LANrev Server.command**.
4. Delete any existing certificate files, and then restore the **Certificates** folder that you backed up previously to a network drive, an external hard drive, or a USB stick back to the same relative location from which it was backed up. (See the *LANrev Optimization Guide*, "Backing up the LANrev server certificates folder".)
5. Copy the certificates folder from your backup location and paste them to the new server. LANrev server permissions are set automatically on the certificates without intervention.

Restoring the MDM server

When you install your MDM server, you need to define and upload the LANrev server SSL certificate as well as the organizational SSL certificate for the MDM server. We recommended that both of these certificates, in addition to any Intermediate SSL certificates, get stored in a safe place in the event that the MDM server needs to be installed again.

To install the MDM server again and restore the MDM Server SSL certificates to a macOS platform:

1. Start the **LANrev MDM Server.pkg** and follow the prompts from the installer wizard.
2. In the **/Library/Preferences/com.heatsoftware.LANrevMDMServer.plist**, define the key **LANrevServerHostname** with the fully qualified domain name of the LANrev server.
3. Add the LANrev server SSL certificate to **/etc/lighttpd/certs/TrustedCertificates.pem**.
4. Append any additional intermediate certificates to the **TrustedCertificates.pem** list.
5. Add the organizational SSL certificate to **/etc/lighttpd/certs/lighttpd.pem**.
6. Restart the LANrev server by opening the **Extras** folder and selecting **Start LANrev Server.command**.
7. Restart the MDM server by opening the **Extras** folder and selecting **Start LANrev MDM Server.command**.

Restoring the admin application on a macOS platform

To restore the Admin for your new LANrev system on a macOS platform:

1. Install the LANrev Admin application on your new Admin workstation.

2. Start the Admin workstation and click **Quit** without logging in.
3. Restore the files that you backed up previously to a network drive, an external hard drive, or a USB stick to the same relative location from which they were backed up.
For more information, see the *LANrev Optimization Guide*, “Backing up the admin application on a macOS platform”.
4. Copy the **com.poleposition-sw.lanrev-admin.plist** file into the **~/Library/Preferences** location.

Restoring the distribution points

You can configure multiple distribution points for software distribution. LANrev will load-balance between them during a software distribution. In this way, if one server goes down, you can quickly replace it with another and have your software payloads replicate again.

As a best practice we recommend that you configure at least two distribution points – one master and one secondary mirror distribution point. This method ensures that there is always a backup copy of your software payloads, which lets you continue distributing software even when one of the distribution points is lost. For more information, see the *LANrev Optimization Guide*, “Configuring two distribution points for load-balancing”.

For more information, see the following headings in the *LANrev User Guide*:

- “Updating distribution points”
- “Specifying the distribution point in the Software Distribution Center”

This chapter includes the following tasks:

- [Resolving a master distribution point failure](#)
- [Resolving a secondary mirror distribution point failure](#)

Resolving a master distribution point failure

In the event that a master distribution point fails, perform the following task.

To resolve a master distribution point when it fails:

1. Open the **Software Distribution > Distribution Points** area of the Server Center and edit the distribution point definitions.
2. Promote another distribution point to master status by enabling the **Is master distribution point** option in its definition.
3. Demote the old master distribution point by clearing this checkbox in its definition.
4. **Save** your changes to the Server Center.
5. When prompted to transfer the software installers to the new master distribution point, click **Manually Copy Folder** because the files already exist on the new master distribution point since it was previously a mirror distribution point.
6. Delete the definition for the old master distribution point and set up a new secondary mirror distribution point as its replacement.

Resolving a secondary mirror distribution point failure

In the event that a secondary mirror distribution point fails, perform the following task.

To resolve a secondary distribution point when it fails:

1. Add a new distribution point definition. For more information, see the *LANrev User Guide*, “New Distribution Point”.
2. Specify the address of another Agent on the same network segment as the old distribution point to serve as its replacement.
3. Delete the distribution point definition for the failed distribution point.
4. **Save** your changes to the **Server Center**.

Chapter 3 *Restoring your LANrev system to a Windows platform*

NOTE The instructions in this chapter are based on the tasks in the *LANrev Optimization Guide*, in the chapter titled “Backing up your LANrev system”. If you have followed the guidance provided for backing up your entire LANrev system to a network drive, a removable hard drive, or a USB stick, restoring your system in the event of a catastrophic failure should be relatively straightforward.

This chapter provides the following tasks to help you restore your LANrev system’s data and settings to a Windows platform:

- [Restoring a LANrev server to a Windows platform](#)
- [Restoring the LANrev databases from backup](#)
- [Restoring the LANrev SSL certificates](#)
- [Restoring the MDM server](#)
- [Restoring the Admin application on Windows platforms](#)
- [Restoring the distribution points](#)

IMPORTANT You cannot restore the LANrev server, SSL certificates, or databases without first stopping the server.

Restoring a LANrev server to a Windows platform

When you restore the LANrev server, you need to do so on a new machine and ensure that the new LANrev server resides at the same DNS name as the previous server.

If you want to migrate a LANrev Server installation from one computer to another, most of the data, such as the database tables, can be transferred easily by copying the relevant files from the LANrev Server folder. This folder is found at **Program Files\Pole Position Software\LANrev Server** on Windows systems.

Transferring custom field definitions and server settings, however, is less straightforward. There is a command line option that lets you save the server settings and custom field definitions as an XML file, and then you can import that file into any other server instance.

To restore the LANrev server to a Windows platform:

1. Install LANrev Server on the new Windows machine and set the DNS name to the same name as the old LANrev server.
2. Restore the server settings and custom field definitions into a Server as follows:
 - a) On the computer on which the server is installed, start **cmd.exe** with **administrator** privileges.
 - b) Change the directory to the **Program Files\Pole Position Software\LANrev Server** directory.
 - c) At the **DOS** prompt, enter this command:

LANrev Server.exe --ImportPreferences C:\LANrevServerSettings.plist

where **LANrevServerSettings.plist** is the path and name of the settings file you want to import.

Press **Enter**.

The specified settings file is imported and the existing server settings and custom field definitions are overwritten.

3. Stop your LANrev server using the Windows Services and selecting the LANrev Server to **stop**.
4. Restore the following backed up databases (*.dbbackup) and rename them with a **.db** file extension:
 - **ServerCommandDatabase.db**
 - **ServerDatabase.db**
 - **AgentRequestCache.db**
 - **SoftwareLicenseControl.db**
 - **MobileDevices.db**
 - **EnumValues.db**

Depending on the server backup settings (**Server Center** > **Server Settings** > **General** tab) you've defined, it may be possible that the recovered database may be aged one day or more.

For more information, see the task [“Restoring the LANrev databases from backup” on page 14](#).

5. If you defined any dynamic custom information items based on executable or script files, you also need to copy the **CustomFieldScriptFiles** folder to the same relative location from which it was backed up, as follows:
 - Import the **.reg** file that you exported for the **LANrev Server registry key** from the following locations:
 - XP and 2003:
%ALLUSERSPROFILE%\Application Data\Pole Position Software\LANrev Server\CustomFieldScriptFiles
 - Vista, Windows 7, and Windows 2008:
%ALLUSERSPROFILE%\Pole Position Software\LANrev Server\CustomFieldScriptFiles
 - For other versions of Windows:
%ALLUSERSPROFILE%\Application Data\Pole Position Software\LANrev Server\CustomFieldScriptFiles

Importing server settings on Windows

To import server settings and custom field definitions into a server installed on Windows:

1. On the computer on which the server is installed, start **cmd.exe** with **administrator** privileges.
2. Change directory to the **Program Files\Pole Position Software\LANrev Server** directory.
3. At the **DOS** prompt, enter this command:
LANrev Server.exe --ImportPreferences C:\LANrevServerSettings.plist
where **LANrevServerSettings.plist** is the path and name of the settings file you want to import.
Press **Enter**.

The specified settings file is imported and the existing server settings and custom field definitions are overwritten.

Restoring the LANrev databases from backup

If you are unable to log in to the LANrev server or receive error messages about the database's integrity, as a first step restart the server. This restart forces a maintenance on the database structure, which could potentially resolve the database integrity error. If this does not resolve the issue, you need to explore recovering your database from a backup. For information about configuring database backups, see the instructions in the *LANrev User Guide*, "Configuring database backup and maintenance".

To restore your databases from a backup:

1. Stop your LANrev server use the Windows Services and select the LANrev Server to **stop**.
2. Rename the current copies of the databases by adding a **.bak** extension to them.
3. Copy the latest backups (**.dbbackup**) of the databases to:
 - For Windows XP and Windows Server 2003: **%ALLUSERSPROFILE%\Application Data\Pole Position Software\LANrev Server\CustomFieldScriptFiles**
 - For Windows Vista, Windows 7, and Windows Server 2008 and 2008 R2: **%ALLUSERSPROFILE%\Pole Position Software\LANrev Server\CustomFieldScriptFiles**
4. Remove any extensions from the copied database backups to ensure that they are named as follows:
 - **ServerCommandDatabase.db**
 - **ServerDatabase.db**
 - **AgentRequestCache.db**
 - **SoftwareLicenseControl.db**
 - **MobileDevices.db**
 - **EnumValues.db**
5. Start the LANrev Server service on the server by using the Windows Services and selecting the LANrev Server to **start**.
To force the LANrev server to reload its configuration data, change the appropriate 'trigger' registry value to **1**:
HKEY_LOCAL_MACHINE\Software\Pole Position Software\LANrev Server\Trigger
6. Log in to your Admin application and verify that your database problem is resolved.
7. To verify database integrity run a manual database maintenance by doing the following:
 - a) Open the **Server Center > Server Settings > General** tab.
 - b) Go to the **Database Maintenance** section.
 - c) Click **Run**.
8. If you're still having trouble with database integrity after restoring the **.dbbackup** file set, repeat this task in its entirety (steps 1 through 7) for as many database backup sets as you have.

9. If you get to the point of restoring the oldest backup database set and you still encounter database integrity problems, contact HEAT Support immediately at www.heatsoftware.com/support.

Restoring the LANrev SSL certificates

Server certificates are used to validate and secure traffic from the Agents. Therefore, after you install (or restore) a new server, you must restore the backed up set of server certificates (over the newly installed certificates) if you want your new server to accept traffic from your existing Agents.

To restore the SSL certificates for the LANrev server on a Windows platform:

1. When restoring to a new server, you need to execute the LANrev Server installer. Click the LANrev Server **setup.exe** file.
2. Follow the on-screen prompts to install a new version of the LANrev server on your new Windows machine. This procedure installs new certificates that you want to replace with your backed up certificates.
3. Stop your new LANrev server using the Windows Services and selecting the LANrev Server to **stop**.
4. Delete any existing certificate files. and then restore the **Certificates** folder that you backed up previously to a network drive, an external hard drive, or a USB stick back to the same relative location from which it was backed up. (See the *LANrev Optimization Guide*, "Backing up the server certificates on Windows platforms")

For the Windows server platform, go to **C:\ProgramData\Pole Position Software\LANrev Server**.

- a) Take ownership of the folder and all objects within it to gain access.
- b) For each **.pem** file, do the following:
 - i) In the **File Properties** unblock the file.
 - ii) In the **Advanced permissions** clear the **Include inheritable permissions from object's parent** checkbox and click the **Add** button in the Windows Security warning dialog.
 - iii) Grant the SYSTEM account full access.
 - iv) Change the ownership back to the SYSTEM account using the **Other users or groups** button.
- c) For the **Certificates** folder itself:
 - i) Grant the SYSTEM account full access.
 - ii) Change the ownership back to the SYSTEM account using the **Other users or groups** button.
 - iii) When you set the ownership on the Certificates folder back to the SYSTEM account, make sure that you leave **Replace owner on subcontainers and objects** checkbox cleared.

Restoring the MDM server

On installation of your MDM Server, definition and upload of the LANrev server SSL certificate as well as the organizational SSL Certificate is required. It is recommended that both of these certificates in addition to any intermediate SSL certificates be stored in a safe place should the MDM server need to be re-installed should a disaster recovery scenario arise.

To reinstall the MDM Server from scratch and the MDM Server SSL certificates to a Windows platform:

1. In the **LANrev MDM Server** folder (found in the LANrev installer **.zip** archive) click **Setup.exe**.
2. Reinstall the server setup and follow the prompts in the installation wizard. You are asked for the LANrev server certificate as well as the organizational SSL certificate, which are defined in the next two steps.
3. The SSL certificate is obtained from LANrev Admin using **Server Center > Server Settings > General** tab.
 - On the **General** tab, export this certificate by clicking **Save Certificate**.
 - In the Save dialog, archive the certificate (that is: **server '<my server name> certificate.pem**) to the file system.
4. The organization SSL certificate is obtained from your SSL certificate vendor. It's important that the certificate and its private key are saved. If the private key is not retained, the identify of the recovered server is not the same as the original identity of the certificate. As a result, if the private key is not known, all mobile devices will need to be enrolled again into the server.

The certificate and private key are found in the **PKCS#7** format, saved as a **.pfx** file.

If the certificate vendor is classified as a non-CA root, intermediates are likely required and you need to import them to the Certificates MMC snap-in.

You can download Intermediate certificates from your SSL vendor at any time.
5. Restart the LANrev server by using the Windows Services and selecting the LANrev Server to **start**.
6. Restart the MDM server by using the Windows Services and selecting the LANrev MDM Server to **start**.

Restoring the Admin application on Windows platforms

To restore the Admin for your new LANrev system on a Windows platform:

1. Install LANrev Admin on your new admin workstation.
2. Start the Admin application workstation and click **Quit** without logging in.
3. Restore the files that you backed up previously to a network drive, an external hard drive, or a USB stick to the same relative location from which they were backed up.

For more information, see the *LANrev Optimization Guide*, "Backing up the admin application on Windows platforms."
4. Import the **.reg** file for the LANrev Admin registry key from the external drive or USB drive to which you backed it up.

Restoring the distribution points

You can configure multiple distribution points for software distribution. LANrev will load-balance between them during a software distribution. In this way, if one server goes down, you can quickly replace it with another and have your software payloads replicate again.

As a best practice we recommend that you configure at least two distribution points – one master and one secondary mirror distribution point. This method ensures that there is always a backup copy of your software payloads, which lets you continue distributing software even when one of the distribution points is lost. For more information, see the *LANrev Optimization Guide*, “Configuring two distribution points for load-balancing”.

For more information, see the following headings in the *LANrev User Guide*:

- “Updating distribution points”
- “Specifying the distribution point in the Software Distribution Center”

This chapter includes the following tasks:

- [Resolving a master distribution point failure](#)
- [Resolving a secondary mirror distribution point failure](#)

Resolving a master distribution point failure

In the event that a master distribution point fails, perform the following task.

To resolve a master distribution point when it fails:

1. Open the **Software Distribution > Distribution Points** area of the Server Center and edit the distribution point definitions.
2. Promote another distribution point to master status by enabling the **Is master distribution point** option in its definition.
3. Demote the old master distribution point by clearing this checkbox in its definition.
4. **Save** your changes to the Server Center.
5. When prompted to transfer the software installers to the new master distribution point, click **Manually Copy Folder** because the files already exist on the new master distribution point since it was previously a mirror distribution point.
6. Delete the definition for the old master distribution point and set up a new secondary mirror distribution point as its replacement.

Resolving a secondary mirror distribution point failure

In the event that a secondary mirror distribution point fails, perform the following task.

To resolve a secondary distribution point when it fails:

1. Add a new distribution point definition. For more information, see the *LANrev User Guide*, “New Distribution Point”.
2. Specify the address of another Agent on the same network segment as the old distribution point to serve as its replacement.
3. Delete the distribution point definition for the failed distribution point.
4. **Save** your changes to the **Server Center**.

Glossary

The glossary defines the various terms used in the LANrev application and specifically those terms that show in this guide.

Term	Description
agent	A software application that is installed on each managed computer and mobile device. Agents receive commands from LANrev and carry them out on the local computer, sending back information as required. There is a minimal local interface to specify some information.
central server	Acts as the hub of the system. When this server receives instructions, it sends out commands to the Agents, collects the information they send back, and stores the information in its database. There is usually one server per managed network, although multiple servers are possible. Servers have no user interface of their own – they are managed by the LANrev Admin application. LANrev effortlessly handles hierarchies of servers and specialized servers; for example, for software distribution .
desktop device	Refers to traditional desktop and laptop computers.
device	A piece of electronic communication hardware on which you can install LANrev Agent, such as Windows or macOS computers.
distribution point	A computer that is designated to hold software installers for the Software Distribution Center and distribute them to the agents.
DNS	Domain Name Service. We recommend that you assign a DNS name to the LANrev servers and distribution points to minimize the time and effort it takes to recover from a catastrophic failure in the event that either of these components fail.
LANrev Admin	Refers to the Administration application, which is the command center for the LANrev system. Use the Admin both to control the server (and through the server, to control the Agents), and to show required information. You can install the Admin on multiple computers, as needed.
Load-balance	Distributing workloads across computers or other resources for optimal use and overload avoidance. Used to increase reliability through redundancy.
master distribution point	One master distribution point must exist at all times in the software distribution system. For recommended best practice regarding distribution points, see also secondary distribution point . The master distribution point serves as the source of software installers for the other (mirror) distribution points. There must always be exactly one master distribution point.
managed computers and device	A desktop device or mobile device on which an agent resides.
MDM	Mobile Device Management.
MDM server	This optional server handles the management of mobile devices. This server is tightly coupled to the main LANrev Server and is controlled from the same Admin application.
mobile device	Refers to iOS, Android, and Windows Phone mobile devices.
payload	Files or folders that are installed on the client computers. Payloads are stored on distribution point and referenced in installation packages.

Term	Description
.pem file	Private encryption key file
redundancy	Provides additional or duplicate systems, equipment, and so forth that function when a system or the hardware fails.
secondary distribution point	As a best practice we recommend that you configure at least two distribution points – one master distribution point and one secondary mirror distribution point. This method ensures that there is always a backup copy of your software payloads, which lets you continue distributing software even when one of the distribution points is lost.
software distribution	Automatically distribute and install a specific range of software applications on new and existing managed computers. For mobile devices, you can distribute software applications through an app store.
SSL certificate	For security reasons LANrev components, such as servers, Admins, and Agents, require SSL certificates to identify all components, and to validate and secure traffic from the Agents.

Index

A

- about this guide 4
- adding a new distribution point definition for
 - macOS platform 11
 - Windows platforms 18
- audience for this guide 4

C

- configuring
 - multiple distribution points for load-balancing for
 - macOS platform 10
 - Windows platforms 16
- contacting
 - HEAT Professional Services 4
 - HEAT Support 5
- conventions used in this guide 5
- copying the latest LANrev database backups for
 - macOS platform 8
 - Windows platforms
 - Vista, Windows 7, and Windows Server 2008 and 2008 R2 14
 - Windows XP and Server 2003 14

D

- databases
 - copying the latest backups for
 - macOS platform 8
 - Windows platforms
 - Vista, Windows 7, and Windows Server 2008 and 2008 R2 14
 - Windows XP and Server 2003 14
 - removing extensions from copied backups for
 - macOS platform 8
 - Windows platforms 14
 - renaming the current copies for
 - macOS platform 8
 - Windows platforms 14
 - restoring from a backup for
 - macOS platform 8
 - Windows platforms 14
- deleting
 - failed distribution point's definition for
 - macOS platform 11
 - Windows platforms 18
 - old master distribution point's settings for
 - macOS platform 10
 - Windows platforms 17
- demoting an old master distribution point on
 - macOS platform 10
 - Windows platforms 17
- disaster recovery plan, described 4
- distributing software when a distribution point is lost on
 - macOS platform 10
 - Windows platforms 17
- distribution points

- adding a new distribution point definition for
 - macOS platform 11
 - Windows platforms 18
- deleting a failed one's definition on
 - macOS platform 11
 - Windows platforms 18
- demoting an old master distribution point for
 - macOS platform 10
 - Windows platforms 17
- editing definitions on
 - macOS platform 10
 - Windows platforms 17
- promoting to master status for
 - macOS platform 10
 - Windows platforms 17
- resolving a secondary distribution point when it fails on
 - macOS platform 11
 - Windows platforms 18
- setting up a new secondary mirror distribution point for
 - macOS platform 10
 - Windows platforms 17
- dynamic custom information backups for
 - macOS platform 7
 - Windows platforms
 - other versions 13
 - Vista, Windows 7, and Windows 2008 13
 - Windows XP and 2003 13

E

- editing distribution point definitions for
 - macOS platform 10
 - Windows platforms 17
- engaging HEAT Professional Services for assistance 4
- ensuring you have a backup copy of your software payloads for
 - macOS platform 10
 - Windows platforms 17

H

- HEAT Professional Services, engaging them to assist you 4
- HEAT Support 5

I

- importing Server settings for
 - Windows platforms 13
- importing server settings for
 - macOS platform 7

L

- LANrev suite of applications, described 4
- load-balancing between multiple distribution points for

- macOS platform 10
- Windows platforms 16
- location of dynamic custom information backups for
 - macOS platform 7
 - Windows platforms
 - other versions 13
 - Vista, Windows 7, and Windows 2008 13
 - Windows XP and 2003 13

M

- macOS platform
 - adding a new distribution point definition 11
 - copying the latest backups of the database 8
 - deleting
 - failed distribution point's definition 11
 - old master distribution point's settings 10
 - demoting an old master distribution point 10
 - distributing software when a distribution point is lost 10
 - editing distribution point definitions 10
 - ensuring you have a backup copy of your software payloads 10
 - importing server settings 7
 - location of dynamic custom information backups 7
 - promoting a distribution point to master status 10
 - recovering from a master distribution point failure 10
 - recovering from a secondary distribution point failure 11
 - removing extensions from copied backups 8
 - renaming the current database copies 8
 - replacing an old master distribution point with a new secondary mirror distribution point 10
 - resolving a secondary distribution point when it fails 11
 - restarting
 - MDM server 9
 - restarting the server to resolve database integrity problems 8
 - restoring
 - databases from a backup 8
 - LANrev Server 6
 - MDM server 9
 - MDM server SSL certificates 9
 - server settings 6
 - setting up a new secondary mirror distribution point to replace a master distribution point 10
 - transferring the software installers to a new master distribution point 10
- macOS server
 - restoring SSL certificates on
 - macOS platform 9
- master distribution point
 - deleting the old one's settings on
 - macOS platform 10
 - Windows platforms 17
 - how to recover when it fails on
 - macOS platform 10
 - Windows platforms 17
 - transferring the software installers to the new one for
 - macOS platform 10

- Windows platforms 17
- MDM Server
 - restoring it on
 - Windows platforms 16
 - restoring SSL certificates on
 - Windows platforms 16
- MDM server
 - restoring it on
 - macOS platform 9
- multiple distribution points and load-balancing, described for the
 - macOS platform 10
 - Windows platforms 16

O

- overview of what's included in this guide 4

P

- planning for a major failure in IT infrastructure 4
- Professional Services team, how to engage them for assistance 4
- promoting a distribution point to master status on
 - macOS platform 10
 - Windows platforms 17

R

- recovering from a
 - master distribution point failure on
 - macOS platform 10
 - Windows platforms 17
 - secondary distribution point failure on
 - macOS platform 11
 - Windows platforms 18
- removing extensions from copied backups of the databases for
 - macOS platform 8
 - Windows platforms 14
- renaming current copies of the databases for
 - macOS platform 8
 - Windows platforms 14
- replacing an old master distribution point with a new secondary mirror distribution point on
 - macOS platform 10
 - Windows platforms 17
- resolving
 - a secondary distribution point when it fails for
 - macOS platform 11
 - Windows platforms 18
- restarting
 - LANrev Server to resolve database integrity problems on
 - macOS platform 8
 - Windows platforms 14
 - MDM server for
 - macOS platform 9
 - Windows platforms 16
- restoring
 - LANrev databases from a backup for
 - macOS platform 8
 - Windows platforms 14

- LANrev Server on
 - macOS platform 6
 - Windows platforms 12
- MDM Server on
 - Windows platforms 16
- MDM server on
 - macOS platform 9
- MDM Server SSL certificates on
 - Windows platforms 16
- MDM server SSL certificates on
 - macOS platform 9
- Server settings for
 - Windows platforms 13
- server settings for
 - macOS platform 6
- SSL certificates on
 - macOS platform 9
 - Windows platforms 15

S

- secondary distribution point, how to recover when it fails on
 - macOS platform 11
 - Windows platforms 18
- setting up a new secondary mirror distribution point to replace a master distribution point on
 - macOS platform 10
 - Windows platforms 17
- SSL certificates
 - restoring for MDM Server on
 - Windows platforms 16
 - restoring for MDM server on
 - macOS platform 9
 - restoring them on
 - macOS platform 9
 - Windows platforms 15

T

- transferring the software installers to a new master distribution point for
 - macOS platform 10
 - Windows platforms 17
- typographical representations for conventions used in this guide 5

W

- Windows platforms
 - adding a new distribution point definition 18
 - copying the latest backups of the database for
 - Vista, Windows 7, and Windows Server 2008 and 2008 R2 14
 - Windows XP and Server 2003 14
 - deleting
 - failed distribution point's definition 18
 - old master distribution point's settings 17

- demoting an old master distribution point 17
- distributing software when a distribution point is lost 17
- editing distribution point definitions 17
- ensuring you have a backup copy of your software payloads 17
- importing Server settings 13
- location of dynamic custom information backups for
 - other versions 13
 - Vista, Windows 7, and Windows 2008 13
 - Windows XP and 2003 13
- promoting a distribution point to master status 17
- recovering from a
 - master distribution point failure 17
 - secondary distribution point failure 18
- removing extensions from copied backups 14
- renaming the current database copies 14
- replacing
 - an old master distribution point with a new secondary mirror distribution point 17
- resolving a secondary distribution point when it fails 18
- restarting
 - MDM server 16
 - the server to resolve database integrity problems 14
- restoring
 - databases from a backup 14
 - LANrev Server 12
 - MDM Server 16
 - MDM Server SSL certificates 16
 - Server settings 13
- setting up a new secondary mirror distribution point to replace a master distribution point 17
- transferring the software installers to a new master distribution point 17