

Software Installation & Upgrade Guide

Telurio™ Packager

Release 5.7

18-May-2015

Revision: A

Publication Information

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U.S. Patents: 6,996,129; 7,046,677; 7,818,355; 8,180,920. Other US and foreign patents pending.

Contact Information

Imagine Communications has office locations around the world. For domestic and international location and contact information see: <http://www.imaginecommunications.com/contact-us/>

Support Contact Information

For domestic and international support of Selenio VMG, Selenio BNP, Selenio SEP, Selenio MMC, Selenio TAT, Telurio Packager, Telurio Recording Manager, and Telurio AIM products, contact:

Support Contacts: support@rgbnetworks.com
 http://www.rgbnetworks.com/support/rgb-customer-portal.php
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For domestic and international support of all other Imagine Communications' products not mentioned above, contact:

Support Contacts: <http://www.imaginecommunications.com/services/technical-support/>

Document Change History

Telurio Packager Software Installation Guide document history

Part Number	Software Version	Release Date	Document Changes
250-0338-01, Rev A	5.7	05/18/2015	<ul style="list-style-type: none">• Updated document with Imagine Communications' product and branding information• Updated CentOS version• Updated releases number references for 5.7• Removed AMS hardware references
250-0329-01, Rev A	5.6	01/26/2015	Minor changes: <ul style="list-style-type: none">• Updated version numbers & applicable screenshots• Added changes required for non-RGB OS installations• Added screenshots and more detail on RGB-provided OSDVD installation
250-0315-01, Rev A	5.5	11/14/2014	Updated version number & branding
250-0302-01, Rev A	5.4	9/18/2014	Major Changes: <ul style="list-style-type: none">• Removed redundancy removal dependency for upgrades. Minor Changes: <ul style="list-style-type: none">• Added CentOS Installation instructions for RGB-provided OSDVD• Clarified all OS installation instructions.• New version number references
250-0284-01, Rev A	5.3	07/14/2014	<ul style="list-style-type: none">• New version number references• New CentOS version (6.5)• Changes in upgrade / downgrade instructions for package redundancy
250-0262-01, Rev A	5.2	03/18/2014	Release version edits for 5.2 <ul style="list-style-type: none">• New version number references• Additional steps for Non-RGB OSDVD installation added• Migration upgrade / downgrade changes for supported versions.
250-0236-01 Rev A	5.0.1	10/2/2013	Doc edits for release number 5.0.1
250-0228-01 Rev A	5.0	08/30/2013	Major Changes: <ul style="list-style-type: none">• Data migration instructions for CentOS 6.4• VM upgrade instruction changes• Added software downgrade instructions

Table of Contents

Publication Information	2
Notice	2
Trademarks.	2
Patents	2
Contact Information	2
Support Contact Information	2
Document Change History	3
Chapter 1: Introduction	6
In This Chapter	6
About the Telurio™ Packager Application	7
This Document.	7
Document Organization	9
Document Audience.	9
Document Conventions	9
Graphics Used	10
Contacting Customer Support	10
Chapter 2: Installing Packager Software	11
In This Chapter:	11
Overview	11
Basic Steps	11
Operating System Requirements.	12
CentOS Installation with Imagine Communications-customized OS	12
CentOS Installation with Non-Imagine Communications OS	15
Required Linux Packages	15
Partitioning.	15
Additional Steps During OS Installation	16
CentOS Installation Steps (Non-Imagine Communications OS)	16
Additional Steps After OS Installation	16
Installing Packager Software	17
Installation Notes	17
Notable OS Changes When Running TAP Services	18
Initial System Configuration	18
Static IP Method via Imagine Communications' CLI	19
Disabling GUI System Configuration in Favor of Linux Tools (Optional)	20
To Disable GUI System Configuration:	20
To Re-enable GUI System Configuration	20
Chapter 3: Installing on a Virtual Machine.	21
In This Chapter:	21
Overview	21
System Requirements and Partitions.	21

Configuring the Virtual Machine.	22
What You Will Need:	22
These Instructions.	22
Configuration Steps.	22
Special Note When Upgrading Packager Software on a VM.	23
Chapter 4: Upgrading Packager Software.	24
In This Chapter:	24
Prior to Performing Any Upgrade	24
Backup Configuration Databases	24
Determine The Type of Upgrade Needed	27
Direct Upgrade	27
What This Version Upgrades	28
Redundancy Upgrades	28
Upgrade Steps	28
Viewing the Results of a Software Upgrade	30
Migration Overview	31
This Section	31
Migration Tool	31
What is Exported and Restored	31
What is Not Exported and Restored	32
Important Notes on Migration	32
Migration Steps	33
Create a Backup File.	33
Capture Configurations	33
Export Data	34
Install New OS and Packager Software	35
Reconfigure Settings.	35
Restore Data	36
Confirm Successful Migration	36
Restore Unsaved Data	36
Chapter 5: Downgrading Packager Software	37
In This Chapter:	37
Purpose of a Downgrade	37
Prior to Performing Any Downgrade	37
Determine The Type of Downgrade Needed	38
Direct Downgrade	40
What This Version Downgrades	40
Software Downgrade Steps.	40
Restoring Data From a Prior Backup	43
Migration Downgrade	45
Migration Downgrade Steps	45
Restoring Data From a Prior Backup	46
Confirm Successful Downgrade	48
Restore Unsaved Data	48

Introduction

Imagine Communications' Telurio™ Packager segments video and audio content using adaptive streaming technology for delivery to PCs, mobile devices, and set-top boxes. Packager ingests H.264 encoded video streams carried in an MPEG-2 transport stream (TS), Apple HTTP Live Streaming packaged content, or MPEG-4 (MP4) files, and produces segmented output in numerous protocols¹. Additionally, Packager can encrypt content using a variety of methods and integrated with leading DRM vendors and key exchange servers.

Imagine Communications offers the Telurio Packager as either a software license or an appliance. The software-only solution allows customers to deploy on their choice of server-based hardware platform, including virtual machines. Note that performance will be impacted by the hardware platform running the software.

When running on an Imagine Communications supported appliance, the Telurio™ Server provides a minimum mean time between failure (MTBF) of 100,000 hours, as the server is an extremely durable hardware appliance requiring minimal ongoing maintenance. Refer to the *Telurio Server Hardware Setup Guide* for instructions on hardware installation.

Figure 1. Imagine Communications' Telurio Server



In This Chapter

- "About the Telurio™ Packager Application," next.
- "This Document" on page 7.
- "Document Organization" on page 9.
- "Document Audience" on page 9.
- "Document Conventions" on page 9.
- "Graphics Used" on page 10.
- "Contacting Customer Support" on page 10.

1. This release supports the following output formats: Apple HTTP Live Streaming (HLS), Microsoft Smooth Streaming (MSS), Microsoft Smooth Streaming - remote, MPEG Dash ISO, MPEG Dash TS - HTTP format, Adobe HTTP Dynamic Streaming (HDS), Adobe RTMP, and Adobe HTTP Dynamic Streaming - HTTP File Format (HDS-HTTP), and MP4.

About the Telurio™ Packager Application

Packager is a software application that is installed over a Linux-based operating system (OS) — Community Enterprise Operating System (CentOS)². When installing Packager for the first time, the correct OS version and required Imagine Communications-based Linux packages will first need to be installed. When upgrading Packager from a previous version, an OS upgrade may or may not be required, depending on which version of Packager is installed.

This Document

The Telurio™ Packager Software Installation and Upgrade Guide, *Release 5.7* provides instructions for installing and upgrading to the TAP 5.7 software for both Telurio Server³ and non-Telurio Server⁴ platforms.



Note: *Telurio™ Packagers that are running on version 4.9 or lower require an operating system upgrade to CentOS 6.6 in order to run Packager 5.7; this requires an additional data migration procedure. See the section titled, “Determine The Type of Upgrade Needed” on page 27 for more details.*

The following table explains the differences between an appliance and a software-only installation.

Table 1. Differences between appliance and software-only installation

Appliance Installation	Software-Only Installation
Telurio™ Packager is self-contained on a 1RU server appliance—the Application Media Server.	Customer must provide hardware and an operating system that meets requirements for running Telurio™ Packager software.
Default users are created for root, admin, and oper.	Customer is responsible for creating all non-root users ^a .
Operating system packages are updated to the version specified in a manifest file as part of the update.	Operating system packages are never updated as part of a software update. Customer is responsible for maintenance of operating system packages ^b .
System configuration can be performed using the Management Console (Web GUI).	System configuration can be performed using the Web-based Management Console (GUI) by default. Customer has the option to disable configuration commands in the GUI. In this case, system configuration can only be displayed from the Management Console; changes to system configuration must be made using Linux tools manually by the customer.
	Telurio™ Packager software can be executed from within a virtual machine.

2. RHEL can also be used.
3. In the context of this manual, the Telurio Server platform refers to Packager software that is installed only on the Imagine Communications appliance-based hardware server (Dell Enterprise *r610* or *r620*).
4. In the context of this manual, the non-Telurio Server platform refers to Packager software that is installed on any other third party device, including virtual machines.

- a. This does not apply for Imagine Communications-supplied OSDVDs, available for download as an .iso file group upon request from Imagine Communications Customer Support.
- b. Ibid.

Document Organization

This guide is organized as follows:

- [Chapter 1, *Introduction*](#) – (this chapter) describes the contents and conventions used in the Telurio™ Packager Software Installation and Upgrade Guide, *Release 5.7*.
- [Chapter 2, *Installing Packager Software*](#) – provides steps for a software-only installation of the Telurio™ Packager software.
- [Chapter 3, *Installing on a Virtual Machine*](#) – explains how to create a virtual machine within which Telurio™ Packager can be installed and executed.
- [Chapter 4, *Upgrading Packager Software*](#) – describes how to upgrade your existing Packager software and/or migrate data from prior versions of software to the new 5.7 version.
- [Chapter 5, *Downgrading Packager Software*](#) – describes how to downgrade your existing Packager software from Release 5.7 to an earlier version.

Document Audience

This guide is for system administrators and operators who are responsible for installation and maintenance of Telurio software. You should be familiar with general video and networking terminology. You should also be familiar with CentOS operating systems and commands.

Document Conventions

Table 2 provides an easy way to recognize important information in the text.

Table 2. Document Conventions

When you see:	It means:
	Notes are indicated by the icon shown at left, and point out information that may not be part of the text but provide tips and other helpful advice.
	Cautions are indicated by the icon on the left, and let you know that an action may have undesirable consequences if the instructions are not followed correctly. Cautions also indicate that failure to follow guidelines could cause damage to equipment or loss of data.
	Warnings are indicated by the icon on the left, and indicate that failure to take the necessary precautions or to follow guidelines could cause harm to equipment and personnel.
	Navigation tip: follow the path next to the pointer to navigate a specific GUI menu.
Clicking any blue link takes you to the item to which the link refers.	

Graphics Used

In some cases, the screens shown in this manual may have been slightly modified after the manual was released, or may appear slightly different on different browsers.

All efforts have been made to ensure that the latest images are used. In all cases, the functionality described is current at the time of writing.

Contacting Customer Support

Imagine Communications Customer Support is available 24x7. If, after reviewing this installation and upgrade guide, you require assistance, please contact Customer Support via any of the following methods:

Table 3. Contacting Imagine Communications Customer Support

Method	Contact Information
E-mail	support@rgbnetworks.com
Internet	http://www.rgbnetworks.com/support/rgb-customer-portal.php
Inside North America	1.877.RGB.NETW // (1.877.742.6389)
Outside the North America	+1.408.701.2800

Installing Packager Software

This chapter covers steps for performing a *software-only* installation of Packager on a non-Telurio Server¹ device on which Packager software has never been installed. For instructions on upgrading and migrating from a prior version of Packager software, see [Chapter 4, “Upgrading Packager Software.”](#)

In This Chapter:

- “Overview,” next.
- “Operating System Requirements” on page 12.
- “CentOS Installation with Imagine Communications-customized OS” on page 12.
- “CentOS Installation with Non-Imagine Communications OS” on page 15.
- “Installing Packager Software” on page 17.
- “Initial System Configuration” on page 18.
- “Disabling GUI System Configuration in Favor of Linux Tools (Optional)” on page 20.

Overview

A clean² software-only installation of Packager requires the appropriate operating system, Linux packages, and partitioning configuration as described in the subsequent sections. After installing the Packager software on your device, you may optionally change its initial IP configuration, also described in this chapter.

Basic Steps

1. Obtain the correct Linux operating system version³;
2. Confirm or obtain the correct operating system packages;
3. Confirm or set up the correct hard disk partitions;
4. Obtain the Packager software installation executable;
5. Install the Packager software application over the operating system;
6. Optionally reconfigure from DHCP to static IP address;
7. Proceed to configure system parameters in the web-based management GUI.

These steps are explained in detail in the sections that follow.

-
1. Any third party hardware or virtualized device not provided by Imagine Communications.
 2. A clean install is defined as a first-time software installation of Packager on an OS. The only method of software installation is via the Linux command line; no management GUI has yet been installed.
 3. You can use your own version of OS (see [Operating System Requirements](#) section) or you may obtain the pre-packaged OSDVD from Imagine Communications.

Operating System Requirements

Telurio™ Packager Release 5.7 software is supported on the following operating system(s):

- CentOS⁴ version 6.6



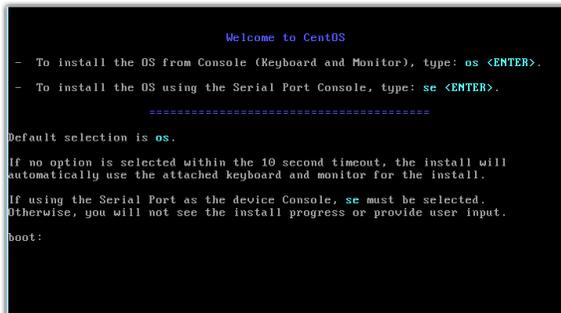
Note: *If you are using an OS installation not obtained from Imagine Communications, you must ensure it meets the requirements set forth in the section titled, “CentOS Installation with Non-Imagine Communications OS” on page 15. If you have obtained the OSDVD from Imagine Communications, all required Linux packages will be present and the partitioning is performed automatically.*

CentOS Installation with Imagine Communications-customized OS

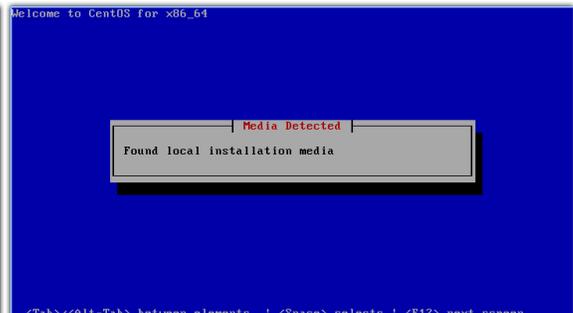
To use Imagine Communications’ customized OS with pre-installed Linux packages and automatic partitioning, proceed as follows:

1. Obtain the CentOS ISO⁵ image file from [Imagine Communications Customer Support](#), labeled as follows:
`osdvd-5.0-CENTOS66-25456.iso`
2. Either burn the ISO image to a DVD or otherwise load the ISO to a location accessible by the target server.

Installation automatically begins when the DVD is inserted or the system otherwise detects the ISO..



CentOS installation menu



CentOS installation menu after media detection

4. RHEL 6.6 can also be installed (instead of CentOS), however CentOS is the Imagine Communications-recommended OS.
5. An ISO image file is an archive or group of files that represents the entire contents of an optical disc. It can be burned to a DVD or it can be copied to network drive and mounted to a system to run as if it were a DVD.

3. Watch for the **Hostname** prompt, which will come immediately after the installation media has been found and before the packages begin installation.

```
=====  
Console configuration for this install: console=ttyS0,115200 console=tty0  
Primary console is last specified value.  
=====  
Disk partition configuration  
  
Disks found: [1]  
1 - /dev/sda: 68.7GB - ATA QEMU HARDDISK (scsi)  
  
=====  
Set ethernet configuration for first interface.  
Configuration of other interfaces can be done after installation is complete.  
Note: enter a blank hostname or IP (or let 4 minute timeout expire) for DHCP.  
Hostname: RM-217-R4_
```



Caution: Do not configure the system to use DHCP⁶.

-
6. When using the Imagine Communications-supplied OS, DHCP will automatically be configured under the following conditions:
 - First Condition:** For multiple drives: If the OS installation detects multiple drives, it prompts for a primary drive selection and waits 1 minute before moving to the Second Condition. For single drive: OS detects a single drive, therefore the selection is not relevant and the system immediately proceeds to the Second Condition.
 - Second Condition:** Installation prompts for hostname entry. If there is no entry within 4 minutes or hostname is an empty string (such as when tapping [enter] instead of a value), DHCP is automatically configured,
 - Third Condition:** If a hostname was entered, the installation prompts for a static IP address entry. If, after 5 minutes, no IP address entry is made, the system times out and DHCP is automatically configured.There is a maximum timeout of 5 minutes for the system installation; which means if the installation is started and left unattended for longer than 5 minutes after the First Condition prompt, DHCP will be used.

- Beginning with the Hostname, enter the following system information relative to your network parameters: Hostname, IP address, Netmask, Gateway, and DNS.

```

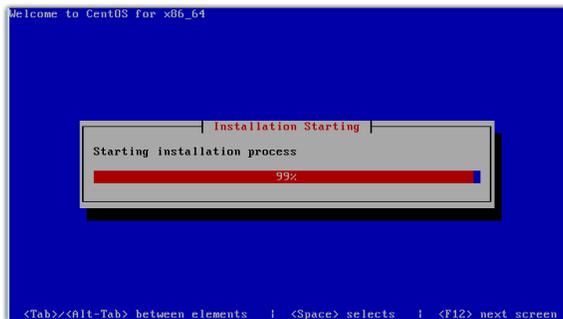
=====
Console configuration for this install: console=ttyS0,115200 console=tty0
Primary console is last specified value.
=====
Disk partition configuration

Disks found: [1]
1 - /dev/sda: 68.7GB - ATA QEMU HARDDISK (scsi)
=====
Set ethernet configuration for first interface.
Configuration of other interfaces can be done after installation is complete.
Note: enter a blank hostname or IP (or let 4 minute timeout expire) for DHCP.

Hostname: RM-217-R4
IP: 10.32.128.217
Netmask [255.255.255.0]:
Gateway [10.32.128.1]: 10.32.128.1
DNS (multiple separated by commas) []: 10.32.128.151_

```

Once you have completed entering the network settings, the system immediately begins its package installation. Upon completion, the system will reboot, start all relevant processes, and return the login prompt. CentOS Installation is complete at this point.



```

Welcome to CentOS for x86_64

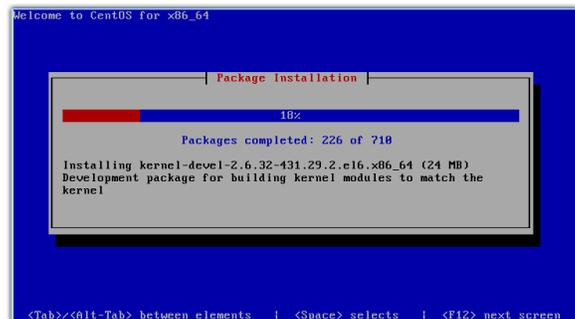
Installation Starting

Starting installation process
99%

<Tab>/<Alt-Tab> between elements | <Space> selects | <F12> next screen

```

1. CentOS Installation start



```

Welcome to CentOS for x86_64

Package Installation

18%

Packages completed: 226 of 710

Installing kernel-devel-2.6.32-431.29.2.el6.x86_64 (24 MB)
Development package for building kernel modules to match the kernel

<Tab>/<Alt-Tab> between elements | <Space> selects | <F12> next screen

```

2. CentOS Installation in process

```

Starting udev: p1lx4_smbus 0000:00:01.3: SMBus base address uninitialized - upgrade BIOS or use force_addr=0xaddr [ OK ]
Setting hostname RM-217-R4: [ OK ]
Setting up Logical Volume Management: No volume groups found [ OK ]
Checking filesystems
/dev/sda2: clean, 78875/768544 files, 598243/3872000 blocks
/dev/sda6: clean, 11/1499136 files, 138111/5991688 blocks
/dev/sda5: clean, 14/328000 files, 55368/1288000 blocks
/dev/sda1: clean, 2884/1682496 files, 159229/6488888 blocks [ OK ]
Remounting root filesystem in read-write mode: [ OK ]
Mounting local filesystems: [ OK ]
Enabling local filesystem quotas: [ OK ]
Enabling /etc/fstab swaps: [ OK ]
Entering non-interactive startup
Calling the system activity data collector (sadc)...
Running DRMS auto installation service for kernel
Done.
Bringing up loopback interface: [ OK ]
Bringing up interface eth0: Determining if ip address 10.32.128.217 is already in use for device eth0... [ OK ]
Starting auditd: _ [ OK ]

```

3. CentOS post installation reboot

```

CentOS release 6.5 (Final)
Kernel 2.6.32-431.29.2.el6.x86_64 on an x86_64
RM-217-R4 login: _

```

4. CentOS post installation login

- Repeat **steps 2-4** for each instance of TAP you wish to install.
For example, if you are installing 2 instances of TAP, you will need 2 separate instances of the OS.
- Proceed to the *Installing Packager Software* section. Since the Imagine Communications OSDVD performs the appropriate partitioning automatically, you do not need to perform any additional OS installation steps.

CentOS Installation with Non-Imagine Communications OS

If you wish to use your own (non-Imagine Communications) version of CentOS 6.6 for OS installation, you must install the Linux packages required for running Packager, manually partition the target server's hard drive, and perform a few extra pre- and post-installation steps as described in this section.

Required Linux Packages

Table 1 below lists the Linux packages required in order to install Packager. When you are using a non-Imagine Communications OS for installation, you must obtain these packages from either the original operating system installation media or from Internet repositories.



Note: *The Packager installation process checks for these packages and will post an error message if one or more of the packages are not installed. An error message will indicate which packages are missing and will provide options for resolving the issue.*

Table 1. Required Linux Packages

alsa-lib.x86_64	neon	postgresql-devel.x86_64
dejavu-sans-mono-fonts	net-snmp	postgresql-server.x86_64
gcc	ntp	rsync
glibc.i686	OpenIPMI	ruby
kernel-devel	perl-Date-Manip	SDL.x86_64
libdbi.x86_64	perl-DBI	sysstat
libicu.x86_64	perl-Digest-HMAC	tftp
libogg.x86_64	perl-libwww-perl	xinetd
libstdc++.i686	perl-MailTools	xorg-x11-fonts-Type1
libuuid-devel	perl-MIME-Lite	zlib.i686
libvorbis.x86_64	perl-XML-DOM	
libxml2.i686	postgresql.x86_64	

Partitioning

For Non-Imagine Communications OSDVD Packager deployments, the system where Packager is installed should be pre-configured with the following partitions for optimal performance:

- **/opt/localmnt**—A partition for local mounts. This partition should be at least 25 GB. If this partition does not exist, local mounts will be created using a virtual filesystem on the **root** mount. This filesystem consists of a single large file formatted and mounted as a filesystem.
- **/var**—If multiple partitions are desired to isolate log files, they should be created for: **/var/ripcode** and **/var/log/ripcode**.



Note: *The above partitions will automatically be created if you are using the Imagine Communications-configured OSDVD installation, however, you must ensure the disk size meets requirements. This installation is in the form of an ISO image which can be downloaded and burned to a DVD or mounted to a local drive. [Imagine Communications Customer Support](#) can provide you with the CentOS OSDVD ISO image upon request.*

Additional Steps During OS Installation

During the network setup portion of the Non-Imagine Communications OSDVD installation, the following actions must be performed:

1. When prompted for a name server, enter only **one** DNS server IP address in the **Name Server** field. Entering more than one IP address here (even if separated with commas) can cause the DNS configuration step to fail, thus causing the Packager software installation to fail.
2. When prompted to select an **Install Type**, choose the **basic server** option. Do not select “minimal” as this does not contain the needed files.

CentOS Installation Steps (Non-Imagine Communications OS)

To install CentOS using a Non-Imagine Communications OS, proceed as follows:

1. Install CentOS according to the media’s installation instructions.
2. Use Linux tools to statically enter the hostname, IP address, subnet mask, default gateway, and DNS.



Caution: Do not configure the system to use DHCP.

3. Partition the hard disk (virtual or physical) as described in “Partitioning” on page 15.
4. After the system reboots, obtain and install the required Linux packages as shown in Table 1 on page 15.
5. Repeat **steps 1-4** for each instance of TAP you wish to install.
For example, if you are installing 2 instances of TAP, you will need 2 separate instances of the OS.
6. Proceed to the *Installing Packager Software* section.

Additional Steps After OS Installation

After the Non-Imagine Communications OSDVD installation, the following actions must be performed:

1. The **SELinux** security module must be **disabled**. One way to do this is as follows:
 - Open the `/etc/sysconfig/selinux` file
 - Edit the file by changing the line reading, “SELINUX=enforcing” to “**SELINUX=disabled**.”
2. Disable the default firewall⁷ by typing the following commands:

```
service iptables save
service iptables stop
chkconfig iptables off
```
3. If SELinux changes were made, reboot the OS instance from the command line in order for the changes to take effect.

7. If you need to enable corporate firewall rules, contact [Imagine Communications Customer Support](#) for a list of IP addresses and ports used by the TAP to include in the firewall rules.

Installing Packager Software



Caution: Before installing Packager software, please refer to “Operating System Requirements” on page 12 for recommendations on partitioning configuration.

Packager software installation is performed using a self-executing `.rampx` file. To install Packager as a software-only solution, proceed as follows:

1. Obtain the appropriate Packager software from [Imagine Communications Customer Support](#).

The software executable file will look similar to this:

```
riptide-packager-5.7-12345.rgb.x86_64.rampx
```

2. Copy the `.rampx` file to your system.



Caution: Do not place the file in the `/tmp/ramp` or `/tmp/ruf` directories.

3. Make the `.rampx` file executable by performing the following command:

```
chmod +x [filename].rampx
```

4. Execute the `.rampx` executable by using the `./` command. Example⁸:

```
./riptide-packager-5.7-12345.rgb.x86_64.rampx.
```

Several flags from the `.rampx` executable are available to aid in a software-only installation. Typically used flags are listed below.

-n	No internet access. If any system packages are required, they will only be retrieved from the DVD or <code>.iso</code> image.
-i	Mount an operating system <code>.iso</code> image instead of using a DVD in the optical drive. The <code>.iso</code> image can be copied directly to the system or remotely remounted using NFS or equivalent protocol.
-R	If required system packages are missing, let the Packager software installation automatically install them. This requires a DVD, Internet access, or an <code>.iso</code> image. The Packager installation will not update any system packages other than to install any missing required packages.



Note: When using flags, ensure there is a space between each flag. For example:

```
./riptide-packager-5.7-12345.rgb.x86_64.rampx -n -i /root/osdvd-5.0-CENTOS65-24111.iso
```

Installation Notes

Below are some helpful notes to aid in the installation process:

- For a full list of flags, execute the `.rampx` file with the `-?` flag.
- When you first install the Packager application, the installation process will check for required system software and list any missing requirements. If one or more Linux packages are missing, ensure that the operating system installation media is in the optical drive, Internet repositories are accessible, or an operating system installation image (`.iso`) is mounted to the system. Follow instructions to resolve the issue.

8. The build number of “12345” is for demonstration purposes only. The real build number for the current release will be different.

- The install log may be reviewed at the following location: `/var/log/ripcode/swupdate.log`. See “Operating System Requirements” on page 12 for a list of required packages.

Notable OS Changes When Running TAP Services

Each time the TAP application is started or restarted, various changes automatically occur to the OS. Below is a list of the most notable changes. Note that this list is not all-inclusive.

- The system corefile pattern is changed in order to better identify which processes generated a core. The following command is run:

```
echo "%t_%e_${BUILD_NUM}.*p.core" > /proc/sys/kernel/core_pattern
```
- The IPv4 configuration is modified in order for asymmetrical multicast packets to flow through the node. The following command is used:

```
echo 2 > /proc/sys/net/ipv4/conf/all/rp_filter
```
- The syslog is changed to redirect messages from `local0.*` and `local1.*` from this location:

```
/var/log/messages
```

to this location:

```
/var/log/ripcode/{events,info}
```
- TIME_WAIT reuse is enabled on Packager for faster TCP connections via the following command:

```
echo 1 > /proc/sys/net/ipv4/tcp_tw_reuse
```



Note: *In order to account for possible TCP connections that are not terminated correctly (thereby reducing the number of available ports on Packager), TCP reuse is enabled. A more preferable solution would be to either reduce the FIN_ACK timeout (named: `tcp_fin_timeout`) or expand the IP socket pool to make more connections available, both values of which should be modified according to your own network requirements.*

Initial System Configuration

This section describes initial configuration for systems that have been installed with the Imagine Communications-provided OSDVD. For non-Imagine Communications OS installations, use Linux tools to statically set an IP address (if this has not already been done).

If you did not configure the system with static IP information during the OS installation, you must do so now. Performing initial system configuration entails setting the IP address, subnet mask, host name, and default gateway for the Packager application. After the IP address is set, the GUI may be used for further system configuration such as network routes, licensing, NTP servers, network bonds, etc.



Note: *Imagine Communications recommends that you configure all system parameters before configuring any workflows or packaging.*

Your system will either be configured with a DHCP address (if you did not manually set up static IP addressing during installation) or a static IP address. The following section describes how to statically configure an IP address.



Note: *When running Packager on a Telurio Server, the currently configured IP address will be displayed on the front panel of the Telurio Server.*

Static IP Method via Imagine Communications' CLI

If you used the OSDVD supplied by Imagine Communications and you did *not* manually set up a static IP address, by default Packager will be configured to use DHCP for obtaining its IP address, subnet mask, and gateway address. Imagine Communications requires a static IP address for Packager.

To configure a static IP address using Imagine Communications' command line interface (CLI), proceed as follows:

1. Login to the Packager via a secure shell (SSH) session.



Note: *You must know the IP address that has been assigned to the Packager and you must log in to it from a routable computer.*

2. Use the following login⁹ credentials to access Packager's CLI:

```
Login:    admin
Password: ripcode!
```

3. Change to the *system* tree of the CLI by typing **system** and pressing the [Enter] key.
4. Configure the IP address using the **ip address** command syntax as shown below (where the **bold** lettering is the command to enter):

```
admin (system)> ip address static [IP address] mask [network mask]
gateway [Gateway IP] iface 0
```

For example, this command sets the static IP, netmask, and gateway on Interface 0¹⁰:

```
admin (system)> ip address static 10.10.10.221 mask 255.255.255.0
gateway 10.10.10.1 iface 0
```

5. Press [Enter] to enter and save the new IP configuration.
6. Type **ip restart** to restart IP services and affect the change.



Note: *When this command is issued, the IP address change is stored and will take effect when you execute the **ip restart** command, or reboot Packager. Once you reboot, you must use the new IP address for subsequent access.*

7. Log in to Packager's Web-based Management Console (GUI)¹¹ from a browser on a remote administrative computer using the new static IP address.



Note: *You can also configure static IP parameters from the **system >> network >> ip >> set** menu in the management GUI.*

Once logged into the GUI, click the **System** tab to configure all system configuration parameters. See the *Telurio Packager User Guide, Release 5.7* for instructions to all GUI procedures.

-
9. Using the `admin/ripcode!` login from the shell prompt initiates Imagine Communications' CLI sub-program. For full root access to a Packager that has been loaded on an Imagine Communications-supplied OS, please contact [Imagine Communications Customer Support](#).
 10. The `iface` parameter requires an index value rather than the interface name. To obtain a list of current index-to-interface mappings, use the **show netiface** command from the CLI *system* tree.
 11. The Web GUI login of `admin/ripcode!` is only created when you are using a Telurio Server or an Imagine Communications-supplied OSDVD for installation. If you are using a Non-Imagine Communications OSDVD, the Web GUI login uses `root` as a login and whatever password you supplied during installation.

Disabling GUI System Configuration in Favor of Linux Tools (Optional)

Once you have installed Packager, there are two ways to perform system configuration for *software-only* based systems (i.e., systems that are not running on a Telurio Server):

- Using the GUI;
- Using standard Linux tools (or customer-supplied tools). In this case, the configuration and management function of the Packager should be disabled.



Warning! *Since commands issued from the GUI may perform additional internal configuration, do **not** use the GUI combined with Linux tools to make system configuration changes. Doing so may render the system inoperable. Either use **only** the GUI, or **only** Linux tools, never a mixture of both.*

To perform remote configuration of a software-only installation using Linux tools, disable GUI system configuration so that users cannot perform configurations via the GUI. Users will still be able to display system settings from the GUI, however, modification of these settings (which could alter the installation process from Linux) will be disabled.

To Disable GUI System Configuration:

1. Use your preferred editor to open the **ripcode.conf** file (stored in the **/etc/ripcode/** directory).
2. Search for the key `RCSysTemConfigDisabled` and change its value to `true` (case-sensitive).
3. Save changes and restart the GUI service by executing `service ripcode restart` from a command prompt.
4. Force the Web browser to reload the GUI and verify that the set/configure aspects of system configuration (IP, DNS, syslog, SNMP, etc.) are not visible.

To Re-enable GUI System Configuration

1. Use your favorite editor to open the **ripcode.conf** file (stored in the **/etc/ripcode/** directory).
2. Search for the key `RCSysTemConfigDisabled` and change its value to `false` (case-sensitive).
3. Save changes and restart the GUI service by executing `service ripcode restart` from a command prompt.
4. Force the Web browser to reload the GUI and verify that the set/configure aspects of system configuration (IP, DNS, syslog, SNMP, etc.) are now visible.

Installing on a Virtual Machine

This chapter provides guidelines for installing the Packager application on a virtual machine (VM) rather than a single dedicated server.

In This Chapter:

- “Overview,” next.
- “System Requirements and Partitions” on page 21.
- “Configuring the Virtual Machine” on page 22.
- “Special Note When Upgrading Packager Software on a VM” on page 23.

Overview

A virtual machine (VM) is a software application that is installed on a computer with an existing operating system (Host OS) so another operating system (Guest OS) can run concurrently. With a VM you can use the same hardware device to run multiple instances of operating systems rather than a dedicated server for each OS.



Note: *The primary benefit of a VM is hardware flexibility; the drawback is the potential for reduced performance. For maximum performance, consider running Packager on the Telurio Server.*

This chapter provides step by step instructions for installing and configuring the Packager software on a VM. Provided the VM software supports the appropriate host/guest pairing, you may use any VM application you choose.



Note: *Installation steps on your specific VM may vary. Imagine Communications recommends consulting your IT department for assistance with the installation.*

System Requirements and Partitions

When installing Packager on a VM, you must provide the same system resources and configure the same partitions for the VM as you would to a dedicated server. See “Operating System Requirements” on page 12, “CentOS Installation with RGB-customized OS” on page 11, and “CentOS Installation with Non-Imagine Communications OS” on page 15.

Configuring the Virtual Machine

This section describes how to install CentOS and the Packager application on a host operating system. When you have completed the OS installation, your VM will be ready to run Telurio™ Packager.

What You Will Need:

1. A computer that has at least 70 GB of free hard disk space and 24 GB of RAM.
2. A Host OS on the computer (Windows 7, for example);
3. A Linux-based Guest OS (CentOS version 6.6)



Note: *To obtain a CentOS OSDVD from Imagine Communications in the form of a downloadable .iso file, please contact Imagine Communications [Customer Support](#).*

4. An installation medium for the Guest OS (DVD, .ISO image, directory mount, USB, etc.);
5. A VM software application that allows the Host OS and the Guest OS to co-exist (VMware, for example);
6. An unused static IP address;
7. The Packager **.rampx** executable.

These Instructions

These instructions provide the basic steps for configuring a VM. Imagine Communications does not recommend one VM application over another.

Configuration Steps

1. Install your preferred VM application on your server.
2. Using the VM program, create a new VM instance for the Linux-installation.
3. Install CentOS version 6.6 via one of two methods (depending on your use):
 - Follow the instructions in “[CentOS Installation with Imagine Communications-customized OS](#)” on page 12.
 - or-
 - Follow the instructions in “[CentOS Installation with Non-Imagine Communications OS](#)” on page 15.
4. Boot / Play the VM.
5. Obtain the appropriate Packager software executable from Imagine Communications [Customer Support](#).

The software executable file will look similar¹ to this:

```
ripcode-packager-5.7-12345.rgb.x86_64.rampx
```

6. Copy the **.rampx** file to your system.



Caution: *Do not place the file in the `/tmp/ramp` or `/tmp/ruf` directories.*

1. The build number of “12345” is for demonstration purposes only. The real build number for the current release will be different.

7. Make the **.rampx** file executable by performing the following command:
`chmod +x [filename].rampx`
8. Execute the **.rampx** executable by using the **./** command. Example:
`./ripcode-packager-5.7-12345.rgb.x86_64.rampx.`
9. If applicable, change the IP address of the Packager VM to static (optional, but highly recommended). See ["Static IP Method via Imagine Communications' CLI"](#) on page 19
10. Log in to the Packager management GUI by navigating to its IP address from a web browser and proceed to manage and/or configure the system.

Special Note When Upgrading Packager Software on a VM

This section applies only to Packager *upgrades* on a VM, and *not* to clean installs.



Caution: *Telurio™ Packager license keys are tied to the MAC address of the device acting as the license server. If you are using the localhost as your license server, this device will be the VM running the Packager. In this case, if you are upgrading Packager from one version to another **and** the upgrade requires that you reinstall the OS running on the VM, you must ensure that the same MAC address is used for the upgraded OS on the VM as was used on the prior OS version. If a new MAC address is used for the upgraded OS, your Packager license key will not work and you will need to obtain a new license lock code.*

For example², if you decide to re-image the OS on a VM whose MAC address is: bb-a4-b3-c2-d-d-ee, it is as if a new hardware device is installed. Therefore, a new MAC address of, for example, aa-b0-1c-2f-ee-45 is assigned to the virtual eth0 interface, the Packager lock code changes, and the license key for the originally installed OS on the VM no longer applies.

Imagine Communications recommends that the VM MAC address be cloned prior to the OS upgrade, and that the same MAC address be reapplied after the OS upgrade. See [Chapter 4, "Upgrading Packager Software"](#) for detailed upgrade instructions.

2. MAC address numbers here are fictitious.

Upgrading Packager Software

This chapter covers steps for upgrading Packager to *Release 5.7* for all devices including Telurio Server, non-Telurio Server, and Virtual Machines.

In This Chapter:

- “Prior to Performing Any Upgrade,” next.
- “Determine The Type of Upgrade Needed” on page 27.
- “Direct Upgrade” on page 27.
- “Migration Overview” on page 31.
- “Migration Steps” on page 33.

Prior to Performing Any Upgrade

Before you upgrade Packager, it is highly recommended that you backup the configuration databases of your system as a fail safe procedure, regardless of which type of upgrade you perform.



Note: *Beginning with Release 5.2, backup via HTTP is supported. However, if you are upgrading from a version prior to this 5.2-22268 release, only TFTP backup is supported.*

Backup Configuration Databases

To backup the Packager’s databases, proceed as follows:

1. From the **System** tab, click through to **sysconfig >> config >> backup**.
2. Determine whether to use TFTP or HTTP as the method of backup. If you are using TFTP, ensure that a valid TFTP server (or service) is running on the desired TFTP host¹.

1. If a search path has not been configured in the *sysconfig >> network >> dns >> search* menu, a fully qualified domain name must be used for *Host* name entries. For example: `server.domain.com`

3. Provide the information in Table 1 and click **Submit**.

TFTP Backup

The screenshot shows the Packager System Status page with the 'System' tab selected. The left sidebar shows a tree view with 'sysconfig' expanded to 'config', and 'backup' selected. The main content area is titled 'sysconfig >> config >> backup' and contains the following form fields:

- Mode:** A dropdown menu set to 'TFTP'. A tooltip explains: 'Mode to use for backup. For TFTP, file is copied to remote server. For HTTP, URL is provided for file retrieval.'
- Host:** A text input field. A tooltip explains: '[text, max. length of 72] For TFTP, the remote TFTP server. Not used for HTTP.'
- File Name:** A text input field. A tooltip explains: '[text, max. length of 256] For TFTP, the name of the backup file (file will be appended with .tgz extension). Not used for HTTP.'

A 'Submit' button is located at the bottom of the form.

HTTP Backup

The screenshot shows the Packager System Status page with the 'System' tab selected. The left sidebar shows a tree view with 'sysconfig' expanded to 'config', and 'backupfile' selected. The main content area is titled 'sysconfig >> config >> backup' and contains the following form fields:

- Mode:** A dropdown menu set to 'HTTP'. A tooltip explains: 'Mode to use for backup. For TFTP, file is copied to remote server. For HTTP, URL is provided for file retrieval.'

A 'Submit' button is located at the bottom of the form.

Table 1. Backup the *Packager's* system configuration.

Field	Description
Mode	Select the mode to use for the database backup. Choices are: TFTP or HTTP. If you select TFTP , the backup files will be saved to the host and directory location you specify in the Host and File Name fields. If you select HTTP , there are no options for location or file name as the backup files will automatically be saved to Packager's hard drive.
Host	Required for TFTP. The remote Trivial File Transfer Protocol (TFTP) server hostname or IP address to which the backup file should be sent.
File Name	Required for TFTP. The name to assign to the backup file. The file will automatically be appended with .tgz .

View HTTP Backup File Location

If you used HTTP as the mode of backup, you can view where the last backed up file was stored on Packager. To do so, proceed as follows:

1. From the **System** tab, click through to **sysconfig >> config >> backupfile**.

2. Click **Submit**.

The backup file location will look similar to the following:



Note: *The backup file which you create here is for your protection only and not a file that is used by any of the upgrade procedures described in this chapter. However, it is possible you may need this backup file if you wish to perform a **downgrade** from this 5.7 release to the release from which this backup was made.*

Determine The Type of Upgrade Needed

Depending on which version of software you are upgrading from, your upgrade path will be one of the following two methods:

- **Direct Upgrade** — OS does not require an upgrade and Packager databases are compatible between the running version and the upgrade version. This upgrade may be performed through the management GUI or using Linux tools. Upgrade time is short and only minimal downtime is expected.
- **Migration Upgrade** — OS requires an upgrade and the device on which Packager is running must be re-imaged with the new OS, or some other factor requires that the current Packager databases must be erased and restored. Upgrade time is longer due to database backup, OS installation, and data migration.

Table 2 below provides a quick reference for determining the type of upgrade needed for your system..

Table 2. Upgrade Path — Quick reference

If you are running:	Your upgrade path is:	System upgrade time will be:	For instructions, see:
<i>Pre-release</i> Version of 5.7 with OS 6.6 already installed	<i>Direct</i> → TAP 5.7	Minimal	“Direct Upgrade” on page 27.
<i>Pre-release</i> Version of 5.7 with OS 6.4 or under	<i>Direct</i> → OS 6.5 ^a → Packager 5.7	Minimal	“Direct Upgrade” on page 27.
Packager 5.0.1p1 and above, OS 6.4	<i>Direct</i> → OS 6.5 ^b → Packager 5.7	Minimal	“Direct Upgrade” on page 27.
Packager 4.9 - Packager 4.6.x, OS 5.8	<i>Migration</i> → OS 6.4 → Packager 5.0.1p1 → <i>Direct</i> → OS 6.5 ^c → Packager 5.7	Longer	“Migration Overview” on page 31, then “Direct Upgrade” on page 27.
Under Packager 4.6.x, OS 5.6	<i>Migration</i> → OS 6.4 → Packager 5.0.1p1 → <i>Direct</i> → OS 6.5 ^d → Packager 5.7 <ul style="list-style-type: none"> • Contact CS to obtain .ramp file (instead of .rampx) 	Longer	“Migration Overview” on page 31, then “Direct Upgrade” on page 27.

a. When upgrading CentOS from 6.3 or 6.4 to 6.5, you are not required to re-image the system. You can simply upgrade the OS, then proceed with the Packager 5.7 upgrade.

b. Ibid.

c. Ibid.

d. Ibid.

Direct Upgrade

This section provides steps for upgrading a Packager from *Release 5.0.1p1* and up for either a Packager operating in standalone mode or a Packager operating in package- or record-level peer redundancy. If your current software version supports a [direct upgrade](#), you can upgrade the Packager software to *Release 5.7* via the management GUI. See the section titled, “[Determine The Type of Upgrade Needed](#)” on page 27 to confirm your upgrade path.



Note: This procedure applies to all devices running Packager, including Telurio Server, non-Telurio Server, and VMs.

What This Version Upgrades

- All Imagine Communications applications.
- Kernel modules and OS software packages to the latest or required versions.

Redundancy Upgrades

Beginning with *Release 5.7*, it is no longer necessary to remove the peer redundancy relationship between two Packagers operating in package-level or record-level redundancy, regardless of the version from which you are upgrading (as long as a [direct upgrade](#) is supported).

When upgrading a redundant pair of Packagers (or Packagers operating in nDVR *Recorder* mode) you must upgrade each node one at a time, rather than all at once. Follow the steps below for upgrade instructions.

Upgrade Steps

1. Create a fail safe backup file [Prior to Performing Any Upgrade](#).
2. Obtain the appropriate Packager **.rampx** software from Imagine Communications [Customer Support](#).

The software executable file will look similar² to this:

```
ripcode-packager-5.7-12345.rgb.x86_64.rampx
```

3. Place the **.rampx** file on a network-accessible directory running either the Trivial File Transfer Protocol (TFTP) or Hypertext Transfer Protocol (HTTP).
4. Use a web browser to navigate to Packager's IP address.
5. Log in to the Packager management GUI with the following login credentials:

```
Login: admin
Password: ripcode!
```



2. The build number of "12345" is for demonstration purposes only. The real build number for the current release will be different.

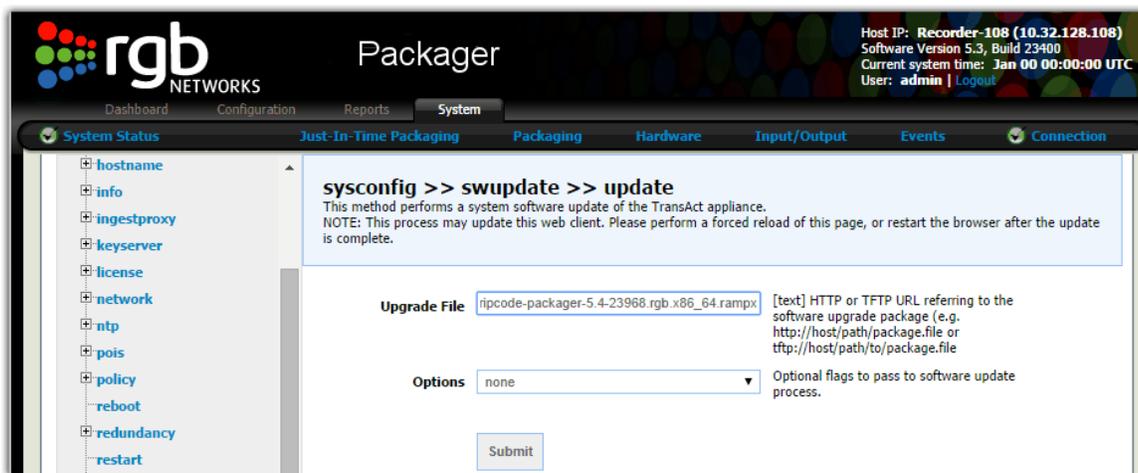
6. If you are upgrading a Packager running package redundancy, follow these additional steps in order to reduce outage time:
 - a) From the Packager you wish to upgrade, click through to **configuration >> package >> stop**.
 - b) Select all packages, and click **Submit**.
 - c) Proceed to the next step.



Note: Once you have stopped all packages on one redundant Packager (e.g. Packager A) and you have upgraded it, you do **not** need to stop packages on the other redundant Packager (e.g. Packager B) before upgrading Packager B.



4. From the **System** tab, click through to **sysconfig >> swupdate >> update**.



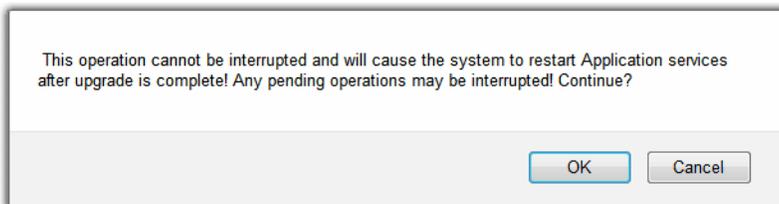
5. In the **Upgrade File** field, enter the URL³ to the location of the **.rampx** file on your network. For example:

```
http://10.10.165.23/rgb-update/pkg/riptide-packager-5.7-12345.rgb.x86_64.rampx
```

```
tftp://10.10.165.23/rgb-update/pkg/riptide-packager-5.7-12345.rgb.x86_64.rampx
```

6. Select whether to allow Internet connection during the update from the **options** field. Imagine Communications recommends leaving this option as **none**.
7. Click **Submit**.

A confirmation message will prompt you to continue:



8. Click **OK** to proceed.
9. When the upgrade has completed, reload the browser page in order to view the upgraded GUI menus and version number.

3. If using a host name instead of an IP address for this field, and if a search path has not been configured in the `sysconfig >> network >> dns >> search` menu, a fully qualified domain name must be used for Host name entries. For example: `server.domain.com`

10. If you are upgrading a Packager that is employing package-level or record-level peer redundancy, repeat **step 1 - step 9** for each Packager in the redundancy cluster.

Viewing the Results of a Software Upgrade

To view the results of a software update, proceed as follows:

1. From the **System** tab, click through to **sysconfig >> swupdate >> show**.
2. Click **Submit**.



Note: *This page does not auto-update. To view real time status, click **Submit** periodically.*

Results appear similar to the following:

The screenshot shows the 'System' tab in a web interface. The left sidebar contains a tree view with 'sysconfig' expanded, and 'swupdate' selected. The main content area displays the command 'sysconfig >> swupdate >> show'. Below the command, there is a 'Submit' button and a log output window showing the progress of the software update.

```

3: 0: [0] Downloading the RGB software package from "http://build.riptide.com/systemtest/tap5.6/build-24911/pkg/riptide-packager-5.6-24911.rgb.x86_64.rampx".
7: 0: [0] Uncompressing and unarchiving from the self-executing software tarball.
9: 0: [0] Verifying downloaded package matches existing system software.
10: 0: [0] Executing Software Update via the software update stage 2 script.
25: 0: SWU Preprocessing...
26: 0: Creating backup archive of persistent data...
30: 0: Updating RGB Binaries...
55: 0: Customizing uninstall file...
60: 0: Updating Operating System Packages...
80: 0: Optimizing BIOS Configuration...
90: 0: SWU Postprocessing...
98: 0: Cleanup...
100: 0: Complete!

```

Migration Overview

If your current software version requires a [migration upgrade](#), you must perform an OS upgrade to CentOS version 6.6, which entails re-imaging the device currently running Packager. Consequently, all existing data on Packager, including the application itself will be erased. Before proceeding further, see the section titled, [“Determine The Type of Upgrade Needed” on page 27](#) to confirm your upgrade path.



Note: *This procedure applies to all devices running Packager, including Telurio Server, non-Telurio Server, and VMs.*

This Section

This section consists of the following sub-sections:

- [“Migration Tool,” next.](#)
- [“What is Exported and Restored” on page 31.](#)
- [“What is Not Exported and Restored” on page 32.](#)
- [“Important Notes on Migration” on page 32.](#)

Migration Tool

Imagine Communications provides a *migration tool* that exports Packager’s system and packaging configurations to a remote destination, then re-imports the data back to Packager after software installation. This tool is available from [Imagine Communications Customer Support](#).

Both the *migration export* file and the *migration restore*⁴ file are packaged as standard **.ramp** or **.rampx** objects.



Note: *If you are migrating from a release prior to 4.6.x, you must use the **.ramp** version of the tool. If you are migrating from 4.6.x and above, you can use the **.rampx** version (recommended if your software supports it).*

The migration tools are executed from the management GUI’s **sysconfig >> swupdate >> update** menu. Future releases of Packager will incorporate a dedicated data migration menu.

What is Exported and Restored

Table 3 lists the application and configuration settings that the *migration tool* will save and restore.

Table 3. Migration tool data that is saved and restored

GUI Tab	Function	Menu Path
Configuration	All configuration stored in this tab.	configuration >> audiomap configuration >> input configuration >> jitp configuration >> output configuration >> package configuration >> session

4. The *migration restore* file is generated by the export migration tool.

Table 3. Migration tool data that is saved and restored

GUI Tab	Function	Menu Path
System	DNS	sysconfig >> network >> dns
	Network interface assignment	sysconfig >> config >> network >> interface
	NTP	sysconfig >> ntp
	SNMP	sysconfig >> snmp
	Syslog	sysconfig >> syslog
	License servers	sysconfig >> license >> server
	Locally installed licenses	sysconfig >> license >> server
	Remote user authentication server configuration (Radius, TACACS+)	sysconfig >> user >> authentication

What is Not Exported and Restored

Table 4 lists the settings that *cannot* be restored by the migration tool as the settings are unique to a system. Importing these settings automatically to multiple systems will cause conflicts..

Table 4. Migration tool data that is not saved or restored

GUI Tab	Function	Menu Path
Dashboard	All events listed in the Events section	Dashboard tab → Events
Reports	Event log, system log, packaging statistics, system status statistics	reports >> event reports >> log reports >> packages reports >> systemstatus
System	Hostname	sysconfig >> hostname
	Network bonds	sysconfig >> network >> bond
	IP address, Subnet mask, Gateway	sysconfig >> network >> ip
	Routes — static, unicast, multicast	sysconfig >> network >> route
	Timezone settings	sysconfig >> timezone
	Local users beyond default <i>admin</i> and <i>oper</i> logins	sysconfig >> user
	Remote user authentication <i>users</i> (Radius, TACACS+)	sysconfig >> user >> authentication



Caution: Events from the **Dashboard** of the Packager GUI will not be restored. Be sure to review these events prior to migration.



Note: If you wish to use the same migration data file for restoring multiple Packagers, you must first **pre-configure** each appliance/application with its own unique settings as described above.

Important Notes on Migration

If the *migration tool* does not have enough information to determine whether a value was changed by the user, if the value was updated as part of the new software build, or both, some settings that would normally be re-imported may need to be manually updated. This may happen as a result of the *migration tool* being unable to account for the differential between existing data at the time of export and new data at the time of import, either due to user-initiated changes or software upgrade changes.



Note: *In order to minimize the possibility of data loss during migration, Imagine Communications recommends that once the migration tool has exported data, no additional changes be made to Packager until after the data has been re-imported and the software has been updated.*

Settings That May Need to be Updated

Table 5 lists the settings that may need to be manually updated after migration.

Table 5. Migration tool data that is saved and restored

GUI Tab	Function	Menu Path
System	Default CIFS and NFS mount options	sysconfig >> defaults >> mount >> options
CIFS and NFS mount defaults are listed here:		
CIFS	rsize=4096, wsize=4096, atime	
NFS v1-3	soft, vers=3, acdirmin=1, acdirmax=1, acregmin=3, acregmax=60, atime, timeo=5, retrans=3, tcp	
NFS v4:	soft, acdirmin=1, acdirmax=1, acregmin=3, acregmax=60, atime, timeo=5, retrans=3	

Migration Steps

This section outlines the procedure for saving and restoring data on a Packager; it consists of the following steps:

1. Create a Backup File
2. Capture Configurations
3. Export Data
4. Install New OS and Packager Software
5. Reconfigure Settings
6. Restore Data
7. Confirm Successful Migration

Create a Backup File

1. Create a fail safe backup file [Prior to Performing Any Upgrade](#).



Caution: *While this backup file will not be used for the migration to the 5.7 release, it will be useful in the event you wish to downgrade to your current operating version for any reason.*

Capture Configurations



1. Log in to the Packager's management GUI and note or capture the current settings from the **System** tab as defined in [Table 4](#) by initiating the following commands:
 - `sysconfig >> hostname >> show`
 - `sysconfig >> network >> bond >> show`
 - `sysconfig >> network >> interface >> show`
 - `sysconfig >> network >> interface >> assignment >> show5`
 - `sysconfig >> network >> ip >> show`

- `sysconfig >> network >> route >> show`
 - `sysconfig >> timezone >> show`
 - `sysconfig >> user >> show`
 - `sysconfig >> user >> authentication >> show`
2. Place the migration tool's executable file on an HTTP or TFTP server that is separate from but accessible by the device running Packager.

The name of the migration tool's file⁶ will be one of the following:

`migrate-5.0-18343.rampx -or- migrate-5.0-18343.ramp`

Export Data



3. From the **System** tab, click through to **sysconfig >> swupdate >> update**.
4. In the **Upgrade File** field, enter the URL⁷ to the *migration tool's* .ramp or .rampx file.

For example:

`tftp://10.10.30.250/rgb/migrate-5.0-18343.rampx`

-OR-

`http://10.10.30.250/rgb/migrate-5.0-18343.rampx`

5. Click **Submit**.

The screenshot shows the 'System Status' page with the 'System' tab selected. The left sidebar shows a tree view of configuration categories: sysconfig, config, database, debug, defaults, hostname, info, ingestproxy, keyserver, license, network, and ntp. The main content area is titled 'sysconfig >> swupdate >> update' and contains the following text: 'This method performs a system software update of the TransAct appliance. NOTE: This process may update this web client. Please perform a forced reload of this page, or restart the browser after the update is complete.' Below this text is a form with an 'Upgrade File' field containing the URL 'tftp://10.10.30.250/rgb/migrate-5.0-18343.ramp', an 'options' dropdown menu set to 'none', and a 'Submit' button. A blue arrow points from the text 'Use Upgrade File field for migration tool URL' to the 'Upgrade File' field.

5. These values are restored, but may be needed during initial re-configuration.
6. To obtain the migration executable file, please contact [Imagine Communications Customer Support](#).
7. If using a host name instead of an IP address for this field, and if a search path has not been configured in the `sysconfig >> network >> dns >> search` menu, a fully qualified domain name must be used for this entry. For example: `server.domain.com`

6. Check the **sysconfig >> swupdate >> show** command for progress and results.

Results will appear similar to this:

```

sysconfig >> swupdate >> show
This method returns the status of the current or last software upgrade operation.
NOTE: This process may update these web pages. Please perform a forced reload of this page, or restart the browser after the
update is complete.
...

Submit

3: 0: [0] Downloading the RGB software package from "http://build.ripcode.com/releases/tat5.0/build-
18343/migrate/migrate-5.0-18343.rampx".
7: 0: [0] Uncompressing and unarchiving from the self-executing software tarball.
9: 0: [0] Verifying downloaded package matches existing system software.
10: 0: [0] Executing Software Update via the software update stage 2 script.
17: 0: Verify installed application.
25: 0: Migration Data Save Preprocessing...
30: 0: Archive DB data...
45: 0: Archive Postgres data...
60: 0: Archive Configuration data...
75: 0: Archive Safenet data...
80: 0: Migration Data Save Postprocessing...
81: 0: Migration Data Save archive: migrate-packager-5.0-2020\_jax-vm1\_20130826\_020039.rampx
98: 0: Cleanup...
100: 0: Complete!

```

7. When complete, click on the link displayed in the **sysconfig >> swupdate >> show** menu to download the migration data executable to your local host⁸.
8. The default output filename uses the following naming convention:
migrate-[application] - [version] - [build]_[hostname]_[date]_[time].rampx.

Example:

```
migrate-packager-5.5-12345_v63_20130826_143341.rampx
```

Install New OS and Packager Software

9. Install the new operating system as required. (See "Determine The Type of Upgrade Needed" on page 27 to confirm you require an OS upgrade)



Caution: *If you are installing the OS on a Virtual Machine, you must ensure that the MAC address of the VM does **not** change when re-imaging the VM, otherwise a new license for Packager will be required. See "Special Note When Upgrading Packager Software on a VM" on page 23 for additional information.*



Note: *Imagine Communications Customer Support can provide a customized CentOS installation package as an .ISO image on request. If you are using an OS installation that is different from the one provided by Imagine Communications, ensure you have the packages and partitions as described in Chapter 2, "CentOS Installation with Non-Imagine Communications OS."*

10. Install the new Packager application software as described in Chapter 2, "Installing Packager Software" on page 17.

Reconfigure Settings

11. Log in to the Packager GUI using the admin login and ripcode! password.

8. This should not be the same device as Packager.

12. Configure network interfaces, bonds, routes, host name, users, and user authentication using the values collected in [step 1 on page 33](#).

Restore Data

13. Place the migrate output file (as described in [step 8 on page 35](#)) on an HTTP or TFTP server separate from but accessible to the Packager.



14. From the **System** tab, click through to **sysconfig >> swupdate >> update**.

15. Enter the URL⁹ that points to the migration output file on the HTTP or TFTP server ([step 13 on page 36](#)). An example is shown below:

```
http://10.10.30.250/migrate-packager-5.5-12345_v63_20130826_143341.rampx  
-or-  
tftp://10.10.30.250/migrate-packager-5.5-12345_v63_20130826_143341.rampx
```

16. Click **Submit**.

Confirm Successful Migration

17. Use the **sysconfig >> swupdate >> show** command to see progress and results. As part of the data restore process, all Packager services are restarted with the new configuration.
18. In the **sysconfig >> defaults >> mount >> options** menu, confirm the settings as described in the previous section, [“Settings That May Need to be Updated” on page 33](#).

Restore Unsaved Data

19. Since the migration procedure does not restore all data to your system, you will need to manually perform these tasks again. See [“What is Not Exported and Restored” on page 32](#) for a list of settings that are not restored.

9. If using a host name instead of an IP address for this field, and if a search path has not been configured in the *sysconfig >> network >> dns >> search* menu, a fully qualified domain name must be used for this entry. For example: `server.domain.com`

Downgrading Packager Software

This chapter covers steps for downgrading Packager from Release 5.7 for all devices including Telurio Server, non-Telurio Server, and Virtual Machines.

In This Chapter:

- “Purpose of a Downgrade,” next.
- “Prior to Performing Any Downgrade” on page 37.
- “Determine The Type of Downgrade Needed” on page 38
- “Direct Downgrade” on page 40.
- “Migration Downgrade” on page 45.

Purpose of a Downgrade

A system downgrade entails loading an earlier version of software than is currently running on Packager in order to restore the system to a prior operating condition. In some cases you may wish to downgrade the software to a prior version with a clean database and default system settings. In this case, you would not restore any prior configuration data. In other cases, however, you may wish to downgrade software to a prior version with a prior database and system settings. In this case, you must have a database backup file from when the system was running on the targeted downgrade version (or before). However, the database backup file can *not* be from a higher version than the targeted downgrade.



Caution: *Before proceeding any further, determine whether you wish to downgrade to a clean database and default system settings or if you wish to downgrade to an earlier database and system settings. If you wish to downgrade to an earlier database, ensure that you have a historical backup file that is equal to or less than the targeted downgrade version.*

Prior to Performing Any Downgrade

Before you downgrade Packager, it is highly recommended that you backup the configuration databases of your system as a fail safe procedure, regardless of which type of downgrade you perform.

To backup the databases, proceed as follows:



1. From the **System** tab, click through to **sysconfig >> config >> backup**.
2. In the **Host** field, enter the IP address or host name¹ of a TFTP or HTTP² server where the backup will be saved.

3. If you are using **TFTP** to backup, in the **File Name** field, enter the desired name of the backup file. A `.tgz` extension will be appended to the backup file at the time of creation.

If you are using **HTTP** to backup, there is no need to specify a file or location as Packager will automatically back up via HTTP to a local path and will automatically create the file name.

4. Click **Submit**.

The image shows two screenshots of the Packager GUI's 'sysconfig >> config >> backup' screen. The top screenshot shows the 'Mode' dropdown set to 'TFTP', the 'Host' field containing '10.10.100.15', and the 'File Name' field containing 'TAP-134_backup_5.x_03-13-14'. The bottom screenshot shows the 'Mode' dropdown set to 'HTTP'. Both screenshots show a 'Submit' button at the bottom of the form.

The GUI will return a confirmation message upon successful backup.



Note: *The backup file created here from this version of software is for your protection only and not a file that is used by any of the downgrade procedures described in this chapter. See the [warning in the previous section](#) for information on which type of historical backup file you will need for **this** downgrade.*

Determine The Type of Downgrade Needed

Depending on which version of software you are downgrading from, your downgrade path will be one of the following two methods:

- **Direct Downgrade** — OS does not require a downgrade, but Packager databases are not compatible between the running version and the downgrade version, requiring that the configuration databases be erased and restored. This downgrade may be performed through the management GUI or using Linux tools. Depending on the version of software, downgrade time is fairly short with minimal to medium downtime expected.

1. If using a host name instead of an IP address for this field, and if a search path has not been configured in the `sysconfig >> network >> dns >> search` menu, a fully qualified domain name must be used for the *Host* name entry. For example: `server.domain.com`
2. As of Release 5.2, HTTP backup and restore is available.

- **Migration Downgrade** — OS requires a downgrade requiring that the device on which Packager is running be re-imaged with the old OS. As with a direct downgrade, current Packager databases must be erased and restored. Downgrade time is longer due to OS installation and data restoration.



Caution: When performing any type of downgrade, whether it is a direct downgrade or migration downgrade, the configuration database does **not** convert down from a higher version of software to a lower one. The only way to restore data from a higher version is to restore a previously captured backup file from the same or lower version of software to which you are downgrading.

Direct downgrade example: Suppose you have installed version 5.7.20123 on your system and you wish to downgrade to version 5.7.18123³. You would need to have already backed up a database version from 5.7.18123 or under (for example: 5.7.10123) prior to downgrading to this version. The 5.7.20123 database will NOT convert down to 5.7.18123.

Migration downgrade example: Suppose you have installed version 5.7.20123 on your system and you wish to downgrade to version 5.0.12345, which requires a different OS. You would need to have already backed up the database from version 5.0.12345 or under (for example: 4.7.10123) prior to downgrading to this version. The 5.7.20123 database will NOT convert down to 5.0.12345.

Table 1 below provides a quick reference for determining the type of downgrade needed for your system.

Table 1. Downgrade Path — Quick reference

If downgrading from Packager 5.7 to:	Your downgrade path is:	System downgrade time will be:	For instructions, see:
Packager 5.7.[lower build], OS 6.5	<i>Direct</i> → Packager 5.7.[lower build] Database backup & restore required.	Minimal to medium	“Direct Downgrade” on page 40.
Packager 5.5.x, OS 6.5	<i>Direct</i> → Packager 5.5.x Database backup & restore required.	Minimal to medium	“Direct Downgrade” on page 40.
Packager 5.4.x, OS 6.5	<i>Direct</i> → Packager 5.4.x Database backup & restore required.	Minimal to medium	“Direct Downgrade” on page 40.
Packager 5.3.x, OS 6.5	<i>Direct</i> → Packager 5.3.x Database backup & restore required.	Minimal to medium	“Direct Downgrade” on page 40.
Packager 5.2.x down to Packager 5.0.x, OS 6.4	<i>Migration</i> → OS 6.4 → Packager 5.1.x down to Packager 5.0.x Database backup & restore required	Longer	“Migration Downgrade” on page 45.

3. If you wish to downgrade to a *pre-release* version of 5.7, you cannot use the Direct Download path; you must use the Migration path.

Direct Downgrade

If your current software version supports a [direct downgrade](#), you can downgrade the Packager software to the desired release via the management GUI. See the section titled, “[Determine The Type of Downgrade Needed](#)” on page 38 to confirm your downgrade path.



Note: *This procedure applies to all devices running Packager, including Telurio Server, non-Telurio Server, and VMs.*

This section contains the following sub-sections:

- [What This Version Downgrades](#)
- [Software Downgrade Steps](#)
- [Restoring Data From a Prior Backup](#)

What This Version Downgrades

- All Imagine Communications applications.
- Kernel modules and Operating System software packages to the required versions.

Software Downgrade Steps

The steps below describe how to perform a direct software downgrade; it contains the following steps:

1. [Capture Configurations](#)
2. [Use GUI to Downgrade](#)
3. [Viewing the Results of a Software Downgrade](#)
4. [Reconfigure Settings](#)

Capture Configurations



1. Log in to the Packager’s management GUI and note or capture the current settings from the **System** tab by initiating the following commands:

- `sysconfig >> hostname >> show`
- `sysconfig >> network >> bond >> show`
- `sysconfig >> network >> interface >> show`
- `sysconfig >> network >> interface >> assignment >> show4`
- `sysconfig >> network >> ip >> show`
- `sysconfig >> network >> route >> show`
- `sysconfig >> timezone >> show`
- `sysconfig >> user >> show`
- `sysconfig >> user >> authentication >> show`

Use GUI to Downgrade

1. Prior to performing a downgrade, create a fail-safe backup of the database as defined in, “[Prior to Performing Any Downgrade](#)” on page 37.

4. These values are restored if using a backup file to restore, but may be needed during initial re-configuration.

- Obtain the appropriate Packager **.rampx** software from [Imagine Communications Customer Support](#).

The software executable file will look similar to this (where the x's represent the desired earlier version):

```
ripcode-packager-5.6-xxxxx.x86_64.rampx
-OR-
ripcode-packager-5.3.x-xxxxx.x86_64.rampx
```

- Place the **.rampx** file on a network-accessible directory running either the Trivial File Transfer Protocol (TFTP) or Hypertext Transfer Protocol (HTTP).
- Use a web browser to navigate to Packager's IP address.
- Log in to the Packager management GUI with the following login credentials:

Login: admin
Password: ripcode!

- Reset the database: From the **System** tab, click through to **sysconfig >> config >> reset**, and click **Submit**.



- From the **System** tab, click through to **sysconfig >> swupdate >> update**.

Use Upgrade File field for
downgrade file location

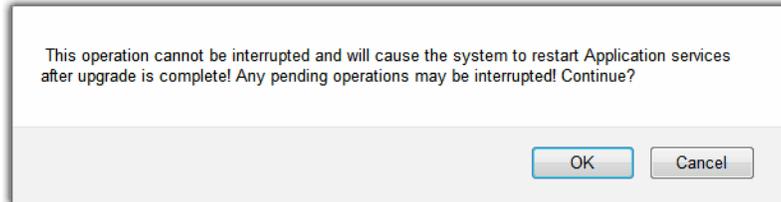
- In the **Upgrade File** field, enter the URL⁵ to the location of the *downgrade* **.rampx** file on your network. For example:

```
http://10.10.165.23/rgb-update/pkg/ripcode-packager-5.6-xxxxx.x86_64.rampx
```

```
tftp://10.10.165.23/rgb-update/pkg/ripcode-packager-5.6-xxxxx.x86_64.rampx
```

- Select whether to allow internet connection during the downgrade from the **options** field.
- Click **Submit**.

A confirmation message will prompt you to continue:



- Click **OK** to proceed.

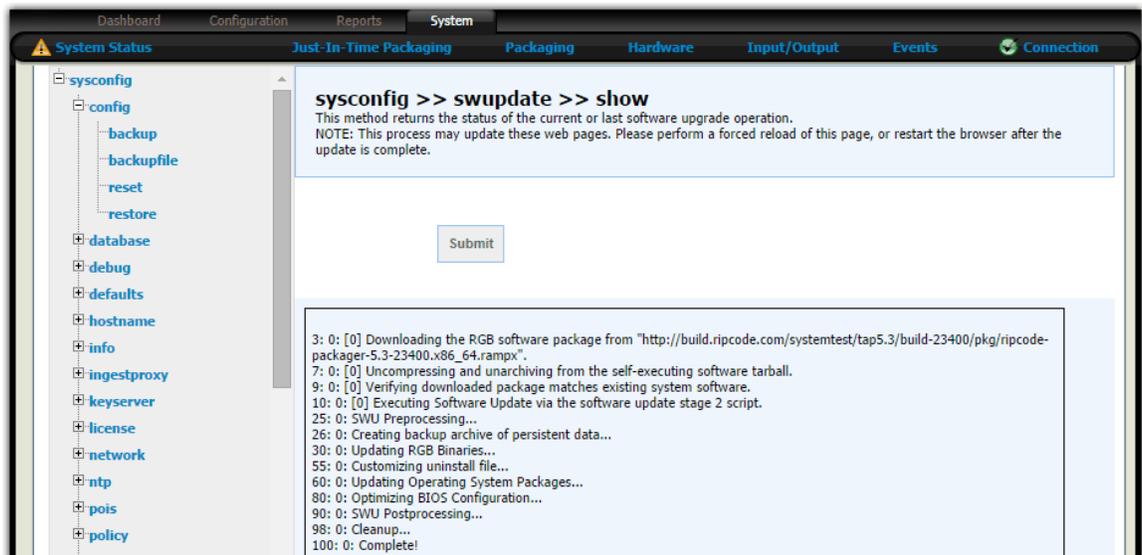
Viewing the Results of a Software Downgrade

To view the results of a software downgrade, proceed as follows:



- From the **System** tab, click through to **sysconfig >> swupdate >> show**.
- Click **Submit**.

Results appear similar to the following:



Note: If you were using package-level redundancy prior to the downgrade and you are downgrading to a version that supports redundancy (Version 5.1 and under do NOT support redundancy), you will need to recreate the redundancy relationship between Packagers. Depending on the

- If using a host name instead of an IP address for this field, and if a search path has not been configured in the `sysconfig >> network >> dns >> search` menu, a fully qualified domain name must be used for this entry. For example: `server.domain.com`

redundancy-supported to which you downgraded, redundancy recreation steps are different. Refer to the Telurio Packager User Guide for the downgraded release for instructions.

Reconfigure Settings

3. Reload the GUI web page.
4. Configure network interfaces, bonds, routes, host name, users, and user authentication using the values collected in [step 1 on page 40](#).

Restoring Data From a Prior Backup

When restoring a database from a backup file, *any changes made from the time of the historical backup file to the time in which you initiate the restore command will be lost.*

For example, suppose that on June 25, 2014 you upgraded your system from 5.7.18123 to 5.7.20202. Prior to doing so you created a backup file of the 5.7.18123 system (on 6/25/2014). Now, on May 20, 2015 you have decided to downgrade back to 5.7.18123. Since a 5.7.20202 backup file will not convert down to a 5.7.18123 system, you must use the backup from the 5.7.18123 system made on 6/25/2014. Therefore, all changes made to the system between 6/25/2014 and 5/20/15 will not be preserved.

What is Backed Up and Restored

All packaging configuration and some system settings are backed up and restored with the **sysconfig >> config >> backup / restore** menu.

Table 2 lists the application and configuration settings that the backup process will save and restore.

Table 2. Backup data that is saved and restored

GUI Tab	Function	Menu Path
Configuration	All configuration stored in this tab.	configuration >> audiomap ^a configuration >> input configuration >> jitp ^b configuration >> output configuration >> package configuration >> session
System	DNS	sysconfig >> network >> dns
	NTP	sysconfig >> ntp
	SNMP	sysconfig >> snmp
	Syslog	sysconfig >> syslog
	License servers	sysconfig >> license >> server
	Remote user authentication server configuration (Radius, TACACS+)	sysconfig >> user >> authentication

a. Depending on version, this menu may or may not be present.

b. Depending on version, this menu may or may not be present.

What is Not Backed Up and Restored

Reports and some system settings are *not* backed up or restored with the **sysconfig >> config >> backup / restore** menu.

Table 3 lists the settings that *cannot* be restored by the backup file as the settings are unique to a system. Importing these settings automatically to multiple systems will cause conflicts.

Table 3. Data that backup file does not save or restore

GUI Tab	Function	Menu Path
Dashboard	All events listed in the Events section	Dashboard tab → Events
System	Network interface assignment	sysconfig >> config >> network >> interface
	Hostname	sysconfig >> hostname
	Locally installed licenses	sysconfig >> license >> server
	Network bonds	sysconfig >> network >> bond
	IP address, Subnet mask, Gateway	sysconfig >> network >> ip
	Routes — static, unicast, multicast	sysconfig >> network >> route
	Timezone settings	sysconfig >> timezone
	Local users beyond default <i>admin</i> and <i>oper</i> logins	sysconfig >> user
	Remote user authentication servers (Radius, TACACS+)	sysconfig >> user >> authentication



Warning! Events from the **Dashboard** of the Packager GUI will not be restored. Be sure to review these events prior to downgrade.



Note: If you wish to use the same backup file for restoring multiple Packagers, you must first **pre-configure** each appliance/application with its own unique settings as described above.

Steps For Restoring Data to Downgraded Version

If you have a historical backup file from the same or lower version to which you have just downgraded, and you wish to restore the data from the historical backup, proceed as follows:



Warning! Any changes that you have made between the time of the historical backup and the time of the downgrade are not preserved.



1. From the **System** tab, click through to **sysconfig >> config >> restore**.
2. In the **Host** field, enter the IP address or host name⁶ of the TFTP server from which the backup file will be restored. For example: 10.10.100.200 or server.domain.com

6. If using a host name instead of an IP address for this field, and if a search path has not been configured in the **sysconfig >> network >> dns >> search** menu, a fully qualified domain name must be used for the *Host* name entry. For example: server.domain.com

3. In the **File Name** field, enter the name of the backup file to use for restoring data.
Do not include the .tgz extension as the restore process automatically appends the file with this extension. For example: TAP-187_backup_5.7.18123_10-02-2013.
4. Click **Submit**.
Upon successful database restore, a confirmation message will be returned.

Migration Downgrade

If downgrading from this release requires a [migration downgrade](#), you must perform an OS downgrade to the specified CentOS version listed in [Table 1 on page 39](#), which entails re-imaging the device currently running Packager. Consequently, all existing data on Packager, including the application itself will be erased. Before proceeding further, see the section titled, “[Determine The Type of Downgrade Needed](#)” on [page 38](#) to confirm your downgrade path.



Note: *This procedure applies to all devices running Packager, including Telurio Server, non-Telurio Server, and VMs.*

This section contains the following sub-sections:

- [Migration Downgrade Steps](#)
- [Restoring Data From a Prior Backup](#)

Migration Downgrade Steps

This section outlines the procedure for downgrading Packager to a lower version of software that requires a different OS. The following steps are covered:

1. [Capture Configurations](#)
2. [Install Older OS and Packager Software](#)
3. [Reconfigure Settings](#)

Capture Configurations



1. Log in to the Packager’s management GUI and note or capture the current settings from the **System** tab by initiating the following commands:
 - `sysconfig >> hostname >> show`
 - `sysconfig >> network >> bond >> show`
 - `sysconfig >> network >> interface >> show`
 - `sysconfig >> network >> interface >> assignment >> show7`
 - `sysconfig >> network >> ip >> show`
 - `sysconfig >> network >> route >> show`
 - `sysconfig >> timezone >> show`
 - `sysconfig >> user >> show`
 - `sysconfig >> user >> authentication >> show`

7. These values are restored if using a backup file to restore, but may be needed during initial re-configuration.

Install Older OS and Packager Software

2. Install the operating system as required (older OS or same version of OS based on the release to which you desire to downgrade).



Warning! *If you are installing the OS on a Virtual Machine, you must ensure that the MAC address of the VM does **not** change when re-imaging the VM, otherwise you will need to obtain a new license for Packager. See “Special Note When Upgrading Packager Software on a VM” on page 23 for additional information.*



Note: *Imagine Communications Customer Support can provide a customized CentOS OSDVD installation package as an .ISO image on request. If you are using an OS installation that is different from the one provided by Imagine Communications, ensure you have the packages and partitions as described in Chapter 2, “CentOS Installation with Non-Imagine Communications OS.”*

3. Install the older Packager application software as described in Chapter 2, “Installing Packager Software” on page 17.

Instead of using the 5.7 **.rampx**, you will use whichever **.rampx** is applicable to your downgrade.

Reconfigure Settings

4. Login to the Packager GUI using the `admin` login and `ripcode!` password.
5. Configure network interfaces, bonds, routes, host name, users, and user authentication using the values collected in [step 1 on page 45](#).

Restoring Data From a Prior Backup

When restoring a database from a historical backup file, *any changes made from the time of the backup file to the time in which you initiate the restore command will be lost.*

For example, suppose that on August 10 you upgraded your system from 5.0.12345 to 5.7-12345. Prior to doing so you created a backup file of the 5.0.12345 system (on 8/10). Now, on August 30 you have decided to downgrade back to 5.0.12345. Since the 5.7-12345 backup file will not convert down to a 5.0.12345 system, you must use the backup from the 5.0.12345 system made on August 10. Therefore, all changes made to the system between 8/10 and 8/30 will not be preserved.

What is Backed Up and Restored

All packaging configuration and some system settings are backed up and restored with the **sysconfig >> config >> backup / restore** menu.

Table 4 lists the application and configuration settings that the *migration tool* will save and restore.

Table 4. Backup data that is saved and restored

GUI Tab	Function	Menu Path
Configuration	All configuration stored in this tab.	configuration >> audiomap ^a configuration >> input configuration >> jitp ^b configuration >> output configuration >> package configuration >> session
System	DNS	sysconfig >> network >> dns
	NTP	sysconfig >> ntp
	SNMP	sysconfig >> snmp
	Syslog	sysconfig >> syslog
	License servers	sysconfig >> license >> server
	Remote user authentication <i>server</i> configuration (Radius, TACACS+)	sysconfig >> user >> authentication

a. Depending on version, this menu may or may not be present.

b. Depending on version, this menu may or may not be present.

What is Not Backed Up and Restored

Reports and some system settings are *not* backed up or restored with the **sysconfig >> config >> backup / restore** menu.

Table 5 lists the settings that *cannot* be restored by the backup file as the settings are unique to a system. Importing these settings automatically to multiple systems will cause conflicts..

Table 5. Data that backup file does not save or restore

GUI Tab	Function	Menu Path
Dashboard	All events listed in the Events section	Dashboard tab → Events
	Network interface assignment	sysconfig >> config >> network >> interface
System	Hostname	sysconfig >> hostname
	Locally installed licenses	sysconfig >> license >> server
	Network bonds	sysconfig >> network >> bond
	IP address, Subnet mask, Gateway	sysconfig >> network >> ip
	Routes — static, unicast, multicast	sysconfig >> network >> route
	Timezone settings	sysconfig >> timezone
	Local users beyond default <i>admin</i> and <i>oper</i> logins	sysconfig >> user
	Remote user authentication servers (Radius, TACACS+)	sysconfig >> user >> authentication



Warning! Events from the **Dashboard** of the Packager GUI will not be restored. Be sure to review these events prior to downgrade.



Note: *If you wish to use the same backup file for restoring multiple Packagers, you must first **pre-configure** each appliance/application with its own unique settings as described above.*

Steps For Restoring Data to Downgraded Version

If you have a historical backup file from the same or lower version to which you have just downgraded, and you wish to restore the data from the historical backup, proceed as follows:



Warning! *Any changes that you have made between the time of the historical backup and the time of the downgrade are not preserved.*



1. From the **System** tab, click through to **sysconfig >> config >> restore**.
2. In the **Host** field, enter the IP address or host name⁸ of the TFTP server from which the backup file will be restored. For example: 10.10.100.200 or server.domain.com
3. In the **File Name** field, enter the name of the backup file to use for restoring data.
Do not include the .tgz extension as the restore process automatically appends the file with this extension. For example: TAP-187_backup_5.0.1.20644_10-02-2013.
4. Click **Submit**.
Upon successful database restore, a confirmation message will be returned.

Confirm Successful Downgrade

5. Use the **sysconfig >> swupdate >> show** command to see progress and results.
As part of the data restore process, all Packager services are restarted with the new configuration.
6. In the **sysconfig >> defaults >> mount >> options** menu, confirm or re-enter the settings as described in the section, "Migration Downgrade Steps" on page 45.

Restore Unsaved Data

7. Since the migration procedure does not restore all data to your system, you will need to manually perform these tasks again. See "What is Not Backed Up and Restored" on page 47 for a list of settings that are not restored.

8. If using a host name instead of an IP address for this field, and if a search path has not been configured in the `sysconfig >> network >> dns >> search` menu, a fully qualified domain name must be used for the *Host* name entry. For example: server.domain.com