# TECHNICAL REFERENCE MANUAL

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# What's New?

In the Technical Reference Manual the icon **NEW!** has been added on the left margin to highlight information on updated features.

The changes linked to new features in version 2.0. are listed below.

#### Cabling procedure for the new PMX2-4601D has been added.

• See section "Cabling the System" on page 4.

#### BEPlay buttons can be customized.

• See section "Customizing the BEPlay Remote Controls" on page 18.

#### A new license key has been introduced: 40 - Xeebra Offside Line.

• See section "Managing the Xeebra Licenses" on page 12.

#### There is a new installation procedure.

- See section "Preparing the USB Drive" on page 21.
- See section "Installing a New Image" on page 21.

#### A new service monitoring tool is available.

• See section "Monitoring the Services" on page 26.

#### A procedure has been added to monitor the server record tracks.

• See section "Monitoring Server Record Tracks" on page 33.

#### A procedure has been added to monitor the Xeebra Client application.

• See section "Monitoring the Client" on page 33.

#### For most of the scripts, you no longer need to provide a username and password.

The following changes unrelated to new features, and therefore not highlighted with the New icon, have been brought to the Technical Reference Manual.

#### Procedure to secure the SDI cables has been added.

• See section "Cabling the System" on page 4.

# The procedure to monitor the video inputs using a Terminal window has been added.

• See section "Monitoring Video Inputs" on page 31.

#### Crash dumps are available.

• See section "Consulting Xeebra System Log Files and Crash Dumps" on page 26.



# 1. Introduction

# **1.1. Product Overview**

## 1.1.1. Description

Xeebra is an instant video review system that enables referees to focus on the content review with the utmost clarity and convenience. It allows the referees to see a multitude of HD camera feeds on up to two (touchscreen) monitors in a fast, synchronized and efficient way from a variety of locations.

Xeebra is simple enough to be operated by a video referee in the game or can be operated by a dedicated operator. Using a touchscreen or mouse in conjunction with a dedicated BEPlay controller, referees can browse and navigate the camera feeds, instantly zoom into the replay directly with a touch and zoom, and mark and label the most important situations for review and export later.

With Artificial Intelligence inside, Xeebra can simplify the calibration and execution of offside calls for VAR reviews.

Xeebra is based on a client/server architecture that guarantees the highest level of flexibility and scalability.

## 1.1.2. Setup

The following diagram shows a setup with a dedicated Xeebra 1U client workstation for the on-field official. The client workstation is connected via a 1 Gigabit network cable with up to six 2U Xeebra servers operated by a booth official.



# 2. Requirements

## 2.1. Network Requirements

The Xeebra client workstation and the Xeebra server hardware need to be connected by a 1 Gbps link. This link can go through a switch or a direct connection.

## Type of Link

The type of link to use depends on the distance between the client and server:

- When the distance between the client and the server hardware is smaller than 80m, a standard Cat 6 network cable is enough.
- When the distance is greater than 80, the connection must go over a fiber link.

This can be achieved by extending the Cat 6 cable with fiber media converters, or by ordering the SFP+ Fiber option (XEE-10GSFP+) on the client and/or the server.

### Type of Switch

	1 server	2 servers	3 servers		
Clients hosted on server machines.	Should work with most switches or direct- attached Ethernet connections.	Should work with most switches or direct-attached Ethernet connections.	Requires data center-grade switch (*) or direct-attached Ethernet connections.		
At least one dedicated client workstation.	Should work with most switches or direct- attached Ethernet connections.	Requires data center-grade switch (*) or direct-attached Ethernet connections.	Requires data center-grade switch (*).		

When choosing a switch, the following recommendations should be followed:

(\*) The following switches have been validated : CISCO 4948 and ARISTA 7048-T. More generally, switches with a dynamically allocated buffer and switches with a deep-buffer should work properly.



# 2.2. Other Technical Requirements

## **Recommendations When Working with Extenders**

It can happen that extenders are used for the screen, keyboard, mouse and BEPlay.

The USB extenders used for the keyboard and mouse must support HID devices (USB HID class).

The USB extenders used for the touch screen(s) and BEPlay must be USB 2.0 extenders.

It is important to respect the manufacturer's recommendation in terms of distances between the machine and USB device and grade of cable.

#### **Recommendations When Working with Two Screens**

When working with 2 screens, both screens must be:

- the same resolution;
- either 2 touch screens or 2 non-touch screens.

# 3. Setting Up and Configuring the System

## 3.1. Cabling the System

## 3.1.1. Cabling the Different Components

## **Client Workstation and Servers**

The Xeebra client workstation is connected with a Xeebra server through a 1Gbps link. If the client workstation is going to be located more than 100 m away from the server, it is needed to use a Fiber link, either through extenders and media converters or by using the built-in SFP+ fiber connectors.

The Xeebra servers can be connected with each other through the 1Gbps link.

## Cameras

The camera's SDI Out has to be connected with one of the Xeebra server's SDI In connectors using a mini BNC cable. A maximum of 8 cameras can be connected. The connectors are numbered as indicated in the photo below (XEE2-4601D).



A SLSM 3x camera has 3 SDI Outs that have to be connected with 3 SDI In connectors of the Xeebra server. A maximum of two SLSM 3x cameras can be connected.

## Monitors

Up to two monitors can be connected to a Xeebra server or client workstation.

XEE2-4601D:

• DVI-I connector

PMX2-4601D:



• 2 DisplayPort connectors

#### NEW !

• 4 DisplayPort connectors

Xeebra supports any 16/9 resolution. In case the resolution is higher, e.g. 4/3 or 16/10, black bands will be displayed at the top and bottom of your screen.

4K monitors are not supported.



## **BEPlay Remote**

The BEPlay remote is connected via USB to the Xeebra Client.

## ShuttlePRO v2

The ShuttlePRO v2 device is connected via USB to the Xeebra Client. The device gets recognized when plugged in.

## X-keys

The X-keys device is connected via USB to the Xeebra Client. The device gets recognized when plugged in.

## 3.1.2. Securing the SDI Cables

#### NEW !

To avoid that because of the heavy weight of the SDI cables one or more SDI In connectors might break or that the Deltacast video card might shift inside the Xeebra server chassis, it is recommended to attach an external cable management crossbar at the back of the rack and to fix the cables onto it using cable ties or Velcro® straps.





Below you can see an example with network cables.

You can also make use of a ring bracket attached to the side of the rack or flight case.





## 3.1.3. DisplayPort Cable Warning

If you directly connect a server with a monitor using a DisplayPort cable, you need to make sure that pin 20 (DP\_PWR) of the cable is not wired and does not carry any power. In case of doubt, use a multimeter to verfiy this.



According to the VESA specification, the DP\_PWR (pin 20) is not supposed to be wired in standard cables because both source and sink devices are designed to provide power.

Ignoring this will in certain cases prevent the Avago RAID Controller (AOM-S3108-H8) from being initialized at startup and thus making the RAID unavailable for the OS.

# 3.2. Changing the IP Address and Hostname

## **Changing the IP Address**

To change the IP address of a Xeebra server, proceed as follows:

1. Press the Windows key, and click the **Settings** button in the window that appears.



2. Double-click the **Network** icon.

		All	Settings		Q ×
Personal					
	<b>(20</b>	()		60	Q
Background	Notifications	Online Accounts	Privacy	Region & Language	Search
Hardware					
*	*				
Bluetooth	Color	Displays	Keyboard	Mouse & Touchpad	Network
Power	Printers	Sound	Wacom Tablet		
System					
$\bigcirc$			×	8	
Date & Time	Details	Sharing	Universal	Users	
			Access		

3. Select the interface to configure and click on the cogwheel.



<	< Network		
Ethernet (eno1)	Connected - 1000 Mb/s		
🕻 Ethernet (ens2f1)	IPv4 Address 10.129.213.37		
📮 Ethernet (eno2)	IPv6 Address fe80::ec4:7aff:fed9:d9c2		
<b>□</b> Ethernet (ens2f0)	Hardware Address 0C:C4:7A:D9:D9:C2		
🗗 Network proxy	Default Route 10.129.213.1		
	DNS 10.128.22.11		
+ -	Add Profile	Ť.	

NOTE

- eno1 & eno2 represent the onboard ethernet connections.
- ens2f0 & ens2f1 represent the optional card ethernet connections.
- 4. Open the IPv4 tab and configure the interface as expected. Once done, click **Apply**.

		Wired
Details Security Identity	IPv4 Addresses	ON Manual -
IPv4		
IРvб	Address	10.129.213.33
Reset	Netmask	255.255.255.0
	Gateway	10.129.213.1
		+
	DNS	Automatic ON
	Server	
		+
		Cancel Apply

NOTE

In case you configure several interfaces, i.e. one for the Xeebra network, one for Internet access to allow access via TeamViewer, make sure to select the correct default gateway.

Use this connection only for resources on its networ	·k	
	Cancel	Apply

5. In order to apply the settings, the connection needs to be re-activated. Click the **ON/OFF** button to re-activate the connection.

Connected - 1000	Mb/s
IPv4 Address	10.129.213.37
IPv6 Address	fe80::ec4:7aff:fed9:d9c2
Hardware Address	000000000000000000000000000000000000000

#### **Changing the Hostname**

To change the hostname of a Xeebra server, proceed as follows:

1. Press the Windows key, and click the **Settings** button in the window that appears.



2. Double-click the **Details** icon.



		All	Settings		Q ×
Personal					
	۲		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	(43)	9
Background	Notifications	Online Accounts	Privacy	Region & Language	Search
Hardware					
*	*				
Bluetooth	Color	Displays	Keyboard	Mouse & Touchpad	Network
Power	Printers	Sound	Wacom Tablet		
System	System				
$\bigcirc$			Ť	8	
Date & Time	Details	Sharing	Universal Access	Users	

3. Change the hostname in the **Device Name** field.

<		Details		×
Overview		•		
Default Applications				
Removable Media				
		CentOS Linux 7		
	Device name	xeebra-client		
	Memory	31.2 GiB		
	Processor	Intel <sup>®</sup> Xeon(R) CPU E5-1620 v4	@ 3.50GHz × 8	
	OS Type	64-bit	6	
	Graphics	Quadro K2200/PCIe/SSE2		
	gnome	Version 3.14.2		
	Disk	179.9 GB		
			Check for update	s

NEW !

# 3.3. Managing the Xeebra Licenses

## 3.3.1. Licenses List

Licenses must be imported into the License Manager. The list of license available codes is given hereafter.

Application	Module	Summary
71 XEEBRA	10 - Xeebra Server	Enables the Ingest service.
	20 - Xeebra Client and Export	Enables the Client and Export application.
	30 - Xeebra Super Motion Ingest	Enables SLSM 3x ingest.
	40 - Xeebra Offside Line	Enables the Offside Line Module.

## 3.3.2. License Manager

## Overview

The License Manager allows you to request and activate the necessary Xeebra license keys. Double-click the License Manager shortcut on your server or client workstation desktop to open the application in a terminal window.

The following system information is displayed: computer name, server serial number, customer information (company name, first and last name, email, phone), global expiry date, computer description, and a list of installed license keys. If no license keys have been installed yet, this list will be empty.

A list of options is also offered to you.

	XSecure Manager
[1]	view current customer info
[2]	Set customer info
[3]	Generate a request key file
[4]	Installed keys
[5]	Import Keys
[6]	Delete a key
[7]	Exit
Ente	er Selection:

To exit the application again, type 7 and press ENTER.

## Setting and Viewing the Customer Information

### **Setting the Customer Information**

When you start the License Manager for the first time, the customer information will be empty. To set the customer information, proceed as follows:

- 1. Type **2** (Set Customer Info) and press **ENTER**.
- 2. Enter the following information:
  - Company Name
  - First Name
  - Last Name
  - Email Address
  - Phone

The following fields are automatically completed

- Serial Number
- Computer Description

Press ENTER each time you have entered a value.

You are informed that the customer info is successfully saved.

3. Press ENTER again to return to the main menu.

### Viewing the Customer Information

To view the customer information you just entered, type **1** (View Current Customer Information) and press **ENTER**.

## **Requesting and Importing a License Key**

### **Requesting a License Key**

To request a license key, proceed as follows:

1. Type 3 (Generate a Request Key File) and press ENTER.

A request license key file is generated on the desktop. The naming convention for the file is: hostname\_ID\_SystemID.xml

2. Send the request key file to the EVS Support.

#### Importing a License Key

To import a license key, proceed as follows:

- 1. Type 5 (Import Keys) and press ENTER.
- 2. Drag and drop the license key into the terminal.

The full file path of the license key will appear in the terminal.

3. Press ENTER to continue.

After importing the key, a message is displayed: 'xx out of xx keys imported'.

To view the already installed license keys, type 5 (Installed Keys) and press ENTER.

#### NOTE

When you have imported a 10 - Xeebra Server license, you need to restart all Xeebra services using the Reset script.



## **Deleting a License Key**

To delete an installed license key, proceed as follows:

1. Type 6 (Delete a Key) and press ENTER.

You get a numbered list of all the installed keys.

Enter the full key string of the key you wish to delete and press ENTER.
 The key is deleted and a message is shown: 'Key deleted'.

# 3.4. Mapping the Touchscreens

## 3.4.1. Rationale

In case you will be working with two touchscreen monitors, you first need to "map" them. This means that you will have to make sure that the touch gestures you perform on a particular half of one of your monitors, e.g. selecting an element, actually take effect on that half, and not on the same half of the other monitor.

If you do not map your touchscreen monitors, and you select an element on the left half of your secondary screen, then an element on the left half of your primary screen will be selected instead. If you select an element on the right half of your primary screen, then an element on the right half of your secondary screen will be selected instead.

This mapping has to be performed each time:

- one of your monitors is unplugged and plugged again;
- a Xeebra server is rebooted;
- the order of the screens is changed.

In case you have only one touchscreen monitor, the mapping is automatically performed.

## 3.4.2. Touchscreen Mapper

The Touchscreen Mapper tool allows you to map the touch gestures. It should only be used in case you will be working with two touchscreen monitors. It has a shortcut on the server or client workstation desktop.



## 3.4.3. Procedure

To map your touchscreens, proceed as follows:

1. Double-tap or double-click the TouchScreenMapper shortcut on your server or client workstation desktop.

You are prompted to tap your main screen.



Tap your main screen to start the mapping.
 You are notified when your screens have been successfully mapped.

# 3.5. Synchronizing the Time of the Xeebra Servers

## 3.5.1. Introduction

In Xeebra, synchronization is achieved by time stamping every image ingested in the server. When two images are ingested on two different servers at the same time, they must have the same timestamp. This is achieved by synchronizing the time of all the Xeebra servers and clients by a protocol called NTP (Network Time Protocol).

The NTP Configuration tool allows you to configure one of your servers as NTP server and all the other servers and clients in the same network as NTP client. The NTP server will function as time reference point for the other Xeebra servers and clients, i.e. their time will be synchronized with the time of the NTP server.

## 3.5.2. Configuring the NTP Server

To configure one of your Xeebra servers as NTP server, proceed as follows:

- 1. Configure the time on the server that will function as NTP server.
- 2. Double-click the NTP Configuration shortcut on your desktop.





The NTP Configuration script opens in a terminal window. If the server has not been configured yet as NTP server, the following message will be displayed: 'This machine is not configured for time synchronization'.

Terminal	-	×
File Edit View Search Terminal Help		
This machine is not configured for time synchronization 1) NTP client - Warning this will restart Xeebra 2) NTP server - Warning this will restart Xeebra ?		

3. Enter 2 and press ENTER.

The Xeebra services are stopped, the Time Service is installed and the Xeebra services are restarted again.

You are prompted to clear all tracks.

4. Press ENTER to continue.

Information is displayed about the synchronization status of the server, e.g. UTC reference time, number of seconds slow of the UTC time, etc. You also get the confirmation that the server is configured as time server now.

## 3.5.3. Configuring an NTP Client

To configure one of your servers a NTP client, proceed as follows:

1. Double-click the NTP Configuration shortcut on your desktop.



The NTP Configuration script opens in a terminal window. If the server has not been configured yet as NTP client, the following message will be displayed: 'This machine is not configured for time synchronization'.

Terminal	-	×
File Edit View Search Terminal Help		
This machine is not configured for time synchronization 1) NTP client - Warning this will restart Xeebra 2) NTP server - Warning this will restart Xeebra ? ■		

- 2. Enter 1 and press ENTER.
- 3. Enter the IP address of the NTP server you want to use as reference point and press **ENTER** to continue.

The Xeebra services are stopped, the Time Service is installed and the Xeebra services are restarted again.

You are prompted to clear all tracks.

4. Press ENTER to continue.

Information is displayed about the synchronization status of the server, e.g. synchronization with the NTP server, UTC reference time, etc. You also get the confirmation that the server is configured to use a time server now.

When you start the ingest on a server, there is a check to see if there are frames existing on the storage in the future. If there are any, the ingest will not start and a message is shown: 'Ingest could not start, a time stamp in the future exists on the storage. Please clear all tracks'.

# 3.6. Customizing the BEPlay Remote Controls

#### NEW !

It is possible to change the default action assignation of the white BEPlay buttons (operational block 2 and 3) by modifying the remoteConfig.json file in the /home/xeebra/bin/ directory.

The configuration file consists of two parts.

The first part lists the names of the available buttons and the actions that can be assigned to each button.

The available buttons are:

TOP_1	BOTTOM_4
TOP_2	BOTTOM_5
TOP_3	LEFT_1
TOP_4	LEFT_2
TOP_5	LEFT_3
BOTTOM_1	LEFT_4
BOTTOM_2	LEFT_5
BOTTOM_3	



The available actions are: MARK MARK\_LIVE DELETE EVENT IN OUT SAVE EVENT PLAY\_PAUSE GO\_TO\_LAST\_EVENT PREVIOUS CAMERA NEXT CAMERA LIVE\_GO\_TO\_HOME LIVE\_KEEP\_CAMERAS GO\_TO\_HOME NEXT\_PRESET\_ON\_MAIN\_SCREEN NEXT\_PRESET\_ON\_SECOND\_SCREEN TAKE\_ON\_SECOND\_SCREEN TAKE\_ON\_MAIN\_SCREEN PAUSE MINUS\_10\_SECONDS MINUS ONE FIELD PLUS ONE FIELD MINUS TEN FIELDS MINUS\_ONE\_THIRD\_FIELD PLUS\_ONE\_THIRD\_FIELD PLUS\_TEN\_FIELDS LOOP PLAY\_16\_PERCENT PLAY\_25\_PERCENT PLAY\_33\_PERCENT PLAY\_50\_PERCENT PLAY 100 PERCENT PLAY 200 PERCENT PLAY 300 PERCENT PLAY 500 PERCENT PLAY 800 PERCENT PLAY 1600 PERCENT PLAY MINUS 16 PERCENT PLAY MINUS 25 PERCENT PLAY\_MINUS\_33\_PERCENT PLAY MINUS 50 PERCENT PLAY\_MINUS\_100\_PERCENT PLAY\_MINUS\_200\_PERCENT PLAY MINUS 300 PERCENT PLAY MINUS 500 PERCENT PLAY MINUS 800 PERCENT PLAY MINUS 1600 PERCENT SHOW\_HIDE\_OVERLAY\_CAM SHOW\_HIDE\_TIMECODE SHOW\_HIDE\_EVENT\_LIST SHOW\_HIDE\_VIDEO\_BROWSING LOAD PRESET 1 ON MAIN LOAD PRESET 2 ON MAIN LOAD\_PRESET\_3\_ON\_MAIN LOAD\_PRESET\_4\_ON\_MAIN LOAD\_PRESET\_5\_ON\_MAIN LOAD\_PRESET\_6\_ON\_MAIN LOAD\_PRESET\_7\_ON\_MAIN LOAD PRESET 8 ON MAIN LOAD\_PRESET\_1\_ON\_SECONDARY LOAD\_PRESET\_2\_ON\_SECONDARY LOAD\_PRESET\_3\_ON\_SECONDARY LOAD\_PRESET\_4\_ON\_SECONDARY LOAD PRESET 5 ON SECONDARY LOAD PRESET 6 ON SECONDARY LOAD\_PRESET\_7\_ON\_SECONDARY LOAD\_PRESET\_8\_ON\_SECONDARY

The second part contains the configuration of each button. The configuration file contains a section for each button. Each section contains three fields:

- key: Name of the button.
- press:Name of the action that gets executed when pressing the button.
- **shift**: Name of the action that gets executed when pressing the button in combination with the SHIFT button.

Example of the default configuration for the Live button:

{

"key": "BOTTOM\_5",

"press": "LIVE\_GO\_TO\_HOME",

#### "shift": "LIVE\_KEEP\_CAMERAS"

}

#### NOTE

The configuration file is read at startup. Changes while the Client application is running will be taken into account at the next restart.

#### NOTE

To reset the buttons to their default assignation, you can delete the remoteConfig.json file. Xeebra will automatically regenerate it at the next Client application restart.



#### WARNING

If the format of the configuration file is not valid, a warning message will appear at the startup of the Client application: 'Invalid format for BEPlay configuration file. Please correct the file and restart Xeebra client.



# 4. Upgrading the System

# 4.1. Installing a New Image

## 4.1.1. Prerequisites

To be able to install a new Xeebra image, the following prerequisites should be fulfilled:

- a Xeebra hardware with RAID (XEE-2U-4 or PMX-2U-4)
- an EVS network connection (with DHCP)
- a good quality USB drive 8 GB or higher

## 4.1.2. Preparing the USB Drive

- **NEW!** 1. Connect an USB drive to a Windows 7/10 machine.
  - 2. Launch the Rufus utility using the following link: https://rufus.akeo.ie/downloads/rufus-2.xp.exe.
  - 3. In the **Device** field, select the appropriate USB drive.

A Rufus 2.17.1198 (Portable) —	×
Device	द्रि≑▼
NO_LABEL (D:) [16GB]	~
Partition scheme and target system type	
MBR partition scheme for BIOS or UEFI	$\sim$
File system	
FAT (Default)	~

4. Click the Click to Select an Image... button and browse for the Xeebra image file.

New volume label	
16GB	
Format Options 🔽	
Check device for bad blocks	1 Pass V
✓ Quick format	
🗹 Create a bootable disk using	FreeDOS 🗸 🎱
Create extended label and ico	n files
READ	Ŷ
About Log	Start Close
1 device found	#

5. Click Start.

You are prompted to select the appropriate write mode.

ISOHyb	rid image detected
?	The image you have selected is an 'ISOHybrid' image. This means it can be written either in ISO Image (file copy) mode or DD Image (disk image) mode. Rufus recommends using ISO Image mode, so that you always have full access to the drive after writing it. However, if you encounter issues during boot, you can try writing this image again in DD Image mode.
	Please select the mode that you want to use to write this image:
	○ Write in ISO Image mode (Recommended)
	Write in DD Image mode
	OK Cancel

6. Select the option Write in DD Image mode and click OK.

You will be notified that all data already on the USB drive will be overwritten.



7. Click **OK** to continue.

Wait until the Xeebra ISO file has been completely written to the USB drive.



## 4.1.3. Changing the Boot Order

To be able to boot a Xeebra server or client workstation from your USB drive, you need to change the boot order in the BIOS settings. To do this, proceed as follows:

- 1. Start up your Xeebra server or Xeebra client workstation.
- 2. Press the **DELETE** key to enter the BIOS Setup utility.

You will enter the Main setup screen.

- 3. Open the Boot tab.
- 4. In the Boot Mode Select field, select the option LEGACY.
- 5. In the Fixed Boot Order Priorities area, set up the boot order as follows:
  - Legacy Boot Order #1 [USB KEY]
  - Legacy Boot Order #2 [Hard disk]

Aptio Setup Utility Main Advanced Event Logs IPMI	– Copyright (C) 2016 American Mo Security Boot Save & Exit	egatrends, Inc.
Boot Configuration		Specifies the Boot Device
Setup Prompt Timeout	1	Priority sequence from available Hard Disk Drives.
Boot Mode Select	[LEGACY]	
STYED DOOT OPDED Delegities		
FIXED BUUT UNDER Priorities	FUOD Keyl	
Legacy Boot Under #1	[USB Key]	
Legacy Boot Under #2	[Hard Disk: 6468 S]	
Legacy Boot Order #3		
Legacy Boot Order #4		
Legacy Boot Order #5		
Legacy Boot Order #6	[USB FIUPPy]	
Legacy Boot under #7	[NETWORK:IBH GE SI]	
▶ Add New Boot Option		
Delete Boot Option		
		→+: Select Screen
▶ Hard Disk Drive BBS Priorities		14: Select Item
NETWORK Drive BBS Priorities		Enter: Select
		+/-: Change Opt.
		F1: General Help
		F2: Previous Values
		F3: Optimized Defaults
		Ed. Cours 0 Ewit

- 6. Select the Hard Disk Drives BBS Priorities option and press] ENTER.
- 7. Set the boot order as follows:
  - Legacy Boot Order #1 [ISATA P4: 64 GB SATA Flash]
  - Legacy Boot Order #2 [ISATA P4: INTEL]
  - Legacy Boot Order #3 [Disabled]

Aptio Setup Utility –	Copyright (C) 2016 American M Boot	egatrends, Inc.
Legacy Boot Order #1 Legacy Boot Order #2 Legacy Boot Order #3	[ISATA P4: 64GB S] [ISATA P5: INTEL] [(Bus 04 Dev 00)PC]	Sets the system boot order
		++: Select Screen fl: Select Item Enter: Select +/-: Change Opt.

#### NOTE

P5 needs to be the INTEL and P4 needs to be the 64 GB SATA. If it is the other way around, it means the cabling is not correct.

8. Press F4 to save the settings and exit the BIOS Setup utility.

## 4.1.4. Installing the Image

NEW !

To install a new image on a server, proceed as follows:

- 1. Insert your USB drive in the USB slot at the back of the server.
- 2. Reboot your server.
- 3. Press F11 several times to get access to the boot menu.
- 4. Enter the password for the boot menu: evsdvb.
- 5. Select your USB drive as boot device and press ENTER.
- 6. From the EVS USB Key Clonezilla menu, select the appropriate Ansible install.
- 7. Press ENTER to confirm the Linux CentOS license.
- 8. Enter the EVS serial number of the machine when asked for.

The serial number should be formatted as follows: 'Axxxxx'.

#### WARNING

Your keyboard is in Qwerty Mode at this stage.

The server will reboot and automatically move to the next steps.

It takes approximately two and a half hours before the installation is finished.



# 5. Support

# 5.1. Resetting Xeebra

#### **Use Cases**

If your Xeebra system has crashed and you can no longer restart it, or if you have imported new license keys and you want them to take effect, you will have to reset your Xeebra system making use of the Reset script.

## **Reset Script**

The Reset script is a script that stops and restarts the Xeebra services. It also cleans the video content stored on the Xeebra server if requested by the user.

To open the script, double-click the **Reset** shortcut on your Xeebra server desktop.



The script contains two options:

- 1. **Restart Services:** If you choose this option, the script will restart the Xeebra services and leave the video content stored on the Xeebra server untouched.
- 2. **Clean All:** If you select this option, the script will restart the Xeebra services, removes all video content stored on the Xeebra server and delete all tracks. The tracks will have to be recreated afterwards.

Terminal	×
File Edit View Search Terminal Help	
Please choose the option 1 or 2 : 1) Restart services - This option will restart Xeebra services and keep material on the storage. 2) Clean all - This option restarts Xeebra services and clears all material on the storage. ?	

# 5.2. Consulting Xeebra System Log Files and Crash Dumps

#### Log Files Folder

The Xeebra system log files are stored in the following directory: /var/log/evs.

#### **Crash Dump Folder**

**NEW !** Crash dumps are available in the following directory: /var/crash/.

#### **Exporting System Log Files**

To generate and export the latest Xeebra system log files, proceed as follows:

 Double-click or double-tap the **GetLogs** icon on your Xeebra server or client workstation desktop.



A terminal window is opened.

The various system log files are generated and exported to your desktop in the form of a .tgz file with the following filename format: hostname-log-YYYY-MM-DD\_HH-MM-SS.tgz.



You get the option to remove or keep all log files.

- 2. Enter **Y** and press **ENTER** to remove all logs. Enter **N** and press **ENTER** to keep all logs.
- 3. Tap or click **X** to close the terminal window again.

## 5.3. Monitoring the Services



The monitoring tool can be accessed via the following link: http://<serverip>:8081.



## **Health Page**

The Health page displays the status of your Xeebra system.

≡v	Б <sub>health</sub>	Docker		ersions
Hea C	8 0 2			
Node	Name	Status	Output	
xee	Check /etc/resolv.conf	passing		
xee	Check disk free space	passing		
xee	Data RAID status	passing		
xee	evs-sxe-content- status	critical	• evs-zus-costent-manager.service - EVS SIZegine Content Manager. Londet [Just/ILivygined/system/evs-zus-costent-manager.service; emabled; vendor preset: disabled) Active field (Realit signal actual field) (SIZE)	
xee	HDD disk health	passing		F overall-
xee	Megaraid status	passing		r VD in er
xee	Serf Health Status	passing		
xee	Service 'evs-sxe-so check	r critical	• ers-sm=di.service - EVS INEquipe SDI service. Linded: Just/IL/Just/IL/Just/INE/System/sort.service; enabled; vendor preset: disabled) Activ: instruct: (dead since Am 2014-0-04 Hr112111 CBST; Th Sakan app Main FDI: SDB (code=exited, statua=0.800CEB)	٩

The following checks are performed:

- Check /etc/resolv.conf: It checks if the DNS servers referenced in /etc/resolv.conf are accessible. If not, then you should change your /etc/resolv.conf (do not suppress it), because having a wrong /etc/resolv.conf is known to cause timeouts and can negatively impact the stability of the stack.
- Check disk free space: It checks if you have enough disk space. If not, then some files must be deleted, for example crash dumps can fill the /var/crash folder and can safely be deleted. For other file systems, it might be needed to ask support from EVS.
- Data RAID status: It checks the software RAID. If this check fails, then the RAID is degraded and it is likely that one disk is damaged and it might need to be replaced. It is recommended to take action because if you lose another disk then you will lose the content and the system will not be available.
- HDD disk health: It checks the state of the internal disk.
- **Megaraid status:** It check if there is a problem with the LSI megaraid. If there is a problem, please contact EVS support.
- Serf Health Status: It checks a low level service. It should always be passing. If not, then you can try to restart it in a Terminal.

sudo systemctl restart consul

- evs-sxe-sdi / evs-sxe-content / evs-sxe-playout / evs-sxe-resource status: It checks the status of these services.
- Soccer offside line service health: It checks the status of the offside line service.
- **Thinpool free space:** It checks the space available for the Docker backend storage. If this check is not passing, then please call the EVS support as we might need to either free some spaces or to allocate more disk space.

### **Docker Page**

#### **Services Tab**

The Services tab displays the docker services (and containers in a next version) that are currently running. With the **Restart** button a service can be re-created.

				Versions
Docker				
Services Into disk usage				
Refresh				Updated at: 15:50:08
Name	Image	Replicas	Running tasks	Action
phoenix_evs-infra-platform-console	evs-infra-platform-console:1.0.0-89			Restart
phoenix_kafka	evs-infra-kafka:2.0.0-1.0.0-10	global		Restart
phonol_passingent]	veiiiita zookopor 2003 4 114			Terior
				4

Note that the platform-console service is the application being documented here, Kafka and zookeeper are infrastructure components.

#### Info Tab

The Info tab simply shows the outputs of the docker info command. It gives various informations about the version of the docker used, the backend storage, etc.

	Docker	
Decker		
Docker		
Services Info	disk usage	
Docker info		
Server Version	17.12.1-ce	
Containers	Totat: 9     Paused 0     Running 4     Stopped: 5	
Device driver	devicemapper	
Driver status	Pool Name	vg_01-thinpool
	Pool Blocksize	524.3kB
	Base Device Size	10.7468
	Backing Filesystem	
	Udev Sync Supported	
	Data Space Used	9.302GB
	Data Space Total	48.3268
	Data Space Available	39.0268
	Metadata Space Used	2.212MB
	Metadata Space Total	2.14768
	Metadata Space Available	2.14568
	Thin Pool Minimum Free Space	4.832GB
	Deferred Removal Enabled	true
	Deferred Deletion Enabled	
	Deferred Deleted Device Count	
	Library Version	1.02.140-RHEL7 (2017-05-03)
ID	XPSD-AWZI:SBSZ:655X:SKLD:LD74:N7V6:APSW:2LRM:GGH6:RLDG:PXLN	
Images		
Name		



#### Disk Usage Tab

The Disk Usage tab displays information about the various docker images stored on the server. Note that this request can take very long time.

## **Versions Page**

The Versions page gives information about the versions stored on the system.

#### **Content Tab**

The Content tab shows the file /etc/evs/versioninfo/content.yml. It lists the components and their versions that were installed either during the installation or during the last software upgrades.



#### **RPMS** Tab

The RPMS tab shows the versions installed on the system for the various evs packages (for the components that are delivered as rpms).

Content RPMS LivePamCore I	mages		
Versions of DDM			
VEISIONS OF REIVI			
Package †	Version	release Installed	
evs-beplay0.1		13.5c0b406.el7.centos.evs 2018-03-26T12:04:20.000Z	iz
evs-deltacast		106 2018-03-26T07-20-56.000Z	ız
evs-deltacast-dcare		106 2018-03-26T12:02:47.000Z	ız.
evs-deltacast-dmosaic		106 2018-03-26T12:02-43.000Z	ız
evs-deltacast-drec		106 2018-03-26T12:02:41.000Z	ız
evs-deltacast-drivers-x300		106 2018-03-26T12:02:52.000Z	ız
evs-deltacast-dscope		106 2018-03-26T12:02:52.000Z	ız
evs-eefsdk5.10.17-svn102295		0.1.svn102295.el7.centos.evs 2018-03-26T12:02:01.000Z	ız
evs-ffmpeg2.8-libs		1.0.el7.centos.evs 2018-03-26107:20:46.000Z	ız
evs-log4cplus1.2		0.1.rc1git0bb509c.el7.centos.evs 2018-03-26T12:02:01.000Z	ız
evs-logging-cpp		0.1.el7.centos.evs 2018-03-26T12:01:58.000Z	ız
evs-logging-log4cplus-cpp		0.1.el7.centos.evs 2018-03-26T12:02:01.000Z	īz
evs-ndi-module2.2		1 2018-03-26T07:20:46.000Z	īz
evs-playoutengine1.0		1 2018-03-26T12:02:08.000Z	1Z
evs-pmx-support		0 2018-03-26T07:10:37.000Z	ız
evs-gml-debug-screen0.1		2.8c45e18.el7.centos.evs 2018-03-26T08:25:13.000Z	IZ.
evs-qml-offside-line		3 2018-03-26T12:04:20.000Z	IZ.
evs-qt5		3.el7.centos 2018-03-26T08:25:12.000Z	0Z
evs-qt5-qdbusviewer		1.el7.centos 2018-03-26T08:25:12.000Z	0Z
evs-qt5-qtbase		1.el7.centos 2018-03-26T08:25:05:000Z	0Z
evs-qt5-qtbase-common		1.el7.centos 2018-03-26T08:25:04.000Z	0Z
evs-qt5-qtbase-gui		1.el7.centos 2018-03-26T08:25:05:000Z	0Z
evs-qt5-qtbase-mysql		1.el7.centos 2018-03-26T08:25:12.000Z	0Z
evs-qt5-qtbase-postgresql		1.el7.centos 2018-03-26T08:25:07.000Z	DZ
evs-qt5-qtdeclarative		1.el7.centos 2018-03-26T08:25:06.000Z	0Z

#### LivePamCore Tab

The LivePamCore tab shows the version of the docker images used in Xeebra (for the components delivered as docker images).



#### **Images Tab**

The Images tab lists the docker images installed on the system and their version.



				Versions
Content RPMS LiveParnCore Images				
Docker images				
Name		SharedSize	Size	VirtualSize
evs-infra-platform-console:1.0.0-89	sha256/d351c86a3d9d9582tc1a490b476d909e8d85a230t40144ad6d053e464e2tb191		406521231	406521231
evs-soccer-offside-line-service:180	sha256 a78c0fba5fc046a10c2a905141b3ccdc764b66a5b0eb2b10aa994977eb1c14fe		4201855474	4201855474
nvidia/cuda:latest	sha256-3fd923127acb047eed14bc5312ff5a3d995a4ae2519a642c3730327236bbdf51		2226587224	2226587224
evs-infra-zookeeper:2.0.0-3.4.11-8	sha256:d44757f71e4f7a129278d8d5d23ecad06e5f781e62a7cb019a2f97372504a7ca		146131733	146131733
evs-infra-kafka:2.0.0-1.0.0-10	sha256/8178c1b56170d74284ccd62t8ee1df3f62db3e712d91031856bdb1c68763397b		271965367	271965367

# 5.4. Monitoring Video Inputs

#### **Using a Terminal Window**

To monitor the Deltacast I/O board in case of input issues, you must execute the following commands:

```
cd /var/log/evs/sdi-engine
tail -f deltacast.log
```

## Using the Deltacast dCARE Tool

To check the status of the incoming video signals of a particular Xeebra server, you can make use of the DELTACAST dCARE tool. To do this, proceed as follows:

- 1. Open a Terminal window on the Xeebra server.
- 2. Stop the evs-sxe-ingest-manager by entering the following command:

sudo systemctl stop evs-sxe-ingest-manager

- Access the dCARE binaries directory by entering the following command: cd /opt/evs/evs-deltacast/dCARE/bin
- 4. Run the dCARE application by entering the following command:

./dCARE

The Bidirectional Configuration dialog box opens.



- 5. Close the dialog box without changing the settings.
- 6. In the main window of the dCARE application, click the **IO Control** button in the bottom toolbar.



- 7. In the Channel area to the right, select the appropriate incoming video signal from the drop-down box. For example, select Rx0 for the first incoming signal.
- 8. Click the **Autoset** button.

Autoset

The Setup tab of the Channel area will be updated with the data of the selected incoming signal.

Channel	Rx0 🖨			
Setup	Status			
Buffer queue depth		4	±	I
Interface		SD_259	¢	
Video standard		PAL	¢	
Audio enabled		\$		11
Thumh cantum				

9. Click the Start button to see the incoming video signal.

Start

- 10. Repeat steps 8 and 9 for all other incoming video signals.
- 11. To check the status of a particular incoming signal, select it from the drop-down list and open the Status tab.



Channel	Rx7 🖨	
Setup	Status	L
Status mask		0x0000000
Incoming video standard		1080i50
Incoming interface		HD_292_1
Incoming clock system		EU

- 12. Close the dCARE application.
- 13. Restart the the evs-sxe-ingest-managerby entering the following command: sudo systemctl start evs-sxe-ingest-manager

# 5.5. Monitoring Server Record Tracks

NEW !

To monitor the tracks recording, you must execute the following commands: cd /opt/evs/sx-storage/bin watch ./GetTrackInfos localhost 11000

# 5.6. Monitoring the Client

NEW !

To access the Client monitoring, press CTRL + ALT + D.



# 5.7. Enabling TeamViewer

To be able to remotely connect to a Xeebra server using TeamViewer, you have to make sure that on the server the TeamViewer daemon is running and the TeamViewer GUI is open.

You can enable and start the TeamViewer daemon using a terminal window. You can open the TeamViewer GUI using the **Applications** menu.

To start the TeamViewer daemon, open a terminal on the server and proceed as follows:

1. To check the status of the TeamViewer daemon, enter the following command:

```
sudo systemctl status teamviewerd
```

2. To enable the TeamViewer daemon, enter the following command:

sudo systemctl enable teamviewerd

3. To start the TeamViewer daemon, enter the following command:

```
sudo systemctl start teamviewerd
```

In case of connection problems, you can also check if the firewall service is enabled and stop it if needed.

1. To check the status of the firewall service, enter the following command:

```
sudo systemctl status firewalld
```

2. To stop the firewall service, enter the following command:

```
sudo systemctl stop firewalld
```

# 5.8. Support & HealthCheck Tool

The Support & HealthCheck tool is a small tool which can be used for the following support tasks:

- to collect the logs from all Xeebra servers and client workstations that are currently connected to the same Xeebra network, and to save them in one central location.
- to detect if the Xeebra system has been set up properly, and to see if there are no issues preventing the system from functioning.
- to shut down the Xeebra Client application of all Xeebra client workstations, and this from any client workstation in the same network.
- to shut down all client workstations and servers in the network in a safe and timely manner.

For more information about how to install, set up and use the Support & HealthCheck tool, see the Xeebra Support Tool application note.

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