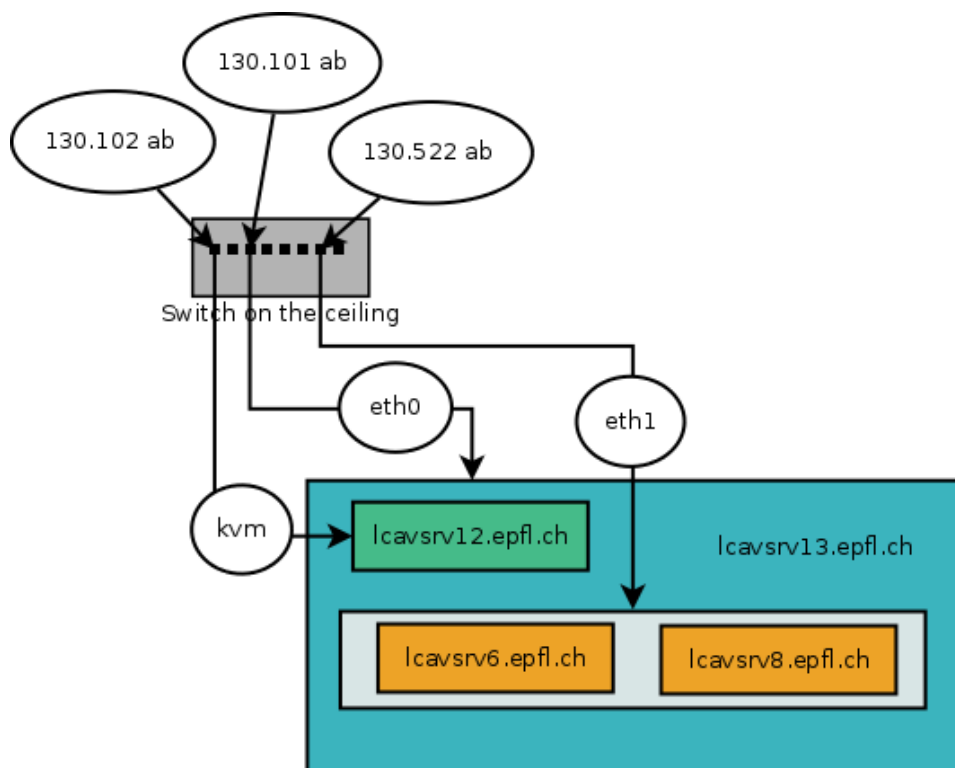# IVRG Server overview

First version: 26.01.2012, Dominic Rüfenacht.

The following document gives a detailed overview over the servers of the IVRG group which are maintained by Damir Laurenzi. It also contains helpful information regarding the camera setup in Vevey, which can serve as an entry point for troubleshooting.

There is just one physical machine, on which 4 independent operating systems (OS) are running. They are:
1) IPMI interface for remote KVM/power management (lcavsrv12.epfl.ch)
2) Host system (lcavsrv13.epfl.ch)
3) Virtual Guest nr. 1 (lcavsrv6.epfl.ch)
4) Virtual Guest nr. 2 (lcavsrv8.epfl.ch)

These systems are detailed in the following.

1   Host System (lcavsrv13.epfl.ch)

1.1   Summary

This server is configured to host 2 different virtual machines using Red Hat EL 6 as operating system for the host and the guests' images, for a total of 3 different servers (1x bare metal, 2x virtual guests) that act independently.

1.2   Detailed Summary

This server is configured to host 2 different virtual machines using Red Hat EL 6 as operating system for the host and the clients' images.

The host system is not accessible from outside the local network, where the guest systems (two web servers) have access from internet when and if needed.

To manage the metal system there is a KVM interface that answers (at this moment) to the address *lcavsrv12.epfl.ch*. Accessing to the web server that responds to this address the administrators can have full access to the console of the server and manage the BIOS of the machine or the power alimentation switch, if necessary.

In the host system the operating system is installed with just the minimum packages to manage the bare metal and the virtualizations and it is accessible using the network at the address *lcavsrv13.epfl.ch*.

The two guest images are reachable at the addresses *lcavsrv6.epfl.ch* and *lcavsrv8.epfl.ch*. In both cases, the configurations are inherited from existing real servers which are now offline (still accessible on the local network using the addresses lcavsrv14 for lcavsrv6 and lcavsrv5 for lcavsrv8).

1.3   Hardware

The real machine is located in the room server BC.333, in the 5th rack. It is the 2nd server from the top of the rack.

1.3.1   Bare Metal

Transtec Server (Supermicro) with:
Motherboard: Supermicro X9SCL/X9SCM. S/N: ZM19S32099
CPU: 1x Xeon (R) CPU E31230 @ 3.20GHz (4 Core, 8 Thread)
RAM: 3x 4096 Mbyte DDR-3 (12 GByte)
Disks:
1x Controller RAID 3ware 9750-4i SATA/SAS + Battery module (512 MByte Cache)
4x Disk Seagate Constellation ES ST500NM0011 with SATA Interface: S/N: Z1M06778, Z1M067CS, Z1M066MX, Z1M066VV
LAN: 2x Intel Corporation 82574L Gigabit Network Connection
KVM: 1x Aten Winbond Electronics
PSU: redundant PSU for a maximum of 700 Watt

1.3.2   Systems

Bare metal (IPMI interface):
OS: ATEN
IP: 128.178.8.21
MAC address : 00:25:90:54:9d:23
Accessible through IPMI Web Interface (on port 80)
User: ADMIN
Password: supermicr0

1.3.3   Host OS

Bare metal (IPMI interface):
OS: RedHat EL 6
IP: 128.178.8.22
Accessible through console or ssh client
User: root
Password: 499fk0j

1.3.4   CPU

4x (8x if you count the threading)

```
processor       : 0
vendor_id       : GenuineIntel
cpu family      : 6
model           : 42
model name      : Intel(R) Xeon(R) CPU E31230 @ 3.20GHz
stepping        : 7
cpu MHz         : 1600.000
cache size      : 8192 KB
physical id     : 0
siblings        : 8
core id         : 0
cpu cores       : 4
apicid          : 0
initial apicid  : 0
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic mtrr pge mca cmov pat pse36 clflush dts
acpi mmx fxsr sse sse2 ss ht tm pbe syscall nx rdtscp lm constant_tsc arch_perfmon pebs bts
rep_good xtopology nonstop_tsc aperfmperf pni pclmulqdq dtes64 monitor ds_cpl vmx smx est tm2
ssse3 cx16 xtpr pdcm sse4_1 sse4_2 x2apic popcnt xsave avx lahf_lm ida arat epb xsaveopt pln pts
dts tpr_shadow vnmi flexpriority ept vpid
bogomips        : 6385.98
clflush size    : 64
cache_alignment : 64
address sizes   : 36 bits physical, 48 bits virtual
```

1.3.5   RAM

free

	total	used	free	shared	buffers	cached
Mem:	12176032	11549296	626736	0	6564156	174732
-/+ buffers/cache:	4810408	7365624				
Swap:	4193272	1312	4191960			

2 Gbyte are reserved by the lcavsrv6.epfl.ch virtual system
2 Gbyte are reserved by the lcavsrv8.epfl.ch virtual system

1.3.6   Disk subsystem

The disks are configured in RAID-10 mode directly in the configuration of the RAID controller.
The 3ware controller export 2 units:
/dev/sda used for the host operating system:
/dev/sda1 (60 Gbyte) O.S. installation
/dev/sda2 (4 Gbyte) Swap Partition
/dev/sdb is used for guests and the data (lvm partitioning).

pvdisplay
```
  --- Physical volume ---
  PV Name          /dev/sdb
  VG Name          data
  PV Size          867.30 GiB / not usable 2.00 MiB
  Allocatable      yes
```

```
PE Size              4.00 MiB
Total PE         222029
Free PE          103245
Allocated PE        118784
PV UUID             ii31NP-K5GE-roCU-nh1U-TcvS-CGBx-LPVmdz
```

vgdisplay
```
--- Volume group ---
VG Name               data
System ID
Format                lvm2
Metadata Areas        1
Metadata Sequence     No  5
VG Access             read/write
VG Status             resizable
MAX LV                0
Cur LV                4
Open LV               4
Max PV                0
Cur PV                1
Act PV                1
VG Size               867.30 GiB
PE Size               4.00 MiB
Total PE              222029
Alloc PE / Size       118784 / 464.00 GiB
Free  PE / Size       103245 / 403.30 GiB
VG UUID               9mdnlu-4dYA-4nA9-KG3J-aZKv-tZVg-trInqf
```

lvdisplay
```
--- Logical volume ---
LV Name               /dev/data/photographers-sys
VG Name               data
LV UUID               swrizK-duwe-I4XD-5Ac6-yvaq-bocS-O814bz
LV Write Access       read/write
LV Status             available
# open                1
LV Size               32.00 GiB
Current LE            8192
Segments              1
Allocation            inherit
Read ahead sectors    auto
- currently set to    256
Block device          253:0

--- Logical volume ---
LV Name               /dev/data/photographer-data
VG Name               data
LV UUID                4tyvnm-1p9a-IAfo-JIwY-3gyy-0Gnw-kg6Wk3
LV Write Access       read/write
LV Status             available
# open                1
LV Size               200.00 GiB
```

```
Current LE              51200
Segments                1
Allocation              inherit
Read ahead sectors      auto
- currently set to      256
Block device            253:1

--- Logical volume ---
LV Name                 /dev/data/photo-vevey-sys
VG Name                 data
LV UUID                 4AqFAE-AnVY-zce3-MgUD-nUsD-ndVh-5wajwd
LV Write Access         read/write
LV Status               available
# open                  1
LV Size                 32.00 GiB
Current LE              8192
Segments                1
Allocation               inherit
Read ahead sectors      auto
- currently set to      256
Block device            253:2

--- Logical volume ---
LV Name                 /dev/data/photo-vevey-data
VG Name                  data
LV UUID                 t1vcBu-6AZo-nOwM-P9So-KfxT-IwN1-EmHzAv
LV Write Access         read/write
LV Status               available
# open                  1
LV Size                 200.00 GiB
Current LE              51200
Segments                1
Allocation              inherit
Read ahead sectors      auto
- currently set to      256
Block device            253:3
```

/dev/data/photographers-sys (32 GB): system disk for guest photographers (lcavsrv8.epfl.ch)
/dev/data/photographer-data (200 GB): data disk for guest photographers (lcavsrv8.epfl.ch)
/dev/data/photo-vevey-sys (32 GB): system disk for guest photo-vevey (lcavsrv6.epfl.ch)
/dev/data/photo-vevey-data (200): data disk for guest photo-vevey (lcavsrv6.epfl.ch)

1.3.7   Network

LAN0: ipmi management system (static IP configuration)

```
ipmitool lan print
Set in Progress         : Set Complete
Auth Type Support       : NONE MD2 MD5 PASSWORD
Auth Type Enable        : Callback : MD2 MD5 PASSWORD
                        : User     : MD2 MD5 PASSWORD
                        : Operator : MD2 MD5 PASSWORD
                        : Admin    : MD2 MD5 PASSWORD
```

```
                          : OEM     : MD2 MD5 PASSWORD
IP Address Source         : Static Address
IP Address                : 128.178.8.21
Subnet Mask               : 255.255.255.0
MAC Address               : 00:25:90:54:9d:23
SNMP Community String     : public
IP Header                 : TTL=0x00 Flags=0x00 Precedence=0x00 TOS=0x00
BMC ARP Control           : ARP Responses Enabled, Gratuitous ARP Disabled
Default Gateway IP        : 128.178.8.1
Default Gateway MAC       : 00:08:e3:ff:fc:50
Backup Gateway IP         : 0.0.0.0
Backup Gateway MAC        : 00:00:00:00:00:00
802.1q VLAN ID            : Disabled
802.1q VLAN Priority      : 0
RMCP+ Cipher Suites       : 0,1,2,3,6,7,8,11,12
Cipher Suite Priv Max     : aaaaXXaaaXXaaXX
                          :    X=Cipher Suite Unused
                          :    c=CALLBACK
                          :    u=USER
                          :    o=OPERATOR
                          :    a=ADMIN
                          :    O=OEM
```

LAN1: dedicated to host Operating System (static IP configuration)

`ip ad show dev eth0`
```
3: eth0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast state UP qlen 1000
   link/ether 00:25:90:54:9f:22 brd ff:ff:ff:ff:ff:ff
   inet 128.178.8.22/24 brd 128.178.8.255 scope global eth0
   inet6 fe80::225:90ff:fe54:9f22/64 scope link
     valid_lft forever preferred_lft forever
```

```
LAN2: dedicated to guest operating system
brctl show
bridge name    bridge id              STP enabled    interfaces
br0            8000.002590549f23      no             eth1
                                                     vnet0
                                                     vnet1
```
`brctl showstp br0`
```
br0
 bridge id                8000.002590549f23
 designated root          8000.002590549f23
 root port                 0                 path cost                 0
 max age                   19.99             bridge max age            19.99
 hello time                1.99              bridge hello time         1.99
 forward delay             14.99             bridge forward delay      14.99
 ageing time               299.95
 hello timer               0.55              tcn timer                 0.00
 topology change timer     0.00              gc timer                  5.55
 hash elasticity    4                        hash max                  512
 mc last member count   2                    mc init query count       2
 mc router                 1                 mc snooping               1
```

```
mc last member timer    0.99            mc membership timer  259.96
mc querier timer        254.96          mc query interval    124.98
mc response interval    9.99            mc init query interval  31.24
flags


eth1 (0)
port id         0000            state           forwarding
designated root         8000.002590549f23   path cost           4
designated bridge       8000.002590549f23   message age timer   0.00
designated port         8001               forward delay timer  0.00
designated cost         0                  hold timer          0.00
mc router               1
flags


vnet0 (0)
port id         0000            state           forwarding
designated root         8000.002590549f23   path cost           100
designated bridge       8000.002590549f23   message age timer   0.00
designated port         8002               forward delay timer  0.00
designated cost         0                  hold timer          0.00
mc router               1
flags


vnet1 (0)
port id         0000            state           forwarding
designated root         8000.002590549f23   path cost           100
designated bridge       8000.002590549f23   message age timer   0.00
designated port         8003               forward delay timer  0.00
designated cost         0                  hold timer          0.00
mc router               1
flags
```

vnet0: Guest Lan lcavsrv6.epfl.ch
vnet1: Guest Lan lcavsrv8.epfl.ch

Access using the IP network to the host or the guest operating system is regulated by the internal firewall of the host system and the guests systems. Please refer to the output of the command "`iptables -nvL`" for the details on every working system. No masquerading (NAT) is activated in the LAN systems.
The access to the virtual networks is regulated by the iptables command. The bridge traffic not authorized is by default blocked.

/etc/sysctl.conf (just the lines changed from the default)
# Controls IP packet forwarding
net.ipv4.ip_forward = 1
net.bridge.bridge-nf-call-ip6tables = 1
net.bridge.bridge-nf-call-iptables = 1

1.3.8   Host system

OS: RHEL 6
IP: 128.178.70.13
System repositories:

Configured for manual update using RHN (RedHat Network) resources and default software channels are configured to use epel repositories.

1.3.9 Active programs

Virtualization (config are accessible on /etc/libvirt/qemu/{photographers.xml,photo-vevey.xml}):

```
virsh list --all
 Id Name            State
--------------------------------
  3 photo-vevey      running (Cpu: 1 core, Ram: 2 Gbyte) a.k.a.: lcavsrv6.epfl.ch
  4 photographers    running (Cpu: 1 core, Ram: 2 Gbyte) a.k.a.: lcavsrv8.epfl.ch
```

The console of both virtual systems is accessible using the "Virtual Machine Manager" Application and connecting to the IP address of the physical server (you need root access).

1.3.10 RHN

RHN system is registered in the Red Hat Network update system as lcavsrv13.epfl.ch, but the automatic update is disabled. In order to update the system you must enter the following command in a terminal:
```
yum update
```

1.3.11 NTP

Configured to use 128.178.8.1 as time source

1.3.12 Mail

Installed the sendmail program (config: /etc/mail/sendmail.mc), configured to use mail.epfl.ch as smart host
/etc/aliases:
root: damir.laurenzi@epfl.ch

1.3.13 Log

The daemon is rsyslog, configured to accept remote messages on the port 514/tcp and 514/udp .
The logwatch daemon sends the log report to root every night.

1.3.14 Report

/var/HotSaNIC contains the HotSaNIC program for reporting on the activity of the system activity.
The graphic reports are accessible on the address: lcavsrv13.epfl.ch/hot/
This program needs the packages rrdtool, rrdtool-perl, ImageMagick and ImageMagick-perl to function correctly.

2   Virtual Guest Nr. 1 (lcavsrv6.epfl.ch) – Photo Museum Vevey

2.1   Summary

This server is used for the photo experience from the photo museum in Vevey. It receives the images from a Windows workstation installed in the museum, collects them and sends back to the user the images he/her selected.

2.2   Detailed Summary

The Windows workstation installed in the Photo Museum of Vevey sends to the server the images taken by a visitor of the museum using the infrared and the normal camera. The images are then sent

to this server (using a ssh connection) that collects all the images and send back to the user the original and the enhanced (with infrared light) image.

In order to provide an automatic connection between the server and the Windows client, both an ssh-key that permits the connection using the "camera" user. This user is allowed to only connect to the rssh (/etc/rssh.conf) service.

The images stored on the server are useable for statistics and post elaborations.

2.3   Detailed information about the project

This document collects information about the camera setup in Vevey. What follows is a general description how the system works:

2.3.1   Workflow

- 2 versions of the images are saved to a directory on the Vevey machine with a unique name containing date and time, in the directory: C:\imagedb\
- A .txt file with the same name + _db.txt extension is saved in the same directory and contains the email address and preferred image.
- The software does not send images or emails.
- There is a cron job on the vevey machine that does an rsync with a server at EPFL (128.178.8.7) every hour to transfer the images and *db.txt files
- The file that executes the rsync is called "upload.cmd" and is located in C:\Windows\ . The relevant content of this file is the following line:

```
rsync -q --remove-source-files --protocol=29 -e "ssh -i
/cygdrive/c/windows/camera_server_key" /cygdrive/c/imagedb/*
camera@128.178.8.7:upload
```

- Once the images are transferred, they are deleted from the Vevey machine. In other words, if the image has not been transferred, it will still be in the folder C:\imagedb\ .
- There is another script on the EPFL server that runs every hour to send the emails.

In case of a problem, there are three main sources:
a) The software which does the capturing has problems writing to the disk.
-> Check whether there are images and txt-files in the folder C:\imagedb\ .
b) rsync cannot connect to the EPFL server
-> Go to C:\Windows\ and double click on upload.cmd . If there is some text output in the console that the operation timed out, then there is no connection to the EPFL server. In that case, check that the computer is connected to the Freespot access point, and not to lcav-annotations.
c) EPFL server script sending emails

2.3.2 Wifi-Setup

The network architecture is depicted in the following Figure. Initially, the computer was connected to
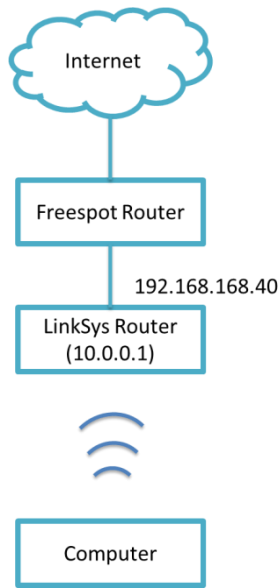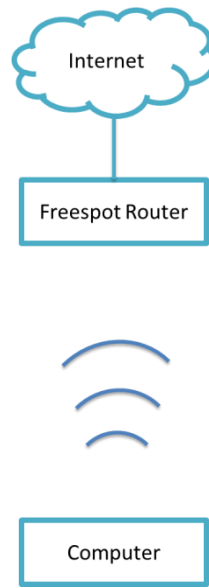

Figure 2: Initial setup

Figure 1: Current setup

the LinkSys router, as depicted in Figure 2: Initial setup. This router can be accessed by going to
http://10.0.0.1.
Login: admin
Password: lcavmuseum1985

WLAN connection details:
SSID: lcav-annotations
Password: annotations2010

Due to problems with this connection, the decision has been made to directly connect to the
Freespot Access Point (Figure 1: Current setup). The connection details are:
SSID: ((o)) FREESPOT
Password: - (no password needed)

Access to the internet over this access point is provided free of charge by the municipality of Vevey.
It can happen that this access point is not working. If this is the case, Windows will try to connect to
another access point. Right now, if it connects to the lcav-annotations, there will be no connection to
the internet anymore, and hence no images will be transferred! So in case of problems with the
connection, always check that the computer is connected to the Freespot access point.

2.3.3 Important contacts related to the project:

Responsible person at the Vevey camera museum:
David Schenker
Phone: 021'925'34'83
Mail: david.schenker@vevey.ch

Responsible for capturing related problems:
Dominic Rüfenacht
Mail: dominic.ruefenacht@epfl.ch

Responsible for networking related issues:
Damir Laurenzi
Mail: damir.laurenzi@epfl.ch

2.3.4 Accounts on the Vevey machine:

Normal operation (of the camera setup):

      Username: Camera
      Password: camera

Administrator rights (only use this for debugging):

      Username: LCAV Admin
      Password: coHukued

2.4 Hardware

Root password: 499fk0j
Currently this server is hosted as a virtual system on lcavsrv13.epfl.ch.

```
cat /proc/cpuinfo
```
processor   : 0
vendor_id   : GenuineIntel
cpu family   : 6
model   : 13
model name   : QEMU Virtual CPU version (cpu64-rhel6)
stepping   : 3
cpu MHz   : 3192.992
cache size   : 4096 KB
fpu   : yes
fpu_exception : yes
cpuid level   : 4
wp   : yes
flags   : fpu de pse tsc msr pae mce cx8 apic mtrr pge mca cmov pse36 clflush mmx fxsr sse sse2 syscall nx lm up unfair_spinlock pni cx16 hypervisor lahf_lm
bogomips   : 6385.98
clflush size : 64
cache_alignment : 64
address sizes : 36 bits physical, 48 bits virtual

2.4.1 Memory

```
free
```

	total	used	free	shared	buffers	cached
Mem:	2055076	1960184	94892	0	506728	440860
-/+ buffers/cache:	1012596	1042480				
Swap:	1049320	0	1049320			

2.4.2 Network

```
ip ad show dev eth0
```
2: eth0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast state UP qlen 1000
   link/ether 52:54:00:86:98:51 brd ff:ff:ff:ff:ff:ff
   inet 128.178.8.7/24 brd 128.178.8.255 scope global eth0
   inet6 fe80::5054:ff:fe86:9851/64 scope link

valid_lft forever preferred_lft forever

/etc/sysconfig/network-scripts/ifcfg-eth0
DEVICE="eth0"
BOOTPROTO="static"
HWADDR="52:54:00:86:98:51"
NM_CONTROLLED="no"
ONBOOT="yes"
IPADDR=128.178.8.7
NETMASK=255.255.255.0
GATEWAY=128.178.8.1

```
cat /etc/sysconfig/iptables
```
Generated by iptables-save v1.4.7 on Tue Jan 10 19:33:28 2012
*filter
:INPUT DROP [0:0]
:FORWARD DROP [0:0]
:OUTPUT DROP [0:0]
-A INPUT -i lo -j ACCEPT
-A INPUT -s 128.178.70.0/24 -i eth0 -j ACCEPT
-A INPUT -s 128.178.8.0/24 -i eth0 -j ACCEPT
-A INPUT -s 128.178.0.0/15 -i eth0 -j ACCEPT
-A INPUT -i eth0 -p tcp -m tcp --dport 22 -m state --state NEW -j ACCEPT
-A INPUT -i eth0 -p tcp -m tcp --dport 22 -m state --state ESTABLISHED -j ACCEPT
-A INPUT -i eth0 -m state --state ESTABLISHED -j ACCEPT
-A OUTPUT -o lo -j ACCEPT
-A OUTPUT -d 128.178.70.0/24 -o eth0 -j ACCEPT
-A OUTPUT -d 128.178.8.0/24 -o eth0 -j ACCEPT
-A OUTPUT -d 128.178.0.0/15 -o eth0 -j ACCEPT
-A OUTPUT -o eth0 -p tcp -m tcp --sport 22 -m state --state ESTABLISHED -j ACCEPT
-A OUTPUT -o eth0 -m state --state NEW -j ACCEPT
-A OUTPUT -o eth0 -m state --state ESTABLISHED -j ACCEPT
COMMIT
Completed on Tue Jan 10 19:33:28 2012

2.4.3 Disks
The disks are lvm partitions on the host system.

```
fdisk –l
```
Disk /dev/vda: 34.4 GB, 34359738368 bytes
16 heads, 63 sectors/track, 66576 cylinders
Units = cylinders of 1008 * 512 = 516096 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disk identifier: 0x0003ef58

```
Device Boot    Start      End    Blocks  Id  System
/dev/vda1  *       1    16645   8389048+  83  Linux
/dev/vda2        16646    18727   1049328  82  Linux swap / Solaris
/dev/vda3        18728    66576  24115896  83  Linux
```

Disk /dev/vdb: 214.7 GB, 214748364800 bytes

16 heads, 63 sectors/track, 416101 cylinders
Units = cylinders of 1008 * 512 = 516096 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disk identifier: 0x00000000

Disk /dev/vdb doesn't contain a valid partition table

```
df -h
```
Filesystem   Size Used Avail Use% Mounted on
/dev/vda1   7.9G 1.6G 6.0G 21% /
tmpfs   1004M   0 1004M   0% /dev/shm
/dev/vda3   23G   18G 4.1G 82% /var
/dev/vdb   197G   85G 103G 46% /data

```
cat /etc/fstab
```
#
/etc/fstab
Created by anaconda on Fri Nov 25 20:50:28 2011
#
Accessible filesystems, by reference, are maintained under '/dev/disk'
See man pages fstab(5), findfs(8), mount(8) and/or blkid(8) for more info
#
UUID=1f24e825-7aba-4cd7-ba41-43fd19bdb374 /   ext3   defaults   1 1
UUID=0d0d9e03-f140-447c-8120-dd4a0e30e26f /var   ext3   defaults   1 2
UUID=fc7ae350-ad5c-4add-9c0c-cae57495c290 swap   swap   defaults   0 0
tmpfs   /dev/shm   tmpfs defaults   0 0
devpts   /dev/pts   devpts gid=5,mode=620 0 0
sysfs   /sys   sysfs defaults   0 0
proc   /proc   proc   defaults   0 0
UUID=7de514b5-eca8-4c22-8ff9-9a6eb1bf1b6b /data   ext4   defaults   0 0

2.4.4   Active programs

fail2ban: to prevent attacks on port 22. the port 22 must be accessible from internet as it's the port used from the clients (currently only the museum of Vevey) to send the images collected.

2.4.5   RHN

The system is registered in the Red Hat Network update system as lcavsrv6.epfl.ch, but the automatic update is disabled. In order to update the system you must enter the following command in a terminal:
```
yum update
```

2.4.6   Mail

Uses the sendmail program (/etc/mail/sendmail.mc) and configured to use mail.epfl.ch as smart_host

/etc/aliases:
Root: damir.laurenzi@epfl.ch

2.4.7   Log

The daemon is rsyslog, configured to send the messages to the remote server lcavsrv13.epfl.ch that act as collector.

2.4.8 Cron

```
crontab -l
```

#every hour check if there're new photos that need processing
50 * * * * /root/bin/msap_service.py -v /home/camera/upload/ /home/archive/ 2>&1 >>
/var/log/camera_script_output.log

#backup whole system on iscsrv14.epfl.ch
0 3 * * sun /root/bin/backup.sh

2.4.9 Users

damir:x:500:501::/home/damir:/bin/bash
sysadmin:x:116:116:System Administrator,,,:/home/sysadmin:/bin/bash
camera:x:1001:1001::/home/camera:/usr/bin/rssh
daniel:x:1002:1002:Daniel Tamburrino,,,:/home/daniel:/bin/bash
laurenzi:x:74563:11240::/home/laurenzi:/bin/bash

2.4.10 Old system

All files except the data are under:
/var/old-lcavsrv8/

3 Virtual Guest Nr. 2 (lcavsrv8.epfl.ch) - AllPhotographersNow

3.1 Summary

This server is used to collect and manage the photos for the project "AllPhotographersNow".

3.2 Detailed Summary

The server uses a web interface as way of interaction for the end users that can submit their photos to increase the collection of samples for the project. Access to the server, after the initial launch, is blocked and is reopened only in occasion of photographic events around the globe.
The images submitted through the web interface are inserted in a SQL database and subject to any process of post processing that is necessary to the responsible of the project.

3.3 Hardware

Currently, this server is hosted as virtual system on lcavsrv13.epfl.ch.
Root password: 499fk0j

```
cat /proc/cpuinfo
```

```
processor      : 0
vendor_id      : GenuineIntel
cpu family     : 6
model          : 13
model name     : QEMU Virtual CPU version (cpu64-rhel6)
stepping       : 3
cpu MHz        : 3192.992
cache size     : 4096 KB
fpu            : yes
fpu_exception  : yes
cpuid level    : 4
wp             : yes
```

flags   : fpu de pse tsc msr pae mce cx8 apic mtrr pge mca cmov pse36 clflush mmx fxsr sse sse2 syscall nx lm up unfair_spinlock pni cx16 hypervisor lahf_lm
bogomips   : 6385.98
clflush size   : 64
cache_alignment   : 64
address sizes   : 36 bits physical, 48 bits virtual

3.3.1   Memory
```
free
```

	total	used	free	shared	buffers	cached
Mem:	2055076	1968188	86888	0	364296	1341168
-/+ buffers/cache:	262724	1792352				
Swap:	1049320	0	1049320			

3.3.2   Network
```
ip ad show dev eth0
```
2: eth0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast state UP qlen 1000
   link/ether 52:54:00:c8:ae:e2 brd ff:ff:ff:ff:ff:ff
   inet 128.178.8.9/24 brd 128.178.8.255 scope global eth0
   inet6 fe80::5054:ff:fec8:aee2/64 scope link
     valid_lft forever preferred_lft forever

```
cat /etc/sysconfig/network-scripts/ifcfg-eth0
```
DEVICE="eth0"
BOOTPROTO="static"
HWADDR="52:54:00:C8:AE:E2"
NM_CONTROLLED="no"
ONBOOT="yes"
IPADDR=128.178.8.9
NETMASK=255.255.255.0
GATEWAY=128.178.8.1

/etc/sysconfig/iptables:
It is too long, please refer to the original file.
In a nutshell: the system is configured to accept connections to the ports 22, 80, 443, 7978 used during the performances.

3.3.3   Disks
```
fdisk -l
```
Disk /dev/vda: 34.4 GB, 34359738368 bytes
16 heads, 63 sectors/track, 66576 cylinders
Units = cylinders of 1008 * 512 = 516096 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disk identifier: 0x0002d7fb

Device Boot	Start	End	Blocks	Id	System
/dev/vda1 *	1	16645	8389048+	83	Linux
/dev/vda2	16646	18727	1049328	82	Linux swap / Solaris
/dev/vda3	18728	66576	24115896	83	Linux

Disk /dev/vdb: 214.7 GB, 214748364800 bytes
16 heads, 63 sectors/track, 416101 cylinders
Units = cylinders of 1008 * 512 = 516096 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disk identifier: 0x00000000

Disk /dev/vdb does not contain a valid partition table

df -h
Filesystem   Size Used Avail Use% Mounted on
/dev/vda1   7.9G 4.4G 3.1G 59% /
tmpfs   1004M   0 1004M   0% /dev/shm
/dev/vda3   23G 3.8G   18G 18% /var
/dev/vdb   197G   89G   99G 48% /data

cat /etc/fstab
#
/etc/fstab
Created by anaconda on Fri Nov 25 20:11:37 2011
#
Accessible filesystems, by reference, are maintained under '/dev/disk'
See man pages fstab(5), findfs(8), mount(8) and/or blkid(8) for more info
#
UUID=fac59808-0836-43d3-a261-f82965ad06ed /   ext3   defaults   1 1
UUID=a4ca4e50-e326-4bf1-8d6b-c263a704ac99 /var   ext3   defaults   1 2
UUID=c9dc4660-c829-421c-bcec-bfb16c642cc4 swap   swap   defaults   0 0
tmpfs   /dev/shm   tmpfs defaults   0 0
devpts   /dev/pts   devpts gid=5,mode=620 0 0
sysfs   /sys   sysfs defaults   0 0
proc   /proc   proc   defaults   0 0
UUID=d1c9929c-160b-457a-8e2a-441e4aac78f9 /data ext4   defaults   0 0

3.3.4   Programs
fail2ban: to protect the system when it's online
apache: web interface
mysql: DB photos

3.3.5   RHN
The system is registered in the Red Hat Network update system as lcavsrv8.epfl.ch, but the automatic update is disabled. In order to update the system you must enter the following command in a terminal:
yum update

3.3.6   Report
/var/HotSaNIC: used to collect and report in graphical format the activity of the server. the graphs are accessible using the address http://lcavsrv8.epfl.ch/hot/

3.3.7   Mail
Uses the sendmail program (/etc/mail/sendmail.mc) and configured to use mail.epfl.ch as smart_host.

/etc/aliases:

root: damir.laurenzi@epfl.ch

3.3.8 Log
The daemon is rsyslog, configured to send the messages to the remote server lcavsrv13.epfl.ch that act as collector.

3.3.9 Cron
```
crontab -l
```
#* * * * * /root/bin/log-camera.sh >> /tmp/log-camera 2>&1
#* * * * * /root/bin/log-museum.sh >> /tmp/log-museum 2>&1

backup on iscsrv14.epfl.ch
0 3 * * sun /root/bin/backup.sh

3.3.10 Web server:
/var/www/html/elysee.epfl.ch: web site used at the time of the launch
/var/www/html/lcavsrv8.epfl.ch: base web site to access the basic function of the server (mainly to manage the MySql DB)
/var/www/html/lcavsrv8.epfl.ch/hot: status of the server, graphical interface
/var/www/html/lcavsrv8.epfl.ch/phpMyAdmin: management interface for the MySql DB
/var/www/html/www.allphotographersnow.ch: web site accessible for the project experience, english version
/var/www/html/www.tousphotographes.ch: web site accessible for the project experience, french version

3.3.11 MySQL Server:
all_photographers_now: database for collecting the photos
apn_nowebcam: database used for post processing
apn_search_db: database used for post processing
mysql passwd:
root: lcavroot

GRANT ALL PRIVILEGES ON apn_nowebcam.* to apn_nowebcam_user@localhost IDENTIFIED BY 'q*a3Se]Jw';
GRANT ALL PRIVILEGES ON apn_nowebcam.* to apn_noweb_user@localhost IDENTIFIED BY 'q*a3Se]Jw';
GRANT ALL PRIVILEGES ON apn_nowebcam.* to apn_readonly@localhost IDENTIFIED BY 'ySH<ENH7Ro';
GRANT ALL PRIVILEGES ON apn_nowebcam.* to apn_noweb_user@localhost IDENTIFIED BY 'ySH<ENH7Ro';
GRANT ALL PRIVILEGES ON all_photographers_now.* to apn_readonly@localhost IDENTIFIED BY 'ySH<ENH7Ro';
GRANT SELECT PRIVILEGES ON all_photographers_now.* to apn_readonly@localhost IDENTIFIED BY 'ySH<ENH7Ro';
GRANT SELECT ON all_photographers_now.* to apn_readonly@localhost IDENTIFIED BY 'ySH<ENH7Ro';
GRANT SELECT ON all_photographers_now.* to apn_readonly@localhost IDENTIFIED BY 'ySH<ENH7Ro';
GRANT ALL PRIVILEGES ON all_photographers_now.* to benoit@localhost IDENTIFIED BY 'rhyqs2XR';

3.3.12 Nagios:

Configured to answer to server iscsrv35.epfl.ch (damir) for some services (disks, load, users, procs)

3.3.13 Users:

sabine:x:504:100:Sabine Susstrunk:/home/sabine:/bin/bash
lmeylan:x:505:100:Laurence Meylan:/home/lmeylan:/bin/bash
patricks:x:506:100:Patrick Schonmann:/home/patricks:/bin/bash
patrickv:x:507:100:Patrick Vandewalle:/home/patrickv:/bin/bash
adrienc:x:508:100:Adrien Carter:/home/adrienc:/bin/bash
apn:x:509:509::/home/apn:/bin/bash
benoit:x:510:510:Benoit Rat:/home/benoit:/bin/false
simon:x:511:511::/home/simon:/bin/bash
alindner:x:512:512:Albrecht Lindner:/home/alindner:/bin/bash
tamburri:x:513:100:Daniel Tamburrino:/home/tamburri:/bin/bash
gschaefe:x:501:100:Gunnar Schaefer:/home/gschaefe:/bin/bash

3.3.14 Old system

All files from previous system, but the data, are under:
/var/old-lcavsrv8/