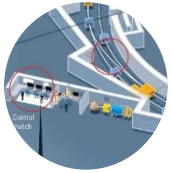
HEPiX Fall 2018/10/10

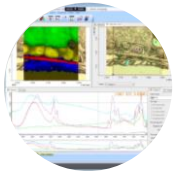
DAAS for MIRAS beamline users on ALBA synchrotron

Jordi Salabert

Outline



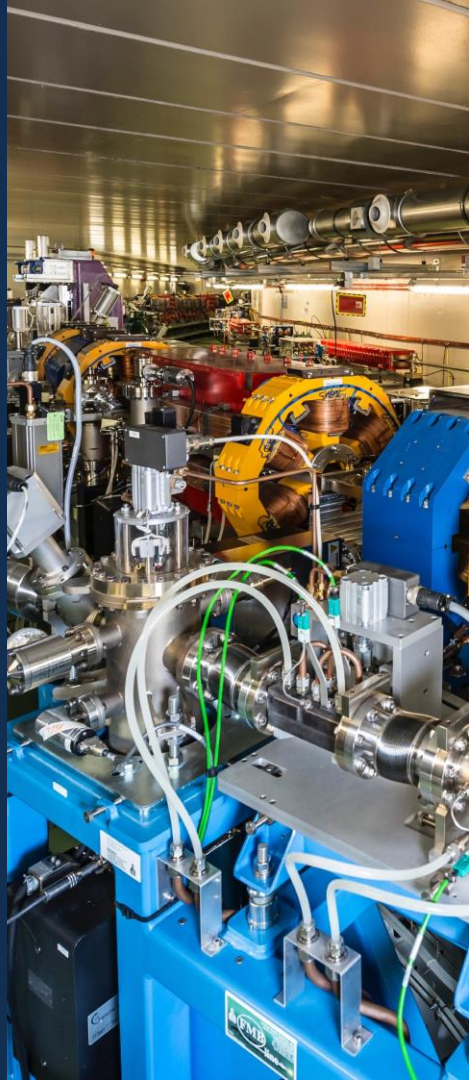
Data analysis and reduction at ALBA synchrotron



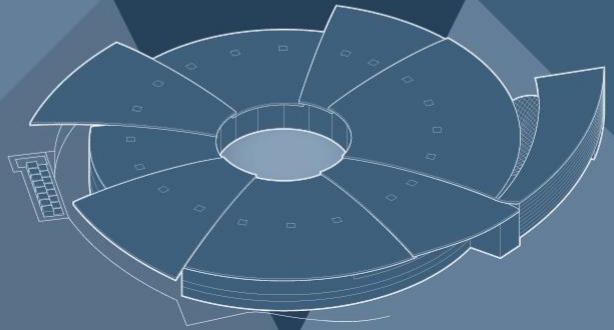
Remote data analysis and data reduction on MIRAS beamline

Additional insights on similar projects

Data analysis and reduction at ALBA synchrotron



ALBA



CLASSIC APROACH

Data analysis and reduction is done during beamtime

When beamtime is up user can download the data to his institution

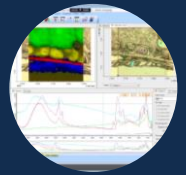
Software and computing resources outside of beamtime are NOT provided

CURRENT APROACH

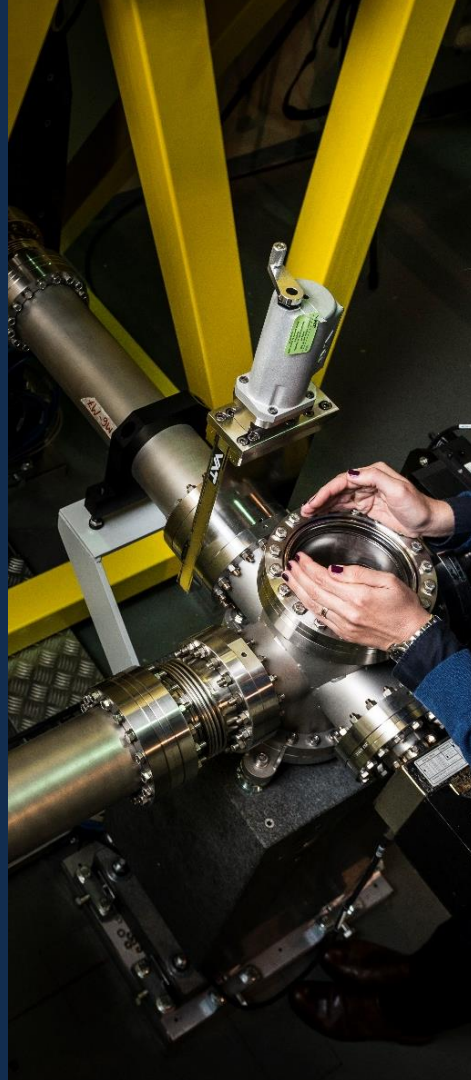
Data analysis and reduction can be done AFTER beamtime

User can keep accessing the same platform used on the beamline

We provide software and computing resources



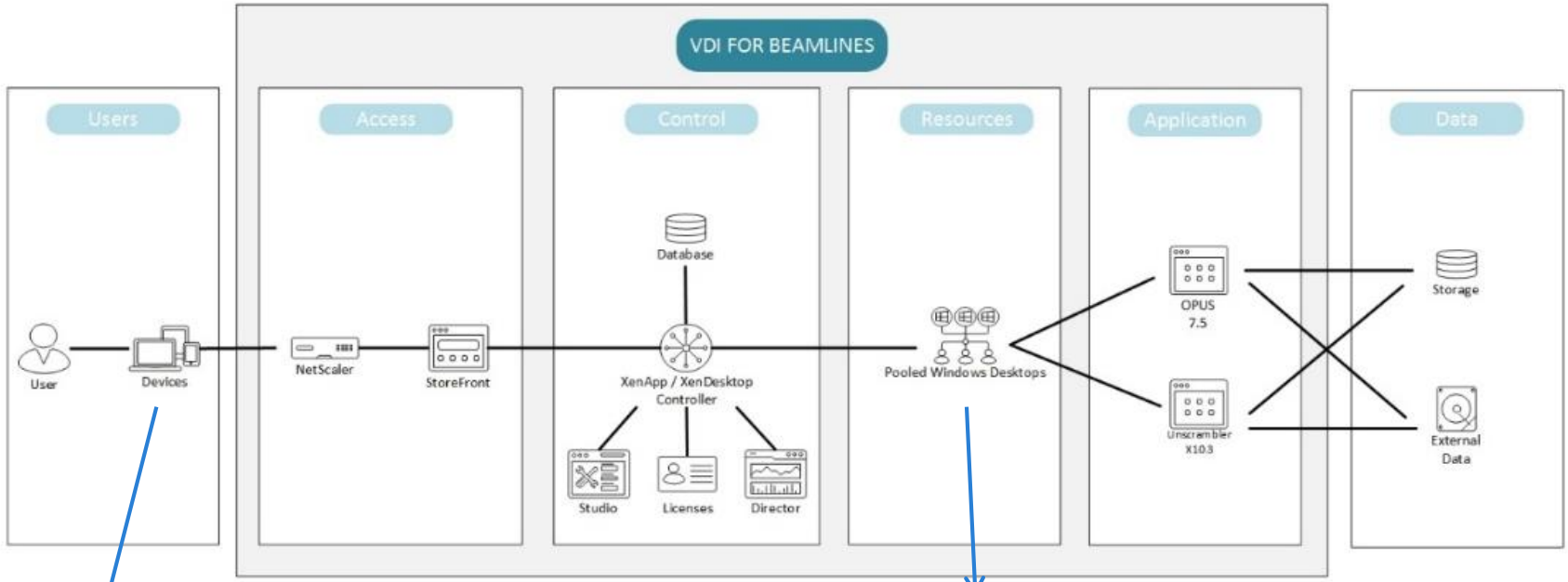
Remote data analysis and data reduction on MIRAS beamline

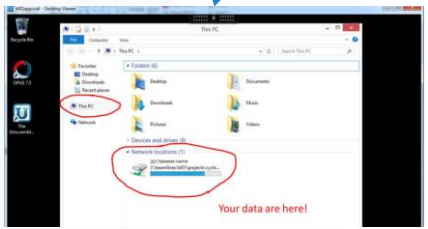


Requirements

- Easy to use
- Ability to connect from outside of our facility
- Users should have Access to the proposal generated data
- Multiple users should be able to connect at the same time
- Windows based software 😒
  - Unscrambler
  - Opus

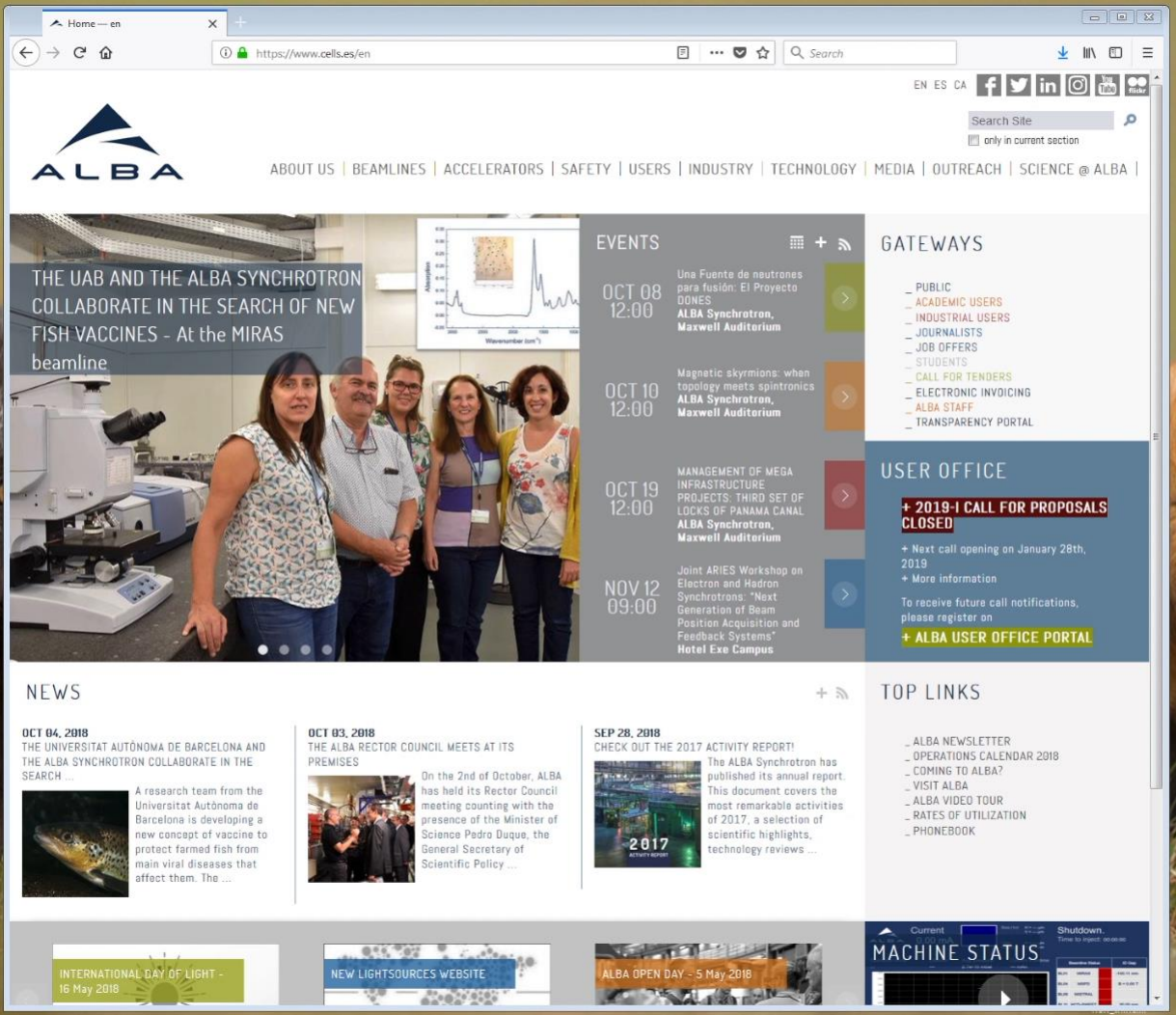
Arquitecture





Specs

Random non-persistent pooled desktops
Windows Server 2012 R2 VDI
Citrix XenDesktop 7.15 VDA
XenServer 7.2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ALBA
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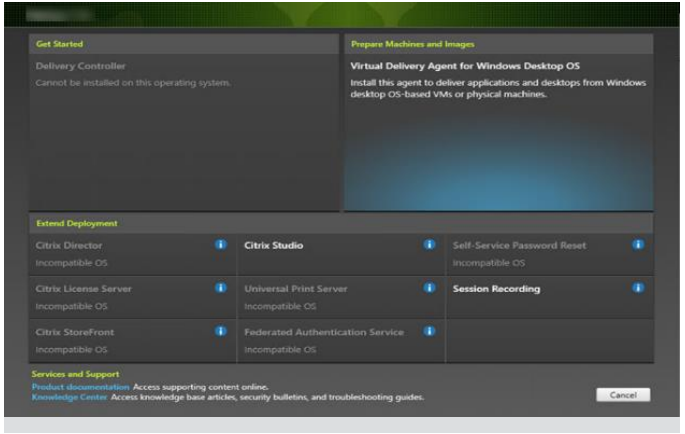
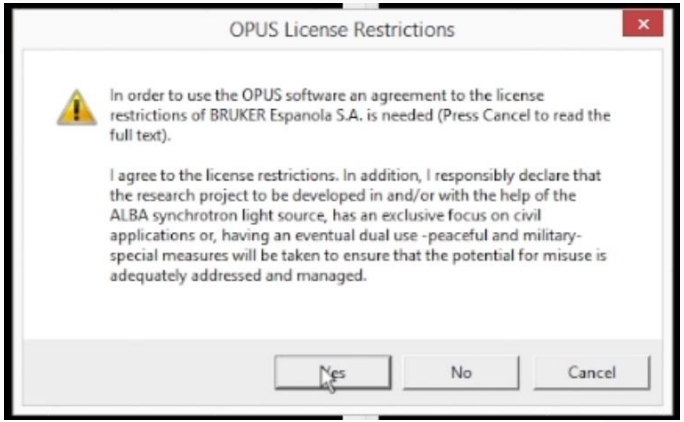
THE UAB AND THE ALBA SYNCHROTRON COLLABORATE IN THE SEARCH OF NEW FISH VACCINES - At the MIRAS beamline
EVENTS
OCT 08 12:00
Una Fuente de neutrones para fusión: El Proyecto DONES
ALBA Synchrotron, Maxwell Auditorium
OCT 10 12:00
Magnetic skyrmions: when topology meets spintronics
ALBA Synchrotron, Maxwell Auditorium
OCT 19 12:00
MANAGEMENT OF MEGA INFRASTRUCTURE PROJECTS: THIRD SET OF LOCKS OF PANAMA CANAL
ALBA Synchrotron, Maxwell Auditorium
NOV 12 09:00
Joint ARIES Workshop on Electron and Hadron Synchrotrons: "Next Generation of Beam Position Acquisition and Feedback Systems"
Hotel Exe Campus
GATEWAYS
_ PUBLIC
_ ACADEMIC USERS
_ INDUSTRIAL USERS
_ JOURNALISTS
_ JOB OFFERS
_ STUDENTS
_ CALL FOR TENDERS
_ ELECTRONIC INVOICING
_ ALBA STAFF
_ TRANSPARENCY PORTAL
USER OFFICE
+ 2019-I CALL FOR PROPOSALS CLOSED
+ Next call opening on January 28th, 2019
+ More information
To receive future call notifications, please register on
+ ALBA USER OFFICE PORTAL
NEWS
OCT 04, 2018
THE UNIVERSITAT AUTÒNOMA DE BARCELONA AND THE ALBA SYNCHROTRON COLLABORATE IN THE SEARCH ...
A research team from the Universitat Autònoma de Barcelona is developing a new concept of vaccine to protect farmed fish from main viral diseases that affect them. The ...
OCT 03, 2018
THE ALBA RECTOR COUNCIL MEETS AT ITS PREMISES
On the 2nd of October, ALBA has held its Rector Council meeting counting with the presence of the Minister of Science Pedro Duque, the General Secretary of Scientific Policy ...
SEP 28, 2018
CHECK OUT THE 2017 ACTIVITY REPORT!
2017
The ALBA Synchrotron has published its annual report. This document covers the most remarkable activities of 2017, a selection of scientific highlights, technology reviews ...
TOP LINKS
_ ALBA NEWSLETTER
_ OPERATIONS CALENDAR 2018
_ COMING TO ALBA?
_ VISIT ALBA
_ ALBA VIDEO TOUR
_ RATES OF UTILIZATION
_ PHONEBOOK
INTERNATIONAL DAY OF LIGHT - 16 May 2018
NEW LIGHTSOURCES WEBSITE
ALBA OPEN DAY - 5 May 2018
MACHINE STATUS
Current
Shutdown.

Lessons learned



Windows Server VDI

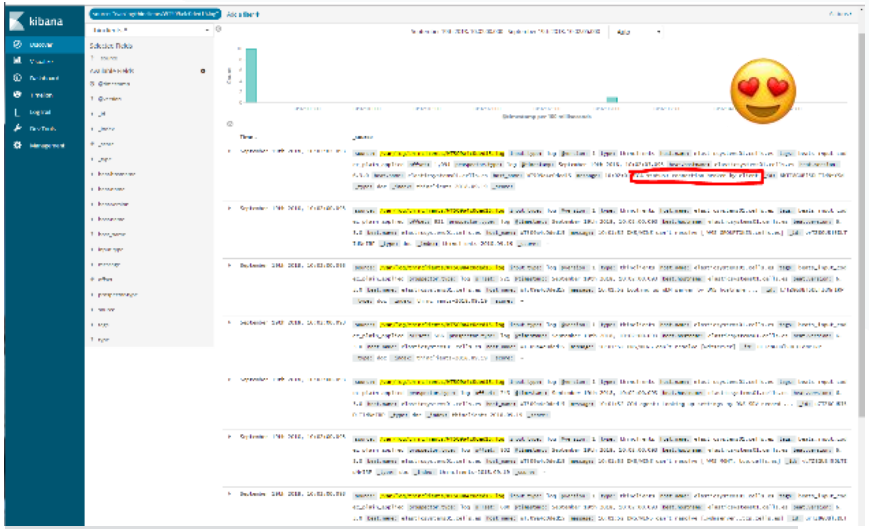
Single user Windows server machines
Citrix VDA software installation
/servervdi modifier



License restrictions

Export restrictions for certain countries users

Lessons learned

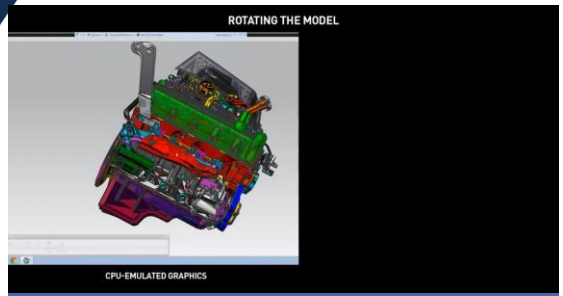


Centralized logging

Elasticsearch – Logstash – Kibana
Multi service central logs
Incident correlation

Additional insights on similar projects

Similar projects



CAD users VDI — Deployed

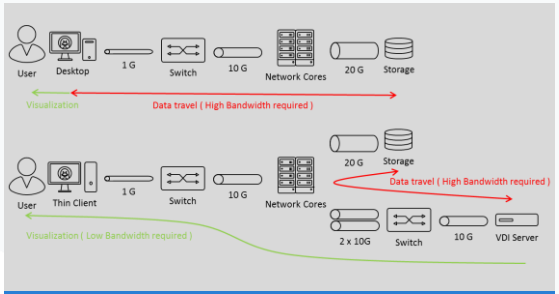
Specs
Windows 7 VDI
Nvidia Grid K2 K2 240Q Profile
Citrix XenApp 7.14 VDA
XenServer 7.0
Siemens NX Teamcenter v10

Target users
CAD engineer interns
Sporadic users of Siemens NX

Training room — Deployed

Specs
Dell Wyse 3040 Thin clients
XenDesktop 7.6+
XenApp 6.5

Target users
Inhouse and Beamline users trainings



Virtual Linux Workstation — Testing

Specs
Centos 7.4
Citrix XenDesktop VDA 7.18
XenServer 7.5
Nvidia Grid M10

Target usage
Virtualized Beamline Workstation
Virtualized Control room Workstation
Remote connection to physical Linux WS

What we learned

- Citrix personal virtual disk (PVD)
  - Don’t use that!

- Thin clients for CAD users
  - DELL Wyse 3040
    - H264 hardware decoding
    - Pull configuration from central server
    - Around 200 Eur

What we learned

- Citrix VDA for Linux with GPUs
  - Citrix requires the machine to be joined to the Active Directory domain
  - You only get 3D acceleration on VMs not in physical machines
    - Firefox “about:Support” capture

XenServer 7.5 — Nvidia M10

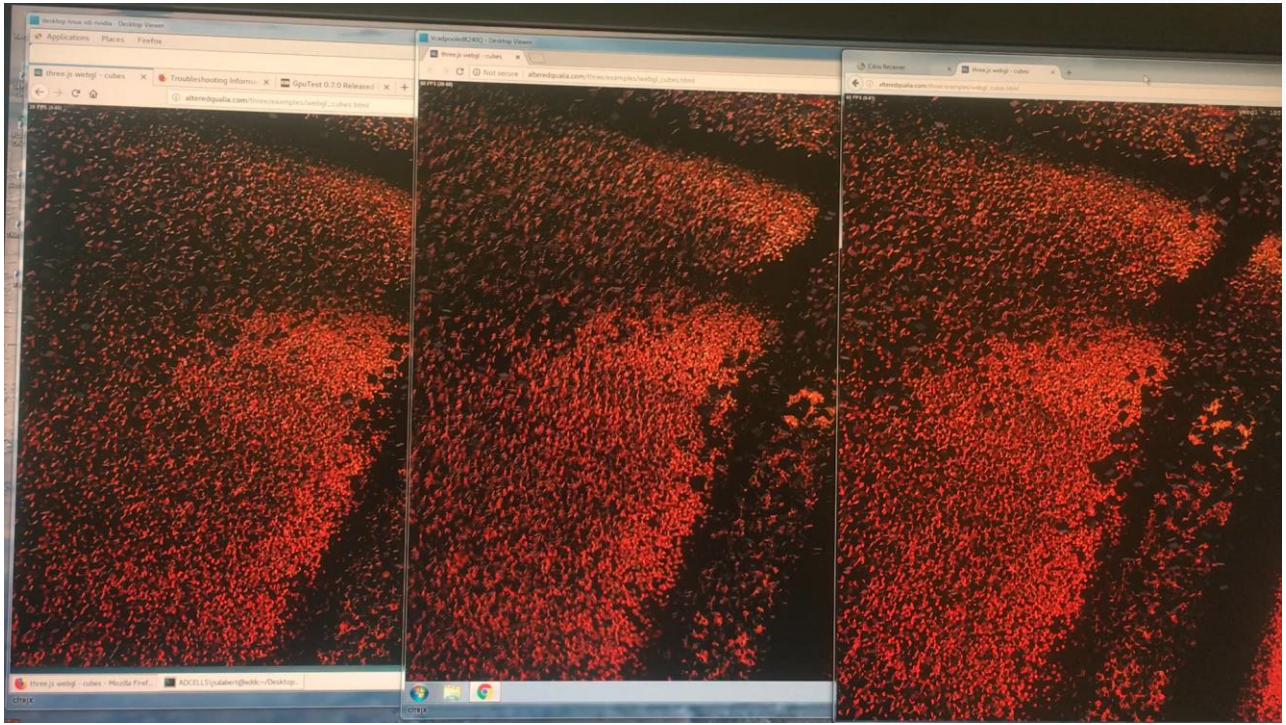
GPU #1	
Active	Yes
Description	NVIDIA Corporation -- Quadro FX GRID M10-8Q/PCI/SSE2
Vendor ID	NVIDIA Corporation
Device ID	Quadro FX GRID M10-8Q/PCI/SSE2
Driver Version	4.6.0 NVIDIA 390.75

Physical machine — Nvidia M4000 / AMD W5000 / Intel integrated

GPU #1	
Active	Yes
Description	VMware, Inc. -- llvmpipe (LLVM 5.0, 256 bits)
Vendor ID	VMware, Inc.
Device ID	llvmpipe (LLVM 5.0, 256 bits)
Driver Version	2.1 Mesa 17.2.3

- How to check visual performance on the client prespective

Linux vGPU VDI *pre optimization	Windows vGPU VDI	Local Windows VDI



http://alteredqualia.com/three/examples/webgl_cubes.html

THANK YOU

QUESTIONS?

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SPAIN