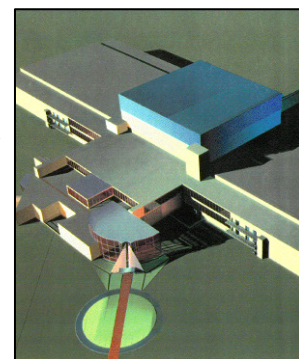
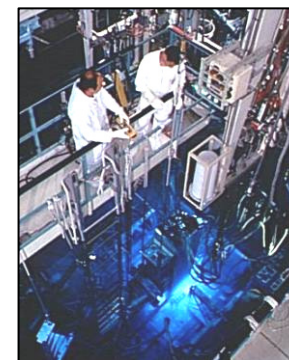
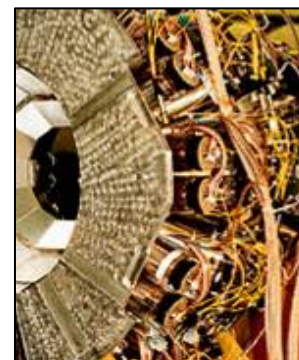


Remote visualization @ CCRT

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CCRT architecture (2010)



BULL Itanium cluster



47.7 Tflops
Memory : 23.2 To
Disks : 420 To

NEC computer



SX8	SX9
8 nodes	3 nodes
2 Tflops	4.8 Tflops
0.9 TB	3 TB
40 TB of disks	

Bull Hybrid (CPU/GPU) cluster



1 092 Bull nodes 8736 Intel/nehalem cores 3 GB/cores 103 TFlops	48 Tesla S1070 46 080 NVIDIA cores 4 GB/GPU 192 Tflops-SP
Disques 500To	

Cluster HP de dépouillement



38 graphics nodes
Memory : 3.2 TB, disks : 100 TB
RGS, VisuPortal



Backbone Ethernet 10Gb/s

2 Gb/s

users



NetApp FAS3050

NFS servers

SGI Altix 450 DMF



Level 1: 1 PB
DDN Sata disks

Level 2:
SUN-SL8500
(9940, T10000)



Storage system

CCRT production numbers



CCRT:

- Has more than **2100 users**
 - **Most if not all our users are located remotely**
- Produces **3 -- 4TB per day** on its DMF storage system
- Stores more than **2,5 PB of data**
- Features more than **98% computer availability**
- Offers people on call **24h/24h 7d/7d**



Post processing cluster and service focus

Post processing cluster description

Hardware configuration :

- 1 management node
- I/O configuration (Lustre) :
 - 2 + 8 I/O nodes
 - 100 To of disks
 - 2 GB/s bandwidth
- 2 login nodes
 - with a 10Gb/s backbone link
- 8 « big » nodes (8 cores, 128 GB, Nvidia FX5800)
 - Mainly for meshing activities
- 30 graphics nodes (8 cores, 64 GB, Nvidia FX5800)
 - Main usage = visual post processing
- Infiniband DDR interconnect network



Post processing cluster description

- **Software configuration :**

- Services to use the cluster as a compute resource (batch system, ...)
- Booking service for interactive usage of the nodes through a web interface
 - The VisuPortal package
- Optimized service for remote graphics
 - HP RGS package
- A set of pre-installed commercial and open source software :
 - Paraview, Ensight, VisIt, Matlab, Idl, ...

VisuPortal : a new service @ CCRT (in production since June 2009)

- Through a WEB interface, users can reserve a period of time to have nodes on the post processing cluster.
- Then through RGS (remote graphic system), users have an optimized remote X11 window connected on the reserved login node.
 - RGS has many clients (Windows, Mac OS, Linux)
- **2 modes :**
 - Applications : launching specific application automatically reserving appropriate resources
 - Expert : reserving a entire node
- **CCRT use only the expert node for the moment**

New post processing service



VisuPortal - Mozilla Firefox

Echier Édition Affichage Historique Marque-pages Outils Aide

https://www-ccrt1.ccc.cea.fr/VisuPortal/newBooking?cid=191481

Red Hat, Inc. Red Hat Network Support Shop Products Training

VisuPORTAL
Oxalya Software

Présentation Sessions ?

Créer une réservation

Description publique

Titre

Déport d'écran Remote Graphics Software

Résolution de votre écran SXGA (1280 x 1024)

Description

B I U ABC

Date de lancement Aucune date sélectionnée

Sélection du noeud de controle

+ Bignem

+ Normal

Sélection des noeuds de calcul

Bignem 0 4 0

Normal 0 14 0

Disponibilités

Durée 60 minutes

À partir de

<< mars, 2010 >>						
	lun.	mar.	mer.	jeu.	ven.	sam. dim.
9	1	2	3	4	5	6 7
10	8	9	10	11	12	13 14
11	15	16	17	18	19	20 21
12	22	23	24	25	26	27 28
13	29	30	31	1	2	3 4
14	5	6	7	8	9	10 11
2010-03-25		effacer		08:36		aujourd'hui

Aucune date de lancement disponible

Aucune disponibilité trouvée pour la période sélectionnée. Indiquez un autre jour ou changez la durée de la session sur le formulaire de gauche pour obtenir d'autres résultats.

Annuler Réserver

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Transfert des données depuis www-ccrt1.ccc.cea.fr...

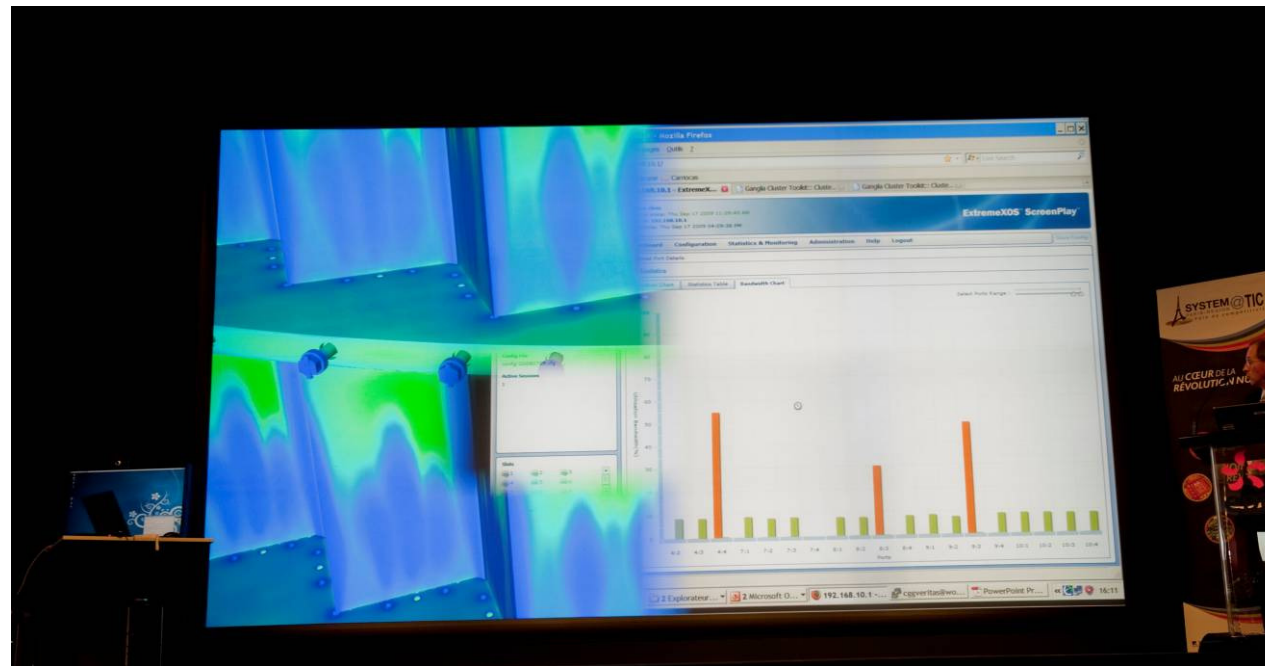
Applications Places System

08:37

www-ccrt1.ccc.cea.fr

VisuPortal background

- **VisuPortal is the output of the Carriocas project**
 - Carriocas : a System@tic project
 - WP4 « software demonstration of the usability of a 40Gb/s link »
 - Main actors : CEA, CGG-VERITAS, EDF
 - Specifications lead of VisuPortal : EDF
 - First usage : reservation of the display wall @ EDF Clamart



VisuPortal in production

CCRT worked hard with Oxalya to make VisuPortal good for a real production :

- Resolving bugs
 - Adding specific developments especially to simplify its usability
 - Adding security to the software installation
-
- **CCRT has put VisuPortal in production since June2009**
 - We consider it a success

Users' quote :

“X11 tools are more efficient on the CCRT visualization cluster using VisuPortal and RGS than on my local desktop.”

Remaining issues / evolutions

- **RGS issues :**

- Not easy to script RGS
- We try to integrate a full SSL support in RGS (easier to “fulfill the security requirements”)
- Dedicated to HP hardware (begin to change)
 - An Open Source replacement is being contemplated.

- **Visuportal :**

- Quota support
- Software hardening especially when mixing compute and interactive usages
- ...



QUESTIONS ?