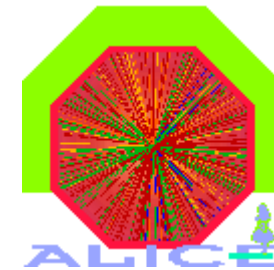


Installation and Commissioning of ALICE VO-BOXES and AliEn Services



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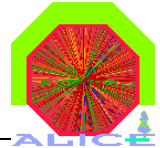
❖ Main Purpose

- ❖ Presentation of the WLCG ALICE model based in the deployment of VO-BOXES at all sites
- ❖ Explanation of the procedure we follow for their setup and the issues we use to face

❖ Content of the talk

- ❖ The concept of the VO-BOX
- ❖ The VO-BOXES of ALICE
- ❖ Management, Installation and Configuration
- ❖ Issues we use to face to

- Motivation:
 - ❖ Several experiments run service jobs at the production sites
 - ❖ In some cases using the Fork Jobmanager in the gatekeeper node
 - ❖ The BaseLine service workgroup identified the need of the experiments to run specific services at the sites
 - ❖ The solution has to be acceptable for experiments and for the sites
- Solution:
 - ❖ A **separate** service where experiments can run their agents and experiments
 - ❖ Specific agents not provided by the LCG middleware
 - ❖ It provides direct access to the software area of each experiment
 - ❖ Hosted in a separate machine

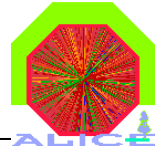


- ❖ Only **sgm (software managers) users** of each VO have access to the node
- ❖ From LCGv.7.0 it runs the **UI service inside** (requested by ALICE and provided for all experiments)
- ❖ It provides **direct access to the software area**
 - ❖ Area mounted and accessible to WNs in the filesystem
 - ❖ **VO_ALICE_SW_DIR** variable mandatory
- ❖ Contains a **GSSSSH server** (port 1975)
 - ❖ ssh connection authorized through user proxies
- ❖ **Proxy renewal** service included
- ❖ If needed **GSSKLOG client**
 - ❖ Needed if the software area is placed in AFS
- ❖ It runs a **local GRIS (local information provider)**
 - ❖ The Service must be published in the information system

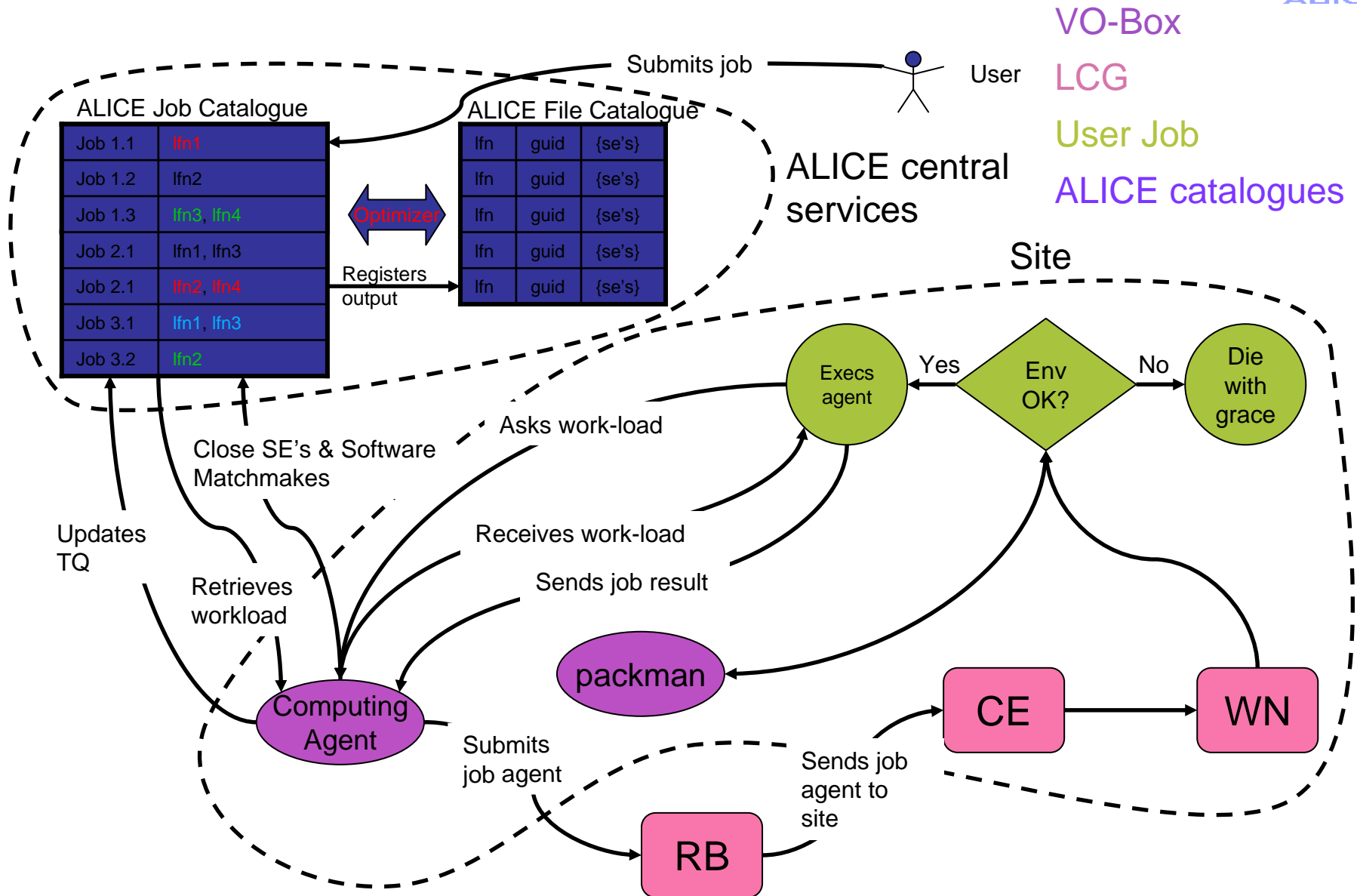
- ❖ OS: Scientific Linux (usually)
- ❖ WN type host + experiment specific requirements
- ❖ Outbound connectivity
 - ❖ It means, you can submit jobs from here
- ❖ Inbound connectivity
 - ❖ As for a CE plus experiment requirements
 - ❖ It means, it can be connected by experiment-specific services
- ❖ Access to local accounts via gsissh (port 1975)
- ❖ Write access to the software area
- ❖ At this moment a gridftp server is included (port 2811)

- ❖ VO-boxes deployed at all T0-T1-T2 sites providing resources for ALICE
 - ❖ *Mandatory requirement to enter the production*
 - ❖ Required in addition to all standard LCG Services
 - ❖ Entry door to the LCG Environment
 - ❖ Runs standard LCG components and ALICE specific ones
- ❖ Uniform deployment
 - ❖ Same behavior for T1 and T2 in terms of production
 - ❖ Differences between T1 and T2 a matter of QoS only
- ❖ Installation and maintenance entirely ALICE responsibility
 - ❖ Based on a regional principle
 - ❖ Set of ALICE experts matched to groups of sites
- ❖ Site related problems handled by site administrators
- ❖ LCG Service problems reported via GGUS (ticket system)
 - ❖ Not too much, ALICE has experts in almost all sites

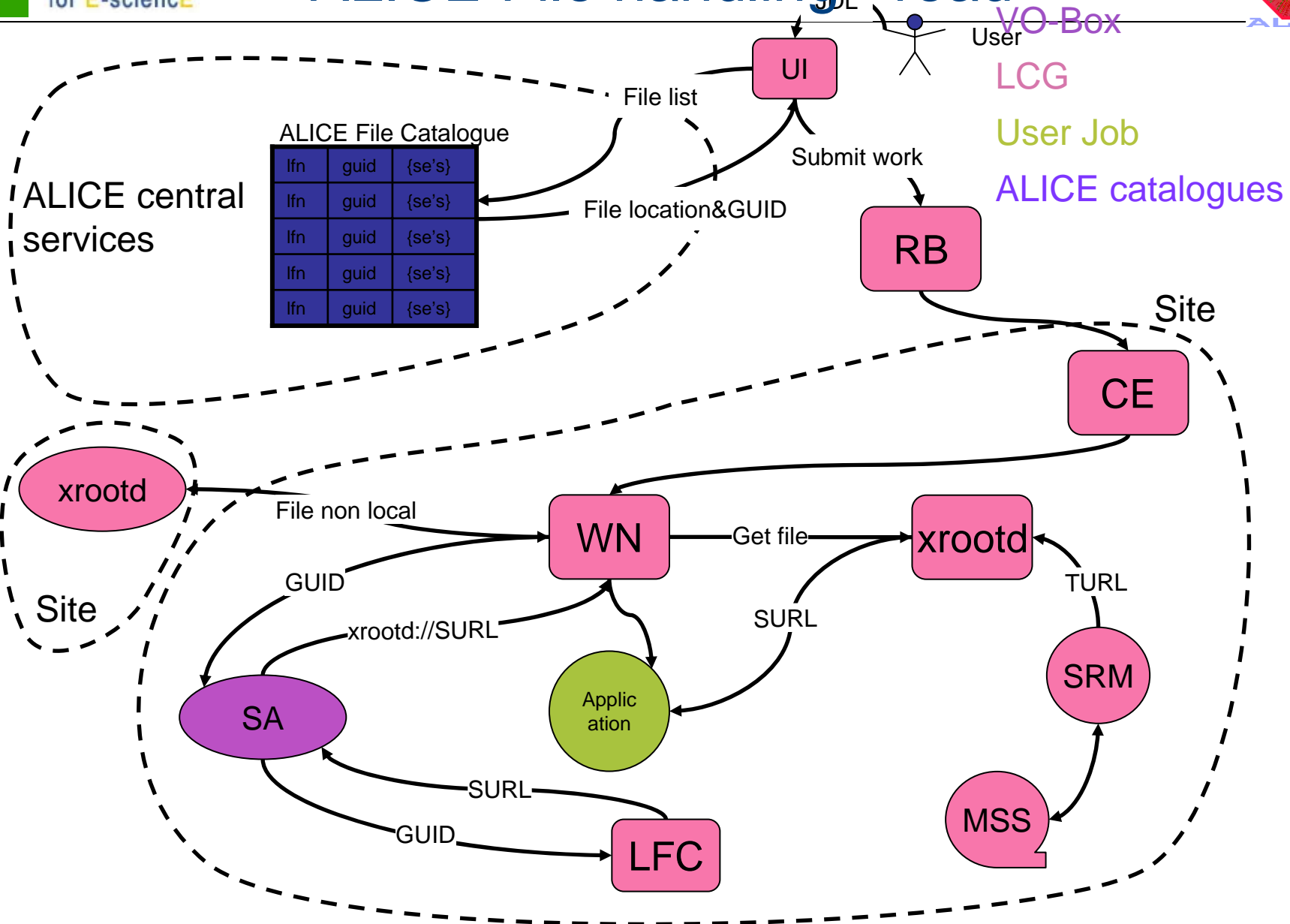
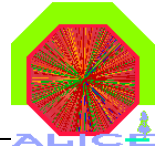
- ❖ Linux Kernel 2.4 or higher, any Linux flavour
- ❖ At least PIII 2GHz with 1024 MB RAM
- ❖ At least one normal user account via ssh or gsissh
- ❖ A VOBOX directory, not shared among WNs with 10GB of space where the log files of the services will be placed
- ❖ Access to the software area shared among WNs and accessible through VO_ALICE_SW_DIR with 5GB disk space
- ❖ Outbound connectivity and inbound connectivity defined through the services requirements
- ❖ Local tactical data buffer managed by xrootd running in VOBOX
- ❖ Backup of the alicesgm directory and /opt/vobox
 - ❖ The 1st because you have there the configuration of the VOBOX and the log files
 - ❖ The 2nd because the automatic start and stop of the services are there



- ❖ Central ALICE Services
 - ❖ Outside of the WLCG environment
 - ❖ Central TQ, central LC, FTD, DB
 - ❖ ALICE experts take care of them
- ❖ WLCG Services used by ALICE
 - ❖ All of them: RB/WMS, VOMS, FTS/SRM, LFC
 - ❖ Still to decide the role of DPM
- ❖ ALICE site VOBOX services
 - ❖ Specific ALICE services run in the VOBOX
 - ❖ Supported together by WLCG and ALICE
 - ❖ PackMan, MonaLisa, Site Computing Agent, Storage Adaptor, xrootd, site proxy, proofd, agent monitoring service

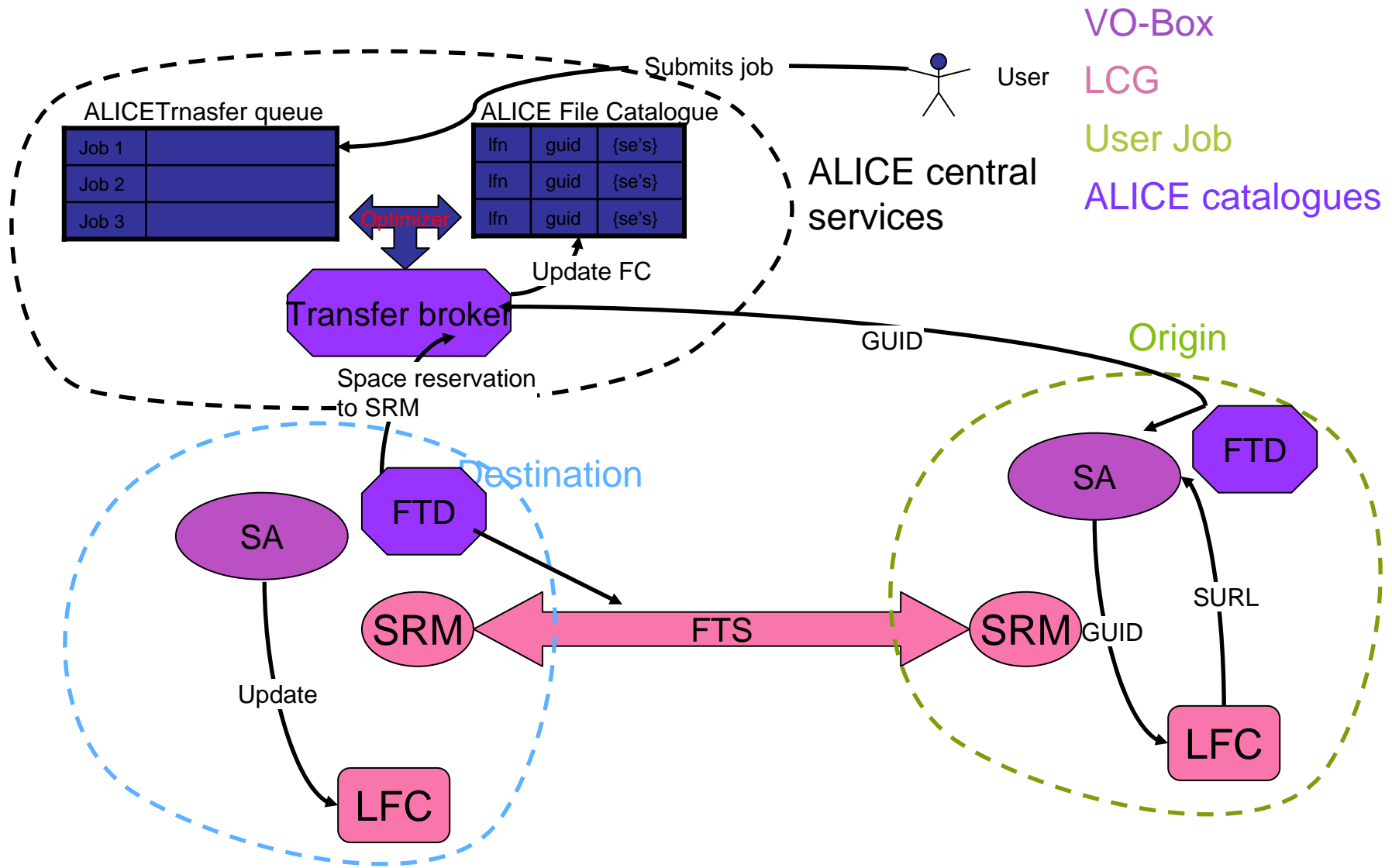


ALICE File handling - read



ALICE File Catalogue

lfn	guid	{se's}
lfn	guid	{se's}
lfn	guid	{se's}
lfn	guid	{se's}
lfn	guid	{se's}



- ❖ All T1 are providing VOBOXES
- ❖ CERN
 - ❖ Kolkota (India), Athens (Greece), Cape Town, T2 federation (Romania), RMKI (Hungary), Slovakia, T2 Federation (Poland), Wuhan (China)
- ❖ CCIN2P3
 - ❖ French T2 (Nantes), Sejong (Korea), Lyon T2, Madrid (Spain)
- ❖ GridKa
 - ❖ FZU (Czech Republic), RDIG (Russia), GSI and Muenster (Germany)
- ❖ CNAF
 - ❖ Tier2 Federation (Italy)
- ❖ SARA/NIKHEF
- ❖ RAL
 - ❖ T2 Federation (UK), Birmingham
- ❖ US
 - ❖ LLNL, BNL, OSC, Houston

1. This is the proposed distribution for the transfer tests in July

1. In green those sites providing VOBOXES

- V *Once a site announces the existence of the VOBOX these are the steps to put it in production:*
- ❖ Send us the DN of the machine (included in the host certificate)
 - ❖ All VOBOXES are trusted by the same myproxy server placed at CERN for proxy renewal purposes
 - ❖ The LCG features are tested
 - ❖ A special test suite has been developed for this test: lcg_vobox_services
 - ❖ It has also been included in the ALICE test suite and the results can be visualized from MonaLisa
 - ❖ In case of problems, direct interaction with the site manager
 - ❖ The site manager gets in contact with us, so we can individualize a person to contact with
 - ❖ The VOBOX is opened to the experts for the installation of ALICE specific software (coming from AliEn)
 - ❖ Immediately the site is opened for the production
 - ❖ Small testing production

- ❖ From the WLCG point of view:
 - ❖ We are speaking about one of the easiest WLCG service to install and configure and about the best documented service
 - ❖ Sites are supported for any problem
 - ❖ The specific ALICE requirements are documented and explain in the following report: **"VOBOX Security and Operations Questionnaires v-0.5"**
- ❖ From the AliEn point of view:
 - ❖ Very well documented procedure (Wiki page) created by S. Bagnasco in terms of installation, configuration and bug fixing
 - ❖ <http://alien.cern.ch/twiki/bin/view/AliEn/HowToInstallLcgVoBox>
- ❖ In both cases (WLCG and AliEn) a well defined set of experts is defined for each site in order to provide support
- ❖ The full configuration of the machine as VOBOX and AliEn installation can be performed in a short time

v During the production: A human caring of the VOBOX is needed

- ❖ The production is performed per site with one alicesgm account associated to one user
 - ❖ Ensure the good state of the proxy registered in the vobox and in the myproxy server at CERN is mandatory
- ❖ We also suffer from scheduled downtimes of sites
- ❖ In some cases the VOBOX was not accessible
 - ❖ Non-scheduled downtime, when this happens the site is not available
- ❖ The WLCG services are failing
 - ❖ RB defined in default not accessible
 - ❖ We can survive defining another RB to use but this is normally not detected immediatly
 - ❖ A new tool has been created to define a backup RB in the case the default one is showing bad performance
 - ❖ Catalog problems
 - ❖ FTS problems: Costin`s talk

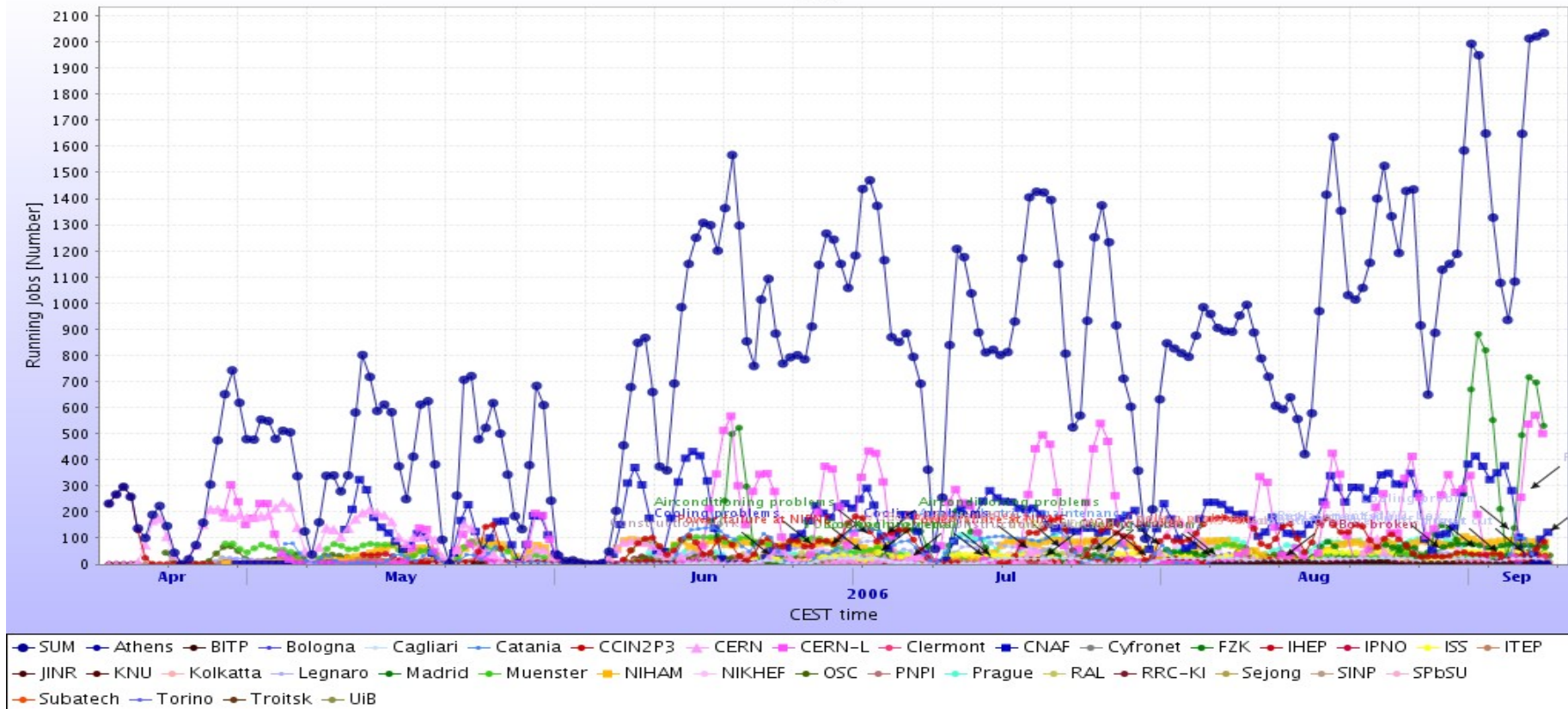
- *All the cited problems can be checked automatically*
 - ❖ Still the system is very dependent on the proxy the production is performed with
 - ❖ The responsible has to be warned
 - ❖ It is possible to see INSIDE the VOBOX the status of the proxies registered in that BOX (lcg_vobox_services can include it)
 - ❖ Regular checks can trigger messages to the responsible if the life time is dangerously low
 - ❖ Could it be possible to define a 2nd certificate to be used?
 - ❖ In terms of VOBOX access
 - ❖ This can be checked outside the VOBOX and the output used to black list a site
 - ❖ In terms of WLCG services
 - ❖ The output of the lcg_vobox_services can be used to trigger actions
 - ❖ The tool created to define backup RBs will improve the situation

- **During the setup:**
 - ❖ The registration of the node is a manual procedure and it is restricted to several persons
 - ❖ Connections denied
 - ❖ The YAIM configuration will help a lot to solve this problem
 - ❖ The site managers should understand that the VOBOX is a UI and therefore the external access has to be ensured
 - ❖ Problems to contact with myproxy server
 - ❖ Normally easy to find
 - ❖ Different configurations of the OS than expected by the VOBOX software (example mktemp)
 - ❖ Under control
 - ❖ The proxy cannot be renovated
 - ❖ This is a nightmare when it happens
 - ❖ Software area not visible
 - ❖ `lcg_vobox_services` checks it from the VOBOX but not from WN

- ❖ The registration of the nodes is restricted to some persons
 - ❖ Shall we try to increase the list of persons?
- ❖ The VOBOX at this moment needs manual and human actions during the setup
 - ❖ If the error message is: unable to register the proxy we have to begin to test all weak points
 - ❖ We can try to automatize it but in any case a last manual check will be needed
 - ❖ Example: in one site we covered all possible problems and just restarting the proxy-renewal service it worked
 - ❖ The service was running, all elements were running

- **From the AliEn point of view**
- ❖ Too basic configurations of the system (Example: dialog is missed)
 - ❖ We have to contact the site manager and ask him to complete the configuration of the node
- ❖ Not enough disk space per job in WN
 - ❖ Explained in the documentation
- ❖ Fair sharing with other experiments
- ❖ Too slow connections with the sites
 - ❖ Only the site can solve the problem
- ❖ Software area not available
 - ❖ During production we see it when the agents arrive to the site and they die
- ❖ Ports not opened
 - ❖ If this happens in WN, we will not see it until the agents arrive to the site

Running Jobs



- ❖ The PDC06 has included as part of the production the VOBOX at all ALICE sites
 - ❖ Running all specific ALICE services
 - ❖ Entry door to the Grid
 - ❖ Accessing directly the software area where AliEn is installed
- ❖ We are adding new sites regularly with the inclusion of new VOBOXES
 - ❖ T1 and T2 totally independent (apart of FTS) and are forced to provide the same services
- ❖ We have established a well defined infrastructure of installation testing and support
 - ❖ Per site and per service
- ❖ Still many of these steps requires manual actions