Monitor System Status

INFN-Naples

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The Monitoring Issue

Assumptions

Computing Infrastructure distribute among 4 sites in 4 different regions.

Several SLA requirements in term of availability and reliability.

Need to save efforts and manpower.

Single monitoring system able to manage all the sites in a single point.

Why monitoring resources

- Troubleshooting and fault discovering
- Alarms management
- Found bottle neck
- Dimensioning the different subsystems, respect to the real charge
- Analyze the historical series.
- The Monitoring is also part of the tele-control system.

The Monitoring Issue

The implementation of the central Monitoring System in Naples for the 4 computing infrastructures is one of the Goal defined by the INFN in the ReCaS project and already financed by the Italian Ministry of Research.

A collaboration is already started with the INFN-CNAF in several meeting (Cristina Vistoli) in order to define the main characteristic.

What we can monitor

- Infrastructure parameters (UPS, cooling system, sensors and alarms)
- Status of the hardware (CPU, Storage, Network)
- Resource usage (Computing ad Storage)
- Network links between the sites and between the node of the different clusters
- Monitor the Grid Service form the VO point of view
- More…

Requirement and Issue for a Distributed Monitoring System

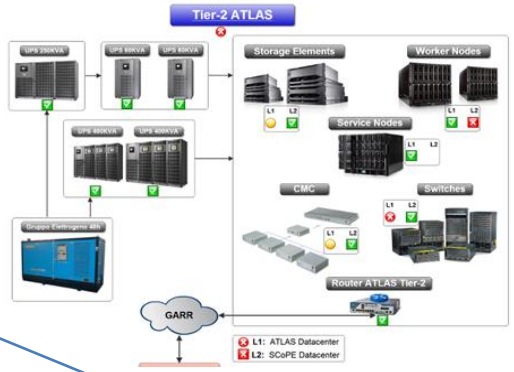
- Scalability
- Modularity
- Fastly responsive to the real-time changes
- Maintainability
- Interoperability
- Easy to Deploy
- Feature to Store and retrieve historical data
- Provide feature to represent data in different form (maps, histograms, time-series, etc..)

GLOBAL VIEW

Site View

Site View

Site View

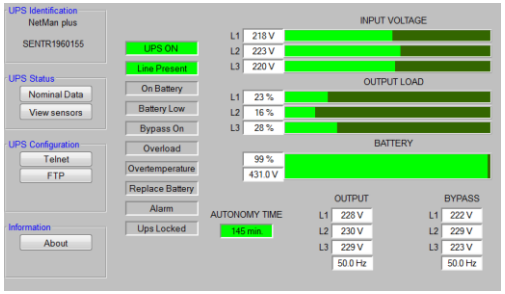


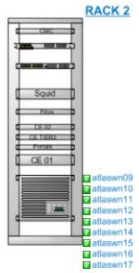
UPS

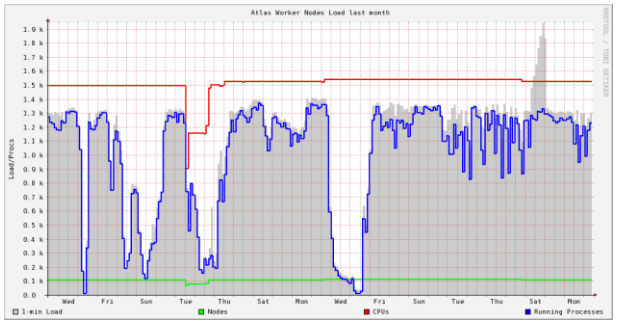
RACK

SERVER

SubSysN







The user profiling

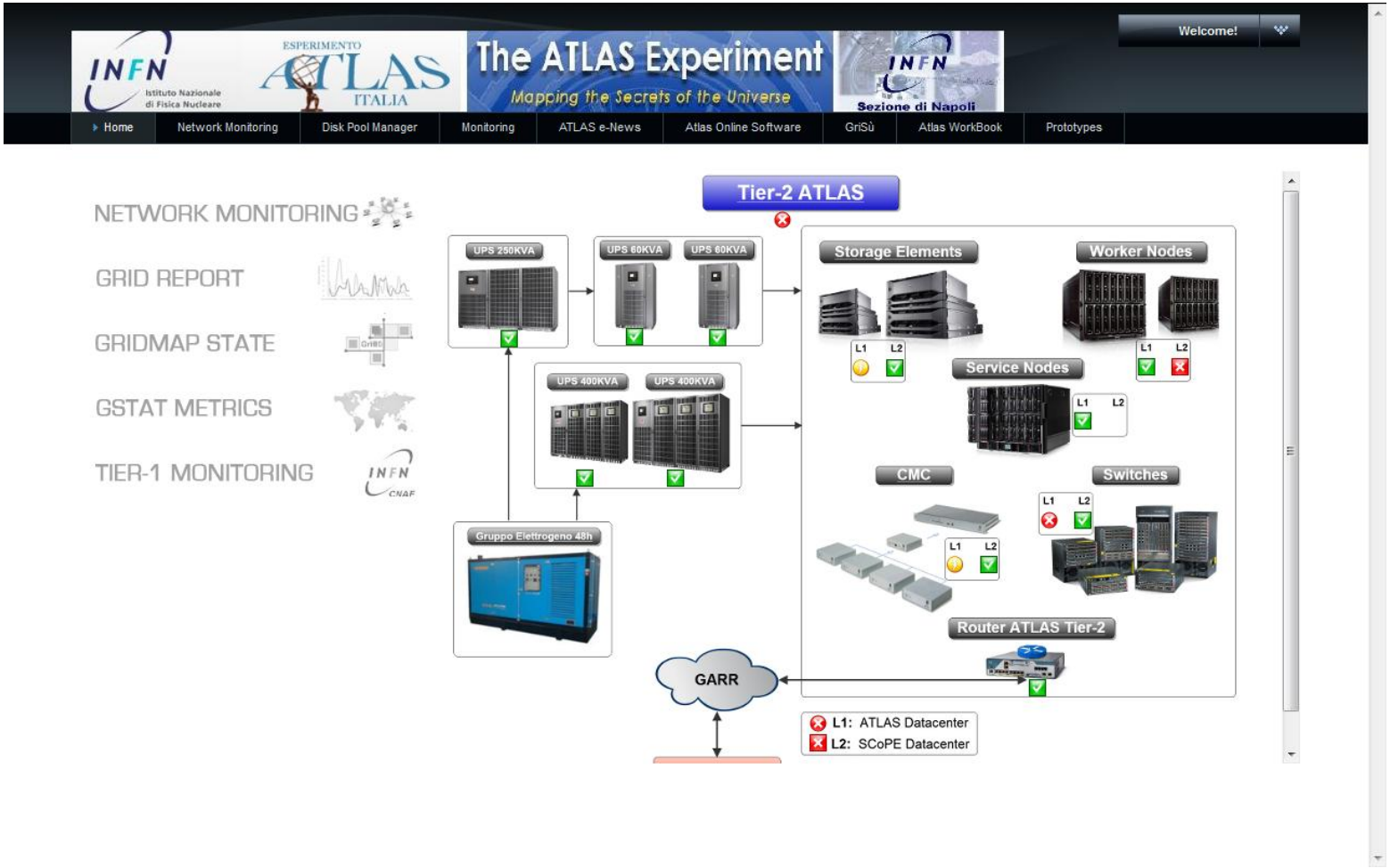
Single sign-on though the different monitor subsystem and the User Profiling are two of the main feature that we need to implement.

Combining these two feature we can log-on each users exactly on the subsystem that is allowed to use with the right role.

We can define a set of general role:
- Administrator (that can manage the monitor site)
- Site-Admin (that is logged as administrator in each subsystem of our site)
- SuperUser (with can access to more view)
- Guest (Simple authenticate user)

The Monitoring system must be added to the SuperB User database.

The Monitoring system of AtlasTier2



What we plan to monitor

Cluster Report for Tue, 13 Dec 2011 09:53:51 +0100 Get Fresh Data

Metric jobs_report Last month Sorted by hostname Physical View

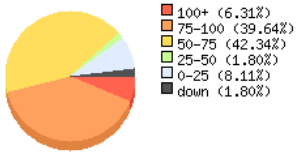
Atlas Tier 2 Napoli Grid > Atlas Worker Nodes > --Choose a Node

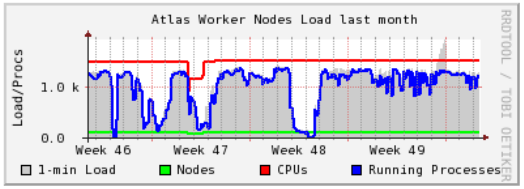
Overview of Atlas Worker Nodes

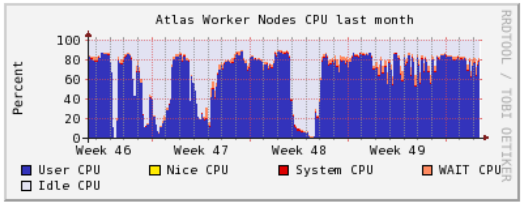
CPUs Total: **1542**
Hosts up: **109**
Hosts down: **2**

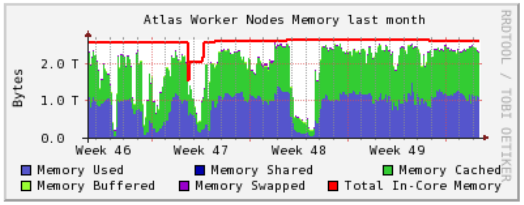
Avg Load (15, 5, 1m):
79%, 75%, 71%
Localtime:
2011-12-13 09:53

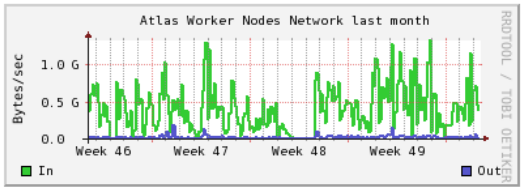
Cluster Load Percentages

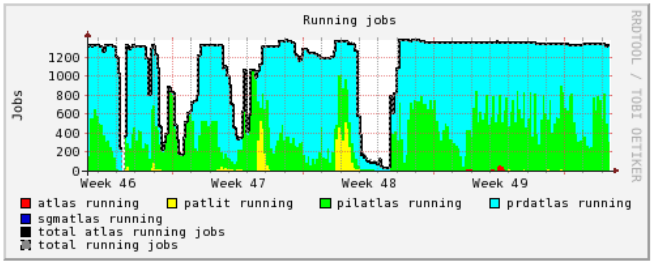








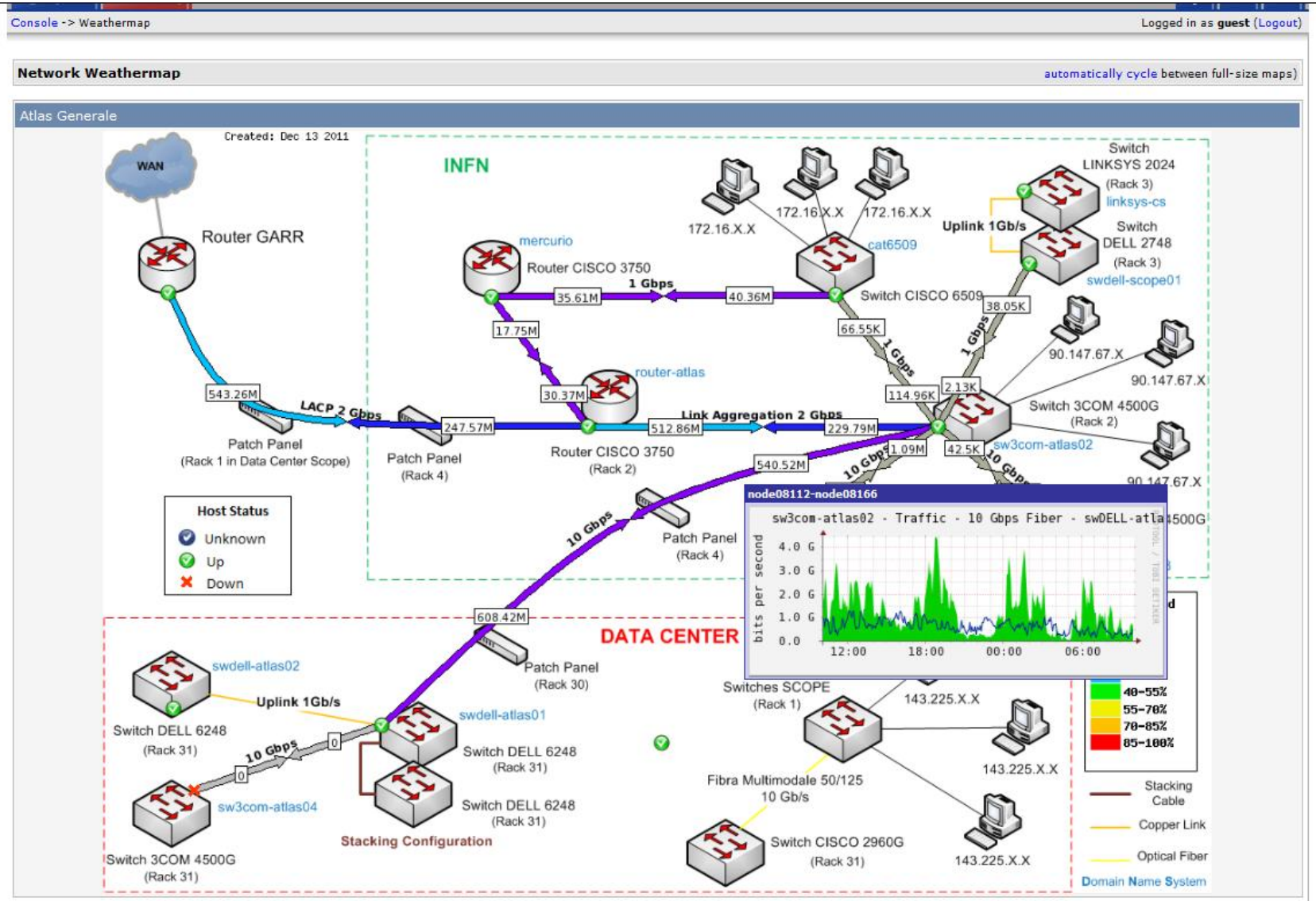


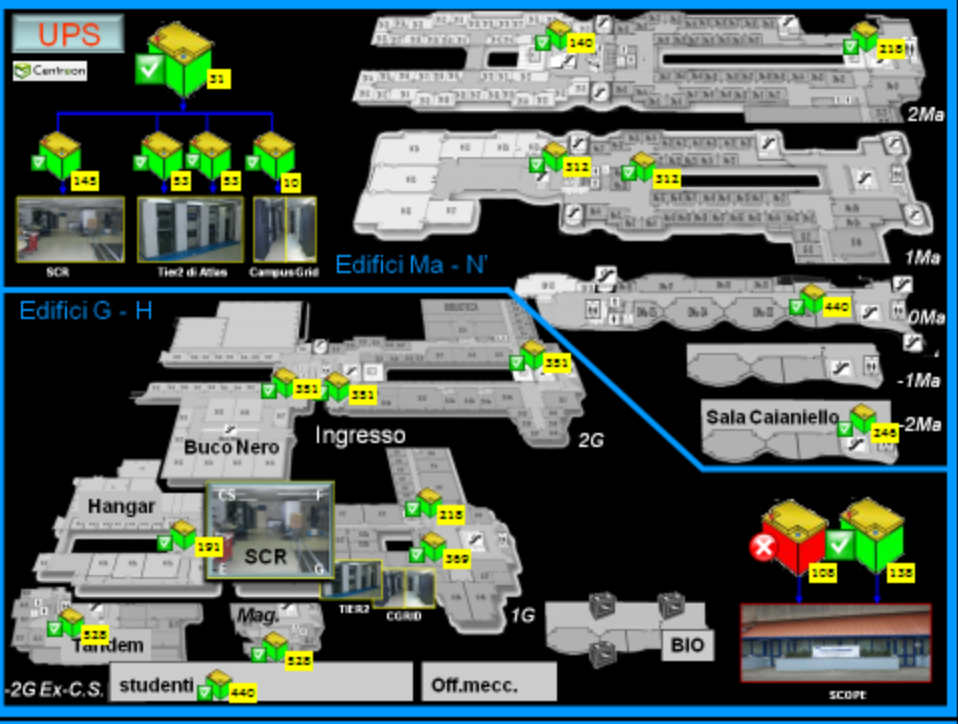


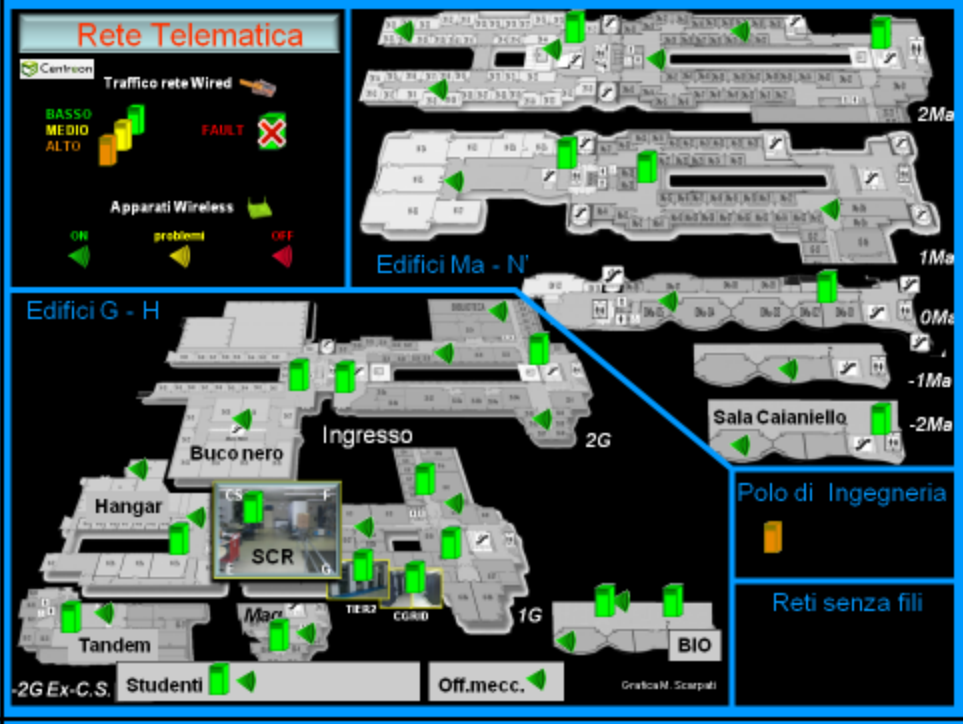
Node types

atlaswn01 - atlaswn08: E4 Twin (Asus RS700D-E6-PS)
atlaswn09 - atlaswn17: Supermicro Biproc (H8DA8/H8DAR)
atlaswn18 - atlaswn27: DELL Blade (Poweredge 1955)
atlaswn28 - atlaswn43: DELL Blade (Poweredge M600)
atlaswn44 - atlaswn51: E4 Twin (Supermicro X7DCT)
atlaswn52 - atlaswn59: E4 Twin (Asus RS700D-E6-PS)
atlaswn60 - atlaswn67: DELL Quad Server (Poweredge C6100)
atlaswn68 - atlaswn87: E4 Twin (Asus RS700D-E6-RS8)
atlaswn88 - atlaswn89: E4 Twin (Asus RS700D-E6-PS)
atlaswn90 - atlaswn113: E4 Twin (Asus RS700D-E6-PS)

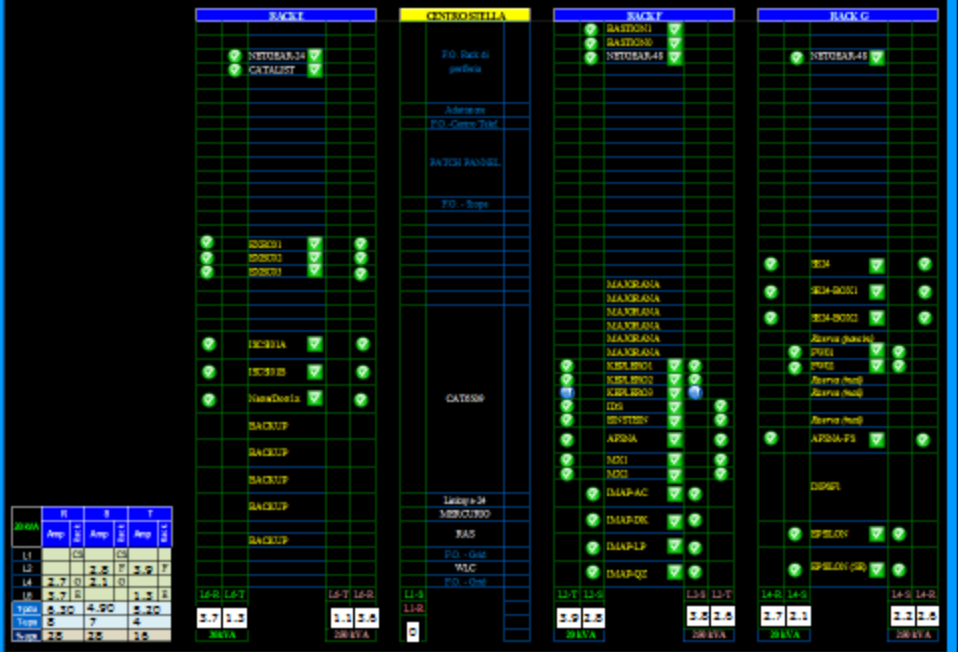
What we plan to monitor







Hardware



Software

AUTENT.
- auth01
- auth02
- ina-srv1

DNS
- dsna1
- dsna6

VPN
- bastion0
- bastion1

WEB
- einstein
- leonardo
- proxy
- cassini
- webdip

MAIL
- imap-ac
- imap-dk
- imap-lp
- imap-qz
- mx1
- mx2
- listserv
- imap-fisica
- mx1-fisica

VARIE
- mercurio
- cat6509
- wlc
- ras
- epsilon
- ids2
- lxboot
- nagios

STORAGE
- iscsi01a
- iscsi01b

EXEC
- exec01
- exec02
- exec03

AFS
- afsna
- afsna-fs

CLOUD INFN-NAPOLI

auth01
auth02
dsna1
dsna6
nagios
natter0
natter1
natterfis
tino
listserv
webdip
dipsf
imap-fisica
mx1-fisica
presenze
leonardo
cassini
lxprint
winamma
ina-srv1
lxboot

PUB.LOGIN
- matrix
- keplero
- dipsf

NATTER
- natter0
  - fw01
  - fw02
- natter1
- natterfis
- tino

Interesting technologies

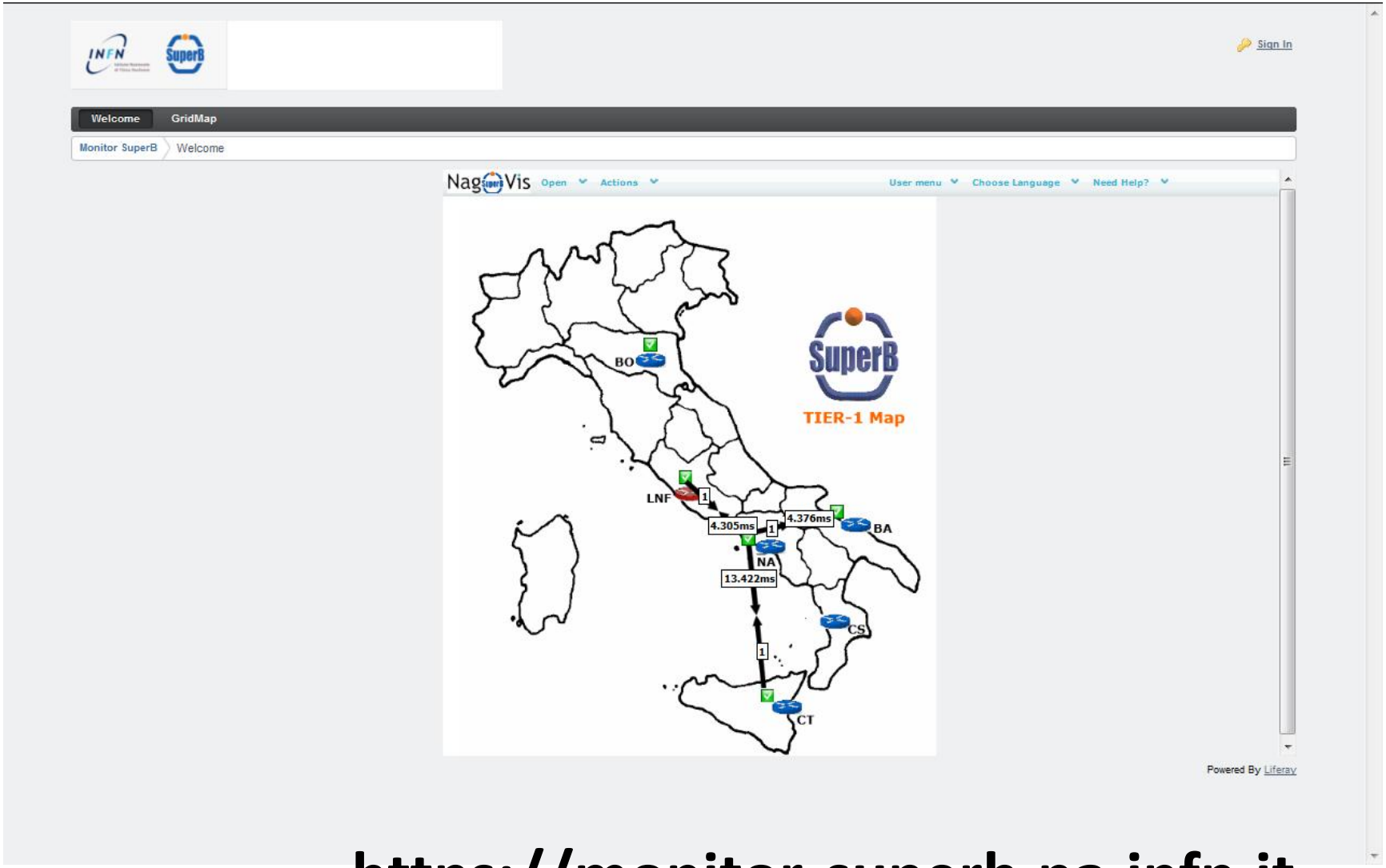
Liferay - collect different monitors tools in a single point. Manage the single sign-on between the portlets. Allow to create user profile. Simplify the interoperability

FAN – Full Automated Nagios That offer in a single distribution NAGIOS, CENTREON, NAGVIS and DB for data persistence.

Shibboleth to integrate the authentication system in the IDEM Federation

A question coming from the previous meeting:
Would be possible integrate some functionality of the !CHAOS framework for our propose?

The current status



https://monitor-superb.na.infn.it

Work in progress

Some General purpose tests as now in progess with the help of some student of University Federico II.

Testing the CATANIA solution (provide by Marco Fargetta) for the intregration of liferay in the IDEM infrastructure.

Testing the possibility to manage the authorization with an external and centralized entity for example VOMS or other attribute authorities.

Integrate more monitoring function in order to understand which are the less invasive monitoring systems, individuate the limits and offer new feedback for the complete Monitoring System Design.

https://monitor-superb.na.infn.it

To Do in next Months

Open a discussion about the complete model and the features (modularity, authentication etc.)

Individuate the tools and services that we will implement and maintain in each sites and individuate the most efficiency and cost effective way to deploy this system.

Implement new monitoring features in the portal in order to test some useful tools for the Production.

Integrate the CNAF-Experience relate to VO-Nagios in the SuperB Monitoring Portal.