Distributed computing monitoring activities for SuperB

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The rationale and summary

- The distributed computing system that will support the SuperB project will need a valid software tool for the management and monitoring

- A geographically distributed monitoring system

- Centralize all necessary applications in a Web Portal

- Use individual applications as components

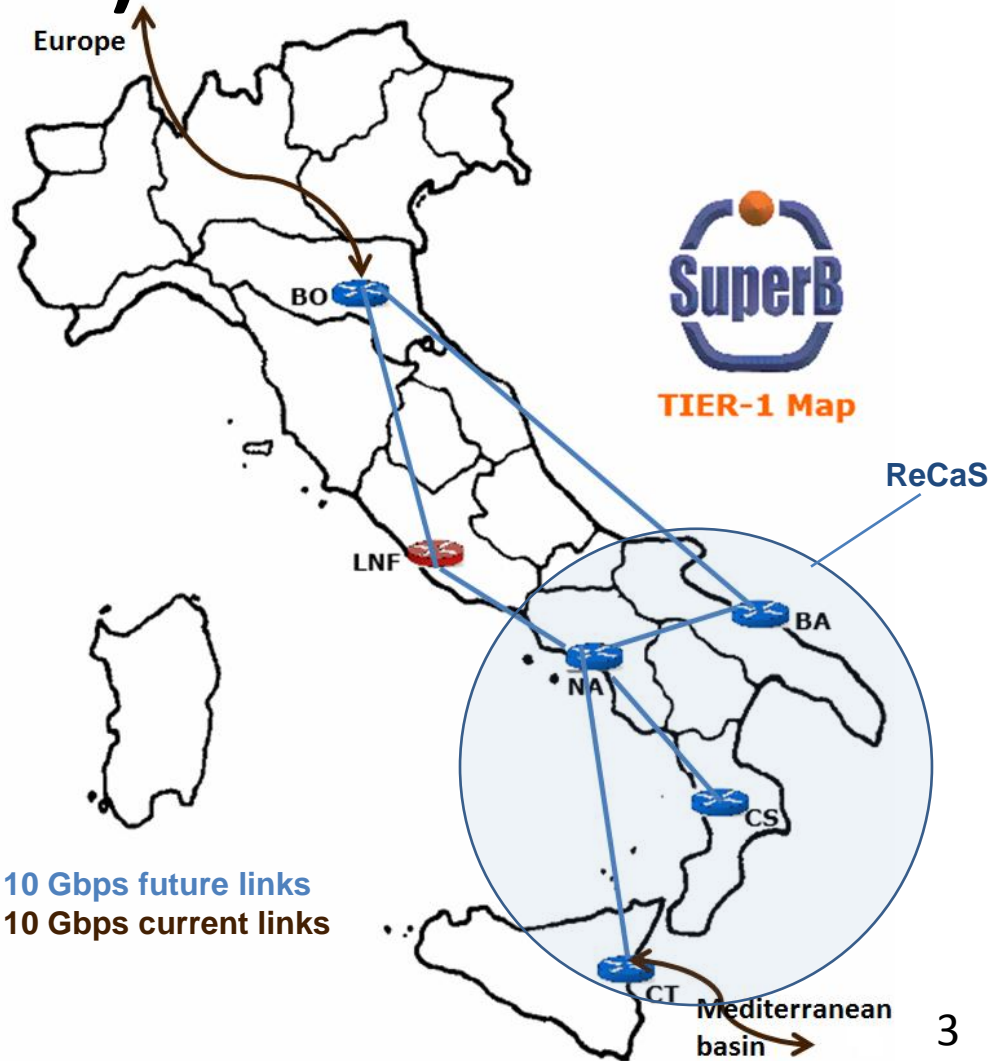- Management Monitoring and Control, from the fabric layer to application layer
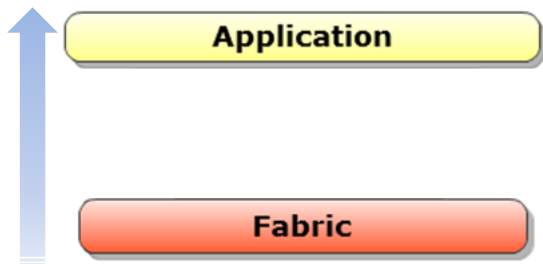
Computing sites for SuperB in Italy (ReCaS)

Centralized monitoring: Using Liferay as a portlet container, we could integrate several etherogeneous tools, **allowing an integrated vision of all sites**

- Power
- Cooling
- Environmental monitoring
- Machine services
- Remote management of hw
- Network
- GRID resources

Application

Fabric

Europe

BO

LNF

ReCaS

BA

NA

CS

CT

Mediterranean basin

TIER-1 Map

- **10 Gbps future links**
- **10 Gbps current links**

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The basic idea for the distributed monitoring with the ReCaS project

- A Layer2-like network will ensure the visibility of remote nodes between sites

- Each site will have a physical machine with a number of VMs to dedicate to monitoring nodes
- Each monitoring node "talk" with both very local nodes (eg wn) than with the entire monitoring geographic network
- Each local site monitors all its resources
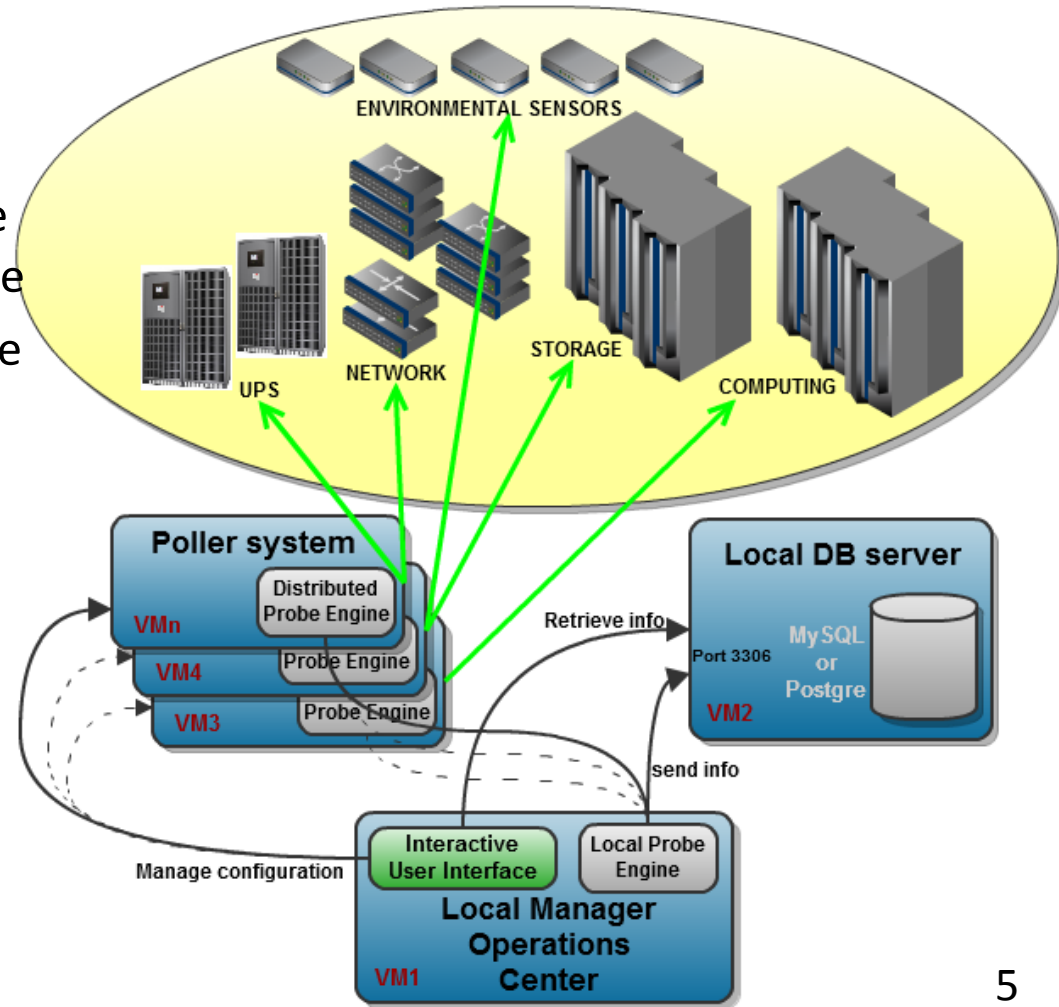- Naples is the centralized site that collect and manage all monitoring informations
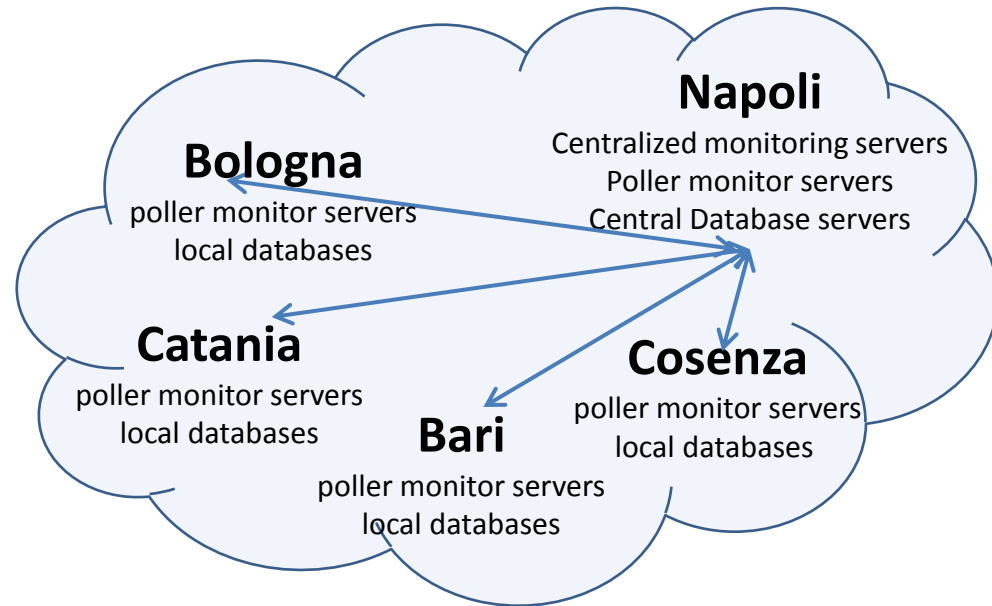
  The system will be designed also to interface with other european and rest of world sites (monitoring the available resources)

Napoli
Centralized monitoring servers
Poller monitor servers
Central Database servers

Bologna
poller monitor servers
local databases

Catania
poller monitor servers
local databases

Cosenza
poller monitor servers
local databases

Bari
poller monitor servers
local databases

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Monitoring on a IaaS Cloud model infrastructure (each site)

Latest investigation is focalized on some key points:

- A distributed file system provides the management of a cloud infrastructure

- Nagios based (clustered) architecture

- Highly extensible

- Powerful interactive Web UI

- Highly modular

- Ready to SSO for user groups

All data acquired from each site and all configurations are managed either locally or in a distributed manner
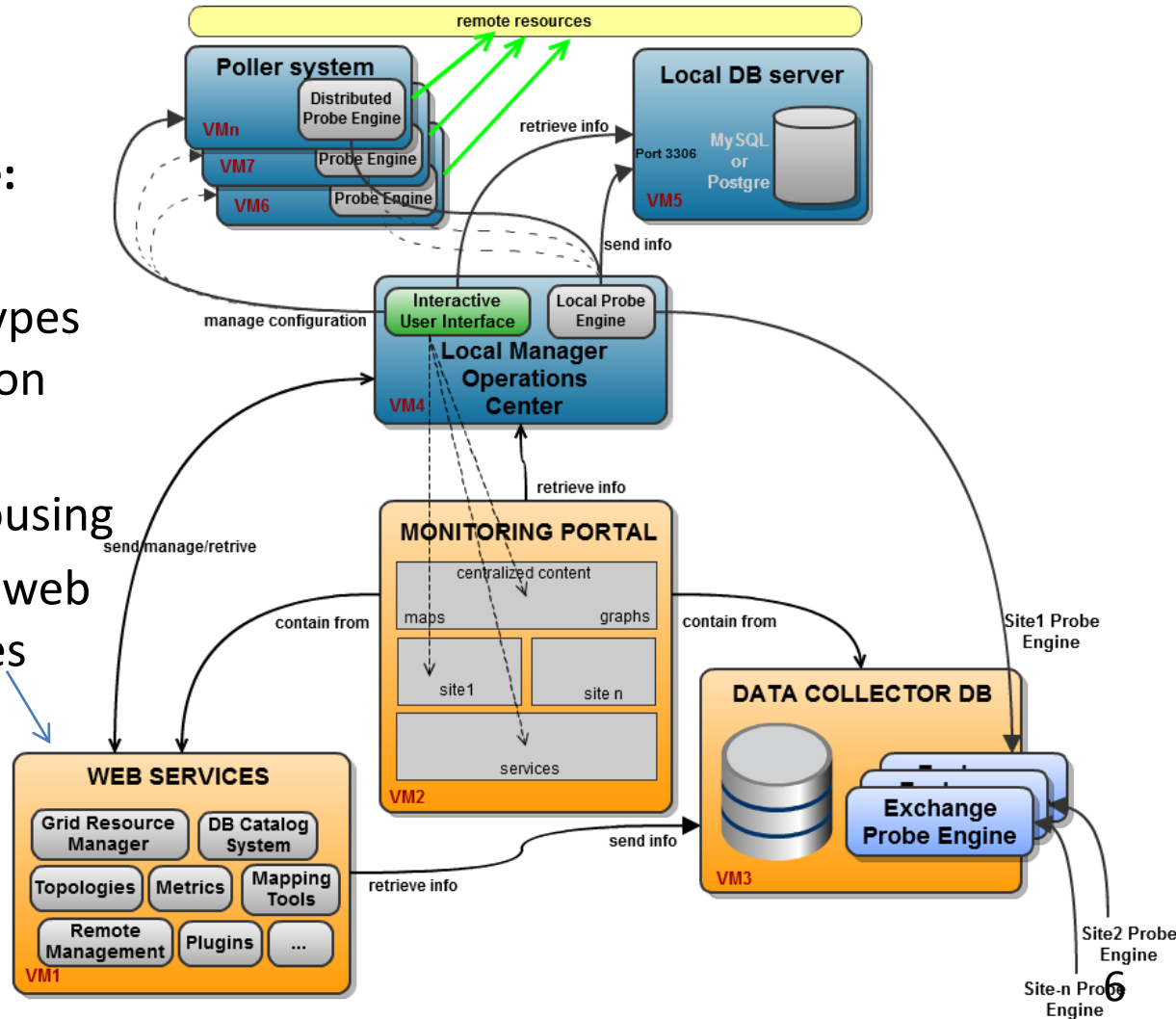

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Investigation for manager site:

- A centralized portal for all types of services and authentication

- Data collector DB: data replication and data warehousing

- A machine will contains the web application to use all services

Integration of all heterogeneous systems and data presentation

Hardware monitoring in Naples

1 Server (Dell R815)
   4x CPU 12core – total **48 core**
   16x 4GB RAM – total **64GB RAM**
   6x 500GB HDD – total **3TB storage**
   2x 10Gbs SFP Twinax
   4x 1Gbs STP

1 Monitoring Station (Control Room dedicated)
   6x LCD Monitor 22" @16:10 on double stands
   1x workstation machine
   1x large desk station

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