VRE for regional Interdisciplinary communities in Southeast Europe and the Eastern Mediterranean

Monitoring of Heterogeneous Computing Infrastructure in VI-SEEM Project

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Introduction

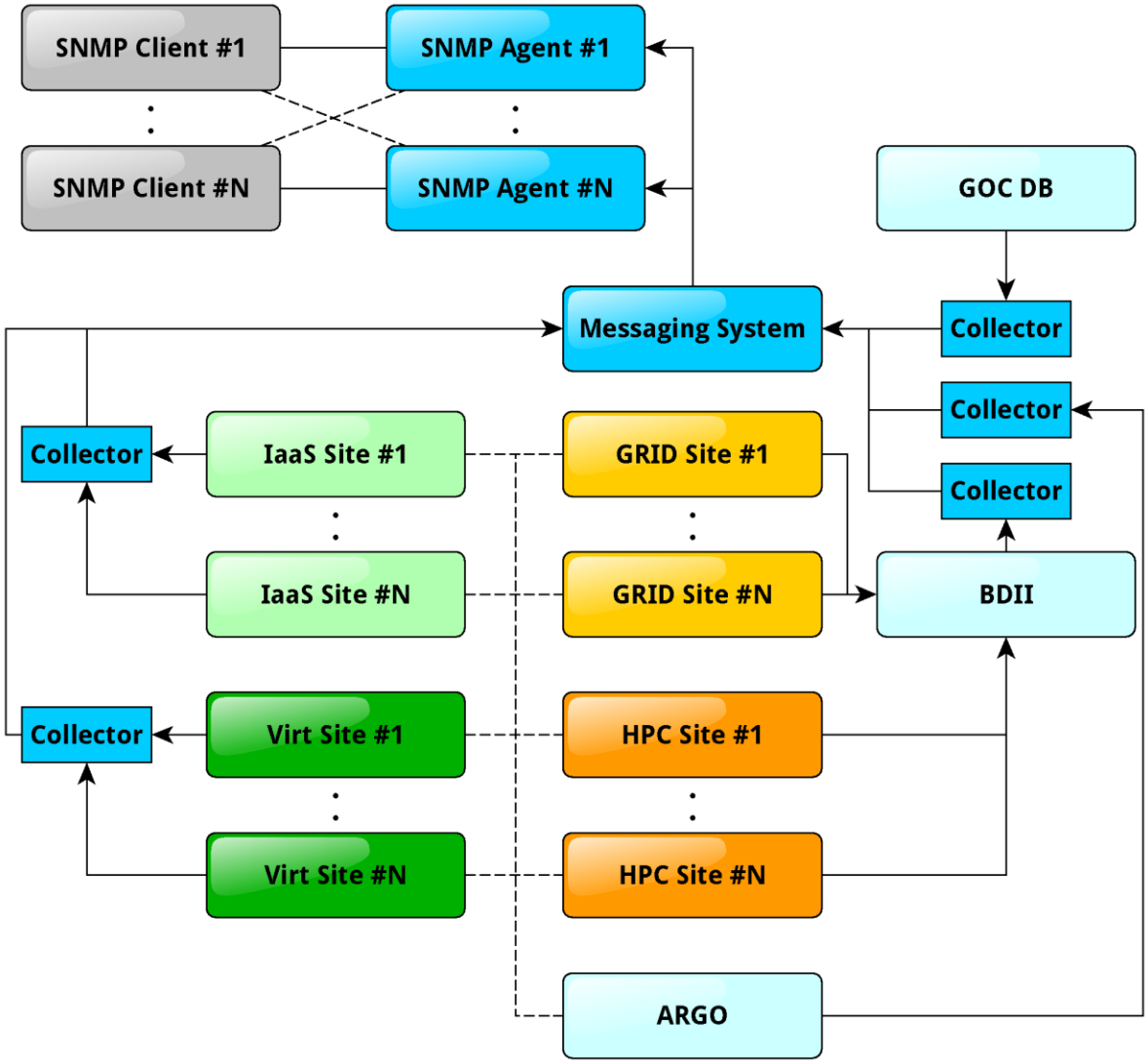
- The project infrastructure covers multiple countries and administrative domains
  - as well as several computing paradigms
  - from classic datacenter virtualization solutions to grid and high performance computing installations
- Use widely used standard like SNMP
- Support various existing data sources
- Be usable in both self-standing and distributed use cases
- We developed a new SNMP MIB and implemented the monitoring system

Data Sources

- Topology data – GOC DB
  - X.509 certificate based access
  - GOC DB PI – API for accessing the data
- Grid and High Performance Computing Sites
  - Top and Site BDIIs – LDAP Servers
- IaaS Sites
  - Support for OpenStack API
- Datacenter Virtualization Sites
  - Currently support for Proxmox VE
- Operational monitoring data
  - ARGO service monitoring system
  - Nagios – via JSON API

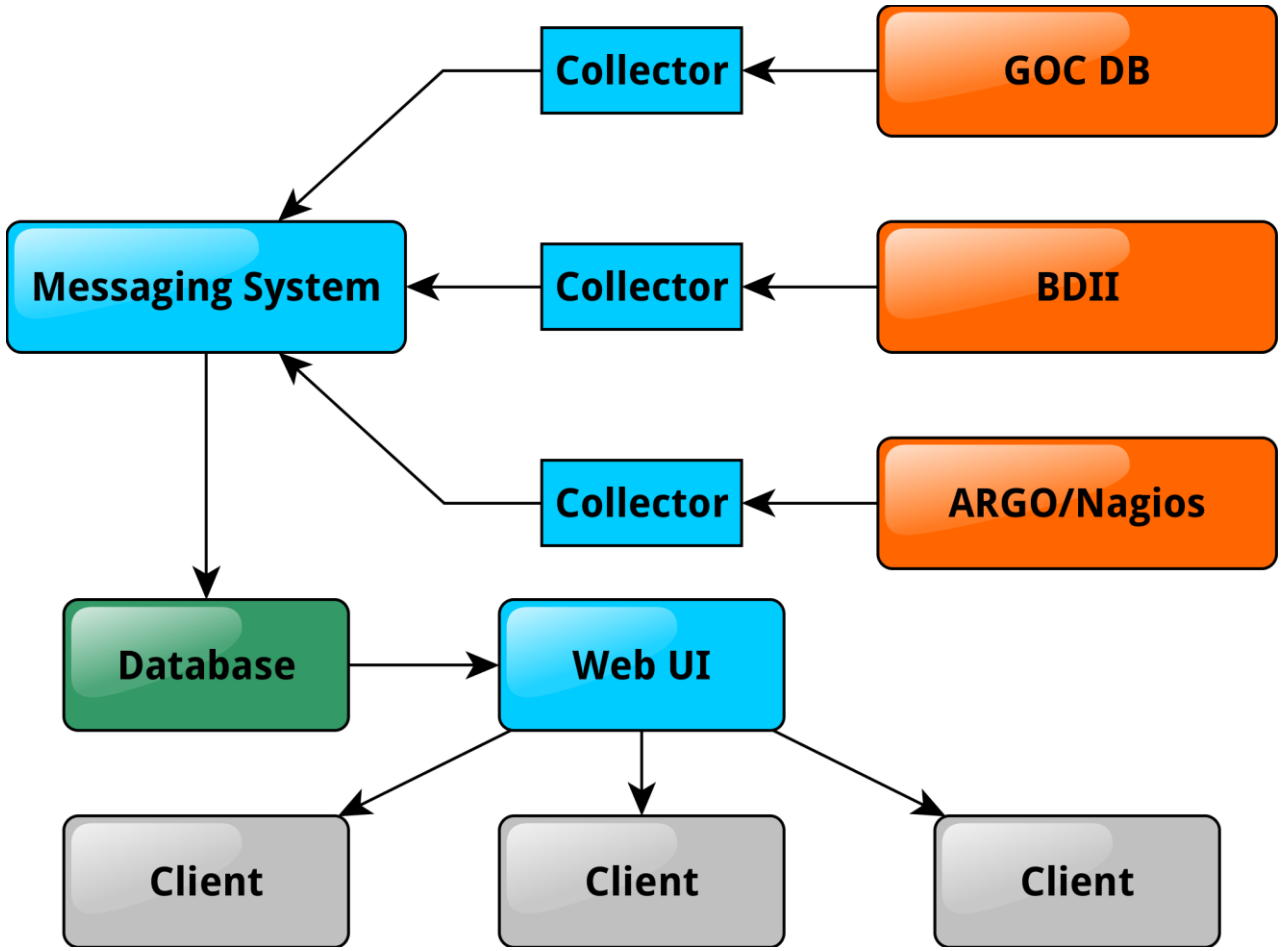
Collecting the Data

- Based around messaging system
- Various collectors gather and transform the data
- Data transferred in standardized messages
  - Bulk or individual messages
- Arbitrary number of SNMP agents can listen for incoming messages
  - Filtering messages
  - Scalable and reliable solution



Monitoring Web-UI Data

- Web-UI accesses the data from ARGO API
- Created database with historical data aggregation
  - Filled from collectors via messaging system
  - Provides access through ARGO-like API
- Web-UI presents the processed data to end users



Application services - Availability & Reliability (Current month)

99.99%
Availability

99.99%
Reliability

Search for a service

Service		
eu.vi-seem.app.clowder	100.00	100.00
eu.vi-seem.app.las	100.00	100.00
eu.vi-seem.app.chembio	100.00	100.00
eu.vi-seem.app.subtract	100.00	100.00
eu.vi-seem.app.afmm	99.98	99.98
eu.vi-seem.app.vreportal	99.98	99.98
eu.vi-seem.app.dicom	99.98	99.98
eu.vi-seem.app.sae	99.97	99.97

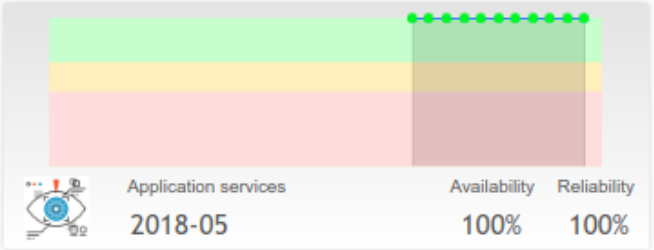
« 1 »

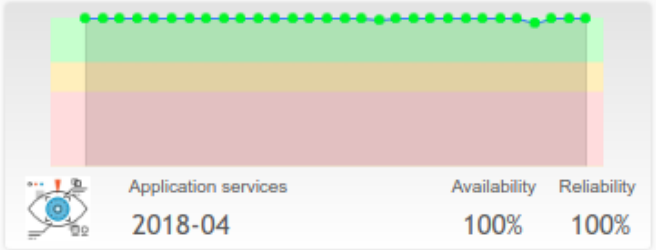
Application services - Services Statuses

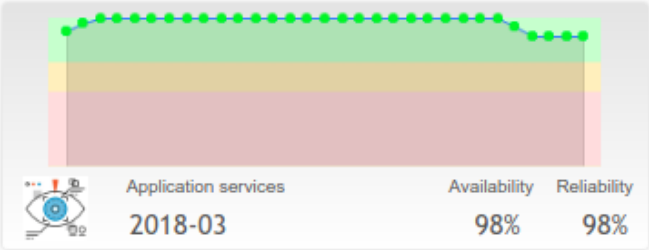
Search for a service

Service	Time
eu.vi-seem.app.afmm	22:42
eu.vi-seem.app.vreportal	22:42
eu.vi-seem.app.chembio	22:41
eu.vi-seem.app.las	22:41
eu.vi-seem.app.subtract	22:41
eu.vi-seem.app.clowder	22:40
eu.vi-seem.app.dicom	22:40
eu.vi-seem.app.sae	22:40

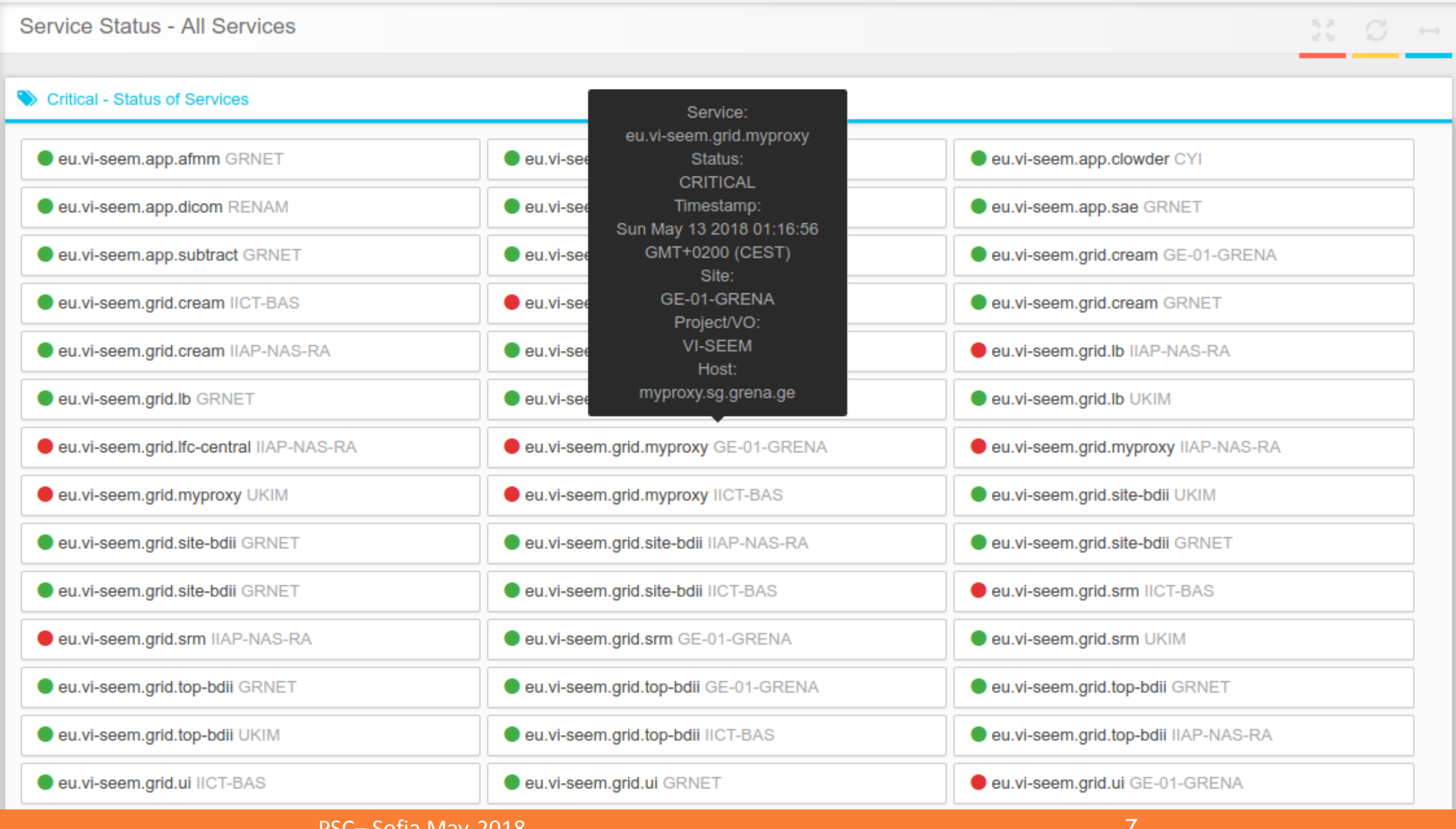
« 1 »



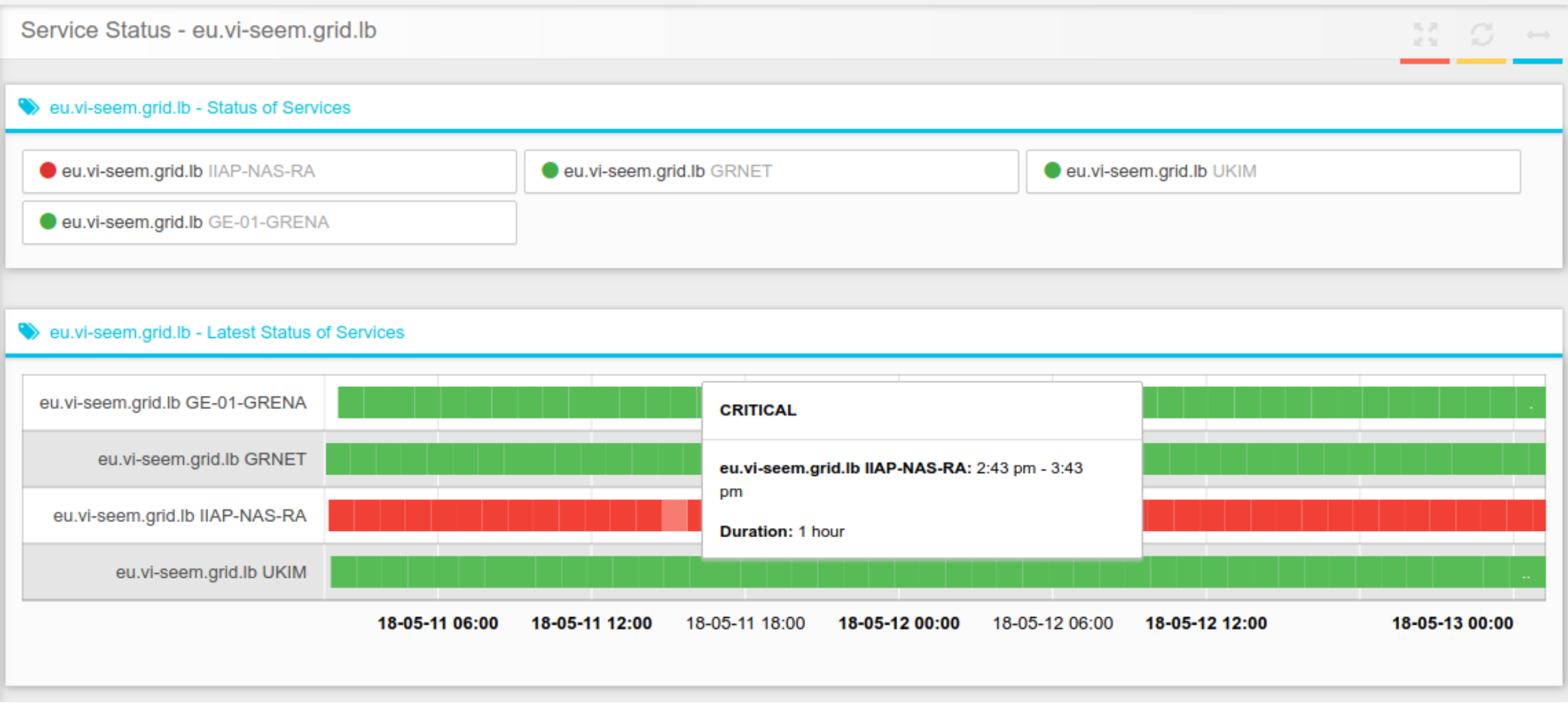




Monitoring Web-UI



Monitoring Web-UI



Overall Availability and Reliability Results

Search for a service

Service	2018-05		2018-04		2018-03	
	Availability	Reliability	Availability	Reliability	Availability	Reliability
eu.vi-seem.app.afmm	100%	100%	100%	100%	100%	100%
eu.vi-seem.app.chembio	100%	100%	100%	100%	100%	100%
eu.vi-seem.app.clowder	100%	100%	100%	100%	86%	86%
eu.vi-seem.app.dicom	100%	100%	100%	100%	97%	97%
eu.vi-seem.app.las	100%	100%	100%	100%	100%	100%
eu.vi-seem.app.sae	100%	100%	100%	100%	100%	100%
eu.vi-seem.app.subtract	100%	100%	100%	100%	100%	100%
eu.vi-seem.app.vreportal	100%	100%	100%	100%	100%	100%
eu.vi-seem.grid.cream	80%	80%	80%	80%	79%	79%
eu.vi-seem.grid.lb	75%	75%	75%	75%	54%	54%
eu.vi-seem.grid.lfc-central	0%	0%	0%	0%	0%	0%
eu.vi-seem.grid.myproxy	0%	0%	0%	0%	0%	0%
eu.vi-seem.grid.site-bdii	100%	100%	100%	100%	93%	93%
eu.vi-seem.grid.srm	50%	50%	49%	49%	50%	50%
eu.vi-seem.grid.top-bdii	99%	99%	99%	99%	99%	99%

Latest | Search Over Time

< May 2018 >

eu.vi-seem.hpc.ui Service - Latest Results Current Month

eu.vi-seem.hpc.ui	Availability: 87.49%	Reliability: 87.49%	Downtime: 12.51%	Unknown: 0%

eu.vi-seem.hpc.ui Service Components - Latest Results Current Month

BA-HPC	Availability: 99.98%	Reliability: 99.98%	Downtime: 0.02%	Unknown: 0%
CYI	Availability: 100%	Reliability: 100%	Downtime: 0%	Unknown: 0%
GRNET	Availability: 0%	Reliability:		nknown: 0%
IIAP-NAS-RA	Availability: 100%	Reliability:		nknown: 0%
IICT-BAS	Availability: 100%	Reliability:		nknown: 0%
NIIF	Availability: 99.98%	Reliability: 99.98%	Downtime: 0.02%	Unknown: 0%
UKIM	Availability: 99.98%	Reliability: 99.98%	Downtime: 0.02%	Unknown: 0%
UVT	Availability: 99.98%	Reliability: 99.98%	Downtime: 0.02%	Unknown: 0%

Reliability

Service Reliability is the ratio of the time interval a service was UP over the time interval it was supposed (scheduled) to be UP in the given period.

Latest | Search Over Time

< May 2018 >

UKIM Service Components - Latest Results Current Month

UKIM	Availability: 99.98%	Reliability: 99.98%	Downtime: 0.02%	Unknown: 0%

UKIM Daily Availability and Reliability Current Month

Date	Availability	Reliability	DownTime	Unknown
2018-05-11	100%	100%	0%	0%
2018-05-10	100%	100%	0%	0%
2018-05-09	100%	100%	0%	0%
2018-05-08	99.81%	99.81%	0.19%	0%
2018-05-07	100%	100%	0%	0%
2018-05-06	100%	100%	0%	0%
2018-05-05	100%	100%	0%	0%
2018-05-04	100%	100%	0%	0%
2018-05-03	100%	100%	0%	0%
2018-05-02	100%	100%	0%	0%
2018-05-01	100%	100%	0%	0%

Monitoring Web-UI

Availability and Reliability - eu.vi-seem.app.vreportal

Latest | Search Over Time

Dates to check

2017-12-01 - 2018-05-11

Granularity

Daily | Monthly

Date	Availability	Reliability	DownTime	Unknown
2018-05	99.98%	99.98%	0.02%	0%
2018-04	99.8%	99.8%	0.2%	0%
2018-03	100%	100%	0%	0%
2018-02	99.98%	99.98%	0.02%	0%
2018-01	100%	100%	0%	0%
2017-12	99.37%	99.37%	0.11%	0.04%