



Training seminar for teachers 08th -9th October 2018: MECA mClouds course scheduling

New modules in 2018

- MECA region dashboard
- MECA region instance scheduler
- MECA global template repository (MGTR) enhancements

MECA

MicroElectronics Cloud Alliance
www.meca-project.eu/



First: Full list of partners in the mClouds system

apachecloudstack

0 Notifications | MECA Admin

Project: Default view

Home > Regions >

Viewing Regions

Name	ID	Endpoint	Quickview
MECA-PolITO	1		+
MECA-eWorks	2		+
MECA-BME	3		+
MECA-UKIM	5		+
MECA-TUS	6		+
MECA-UPB-CETTI	7		+
MECA-UNED	8		+
MECA-INSA	9		+
MECA-TUB	10		+
Region1-Local-Test	999		+



MECA region dashboard

- visual real-time overview of resources currently in use and available in all regions
- similar to CloudStack's Dashboard view but as a summarization from all regions
- updated frequently every 5 minutes
 - uses CloudStack's API (HTTPS/TLS encrypted)
 - plus single resource view of each region

Project: Default view

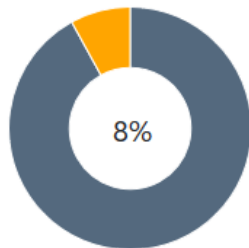


[Home](#) > [MECA region dashboard](#) >

MECA region dashboard

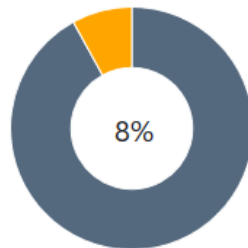
MECA cloud statistics over all regions:

Memory



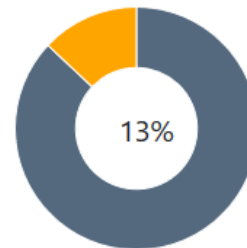
13.5 GB / 158.99 GB

CPU



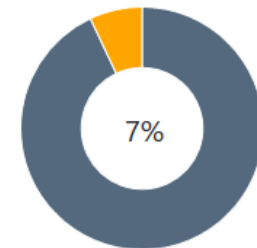
11.50 GHz / 141.45 GHz

Allocated Storage



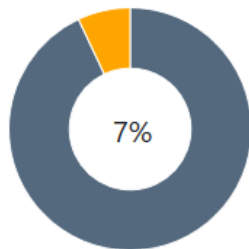
329.97 GB / 2.54 TB

Primary Storage



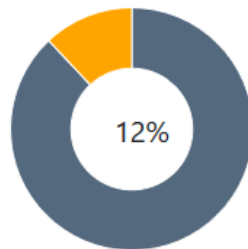
436.41 GB / 6.44 TB

Management IP Adresses



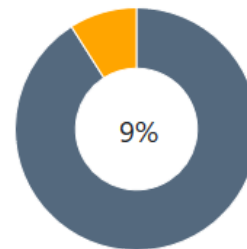
12 / 163

Secondary Storage



316.29 GB / 2.49 TB

Shared Network IPs



40 / 468

Last updated: 2018-10-06 20:30

Dashboard

Instances

Affinity Groups

Storage

Network

Templates

Events

Projects

Accounts

Domains

Regions

Infrastructure

Global Settings

Service Offerings

MECA region dashboard

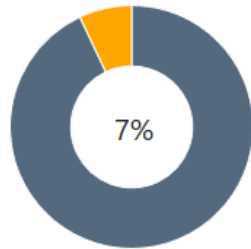
MECA instance scheduler

Project: Default view



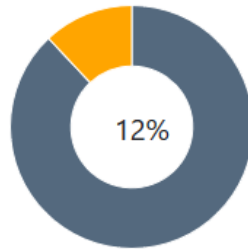
Home > MECA region dashboard >

Management IP Addresses



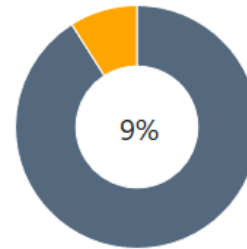
12 / 163

Secondary Storage



316.29 GB / 2.49 TB

Shared Network IPs



40 / 468

Last updated: 2018-10-06 20:30

[MECA-eWorks](#)

[MECA-TUS](#)

[MECA-UKIM/FEEIT](#)

[MECA-UNED](#)

[MECA-INSA](#)

[MECA-BME](#)

single resource view
of each region

Dashboard

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MECA region dashboard

MECA instance scheduler

Project: Default view



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[MECA-eWorks](#)

[MECA-TUS](#)

Dashboard

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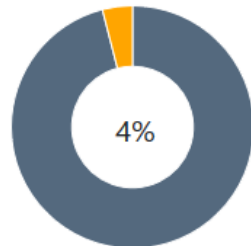
Global Settings

Service Offerings

MECA region dashboard

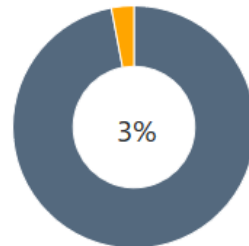
MECA instance scheduler

Memory



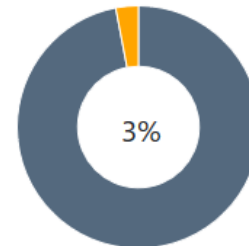
2.25 GB / 61.65 GB

CPU



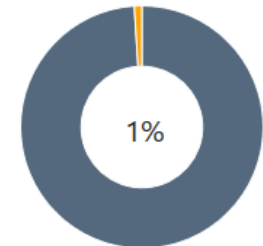
2.00 GHz / 67.01 GHz

Allocated Storage



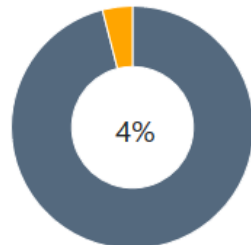
27.07 GB / 916.77 GB

Primary Storage



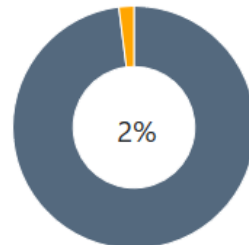
15.3 GB / 1.79 TB

Management IP Addresses



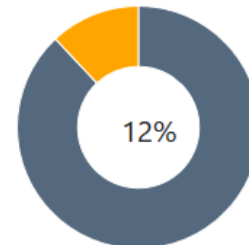
2 / 50

Secondary Storage



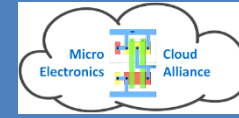
20.95 GB / 916.77 GB

Shared Network IPs



6 / 50

single resource view of each region



MECA region instance scheduler concept

- Implementation of auto-provisioning logic to scale the web eLearning environment depending on the load, especially for usage peaks and for the mobility of eLearning resources.
 - It should be able to host the virtual PCs with learning and laboratory software in any MECA CloudStack region.
 - Preferably in those regions who have the least load at the time and which are regionally closest to the region of the instructor / university.



MECA region instance scheduler concept

- One requirement discussed among the partners in the virtual meetings is the priority of using the own hardware / region.
 - This means that if a teacher in a region wants to held a planned classroom session the virtual machines should preferably be run in his own region.
 - If there are no blocked resources in other regions they can be used to share resources between the partners. We can call it the "fairness condition".
- So we need a visual schedule where each teacher can reserve his own region (time slots)

Project: Default view



[Home](#) > [MECA instance scheduler](#) >

MECA region instance scheduler

Please see and plan your classroom sessions in the following schedule to reserve instances



today

Oct 7 – 13, 2018

month

week

day

	Sun 10/7	Mon 10/8	Tue 10/9	Wed 10/10	Thu 10/11	Fri 10/12	Sat 10/13
09:00							
10:00							
11:00					11:00 am - 12:00 pm FEEIT classroom session		
12:00		12:00 pm - 02:00 pm TUS classroom session				12:00 pm - 02:00 pm TUS classroom session	
13:00							
14:00				02:00 pm - 04:00 pm FEEIT classroom session			
15:00		03:00 pm - 05:00 pm FEITT classroom session					
16:00							
17:00							
18:00							

legend:

- MECA TUS
- MECA UKIM/FEEIT
- MECA eWorks
- MECA UNED
- MECA INSA
- MECA BME

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MECA region dashboard

MECA instance scheduler



MECA region instance scheduler

- allows planning of time-slots of online-lessons
- preferred region can be selected
- number of instances can be chosen
- with one mouse-click: Starting and stopping of several reserved instances

Project: Default view

Home > MECA instance scheduler >

MECA region instance scheduler

Please see

schedule session

Start: 2018-10-08

10:00



End: 2018-10-08

11:30



Title:

Test session

Owner:

Martin

Region:

MECA INSA

Template:

CentOS-7-x86-64-Minimal-1708.iso

Number of Instances:

4

Comments:

reserve slot

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- 09:00
- 10:00
- 11:00
- 12:00
- 13:00
- 14:00
- 15:00
- 16:00
- 17:00
- 18:00

Project: Default view



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Filter by All

Metrics

Add Instance

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<input type="checkbox"/>	Name	Internal name	Display Name	IP Address	Zone Name	State	Quickview
<input type="checkbox"/>	VM-78035fce-8976-4d15...	i-4-233-VM	VM-78035fce-8976-4d15...		MecaZoneEworks2	Stopped	
<input type="checkbox"/>	VM-425b9814-26ed-462...	i-4-232-VM	VM-425b9814-26ed-462...		MecaZoneEworks2	Stopped	
<input type="checkbox"/>	VM-b7d6dffc-973f-40da...	i-4-231-VM	VM-b7d6dffc-973f-40da...		MecaZoneEworks2	Stopped	
<input type="checkbox"/>	VM-7765d66b-4c01-43a...	i-4-230-VM	VM-7765d66b-4c01-43a...		MecaZoneEworks2	Stopped	
<input type="checkbox"/>	CentOS7-MECA-Dashboard	i-8-42-VM	CentOS7-MECA-Dashboard	172.16.20.54	MecaZoneEworks2	Stopped	
<input type="checkbox"/>	UbOnHOST03	i-4-38-VM	UbOnHOST03	172.16.20.67	MecaZoneEworks2	Stopped	
<input type="checkbox"/>	CentOS7-Minimal-Template	i-4-36-VM	CentOS7-Minimal-Template	172.16.20.109	MecaZoneEworks2	Running	
<input type="checkbox"/>	VM-967a230f-7eff-4249...	i-4-168-VM	VM-967a230f-7eff-4249...	172.16.20.59	MecaZoneEworks2	Stopped	
<input type="checkbox"/>	VM-9ce4b2d0-c9fa-4ba0...	i-4-167-VM	VM-9ce4b2d0-c9fa-4ba0...	172.16.20.62	MecaZoneEworks2	Stopped	
<input type="checkbox"/>	VM-12934144-0fee-4eff...	i-4-166-VM	VM-12934144-0fee-4eff...	172.16.20.126	MecaZoneEworks2	Stopped	
<input type="checkbox"/>	VM-16bc352b-29dc-432...	i-4-165-VM	VM-16bc352b-29dc-432...	172.16.20.51	MecaZoneEworks2	Stopped	
<input type="checkbox"/>	VM-a401cd47-05ce-404...	i-4-164-VM	VM-a401cd47-05ce-404...	172.16.20.142	MecaZoneEworks2	Stopped	
<input type="checkbox"/>	VM-420f80f2-1c28-4d4f...	i-4-163-VM	VM-420f80f2-1c28-4d4f...	172.16.20.123	MecaZoneEworks2	Stopped	
<input type="checkbox"/>	VM-bee0c6d5-0c80-445...	i-4-162-VM	VM-bee0c6d5-0c80-445...	172.16.20.65	MecaZoneEworks2	Stopped	

Project: Default view

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MECA region instance scheduler

Please see and plan your classroom sessions in the following schedule to reserve instances

< > today Oct 7 – 13, 2018 month week day

	Sun 10/7	Mon 10/8	Tue 10/9	Wed 10/10	Thu 10/11	Fri 10/12	Sat 10/13
06:00							
07:00							
08:00							
09:00							
10:00		10:00 am - 11:30 am Test session					
11:00					11:00 am - 12:00 pm FEEIT classroom session		
12:00		12:00 pm - 02:00 pm TUS classroom session				12:00 pm - 02:00 pm TUS classroom session	
13:00							
14:00				02:00 pm - 04:00 pm FEEIT classroom session			
15:00		03:00 pm - 05:00 pm FEITT classroom session					
16:00							

Project: Default view

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MECA region instance scheduler

Please see



Test session



info

instances

09:00		i-4-230-VM	Stopped ●
10:00	10:00 Test s	display name	VM-7765d66b-4c01-43a9-9fe2-abff0d4952c9
		template	CentOS-7-x86-64-Minimal-1708.iso
11:00			
12:00	12:00 TUS d	i-4-231-VM	Stopped ●
13:00		i-4-232-VM	Stopped ●
14:00		i-4-233-VM	Stopped ●
15:00	03:00 FEITT		
16:00			
17:00			
18:00			



Start instances

- Dashboard
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Metrics

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<input type="checkbox"/>	Name	Internal name	Display Name	IP Address	Zone Name	State	Quickview
<input type="checkbox"/>	VM-78035fce-8976-4d15...	i-4-233-VM	VM-78035fce-8976-4d15...	172.16.20.133	MecaZoneEworks2	Starting	
<input type="checkbox"/>	VM-425b9814-26ed-462...	i-4-232-VM	VM-425b9814-26ed-462...	172.16.20.145	MecaZoneEworks2	Starting	
<input type="checkbox"/>	VM-b7d6dffc-973f-40da...	i-4-231-VM	VM-b7d6dffc-973f-40da...	172.16.20.140	MecaZoneEworks2	Starting	
<input type="checkbox"/>	VM-7765d66b-4c01-43a...	i-4-230-VM	VM-7765d66b-4c01-43a...	172.16.20.132	MecaZoneEworks2	Running	
<input type="checkbox"/>	CentOS7-MECA-Dashboard	i-8-42-VM	CentOS7-MECA-Dashboard	172.16.20.54	MecaZoneEworks2	Stopped	
<input type="checkbox"/>	UbOnHOST03	i-4-38-VM	UbOnHOST03	172.16.20.67	MecaZoneEworks2	Stopped	
<input type="checkbox"/>	CentOS7-Minimal-Template	i-4-36-VM	CentOS7-Minimal-Template	172.16.20.109	MecaZoneEworks2	Running	
<input type="checkbox"/>	VM-967a230f-7eff-4249...	i-4-168-VM	VM-967a230f-7eff-4249...	172.16.20.59	MecaZoneEworks2	Stopped	
<input type="checkbox"/>	VM-9ce4b2d0-c9fa-4ba0...	i-4-167-VM	VM-9ce4b2d0-c9fa-4ba0...	172.16.20.62	MecaZoneEworks2	Stopped	
<input type="checkbox"/>	VM-12934144-0fee-4eff...	i-4-166-VM	VM-12934144-0fee-4eff...	172.16.20.126	MecaZoneEworks2	Stopped	
<input type="checkbox"/>	VM-16bc352b-29dc-432...	i-4-165-VM	VM-16bc352b-29dc-432...	172.16.20.51	MecaZoneEworks2	Stopped	
<input type="checkbox"/>	VM-a401cd47-05ce-404...	i-4-164-VM	VM-a401cd47-05ce-404...	172.16.20.142	MecaZoneEworks2	Stopped	
<input type="checkbox"/>	VM-420f80f2-1c28-4d4f...	i-4-163-VM	VM-420f80f2-1c28-4d4f...	172.16.20.123	MecaZoneEworks2	Stopped	
<input type="checkbox"/>	VM-bee0c6d5-0c80-445...	i-4-162-VM	VM-bee0c6d5-0c80-445...	172.16.20.65	MecaZoneEworks2	Stopped	

Project: Default view

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MECA region instance scheduler

Please see

Test session

[info](#) [instances](#)

[i-4-230-VM](#)

Running ●

[i-4-231-VM](#)

Running ●

display name

VM-b7d6dfffc-973f-40da-9f06-bda9c0fc945f

template

CentOS-7-x86-64-Minimal-1708.iso

[i-4-232-VM](#)

Running ●

[i-4-233-VM](#)

Running ●

Stop instances

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info instances

i-4-230-VM

Running ●

i-4-231-VM

Running ●

display name

VM-b7d6dff-973f-40da-9f06-bda9c0fc945f

CentOS-7-x86-64-Minimal-1708.iso

Running ●

Running ●

Stop instances

```
[root@host02 mecainstancescheduler]# virsh list --all
```

Id	Name	State
1	v-1-VM	running
2	s-2-VM	running
6	i-2-10-VM	running
8	i-4-36-VM	running
10	r-41-VM	running
118	i-4-230-VM	running
119	i-4-232-VM	running
120	i-4-233-VM	running
121	i-4-231-VM	running





- **Forecast/plans for End of 2018**

- Dashboard: using the statistics for long-term monitoring and access it from the scheduler
- Online scheduler: Feature finishing
- Templates: How to access VM instances over the network for the students through the regions?
- Security optimizations