

Update on GCS

HPC User Forum October 01, 2018

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WHAT IS GCS?

- Funded by the federal and three state governments (Baden-Württem., Bavaria, North-Rhein-Westfalia)
- Is a collaboration of three centers (HLRS, JSC, LRZ)
- Provides Europe with tier-0 capability
- Provides Germany with tier-1 capability



Federal Ministry
of Education
and Research



Baden-Württemberg

MINISTRY OF SCIENCE, RESEARCH AND THE ARTS

Bavarian State Ministry of
Sciences, Research and the Arts



Ministry of Culture and Science
of the German State
of North Rhine-Westphalia



Main Driving Forces of GCS

- Science and industry driven simulation solution center
 - All activities and hardware procurements are driven by scientific user demand
 - Each of the three centers has a clear focus to cover together all topics
 - Each of the three center has an application driven hardware strategy
- GCS takes a lead role in European HPC





GCS PROJECTS

Project Driven Strategy



PetaGCS
2008 – 2019
400 M€

SiVeGCS
2017 – 2025
460 M€

inHPC
2017 – 2021
15 M€

PetaGCS



Jugene



SuperMUC

Hazelhen





NEW GCS SYSTEMS THROUGH SIVEGCS

Jülich System: Juwels

Supplier: ATOS/Intel

Configuration:

- 10,4 PF (CPU) + 1,6 PF (GPU) Peak
- 122.448 CPU cores
- ~1.000.000 GPU cores
- GPFS File System
- First module of a Modular Machine
- highly scalable module added next year (50+ PF)



LRZ System / SuperMUC-NG

Supplier: Intel/Lenovo

Configuration:

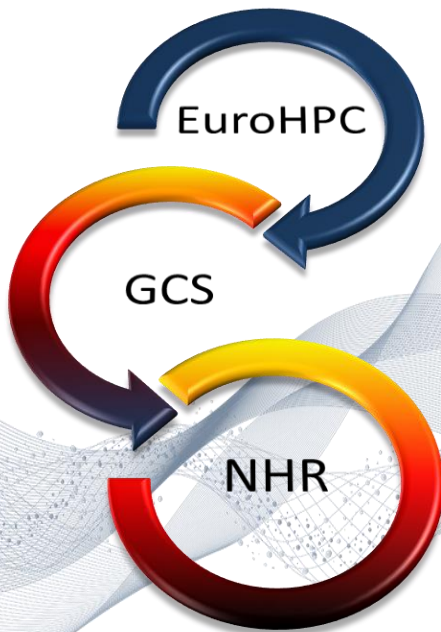
- 26,7 PF Peak
- 309.504 CPU cores



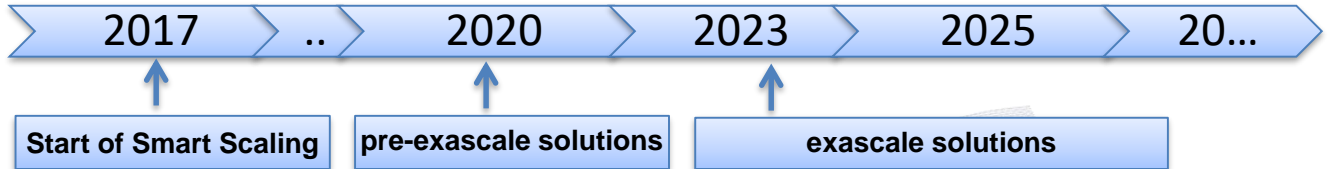


GCS STRATEGY

Global View



German Smart Scaling Strategy



Objectives

- Provide integrated HW/SW solutions for science and industry
- Increase application performance x1000
- Provide high quality HPC-services and create ecosystem
- Attract, train and retain competences
- Leading application performance and energy to solution

Realization

- Systems with integrated performance >100 Pflop/s from 2020 on
- Mobility program for users
- Code porting
- Application enabling
- Communication, dissemination
- New types of access

Germany & Europe

EuroHPC Pre-Exa
EPI
CoE



JÜLICH
Forschungszentrum

JÜLICH
SUPERCOMPUTING
CENTRE

SiVeGCS
InHPC
SPPEXA

H L R I S

lrz

Exascale
Systems

PRACE
EOSC



Thank You

Questions