



High Performance Computing  
**EMPOWERING RESEARCHERS**

# Introduction to HPC-UGent and VSC

*FOSDEM – HPC and Computational Science devroom*  
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*Kenneth Hoste & Ewald Pauwels*

[hpc@ugent.be](mailto:hpc@ugent.be)

<http://ugent.be/hpc>

# HPC @ UGent



High Performance Computing

Started in 2008

Centralisation of HPC

... infrastructure

... expertise

... support

... training

➔ Single point of contact



Stijn De Weirdt  
*Technical lead*



Ewald Pauwels  
*Team lead*



Kenneth Hoste  
*User support, Easybuild*



Wouter Depypere  
*Sysadmin*



Jens Timmerman  
*User support, sysadmin*



Kenneth Waegeman  
*Sysadmin, storage*

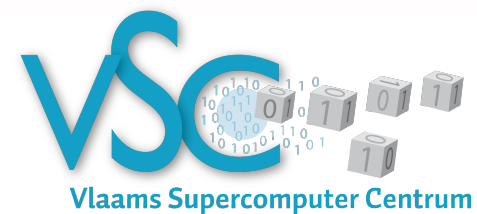


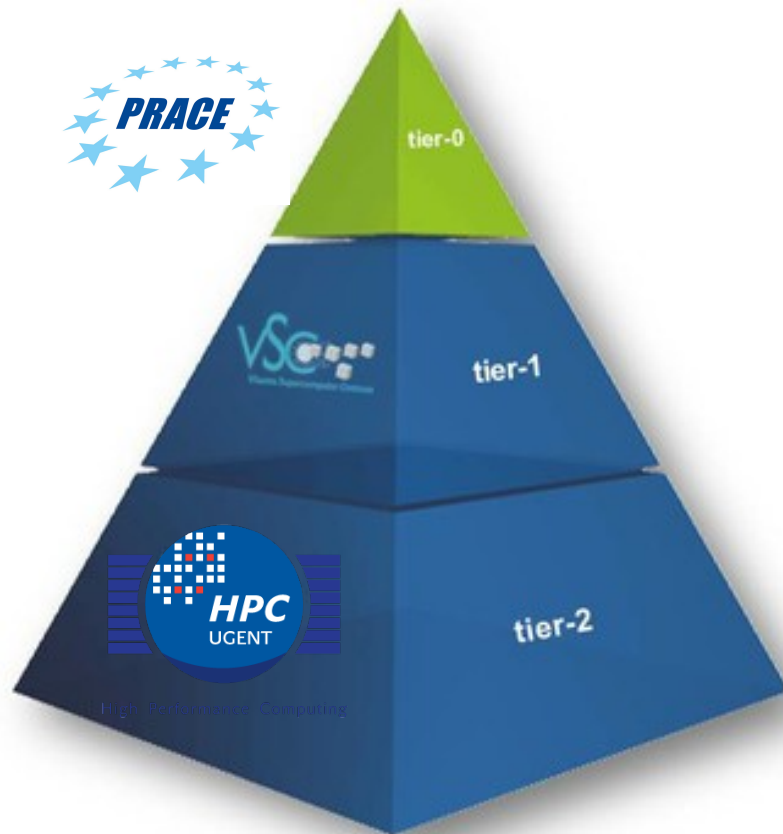
Andy Georges  
*User support, sysadmin*



Ewan Higgs  
*User support, bigdata*

# Flemish Supercomputer Centrum (VSC)





Performance pyramid

## Tier-0

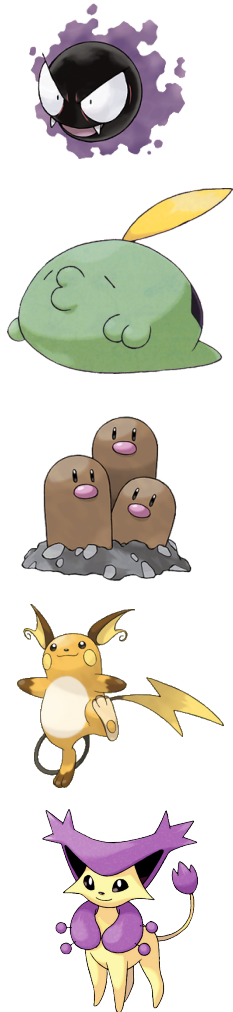
Capability computing  
European level

## Tier-1

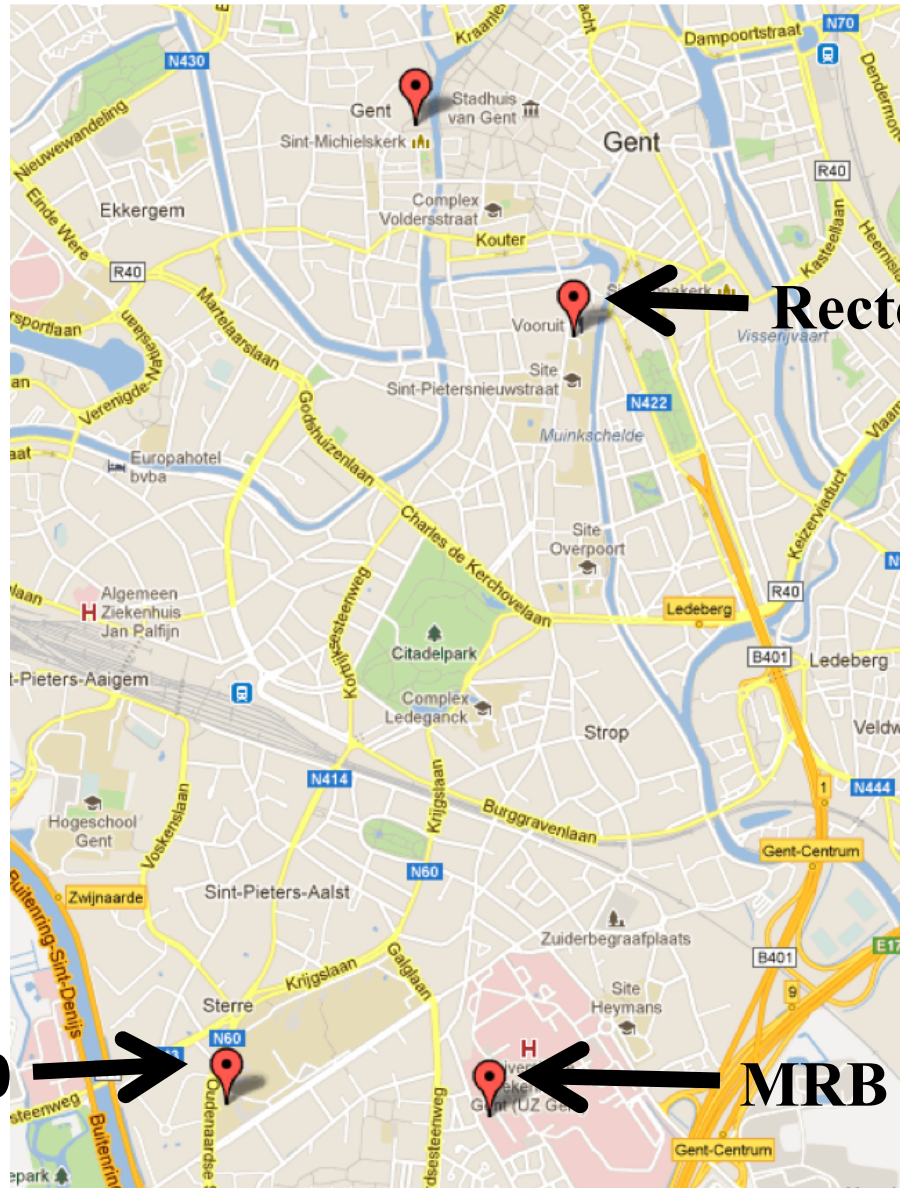
Capability/capacity computing  
National level

## Tier-2

Capacity computing  
University level



**Datacenter S10**



**Rectorate**

**MRB**





	gengar	gastly	haunter	gulpin	dugtrio	raichu	delcatty
# nodes	192 -> 125	56	167	34	16	64	160
# cores	1536 -> 1000	448	1336	1088	192	1024	2560
network	IB DDR	ethernet	ethernet	IB 2x QDR	IB 2x QDR	ethernet	IB FDR
CPU	Intel Xeon Harpertown (L5420)	Intel Xeon Nehalem (L5520)	Intel Xeon Nehalem (L5520)	AMD Magny-Cours (Opteron 6136)	Intel Westmere-EP (X5675)	Intel Sandy Bridge (E5-2670)	Intel Xeon Sandy Bridge
Clock (GHz)	2,5	2,26	2,26	2,4	3,06	2,6	2,6
Memory per node (GiB)	16	12	12	64	96 (vSMP)	32	64
Dedicated SCRATCH	28 TB	-	-	53 TB	-	-	400 TB
Shared storage	200 TB (HOME & DATA)						
	2008	2009	2010	2011	2011	2012	2013





## muk

528 computing nodes  
64 GB RAM/node  
8448 cores @ 2.6 GHz  
Intel Sandy Bridge  
450 TB storage  
Infiniband  
176 Teraflops



June 2012:	<b>118</b>
November 2012:	<b>163</b>
June 2013:	<b>239</b>
November 2013:	<b>306</b>

