

# NET2.1 Site Update

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# Milestones

- Milestones are driven by amount of computing transferred from BU
- Milestones assume only the currently available machines

Milestone	Date	Description
Ramp-up 1	Jan/31/2023	1500+ slots with 25 kHS06
Ramp-up 2	Mar/31/2023	5500+ slots with 110 kHS06 + 10.3 PB of storage
Ramp-up 3	May/31/2023	9500+ slots with 160 kHS06
Ramp-up 4	Jul/31/2023	11500+ slots with 190 kHS06

**Total CPU available from BU: 127 kHS06**

**Total (raw) disk available from BU: 6.6 (9.1) PB**

# Risks

The milestones have significant **external dependencies**.

- Receiving equipment from BU. So far, no equipment has been made available despite repeated requests.
- Integration of equipment at UMass pod and connection to UMass network.
- Integration of NESE with the UMass/NET2.1 network.

Both these **external dependencies** will continue to exist until all the BU equipment is transferred.

Additional equipment, received directly by the UMass team will not have similar risks.

# Procurement

Resource	Available from BU	Pledge 2022	To be deployed	Pledge 2023	To be deployed
Computing [kHS06]	127	81	162	89	178
Storage [PB]	6.6	7.2	8.7	8.5	10.3

- Right now, our procurement plans are focused on the equipment strictly needed to connect the BU machines to the UMass network (switches and optics)
- However, we will need to procure computing and storage nodes to get close to the resources to be deployed.
- Probably not enough funds to meet pledge in 2023.

# Opportunities

The machines are being transferred from BU but a new system is being deployed.

- Thanks all the other Tier 2 teams for the visits and constant exchange of expertise with our team.

It is an opportunity to try new solutions

- Review system choices
- Experiment with virtualization: possible test-bed for kubernetes-based system
- More discussion at the dedicated session tomorrow

# Open Points (1/2 more details in the talk tomorrow)

Little control over **external dependencies**.

## **Space availability** at MGHPCC

- We have racks for the initial transfers from BU, but not for the full system.
- Additional racks may be made available as other UMass systems retire.
- Another possibility is to have dedicated Tier 2 racks, which would expose us to less risk.

## LHCone and **ESnet connection**

- We are establishing a low bandwidth (10 Gbps) connection using NoX.
- Cost for high bandwidth connection via NoX is prohibitive for the University.
- Other possibilities are being investigated, including shared connection with other Tier 2 systems at MGHPCC (CMS/LHCb) or new regional networks (NEREN).

# Open Points (2/2 more details in the talk tomorrow)

## **NESE** disk and tape

- After addition of modern ceph DTN, NESE is stable.
- DTN for tape also working via xrootd (usage paused for ATLAS ADC, but CMS continues to use it)
- Cost model is still prohibitive.
- We are proposing a new model to the NESE team that will reduce the cost to values compatible with other Tier 2 systems.