

Cyclotron computing

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To continue our mission of providing the Cyclotron Institute with the secure computational and networking infrastructure necessary to teach and execute research programs, we increased the Institute's computing capacity and infrastructure over this past year by adding four computational servers and a pair of container servers for service virtualization. We upgraded our authentication service hardware. We are pursuing containerizing legacy administrative services to allow better utilization of server room rack space, power and cooling by reducing our physical machine count. To enhance our security posture, we migrated the Institute's WiFi infrastructure and computational server authentication service to TAMU NetID and we are migrating Institute desktop/laptop computers to the TAMU CONTINUUM which utilizes TAMU NetID.

To increase productivity and reduce turn-around time we added four general lab computational servers, now totaling sixteen. This increases our capacity by 8 2.4GHz late model processors or from 292 to 388 concurrent jobs. Each added server has 32GByte of RAM, allowing users to analyze memory-intensive jobs quickly. These servers are ready to be provisioned and move into production. We migrated our aging authentication server from Raspberry Pi 1's to Pi 2's and update the OS on all four authentication Raspberry Pi's.

In an effort to reduce the number of administrative servers in the data center, and thereby reduce server room power and cooling requirements, we are testing containerizing legacy administrative services. The motivation is to free up physical computers running administrative services, one machine for each service; web, database, list-server, and other services by hosting all these services on one physical server.

These changes and additions allow us to supply the Institute with the resources it needs to execute its mission by increasing our computational and data serving capacity, providing more security by utilizing TAMU authentication services, and by reducing physical machine footprint via migration of administrative services to containers.