Secure Server Management (Managed Cloud Services)
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Summary:

UITS mandates that all physical servers be decommissioned and rebuilt in the UITS-managed Amazon Web Services tenant. There are a couple of flavors of UITS Server Management.

1. **Cloud-Managed Services (MCS)** – UITS manages servers for faculty and campus units for two use cases: 1) a database or 2) PHP/static web server. Customers will pay for storage costs related to the server (UITS pricing not available, but rough estimates are $0.15/GB per 30-day month, including snapshot backups).

2. **Cloud Computing Infrastructure (CCI)** – UITS' server admins share administrative access with faculty, researchers, and/or campus IT for cases not covered by MCS. Servers are limited in two OS variants: Windows Server 2019/2022 and Amazon Linux 2. Customers will pay for storage costs related to the server (UITS pricing not available, but rough estimates are $0.10/GB per 30-day month, not including backups).

3. **Server Storage**– various options include the HPC for *active* research data, AWS for archive or infrequently used data (2.3 cents/GB/month associated fee for this service – free for data that is unchanged after 90 days), and vendor services such as Box, SharePoint, OneDrive, and Google Drive for administrative data. Department and Lab managed storage servers, NAS devices, and research instrumentation storage servers will need to be decommissioned and transitioned to UITS Storage solutions.

Out of Scope:

UITS is planning to meet on a case-by-case basis with individual faculty-run labs, to understand the scope of the lab's cyberinfrastructure and properly assess what can be exempted from the UITS Secure Server Management mandate.

Additional Requirements:

- UITS Server Storage solutions for infrequent data will require a dedicated application (e.g. Globus) to move/copy data between the server and PC. Drag-and-Drop, Copy/Paste operations in the OS are not natively supported as they are on network file shares.

Unknowns:

- Solutions for ***proximate*** storage for in-building research instrumentation that captures and creates large datasets (e.g. gantry staging server), ultra-high resolution image retrieval, LiDAR Processing, 4K video editing (the list goes on), etc, remain unaddressed.

- How can other cloud computing solutions be leveraged such as Google Compute Engine, DigitalOcean, etc. that aren't approved by UITS?
- How are servers that were recently purchased with Sponsored Project funding to be handled?
- Will servers already in a UA-federated AWS tenant, with ISO-managed security features, be required to migrate to UITS' MCS or CCI service?

Concerns:

- Campus IT is worried that this mandate will create black market IT, pushing users to buy their own servers to perform research too difficult to do under MCS/CCI, and jeopardizing security best practices.
- The research needs at an R1 Institution are too varied to be handled by a handful of server "molds". Are we stifling innovation?
- Without proximate storage solutions, network latency becomes an issue, especially for buildings (Shantz) that have outdated networking infrastructure or low bandwidth ISPs (some rural Extension offices).
- Computing infrastructure is usually paid with temp or one-time funding. Will PIs and Departments successfully transition to a monthly payment model – especially if investments have already been made?
- What assistance is there for PIs and Departments that no longer have funding? Usually, physical hardware can be extended for a fraction of the cost. Similarly, public-facing databases (AgBase, DroughtView, etc) are cost-prohibitive to host in the cloud.
- When a Sponsored Project and associated funding ends, will UITS be forced to delete the unfunded servers and associated data?

UITS Informational Pages

- UITS Cloud Services Overview: https://it.arizona.edu/cloud-services
- MCS: https://emailarizona.sharepoint.com/sites/UITS-CloudOpenSystems/managedcloudservices/
- CCI: https://emailarizona.sharepoint.com/sites/UITS-CloudOpenSystems/CCI/

  HPC Storage: https://public.confluence.arizona.edu/display/UAHPC/Storage
- Tier 2 Storage: https://public.confluence.arizona.edu/display/UAHPC/Tier+2+Storage
- Administrative Storage: https://uarizona.service-now.com/sp?sys_kb_id=c1d34d8a9741d590b41055b00153afe8&id=kb_article_view&sysparm_rank=3&sysparm_tsqueryId=b0162ecd977a55107f31732f2153af01