



## MARION DATA CENTRE

*Located in Marion Hall, this large data centre constructed in 2007, offers owners collegial usage in a safe and controlled facility, accessible 24 hours a day, seven days a week, at their convenience.*

### STATE-OF-THE-ART FACILITY

Rather than invest in and maintain expensive infrastructure (wall plates, individual networks, uninterruptible power supply (UPS) units, physical server space), researchers can host their servers in the Colocation Data Centre. Our state-of-the-art facility boasts a secure, temperature-controlled environment and our power-distribution systems are protected with UPS backup, providing enhanced stability for applications and processes.

### SECURITY

- Access to the Data Centre is controlled through an electronic key system, and cameras have been installed throughout the facility to provide an additional measure of security
- Data centre access is limited to server owners and their delegates
- The front side of server cabinets can be individually locked on request
- To protect individual systems, hot aisle access is restricted to the facility managers

### RELIABILITY

- Servers and systems are protected against power anomalies
- The facility's cooling system is resilient and recuperates heat generated by servers to pre-heat adjacent buildings

### SPEED AND CONNECTIVITY

- Each server has a free connection to the University of Ottawa network at speeds of 1 Gbps, and additional bandwidth can be provided for special requests and requirements
- The facility has 10 Gbps connectivity to the rest of the uOttawa campus, to the Ontario Research and Innovation Optical Network (ORION), and to Canada's Advanced Research and Innovation Network (CANARIE)
- Reserved public and private research IP addresses are available, and special isolated networks can be created on demand
- Access to systems can be performed remotely on campus or through virtual private network (VPN) off-campus. KVM switches (keyboard, video and mouse) can be made available upon request.

### SUPPORT

The Colocation Data Centre is designed for autonomous groups. Information Technology provides basic operating system support to research groups that don't have access to IT expertise; Analyst support is provided on a best effort basis.

### TARGET USERS

- Faculties and Services requiring 24-hour access to their servers
- Researchers and their delegates who wish to host their rack mount servers in a secure, reliable, and cost-efficient environment
- Clients who wish to more securely house their data and computation systems

■ **For more information, contact:**  
Information Technology  
613-562-5800 ext. 6555

## MARION DATA CENTRE

Our Colocation Data Centre provides a safe and reliable hosting environment with controlled climatic conditions, and secure, collegial access for researchers and business units.



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## CENTRAL DATA CENTRE

*Located in the Faculty of Social Sciences Building, the Central Data Centre was built in 2011-2012. The facility meets tier 3 data centre standards, and access is fully controlled with biometrics and cameras. This data centre hosts critical applications and confidential data; its configuration promotes the availability and security of services/applications.*

### POWER AND COOLING

- N+1 power and cooling redundancy. Servers and cooling systems are fully protected against power anomalies by uninterruptible power supply (UPS) units and diesel generators, enabling continual operation during blackout periods
- The cooling system recuperates heat generated by the servers and will contribute up to 80% of the Faculty of Social Sciences building heating requirements during cold weather periods

### SECURITY

- Unmarked location with a secure two-stage entrance
- Biometric authentication process
- Security cameras scan and record the facility 24 hours a day, 7 days a week

### FIRE SUPPRESSION

A two-stage pre-action dry pipe sprinkler system keeps pressurized air in the pipes (the air is only replaced with water when the pipes reach a high temperature and the smoke detection system determines there is an active fire due to smoke).

### VIRTUAL HOSTING AND EFFICIENCY

- The facility hosts a completely private cloud environment where virtual servers are made available on demand
- Virtual servers are fully-accessible remotely and can easily be restarted, upgraded, moved, turned off, and turned on, without manual physical intervention
- Virtual servers are easier to deploy than physical servers and consume far less energy:
  - Average energy cost to power a virtual server (2013) ~\$15/year
  - Average energy cost to power a physical server (2013) ~\$500/year
- Standard virtual servers are available to Faculties and Services (IT Managers) at no charge
- Researchers can request a free virtual server through their Faculty (IT Manager)

### VIRTUAL STORAGE

- Storage in the Central Data Centre is completely virtualized and allows the thin provisioning of data volumes (we partition large data volumes and the system automatically allocates space as usage requires)
- Thin provisioning reduces overhead costs and allows us to purchase only used space (in 2012, over 1 PB was provisioned using only 200 TB of disk space)
- Virtual Volumes can be moved across storage systems transparently

### REMOTE ACCESS

IP KVM are available upon request to allow management of physical servers remotely

### SPEED AND CONNECTIVITY

- The facility has multiple 10 Gbps connectivity to the rest of the University, ORION, and CANARIE Network
- New servers are connected to the University of Ottawa network with dual 10 Gbps links

### SUPPORT

- Owners and their delegates can access their servers by advance appointment, during regular business hours, and 24-hour on-call service is available in case of emergencies
- Professionally monitored and maintained by Information Technology's analysts and technicians
- A dedicated hosting aisle is available for Faculties and Services

### TARGET USERS

- Clients with business-critical systems demanding 24 hours a day uptime, including:
  - Administrative services (remuneration system, student information system, client management system)
  - Teaching applications
  - Email system
  - File servers
- Researchers with critical application requirements, or who are working with private data
- Clients who require secure housing of information and data restricted under privacy and confidentiality laws

## CENTRAL DATA CENTRE

The Central Data Centre provides a secure server environment for critical business/enterprise applications and private electronic information.



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