REGIONAL DATACENTER

operations & facilities handbook

WiscNet
CONNECTING PEOPLE
CONNECTING STRATEGIES

Chippewa Valley
Technical
College

contents

Contact Us

Monday–Friday, 8 a.m. to 5 p.m. Phone: 715-831-7272

Email: noc@cvtc.edu

After Hours Emergency

715-577-7272

Alerts/Notifications

http://rdcstatus.cvtc.edu

Executive Summary

Thank you for choosing the CVTC Regional DataCenter (RDC). This handbook provides important information regarding policies and procedures that ensure CVTC maintains a high level of service quality.

Reporting a Problem

Our Network Operations Center (NOC) staff can be reached during normal business hours. We make every effort to respond after hours, weekends and holidays.

NOC hours: Monday–Friday, 9 a.m. to 5 p.m.

- 715-831-7272 (8 a.m. to 5 p.m.)
- Email: noc@cvtc.edu

On-Site Maintenance

The RDC is a self service facility. There is no need to contact us. Customers may also allow third parties into the facility at their discretion.

Please refer to the datacenter Access Policy portion of this handbook for details regarding access approval.

Customer Relations

Account Manager

An account manager will be assigned to your organization during the onboarding and orientation process. Please contact him/her with service and account-related inquiries including:

- Billing questions
- Service enhancements
- Requesting new services
- Reviewing existing services and contracts

Self-Service and Dashboards

Upon request a dashboard providing power usage and rack temperature data can be made available.

Customer Privacy Policy

CVTC will not disclose any information regarding datacenter tenants to parties outside of the organization without tenant permission.

Amenities & Services

- Internet access via guest WiFi
- Blanking panels
- Mounting screws and cage nuts
- Step ladders
- Basic tool kit
- Label maker
- "Crash cart" containing LCD monitor, keyboard, mouse, 15-foot patch cable, USB to serial cable

Amenity	Features	Included	Contact Account Rep.	Requirements
Remote hands	Power cycle equipment without a presence on site		✔	Equipment documented to recommended standards with rack diagrams on file and labels on front and back of all hardware.
Site security	Proximity based ID badge access to building areas	✔		Organizational administration determines staff security level for each member of staff granted Regional DataCenter (RDC) access
	24 x 7 x 365 data center access	✔		
	Reviewable 24 x 7 x 365 video surveillance	✔		
	Tiered access model	✔		
Event monitoring	Rack level temperature and humidity probes		✔	
	Datacenter level dashboards for temp/power/humidity		✔	
	Rack-level monitoring of power A side and B side and aggregate		✔	
Shipping & receiving	Truck dock with lift gate forklift accessibility	✔		Network Operations Center (NOC) notified prior to delivery of hardware during normal business hours
	Grade level roll door dock with a forklift grade ramp	✔		
	Equipment staging area	✔		
Temporary work space	With 2 days advanced notice and depending on availability, a temp. work space can be provided.	✔		

Access Policy

Our goal is to provide a secure environment for your equipment. We also strive for as much transparency as possible in order to provide an experience similar to that of owning and operating your own facility.

Secure and Monitored Access

- The Applied Technology Center and access to the datacenter office space is controlled using proximity cards
- Datacenter access is controlled via a biometric hand scanner
- Racks within the datacenter use locks with individual combinations
- A multi-camera video surveillance system monitors access to the datacenter facility
- Standard operating hours for the datacenter are Monday–Friday, 8 a.m. to 5 p.m.

Access Control

During the onboarding process, your account manager will work with your organization to determine the following access roles:

Organization Administrators
The organizational administrators have the ability to grant temporary and permanent access to members of your organization. They are also responsible for rack-level access, as well as pre-authorizing individuals who may declare an emergency.

24 x 7 x 365 Access Personnel
Employees at your organization with this role will have 24 x 7 x 365 access to the datacenter

Standard Access Personnel
Employees at your organization with this role will have access during standard operating hours, Monday–Friday, 8 a.m. to 5 p.m.

Third Party Access

Access requests for a third party in no different than for people employed at your organization.

Tenants may use their own access for third parties at their discretion. We do ask for the individual(s) to be supervised and that you retain possession of your access badge the entire time.

Emergency Access

During a declared emergency, standard access protocol will be waived. After the event has ended, event details will be reviewed with your organizational administrator and CVTC management.

Contacting the RDC for Access

The organizational administrator role is defined by the RDC account administrators or the RDC director of operations and approved by CVTC's CIO.

All other access requests are made by the organizational administrator and will be processed in the most efficient manner by NOC support.

On-Site Workspace Occupancy

For scheduled maintenance or in a declared emergency situation, temporary workspaces may be available on request for your organization.

It is our policy that occupancy of a workspace at the facility is considered temporary.

Overview of the Facilities

Monitoring

We monitor the facility environment 24x7 using Siemens Niagra product. Aisle temperature is averaged over a series of sensors, if that temperature exceeds a 90 degree average text alerts are sent to every member of the RDC NOC and backup systems will automatically supplement cooling.

Power Information

Using TIA-942 as a guideline, the power for the data center provides N+1 redundancy. This allows for our external utility power source to the data center or any one internal component within the data center (such as a UPS) to experience failure without causing downtime for our tenants.

Generator

Utility power is backed up by a 500-kilowatt diesel generator manufactured by Caterpillar. This class of generator, commonly utilized by large hospitals, is capable of holding enough fuel for a minimum of 12 hours runtime at maximum output.

Transfer Switch

In the event of a utility power failure, an automatic transfer switch will fail over to the generator in sub-second time.

UPS

To provide redundancy and power conditioning the Regional DataCenter (RDC) implemented multiple Caterpillar Z Series UPS units. The Z series is a three phase UPS that completely destroys input power and re-creates clean power to distribute to equipment. This allows for superior power conditioning, voltage regulation and harmonics cancellation.

Unique to the Z series is the use of flywheel technology in place of more traditional battery power. The flywheel offers less maintenance and heat output as well as the ability to seamlessly increase power output by simply adding additional flywheels.

Bus Bar

Power is distributed from the UPS to the racks via the Liebert Modular Busway product. This product line allows great flexibility when per rack power requirements vary.

Power Distribution

Main power distribution is handled by Eaton Power Distribution Units, configured in an A-side and B-side design.

Rack-level power distribution will consist of two PDU's providing A-side and B-side power. In the event that a tenant has specific needs, account managers will work with our preferred vendors to custom order/design PDUs, as long as that information is obtained well in advance of datacenter occupancy.

Each PDU reports to our central Data Center Infrastructure Management (DCIM) solution for troubleshooting, maintenance, and billing purposes.

Cooling

The RDC uses a combination of both floor-mounted CRAC cooling units, as well as above-rack cooling modular units.

Cold-aisle containment is provided by the Liebert XDV top-mounted pumped refrigerant cooling units. These units are scalable, mobile, and will work together in order to achieve high levels of cooling efficiency.

The perimeter CRAC units have capacity of over 300,000 sensible BtUs and can move over 15,000 cubic feet of air per minute. Their primary purpose is to control humidity; however, they are capable of cooling the datacenter in the event that the XDV system fails.

Fire Detection and Suppression

We utilize a VESDA detection system which is directly integrated into the main building alarm systems. The detector works by drawing air through sampling holes located at different points in the datacenter.

The response to a detection can be pre-programmed at different thresholds to ensure that the suppression system is only activated if absolutely necessary.

If the highest thresholds are exceeded, all power to the room is shut off, the pipes are flushed with water, and the sprinkler system will engage if there is heat to melt the plugs.

Custom Power Requirements

By default each rack receives 6.4 kW.

The standard PDU has 21 IEC320 C13, six C19 and 3 NEMA 5-20R outputs.

If your needs sit outside of the default configuration, please work with your account manager prior to occupancy for an add/change in order to create a custom solution.

Acceptable Usage of the Facilities

Conduct Policy

- Tenants may not abuse and/or misuse CVTC Regional DataCenter (RDC) equipment and/or property.
- No harassment or abuse of any kind towards any individual on CVTC RDC property will be tolerated.
- Tenants may not engage in any illegal activities while on CVTC RDC property.
- CVTC is a smoke and vape-free environment.

Facilities Acceptable Usage Policy

- Prior to vacating the premises, all garbage and waste will be disposed of within or removed from the facility.
- Any equipment in packaging materials must be unpacked prior to entering the RDC.
- RDC staff reserves the right to inspect any item that will be taken into or out of the RDC.
- The following are prohibited in the RDC:
  - Food, Liquids
  - Cardboard, Styrofoam, Other Packaging Materials (excluding ESD bags)
- Tenants must adhere to all Chippewa Valley Technical College safety and security policies, available upon request.

Video and Still Picture Policy

Video and still picture photography of your equipment within the datacenter is permissible. For the sake of tenant privacy, however, we ask that you notify the Network Operations Center (NOC) of any photos or videos that you plan on taking. Video and photography of other tenants and/or their rack equipment is prohibited.

Rack and Cable Management

In order to maintain a clean, manageable and aesthetically pleasing environment, we have established the following guidelines.

The policies and procedures listed below provide high-level insight into the standards CVTC has adopted. For detailed cable-and-rack management information, a separate, complementary document, "The RDC Cabling Guide," is available. It is advised to be familiar with the specifics listed in that document.

In-Rack Management

- Unless approved by the account manager or facilities director, custom racks and cabinets are not allowed.
- All equipment placed in racks must be rack mountable.
- RDC staff will provide hardware necessary to mount equipment.
- No shelves will be permitted.
  Any open spaces must be covered by blanking panels, which will be provided by RDC staff.
- CVTC RDC offers optional professional cabling services for customers.

Rack-to-Rack Cable Management

We recognize that every tenant's needs for rack-to-rack cabling are going to be different. Your organization will want to work with an account manager to customize any rack-to-rack connections. Some important things to note regarding rack-to-rack cabling:

- All cables will exit vertically out of the rack. There are no brushes or grommets on the sides which would allow for horizontal exit.
- We can provide fiber and copper drop panels. Please work with your account manager prior to occupancy for an add/change as those solutions are built to order.

Office Workspace Occupancy

Network Operations Center (NOC) staff will be responsible for coordinating the scheduling and availability of temporary workspace amenities, such as tables or chairs. The NOC will also be responsible for requests for a temporary workspace located outside of the datacenter; however, requests must be made at least 2 business days in advance and are subject to availability.

Equipment Staging

Please stage all equipment in the data center offices or the adjacent hallway. If you need more room email or call the RDC NOC.

All packaging materials need to be disposed of or removed from the premises by the tenant. CVTC is not liable for the accidental disposal of materials left behind by a tenant.

Equipment Installation

The RDC is self service 24x7. You do not need to make our staff aware of equipment installation.

Equipment installation is not a service we provide. However we can usually lend a hand if you let us know in advance.

While the flooring is grounded, ESD it is not 100 percent dissipative. It is strongly recommended to ground yourself while working on equipment.

Equipment Delivery and Storage

The datacenter facility has a shipping and receiving bay located in the northeast corner of the facility. In order to assure that secure storage can be allocated, please contact the NOC in advance. Receipt of deliveries that arrive without prior notice may be denied.

Currently there is no permanent secure storage on site. When storing equipment at the facility, it is important that a window of time be defined and approved with your account manager. CVTC is not liable for any damage, theft, or disposal of equipment that has been left on premises without authorization.

**Applied Technology Center
Main Entrance**
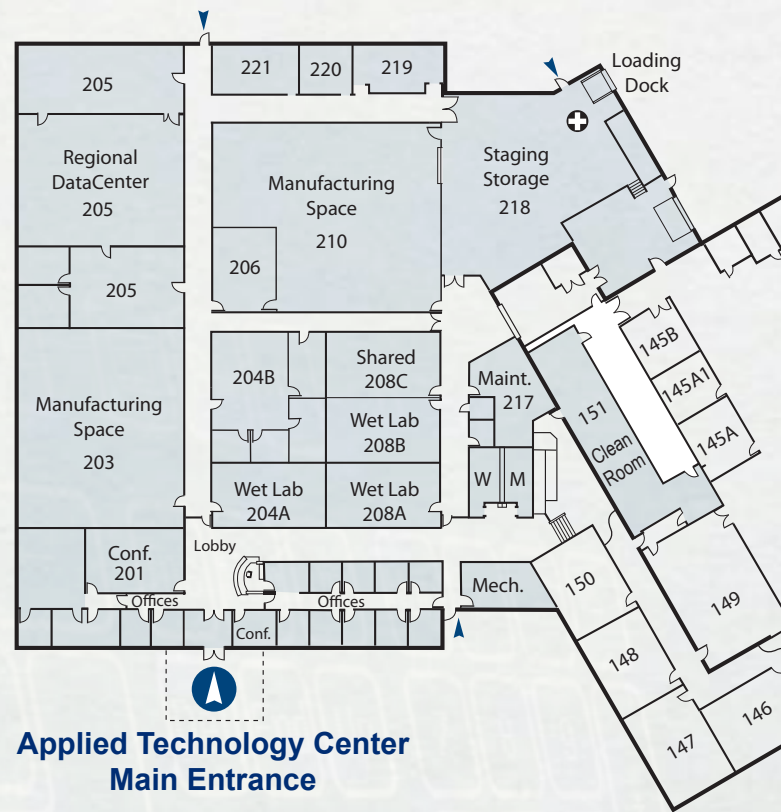
Operational Framework

By practicing continual service improvement, we are constantly assessing our processes and policies using agile, or lean methods.

Key Operational Standards

- Managing incidents and problems using a common practice that is focused on customer centricity and service restoration above all else
- Providing single points of contact for both technical and nontechnical needs
- Utilizing change management to minimize downtime by planning, communicating, and authorizing change in a standard and organized fashion
- Organizing contact information that allows us to easily identify the key stakeholders in your organization and develop custom automated communication plans

Operational Tool Set

Our operational tools allow for us to monitor and report on compliance and trends, as well as automate processes.

- DC Track from Sunbird allows us to visualize the facility and make intelligent decisions on infrastructure placement, as well as view and report capacity utilization.
- PowerIQ, also from Sunbird, gives us the ability to forecast capacity, monitor overall or PDU drill-down power statistics and produce accurate billing.
- Siemens Niagra monitors all facility equipment. It notifies us when alert thresholds have been breached and allows for point-in-time statistical analysis.
- Atlassian's Jira is a cloud-based IT Infrastructure Library (ITIL) service management solution.

IT Infrastructure Library (ITIL) Framework

The Regional DataCenter is operated on ITIL framework. Our staff goes through formal ITIL training and is ITIL foundation certified. By utilizing the four core concepts of strategy, design, transition, and operation, surrounded by a continual service improvement process, we are able to provide our tenants with the structured support necessary for consistent and professional services.

Incident and Problem Management

An incident reported to the Network Operations Center (NOC) will be recorded in our ITIL-based management software. A single point of contact will coordinate with any necessary stakeholders to reach a resolution.

Our goal is to reach the following service level objectives within our facilities:

Priority	Standard Operating Hours	After Hours First Response Time
1	15 minutes	1 hour
2	4 hours	Next Business Day
3	1 day	Next Business Day

Change Management Practices

Change manager—an individual change manager centralizes the approval of all changes and communicates changes to tenants.

Change Advisory Board (CAB)—an official change advisory board is used by the change manager. The board is comprised of individuals representing each operation's specialty. The change advisory board's vote is necessary to approve any changes that affect tenants directly.

Availability Management

The CVTC Regional DataCenter's availability standards are based on both TIA-942 and Uptime Institute tiered datacenter models. Some elements from those industry standards that we comply with are:

• 99.99 percent availability
• TIA-942 cable and electrical standards
• N+1 active capacity components
• Distributed network backbone
• Twelve hours of on-site fuel storage

Customer Resource Management

Customer information regarding levels of individual access, contact information, service requests, and contracts are stored using SOC 2 compliant public cloud-based provider. This allows our team members to have up-to-date centralized information and communication tools.

Disaster Recovery Planning

CVTC maintains a service recovery plan to deal with HVAC, power, and security-related events using standardized procedures. The Regional DataCenter (RDC) Network Operations Center (NOC) closely monitors weather that could potentially cause an outage.

Physical Security Policy

• Proximity card entry controls access to the main Applied Technology Center building and RDC offices.

• Hand-scan biometric recognition is required for datacenter entry.

• Digital surveillance equipment monitors the parking area in the main facility, as well as the entrance to and inside of the datacenter.

• Visitors are required to be escorted to and from the facility.
• Security patrol of the campus is done regularly.

operational framework

Chippewa Valley Technical College

www.cvtc.edu/atc