



Poirier Co-location Facility



The Poirier Sport and Leisure Complex

The Facility

Opened in 2010, Qnet's Poirier co-location facility is a state-of-the-art datacentre located in Coquitlam's new Poirier arena complex. Established as one of two primary hubs for QNet's city-wide fibre optic network, the 1000 square foot facility was especially designed for multi-user ICT equipment co-location.

Located north of the Port Mann Bridge at 635 Poirier Street (between Austin and Como Lake Avenues) in Coquitlam, the facility is a short distance from both the trans-Canada and Lougheed highways.

The facility consists of two rooms: a staging room and the primary server room. The ground level location and double width doors facilitate the delivery of equipment to and from the staging and server rooms. Both rooms are maintained at 20C and 50% humidity.



Staging Room



Server Room

Access and Security

Users of the facility have 24 X 7 access using security key cards issued to each authorized user. The key cards are required to enter both the staging area and the server rooms. The user ID, date and time of entry are logged automatically.

The Poirier Complex is manned 365 days a year. A camera system monitors the entrance of the datacentre as well as the staging room and the aisles between the cabinets.

Survivability

The ice rink in which the co-location facility resides is single story “at grade” structure built on bedrock using reinforced concrete block construction at an elevation of 500 feet above sea level. The windowless co-location facility was built as completely separate reinforced concrete bunker within the new ice rink for additional security and survivability.

Opened in 2010, the ice rink is a public venue and emergency evacuation centre built to meet or exceed B.C. building code seismic requirements for such a facility. For added earthquake protection, equipment cabinets in the server room are mounted on WorkSafe Technologies (Iso-Base™) seismic isolation pads.



Equipment Racks on Seismic Isolation Pads

Fire Suppression

An environmentally safe inert gas fire suppression system is used in both the staging and server rooms. The system is triggered automatically in the case of a fire and the system is serviced and tested on a regular basis. There are no water sprinkler systems in the server room or staging room.

Cabinets

Full Rittal™ cabinets (800 mm x 1050 mm x 2100 mm) are available for lease. The cabinets are equipped with a 48 fibres SC/UPC fibre tray, a cable management system and networked power distribution units. Depending on the power configuration, one cooling panel is shared between two cabinets. A cabinet specific magnetic card opens the front and backdoor and the date and time of access are logged.

Cable Management

Fibre optic connections to the outside world and between equipment cabinets are centrally managed via an ADC™ optical distribution frame (ODF) which supports 576 optical end points. The datacentre utilizes a top-down three level tray system for efficient cable management (upper level for power cables, middle level for copper cables and lower level for fibre optic cables). Ladders are available in the datacentre for accessing the cable trays. Cable management is also built into each equipment rack.



Cable Management System

Power

BC Hydro power is backed up by an Eaton Powerware™ expandable 80 KVA UPS and a 250 KVA Volvo™ diesel generator providing continuous three phase power to the server room. Power is delivered into the equipment cabinets via Avocent™ power distribution units (PDU's), each on a breaker of 30A over 208V. The power fail-over system is tested on a monthly basis.



250KVA Generator

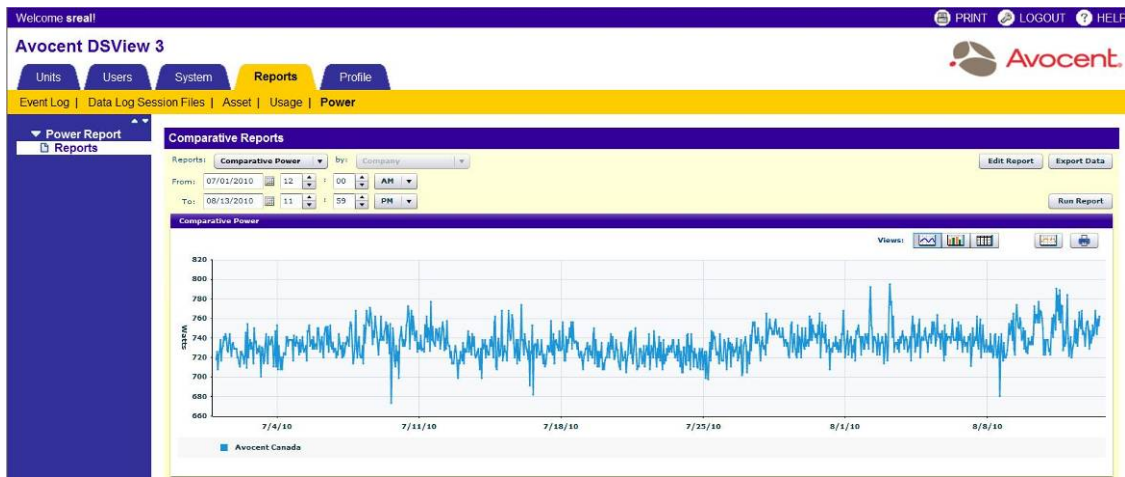
The PDU's in each cabinet are equipped with 4 x C19 outlets (each max 16 Amps) and 20 x C13 outlets (max 12 Amps) under 208V (additional PDU's can be added as required). The PDU's:

- Measure and monitor power consumption per outlet
- Enable remote switching to power on/off individual outlets
- Create thresholds to generate alerts/notifications



PDU Providing Power Management and Remote Outlet Switching Capabilities

The PDU's are integrated on a network that collects real time power consumption data. An itemised bill based on the monthly energy consumption (power and cooling) provides users of the facility with detailed reporting on their energy utilization.



Example of a Power Consumption Graph

Cooling

Traditional open air data centre cooling systems only allow for approximately 10KW of heat dissipation per equipment rack. With densification of ICT equipment requiring 15KW or more power per rack, these traditional cooling systems are no longer adequate. Open air cooling is also very wasteful of energy generally requiring 1KW of cooling power for every 1KW of power consumed.



Cabinets and Cooling Panel



Manifold for Chilled Water

Using Rittal Liquid Cooling Panel Technologies™ the Poirier co-location facility provides highly efficient cooling supporting our customer's long term equipment densification requirements of up to 30KW per cabinet. By conditioning the hot air from equipment cabinets through a radiator similar to the heat dissipation of a car engine, the water based cooling technology has a heat absorption capacity fourteen times greater than

open air based cooling. This leads to higher levels of equipment densification and lower costs for QNet customers.

The cooling system is highly resilient with an automatic back up system in place in the event of a chiller failure. A third back up system opens the rear doors of the cabinets automatically in the event temperature is reaching a preset value. Automated alarms notify QNet staff in the event of any cooling malfunctions.

Energy Efficiency

The Poirier Sports and Leisure Complex utilizes a sophisticated system to limit the generation of green house gas emissions including a thermal energy grid and solar panels. As part of the cooling system, a heat pump (chiller) has been installed that transfers heat generated by the servers to thermal loads such as the pool and the buildings around it. Heated water from the equipment racks is also stored in an underground heat gradient pipe system for re-use.

Avocent KVM™

Qnet is a reseller of Avocent KVM™ services (remote keyboard, video and mouse) for co-location customers requiring a remote access solution.

Connectivity

Several long distance fibre optic networks pass through Coquitlam along the trans-Canada highway, CPR rail lines and BC Hydro's right-of-way. All of these networks terminate at the BC Net transit exchange at 555 West Hastings in Vancouver. The Vancouver Transit Exchange (VANTX) at 555 West Hastings provides a connection point to the Seattle Internet Exchange (SIX) which is one of the primary telecom peering facilities in North America.

Upstream services from the Poirier co-location facility to 555 West Hastings and other locations outside of Coquitlam are currently available from several telecom service providers including Telus, Bell and MTS/Allstream. For a complete list of upstream transit providers and contact information please refer to the QNet website using the following link:

http://www.qnetbc.net/nr/qnet/pdf/v2-QNet_Transit_Service_Providers.pdf

QNet operates a 60 km fibre optic network throughout the City of Coquitlam providing local, dark fibre connectivity for businesses located in the community. In most areas of the city, connectivity to the Poirier co-location facility can be provided via a fibre optic ring for maximum reliability. More information of QNet's dark fibre leasing services and rates can be found at www.qnetbc.net.

Pricing

Equipment Cabinet and Services Pricing	
Full 19" rack, (expansion available), seismic isolation, 60 inches deep, front cable management	\$ 1000 per month per rack
Up to 30 KVA power and cooling per rack	\$0.11 / KVAHr (1)
Adjusting power outlets, setup	\$400
Independent controlled water cooled rack	Included
Inert gas fire prevention	Included
Lockable door, card reader	Included
Pre authorised and logged access to the datacentre	Included
24 x 7 access	Included
Access card	Included
Video surveillance	Included
Out of band access	\$25/mo
KVM emulation 8 port	\$90/mo
KVM emulation 16 port	\$120/mo
KVM emulation 32 port	\$ 160/mo
PDU socket control	\$20/mo
12 Fibres port SC/PC to ODF	Included

(1) Based on a PUE of 1.65 (\$0.07/KVAHr x 1.65).

For a tour or further information contact:

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