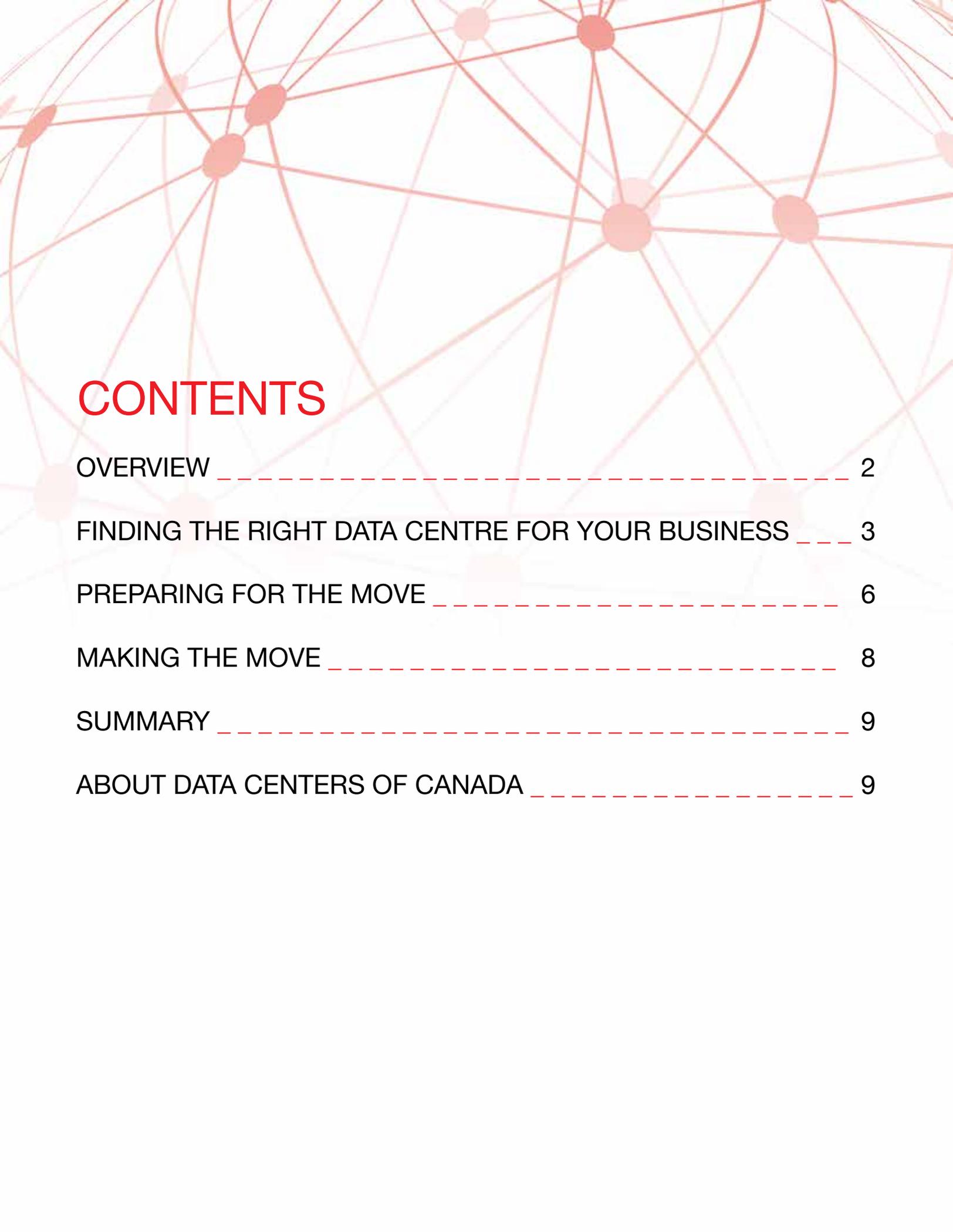


MOVING INTO THE DATA CENTRE: BEST PRACTICES FOR SUCCESSFUL COLOCATION



DATA CENTERS CANADA
COLOCATION AND DISASTER RECOVERY FACILITIES

A Division of **TeraGo Networks**



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OVERVIEW

Data centres and colocation facilities will soon become a necessity for businesses, like smartphones or laptops. Companies around the globe are moving their IT infrastructure into a data centre, and you should be too. Since building a data centre facility is costly and time consuming, many businesses are looking at colocation as a means of obtaining the benefits of utilizing a data centre while saving on costs. However, with the data centre market continuing to grow at an astonishing rate, finding a colocation facility that meets all of your business requirements will become increasingly difficult¹. The demand for space is increasing more than twice as fast as supply worldwide².

More specifically, Canadian companies are facing a unique challenge when searching for a colocation facility; they're in direct competition with American and UK based companies. Recent concerns over the National Security Agency's (NSA) monitoring have international companies looking to house their data in Canadian-based data centre facilities³. The Information and Technology Innovation Foundation (ITIF), a non-partisan, D.C.-based group, published a report saying that U.S. cloud computing and colocation providers could lose as much as \$35 billion by 2016 because of the NSA revelations⁴. As a result, an increased number of companies are looking north of the U.S. border to Canada. With its skilled workforce,

cold climate, and relatively cheap sources of electricity, Canada is an ideal location for companies that no longer want to house their data in the States.

Although there is need to find space quickly, it's equally important to ensure the facility you choose is right for your business. If your company makes a hasty decision and moved in a colocation facility that isn't a good fit, it could cost a lot of time and money to relocate to a data centre that's better suited to your business. This whitepaper will help your company find a colocation facility quickly by providing the information needed to make the right choice for your business.

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1 <http://www.techvibes.com/blog/why-data-center-providers-love-the-greater-toronto-burbs-2014-01-09>

2 <http://www.theglobeandmail.com/report-on-business/small-business/sb-digital/biz-categories-technology/computing-power-being-gobbled-up-at-data-centres/article4301328/>

3 http://www.thestar.com/news/canada/2014/01/09/us_companies_look_to_canadian_servers_in_wake_of_nsa_spy_scandal.html

4 <http://business.time.com/2013/12/10/nsa-spying-scandal-could-cost-u-s-tech-giants-billions/>

FINDING THE RIGHT DATA CENTRE FOR YOUR BUSINESS

The most important aspect of finding the right data centre is taking a tour of the facility. That way, you can see first-hand where your critical data will be stored. It also gives you an opportunity to address any questions or concerns you may have that relate to your company's specific requirements. Like fingerprints, every company is unique – and each company will need to decide which items will be included in their colocation checklist. Below are some key items to consider when compiling your own checklist:

What is the condition and location of the facility?

A key indicator of the quality of a colocation centre is its general maintenance – are the floors clean? Have the trash cans been emptied? Are there any cracks in the foundation? Make sure you inspect the inside and the outside of the facility for any signs of trouble. Typically, if a facility is managed well at the physical level, it speaks volumes for the discipline the colocation provider has in managing the core services.

Another important aspect to consider when examining the facility is its location. The physical location of a data centre can affect every other factor. Facilities that are located outside of heavily populated areas typically cost less as a result of lower land costs. However, it's also important to house your IT infrastructure in a location that can be accessed by your staff if your servers go down in the middle of the night. So be sure to consider staff response time when shopping around for colocation. Although a majority of colocation providers offer outsourced IT support, or "remote hands", to assist businesses that don't have the time or team members to tend to any issues – there is an additional charge for this ser-

vice⁵. The cost of remote hands varies, depending on the colocation facility, but can be ideal for companies who are not in proximity to their data centre location.

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Additionally, you'll need to examine the area surrounding the facility. Does the area look safe? Or is the site located in a busy industrial area with several people coming and going – posing a potential security threat? It's also important to consider the weather patterns in the area – such as tornados or floods. The last thing you want to do is move all your critical data into a region that experiences frequent natural disasters. These are the factors you will need to consider when searching for the right colocation facility for your business.

What type of security measures does the data center offer? This is likely to be the most important aspect of your search. There will always be a risk associated with locating your company's data offsite, so it's critical that you ask what type of security measures are in place to protect your data at the facility. When touring the data centre, look for things like security cameras, access cards, bio metric scanners, and any possible vulnerabilities.

⁵ <http://www.computerweekly.com/feature/The-data-centre-boom-Finding-the-right-site-just-got-serious>

FINDING THE RIGHT DATA CENTRE FOR YOUR BUSINESS (CONTINUED)

In addition to the physical security measures, be sure to inquire about virtual security to protect your data against cyber-attacks. Not all colocation facilities provide this type of service – and those that do typically charge a higher price for their colocation services. In most cases, it's up to the user to ensure their data is protected against any viruses or hackers – which is actually a great benefit. By implementing your own protective measures, instead of relying on your colocation provider, you will have greater control and transparency on which data comes in and out of your servers.

Implementing your own cybersecurity and other protective measures, instead of relying on your colocation provider, enables you to have greater control and transparency on which data comes in and out of your servers

At this time, you should also examine the fire prevention methods the facility has in place. Be sure to note the emergency exits, fire suppression tools, and smoke and fire detection devices.

What kind of power redundancy is in place? In the case of a power outage, you want to ensure that the data center has the ability to continue operating. Be sure to thoroughly understand how your equipment is being supported in the data centre. Once you have an understanding of where your primary power source is coming from, you'll need to inquire what types of power redundancy is in place should the primary source

ever be severed. Having multiple back-up power sources in place, such as generators, batteries, or a combination of multiple power grids, is the best way to counteract the impact of a power outage.

Once you know what the facility's redundant power supply process is, it's important to incorporate that into your company's own disaster recovery plan. Having an understanding of the procedures that take place in the event of a power outage greatly contribute to your company's success. Many businesses that experience a significant interruption or outage never fully recover. A recent study conducted by The Hartford found that 43% of companies that experienced downtime for 10 or more consecutive days never reopened⁶. Businesses that design and implement a disaster recovery plan – one that incorporates any colocation redundant power supply procedures – are better positioned to survive an outage.

Is there room to expand? Every business is looking to grow, so making sure that the data center has enough space to accommodate an expansion. It would be a huge inconvenience to find out that your current data center is not able to accommodate your needs, leaving you to go through the entire process again to locate another data center that has space.

It's also important to ensure your colocation provider is able to meet your power needs in the future, because if they can't – your company's options will be limited as you seek to expand your colocation installation or implement new servers with higher power requirements.

⁶ <http://www.thehartford.com/business/emergency-preparedness>

FINDING THE RIGHT DATA CENTRE FOR YOUR BUSINESS (CONTINUED)

What is the data center staff like? You will want to ensure that the data center staff is friendly, reliable, and knowledgeable. These are the people who are running the facility that houses your company's servers, networks, and other computer equipment. Getting to know them and making sure that you feel comfortable is an important aspect. If the data center staff appears to be unprofessional or unhelpful, then think about taking your business elsewhere.

It's also important to determine how much staffing you require to support your colocation requirements. Not all facilities have 24-hour on-site personnel. If your IT staff isn't in close proximity to the colocation site, it's important to inquire if any sort of remote hands service is offered. Even though the facility may not have staff on site 24x7, they may have a trained technician located close to the data centre that can visit the site after hours if needed. Typically, this type of "on call" service comes at an additional cost, but is well worth the money if you require immediate assistance.

Do they offer a Service Level Agreement (SLA)?

Not every data center will offer one of these, but you may soon see more and more data centers providing them to their customers. Recent research has revealed that SLA's are cited as one of the third most important criterion that IT professionals look for when researching data centers. Providers that offer a 99-100% uptime SLA for power and redundant power systems have engineered their systems with concurrently maintainable power sources⁷. This means they provide uninterrupted power during both routine maintenance and when any power source is severed.

Although there's often a higher cost associated with providers that offer 99-100% uptime, companies running mission-critical operations may feel it's worth the additional fees.

It's important to you review the contractual language of the SLA carefully to ensure you have a full understanding of the levels of availability and remedies, such as guaranteed uptime and support staff. Since colocation providers will offer a credit for any unexpected outages, it's important for companies to have an understanding of the costs they would incur if service went down⁸. After calculating the total costs of downtime, you may find that the credit being offered by your colocation provider isn't enough. If that's the case, your company will need to review the SLA agreement with the provider to negotiate the appropriate changes – or continue your search for a different colocation facility.



The percent of companies that never reopen after experiencing downtime for 10 or more consecutive days. Businesses that design and implement a disaster recovery plan are better positioned to survive an outage.

⁷ <http://searchdatacenter.techtarget.com/tip/From-the-front-lines-How-to-select-a-colocation-facility>

⁸ <http://www.datacenterandcolocation.com/colocation/how-to-select-a-data-center-facility/>

PREPARING FOR THE MOVE

Once you've made a decision on which colocation provider is the best for your business, it's time to start preparing for the big move. The better prepared your business is – the easier the transition will be. A successful migration requires careful planning, but it's important to realize that any move will include unforeseen events. By planning ahead, allowing extra time in your schedule, and leaving room in your budget for any last-minute changes or requirements, you can minimize risk. Some preparation tips include:

Scheduling the move: Just like moving into a new office building – you'll need to arrange a time that works best for your company and colocation provider. Having a scheduled time for the migration also allows for any downtime preparations. While you're busy relocating your servers from one site to another, your company's productivity is halted, so communicating this planned outage during the migration is very important for business continuity⁹.

You also need to consider the fact that the colocation facility will need to prepare for your arrival as well. They'll need to ensure you and your team have all the proper passes and security access to the facility. Additionally, the facility staff will need to confirm that the loading dock is accessible and your rack space is ready for your servers to move in.

Backup Everything: While moving your company's IT infrastructure offsite to a colocation facility, it's essential that you backup all your data in a secure location. Once you have performed the backup, you will need to ensure that the data is complete and uncorrupted. This will ensure your data is safe and accessible while you move, even if one of the servers is damaged during the transition. Hardware is replaceable – company data is not.

Practice makes perfect: If it's your first experience with colocation and you're company is used to having your servers in close proximity, such as down the hall or in your closet, you may want to practice accessing your servers remotely – while they're still in your office. This will give you a good sense of what you need to do and what equipment or software you may need to install before you move to the colocation facility.

However, if you're not experienced or comfortable with migrating your servers, you may want to consider hiring a consultant to assist. There are a variety of independent and third-party consultants available that focus primarily on migrating to a colocation facility – although these services come at an additional cost¹⁰.

⁹ <http://www.datacenterknowledge.com/archives/2012/11/06/selecting-the-best-location-for-a-colocation-provider/>
¹⁰ <http://www.businessnewsdaily.com/5631-choosing-a-data-center.html>

PREPARING FOR THE MOVE (CONTINUED)

Connect with your Internet Service Provider: You'll need a secure connection to your servers in the data centre in order to send and receive data. It's also important to re-evaluate your current Internet service to determine if you have adequate bandwidth necessary to support the increased traffic. There is also a greater demand for decreased latency as critical data is transferred back and forth between the colocation facility and your office location.

Most colocation facilities are carrier neutral, meaning that your company can connect or purchase services from any Service Provider, Carrier, or Network Operator. This gives your company a great deal of options when searching for a provider that meets your needs and budget. Additionally, having multiple Internet providers available provides businesses with the opportunity to establish a redundant connection. By obtaining Internet service from a mix of multiple carriers, businesses can achieve their ideal level of connectivity and server performance at a cost they can afford.

Review the migration process: Once you've established your migration process plan, you will need to review it multiple times and make any necessary revisions. Be sure that every relocation participant understands the role they play throughout the transition process. This includes

educating your internal IT department as well as the colocation facility staff. Having an open line of communication with all parties involved is essential to a successful transition.

Back up all data before the move, and make sure it is complete and uncorrupted. Even if one of the servers is damaged during the transition, hardware is replaceable – company data is not

MAKING THE MOVE

After all that searching and planning, it's time to take the big leap and move into the colocation facility. Every data centre has its own process for new tenants, so be sure you've connected with the colocation staff before you start packing up your servers. However, there are a few important items that should be addressed while you're making the move to your new colocation facility:

Review Colocation Facility Policies with IT Members: Every team member entering the facility will need to have an understanding of the policies and procedures. You will also need to involve all the IT stakeholders in the process. This can include educating those who handle network security, informing those who handle networking of any new protocols and routing methods, and introducing those who will be managing applications and virtualization to the hardware they will now be working with¹¹.

Arranging Facility Access: This is a good time to bring any employees who will require access to the data centre to set up their security access to the facility. As you are well aware, colocation facilities are outfitted with a variety of security measures, both physical and virtual, to keep data secure. In order to maintain the level of security, every team member will need to adhere to the procedures in place. This can include having their photo taken for picture identification, providing a fingerprint for the biometric scanners, or obtaining the appropriate access cards.

Final Inspection and Testing: Before you start moving all your servers into the assigned space, conduct a final check to ensure there are no surprises. This can include verifying that all power sources are connected, the appropriate cooling infrastructure is in place, and there aren't any signs of recent problems around your space – such as debris or water damage.

Once you've ensured the space is clear, it's time to hook everything up and start testing. You'll need to check that all devices are connected and able to communicate with each other. After you and your team have established that all your components are running smoothly, it's time to sit back and enjoy the benefits of colocation.

Colocation facilities are outfitted with a variety of security measures – team members will need to adhere to the procedures, which can include photo identification, fingerprinting for biometric scanners, and access cards

¹¹ <http://onr.com/colocation/colocation-moving-tips/>

SUMMARY

Every aspect of finding the right colocation facility for your business is unique – no two companies have the same demands. It's important for businesses to establish what their needs and requirements are before entering the colocation market. With spaces filling up quickly, you and your team don't want to waste time viewing facilities that don't meet your list of items. Once you've decided on a list of colocation facilities that you may be interested, it's time to schedule a tour.

Remember, taking a tour of the colocation data centre is the most important aspect of finding the proper facility for your business. Whichever colocation facility you choose, it will be an important extension of your organization.

DATA CENTERS CANADA

Data Centers Canada, a division of TeraGo Networks, provides colocation and disaster recovery services to businesses, government establishments, and technology service providers. By relocating mission critical information and equipment to a data center, businesses will save time and money. Colocation services are available to companies of any size, whether they only need 1U of space or a whole cage.

Any business that stores its data offsite at a colocation facility stands to gain considerably from the greater security and performance levels provided without incurring any significant costs. DCC is equipped with resilient power and cooling systems, as well as high security levels, to ensure all data customer data and IT infrastructure is operating and accessible 24/7.

The facility also provides disaster recovery solutions, including dedicated work spaces as well as information technology and support services to minimize the interruption to your business. When an unforeseen event leaves you or your entire company without a place to work, one quick call to DCC can activate priority access to a private office – ensuring your business stays connected.