MIDCO BUSINESS



DATA CENTERS

How Do They Fit into My Enterprise IT Strategy?



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It wasn't that long ago when most thought that, eventually, all businesses would have to get into the data center business.

Healthcare, insurance, banking and finance – you name it, every enterprise-level organization was on its way to owning and operating its own fully equipped, off-site data center.

And while some went this route and succeeded, the reality is that many enterprises attempted it, but fell a little short due to its complexity and substantial cost.

More than 60% of enterprise workloads are still being operated on-premises.[1] But, as the need for compute capacity grows, all organizations will have to face the ever-increasing compliance, bandwidth and security demands of today's connected world.

In order to meet these needs, enterprises will need to redistribute their workloads to not only relieve pressure, but to create a holistically functioning system that has failovers in place, decreased latency and increased availability. **That's why it's predicted by 2024, on-premises workloads will fall to 20% – with colocation and cloud-based solutions taking their place.**[1]

Your IT network is growing and changing – and the time for creating a five-year strategy is now. As you plan for your organization's future, you'll be meeting a growing need for secure, environmentally protected data servers and equipment, without compromising network speed. That's where data centers come in.

1 DataCenterKnowledge.com – This Wave of Data Center Consolidation is Different from the First One, Q12018

Did You Know?

$9,000+

Of the 63 data centers surveyed by the Ponemon Institute in 2016, the average cost per minute of a data center outage is $9,000, with some outages costing upwards of $17,000 per minute.[2]

30%

As of 2019, 30% of enterprise, public-cloud connections will be non-internet-based, through cloud interconnects or direct WAN connectivity – up from approximately 5% today.[4]



A recent survey from the Association for Computer Operations Management (AFCOM) found that 80% of data centers are running at least at N+1 redundancy levels – and of that 30% will be moving to N+2 in the next 36 months.[3]



The same AFCOM survey found that 29% of data center leaders are already implementing or will be deploying edge compute capacity in the next 12 months.[3]

2 Ponemon Institute © Research Report-Cost of Data Center Outages, Q12016
3 AFCOM-State of the Data Center Report, Q12018
4 Gartner-A Way to Better Reach the Cloud, 2016

The Benefits of a Data Center

As a large organization, you have computer systems, servers and other IT equipment that keep your enterprise humming every day. This equipment works as hard as you do – and is critical to the wellbeing of your corporate infrastructure.

Data centers ensure your equipment is protected and performing at its best, and you don't have to build your own data center to reap the benefits. Outsourcing partners provide you with a space to house your equipment within a facility, with an additional commitment to keep it safe and sound.

Depending on what your organization's needs and goals are, data centers can provide a wide variety of benefits. Here are just a few.

Stable, Highly Available Power

Data centers don't punch a time clock. There is a constant, steady stream of power flowing in and out of the data center system 24/7/365. Data centers are ready to withstand large-scale power outages and even natural disasters through a redundant supply of energy via alternate power sources (such as diesel power generators). Equipped for the worst, data centers never quit.

Risk Mitigation

By creating distance between your headquarters and your data center, you're eliminating the risk of a single event – such as a utility blackout or natural disaster – taking out both facilities. Choosing a data center that is geographically diverse, away from your primary data and IT resources, is just another way to protect your critical equipment.

Environmental Controls

Your facilities were built to provide you and your employees with a comfortable environment, but the ebbs and flows of the HVAC system don't spell success for electrical equipment. Your IT equipment pumps out heat day in and day out, so it doesn't function at its highest potential when the average HVAC is heating during the winter and working overtime cooling during the summer.

A proper environment for your equipment isn't one that opens the door to dust, insects and other foreign elements, either. Data centers are built to keep your equipment comfortable, and the environment is monitored 24/7, with systems in place to trap invasive elements. This can ultimately prolong the lifespan of your equipment, saving you money down the road.

Security

Can you guarantee that your employees and customers' information is safe? What would happen if your equipment was destroyed – or even stolen?

According to a 2017 study from the Pew Research Center, a nonpartisan social science research institute, roughly half of Americans (49%) feel their personal information is less

secure than it was five years ago, with the percentage increasing to 58% for Americans age 50 and older.[5] As our online activity increases, so does doubt that our information is safe.

Data centers provide peace of mind for your business – and ultimately, your customers. Built with layers of security, outsourcing in a data center can provide you with 24/7 monitoring and a dedicated team of professionals checking the system every day. Plus, you can choose to keep your access equipment under lock and key in a caged space or even a private suite. So, if there's a crisis situation at your headquarters, you can know that your data is backed up, a safe distance away.

5 Pew Research Center: Americans and Cybersecurity, Q12017

Ask The Expert



TIM KITTALA

Director, Data Center Strategy // Parallel Technologies

In your experience, what is the biggest reason businesses choose to outsource their data center services?

The major driver is investment or cost.

Why is that?

We have found that customers choose to "get out of the data center business," because of the impact to resources from a time-implementation standpoint, especially when it comes to operations and maintaining a critical environment. Managing a data center can easily become a full-time job for an individual who needs to constantly balance the IT requirements needed to meet the goals and objectives of both the data center and the business.

How do you see the data center landscape changing over the next five years?

The data center landscape's biggest change over the next five years will probably come from the immense amount of data being consumed on a daily basis. This network demand will force companies to get smarter and be more flexible with how they manage the deluge of data from bandwidth, latency, storage and cost standpoints. They will also need to justify how they will leverage said information, which will inevitably change the equipment located within the data center.

What about 10 years from now?

Taking a broader look at the next 10 years – it's probably wise to look at the history of the data center. If there's a major change to a data center's IT infrastructure, that impacts the load demand profile – either power, cooling or network. Because of these continual changes and dynamics, the choice between serving IT equipment in the cloud, colocation and on-premises will require flexibility, but more importantly, a purpose-built facility. With the focus on operations, being flexible is the only way to handle this changing landscape.

Parallel Technologies uses years of technical expertise and experience in critical infrastructure to provide complete solutions for reliable data centers and intelligent buildings.

By creating distance between your headquarters and your data center, you're eliminating the risk of a single event – such as a utility blackout or natural disaster – taking out both facilities.



TIME TO UPDATE YOUR EQUIPMENT?

Be sure to check out your outsourcing options before you buy – it could be a much less expensive option in the long run.

Lower Facility and Equipment Costs

In April 2018, Google announced it would invest an additional $1.8 billion in its Oregon data center. Since 2006, the company spent $10.5 billion on data center facilities, including the recent decision to build a $600-million center in Tennessee.[6] And while we know it's a leap to compare the average data center to a Google data center, it might give you an idea of the importance of off-site data centers.

Ultimately, power, cooling, redundancy, monitoring, growth, expansion and staffing (among other factors) come at a cost – an investment your organization doesn't have to make when outsourcing is an option. Essentially, you don't have to be Google – or have access to funds like Google – to reap the business benefits of choosing a data center provider.

Reliable Internet Access

Data centers can provide you with direct network access – giving you, your customers and your employees the instant connection we all crave. The average web page takes about 15 seconds to load entirely, but the average person will leave a page if it takes longer than three seconds to load.[7] If your web visitors aren't receiving the speed they need to access your site because the servers are bogged down, you might be experiencing decreased productivity – or worse, losing out on business.

If you are experiencing a lag, bandwidth could be an underlying issue, too. Data centers provide direct network access – so your bandwidth is faster and more reliable.

Less Staff Responsibility

Your IT team's time is valuable. Outsourcing to a data center can give your team the relief they need to focus on your in-house IT management – instead of managing your data center. Plus, outsourcing a third-party provider means that you don't have to worry about hiring candidates with data center management experience, either. It's all taken care of by your outsourcing partner.

6 Seattle Times: Google touts $1.8 billion investment in Oregon data center, Q22018
7 Think With Google: Find out how you stack up to new industry benchmarks for mobile page speed, Q12018

How Can Colocation Play a Role at My Enterprise?

Housing equipment in a data center isn't for everyone. Keeping your equipment near you, on-premises can have its benefits, too. However, many successful organizations see the upside of colocation protection and downfalls of having solely in-house equipment.

Colocation provides you with complete control of your equipment, but shares the cost of power, cooling and space with other tenants.



Five Questions to Ask Your Team *Right Now*

1. Where is our equipment currently located – and is it safe?
2. How do we backup critical data?
3. What kind of core applications do we rely on to function every day?
4. Are we experiencing slower than normal speeds when accessing our core applications?
5. Do we have an IT strategy that will set us up for success five years from now?

Could This Be You?

Midco's team isn't new to the data center business. In fact, our team has a combined five decades of experience in managing data center infrastructures – not including our experience engineering and managing our own network gear and data, which powers one of the most robust networks in the country.

As a result, we can provide guidance on when it's a good time to colocate. While the following scenarios are (mostly) fictional, if the situation sounds like your organization, or could be in the next five years, it's time to rethink your current IT strategy.



TECHNICAL NEEDS

Availability: Whether or not the equipment needs to be easily accessible by staff

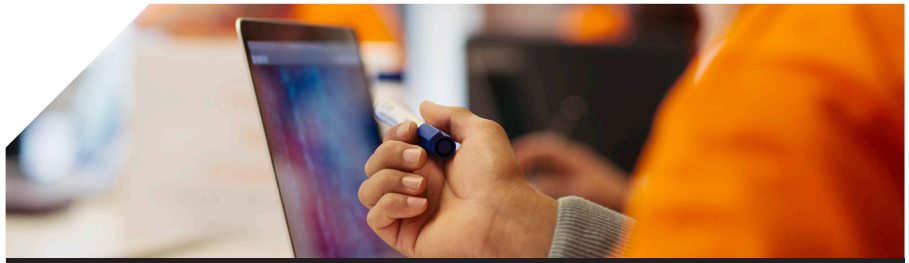
Infrastructure: The building or facility that the equipment is stored in is suitable for IT and server equipment

Performance: Measures how quickly the organization needs their equipment to complete commands

Throughput: Allows for a high amount of information to pass through a system or process

ARE YOU STAYING **COMPLIANT?**

Compliance may not be your favorite word, but it's a necessary part of your job and your company. Data center providers can make your life easier – by meeting your availability and security requirements, which they're often doing for other organizations already.



Company A is a tech company.

Company A is growing. With the successful launch of its new app, they've added more staff to maintain the app's critical data and functionality. Customers are loving it – and everyone is already talking about adding more app features. But even this tech company's IT strategy wasn't prepared for the exponential growth – and the increased customer interactions are maxing out data storage space and affecting app performance. The company's leaders and IT team are in the midst of deciding what solution is best: amplifying their on-premises setup or outsourcing.

MIDCO ASSESSMENT: Company A needs to find a scalable solution that will provide additional space and bandwidth as it grows. Outsourcing server and storage to a data center provider will give this tech company direct network access to increase bandwidth and performance, plus provide a flexible storage solution. Expanding the company's IT footprint in-house will only keep the company regularly one step behind.

Technical Need	On-Premises	Data Center
Availability	↓	↑
Infrastructure	↓	↑
Performance	↓	↑
Throughput	↓	↑

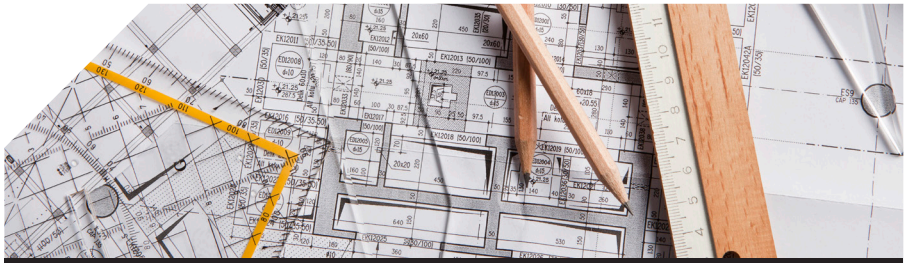


Company B is a regional financial services subsidiary.

Company B is currently using a small, secure back room to house its IT equipment, and staff members don't think about it very much, aside from the routine monthly checks. But Company B's holding company has just acquired another firm, meaning that Company B must merge with the other regional subsidiary. Neither company was prepared for this acquisition, and the IT teams didn't expect data center needs to change anytime soon. In addition, they're now reorganizing their customer-facing teams, which is causing them to rethink the entire IT strategy.

MIDCO ASSESSMENT: The transformed Company B needs to take this opportunity to consolidate and centralize to one place. By moving to a centralized, third-party data center, they can simplify their migration plan and the organization will be better prepared for growth or more acquisitions in the future.

Technical Need	On-Premises	Data Center
Availability	↑	↑
Infrastructure	↓	↑
Performance	↑	↑
Throughput	↓	↑



Company C is an engineering firm.

Company C has locations in three states and has created a multifaceted software that categorizes and documents engineering designs. All of the locations currently run different versions of the software, causing cataloging and backup issues – especially as the organization grows. It's having a negative effect on employee performance and morale, and team members working outside headquarters are feeling more frustrated than most because they're always a version behind.

MIDCO ASSESSMENT: Company C needs to centralize its software platform and implement a virtual desktop infrastructure (VDI) solution. This will eliminate the need for multiple versions of the software platform – increasing reliability, and backup effectiveness, as well as employee productivity and performance. By outsourcing to a data center, this engineering firm can deliver a diversified solution, without having to build and power another equipment-friendly environment. Plus, they'll be able to centralize software maintenance and upkeep.

Technical Need	On-Premises	Data Center
Availability	↑	↑
Infrastructure	↓	↑
Performance	↑	↑
Throughput	↓	↑



Company D is a cloud service provider.

Company D is a cloud service provider that manages more than 150 accounts. Even though the company has a great reputation for being a customer-centric, leaders are constantly choosing between investing in more infrastructure or hiring more managed service personnel. Both are required to grow the business, but the capital budget isn't there.

MIDCO ASSESSMENT: Company D needs to outsource its data center to a third-party, colocation provider. This will allow this cloud service provider to focus efforts on its core strengths, which include delivering support and peace of mind to its business customers. By migrating its own cloud infrastructure to a third-party data center, Company D will also have access to more network carriers, opening up the opportunity to serve more customers.

Technical Need	On-Premises	Data Center
Availability	↑	↑
Infrastructure	↓	↑
Performance	↑	↑
Throughput	↓	↑

Tell Me About the Tiers

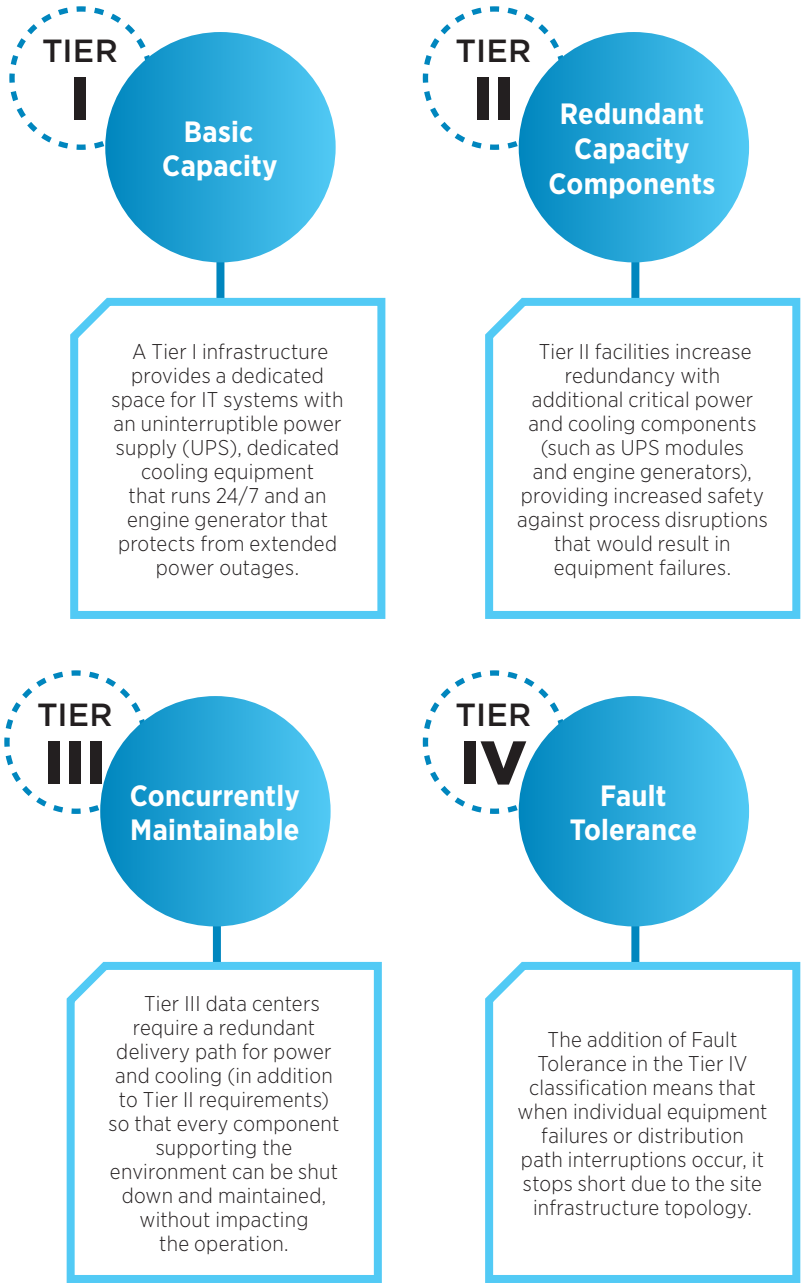
In 1993, the Uptime Institute started constructing a system to evaluate data center infrastructure performance, or uptime. Now present in more than 85 countries around the world, the Tier Standard has become the industry's trusted global standard for data center design, build and operation. The levels are progressive, meaning you must meet the lower requirements before achieving the next.

In the U.S., there are only 100 data centers certified by the Uptime Institute.[8] The Midwest includes 24 certified facilities, with 88% at the Tier III level.[6]

An ideal data center is one with a facility design and structure based on these tiers. Knowing which level your business needs is something to consider when choosing an outsourcing partner.

DID YOU KNOW?

Midco's data centers are built to Tier II and Tier III standards.

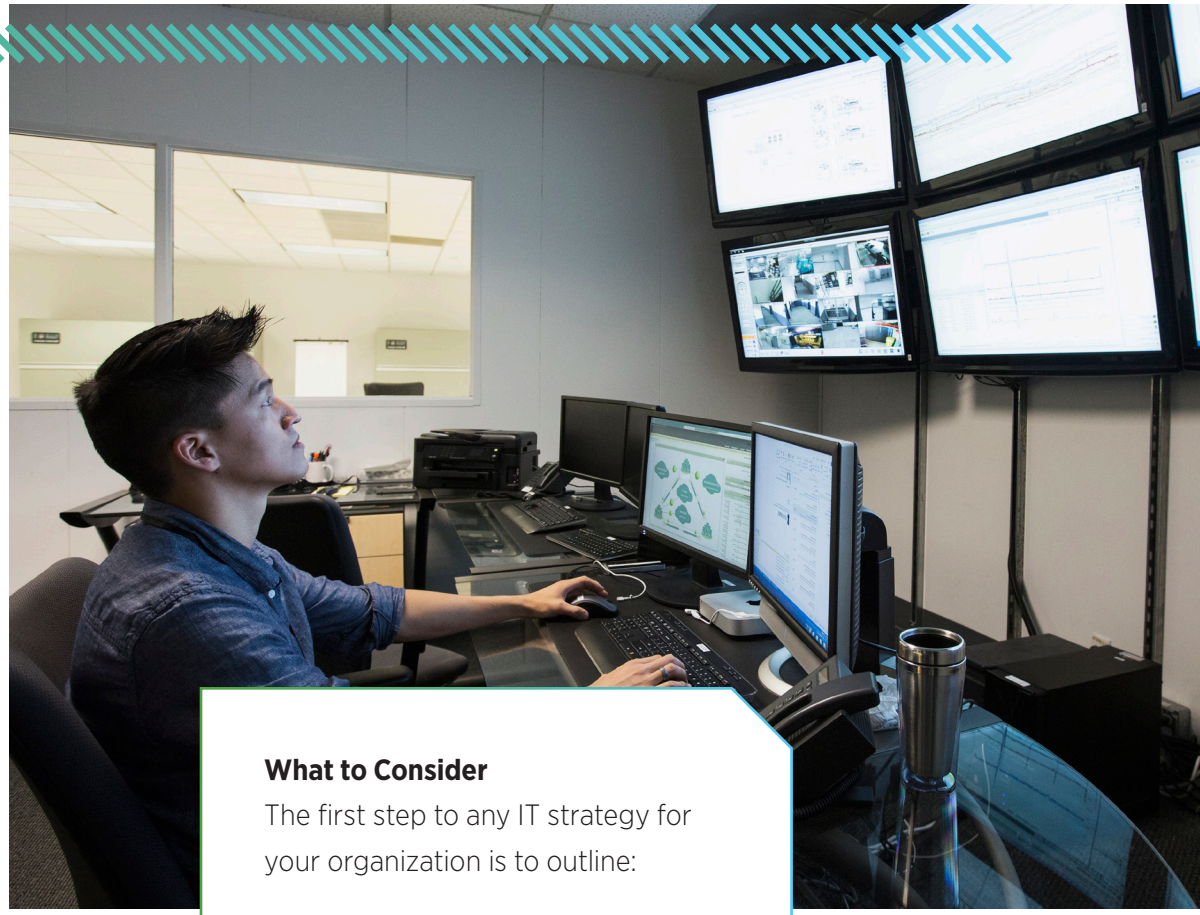


8 Uptime Institute: Uptime Institute Tier Certification World Map, 2Q2018

Data Centers and (Powering) the Cloud

Consider this: Gartner recently stated that more than $1 trillion in IT spending will be directly or indirectly affected by the shift to cloud during the next five years.[9] At the same time, AFCOM's State of the Data Center survey reported that more than half of data center leaders (55%) stated that security of company data was their biggest concern looking ahead.[9] Executives and IT managers are constantly challenged to determine how to transfer data quickly – and securely.

The answer: Hybrid solutions that combine both cloud and colocation solutions allow companies to maintain a private network, while also seamlessly interfacing with the public. Combine that with a colocation provider that can also provide a direct, private connection to cloud resources – and, all of a sudden, you have a highly functioning, secure hybrid model.



What to Consider

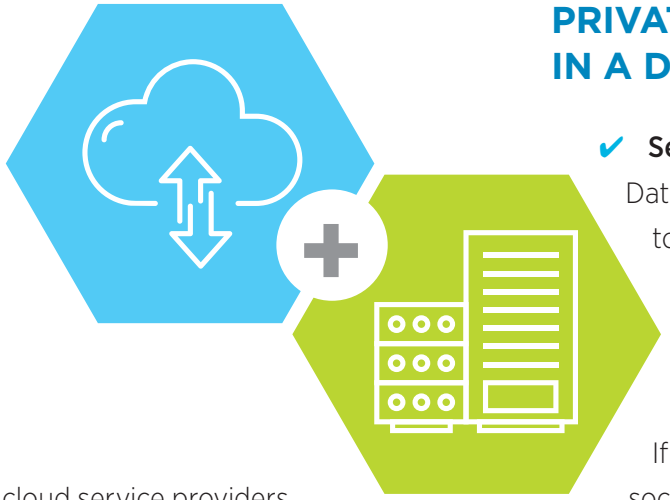
The first step to any IT strategy for your organization is to outline:

- Tactical and prognostic goals
- Assessment and design
- Deployment and migration
- Continual service improvement

9 AFCOM-State of the Data Center Report, Q12018

Creating a Hybrid Solution

CLOUD ENVIRONMENT

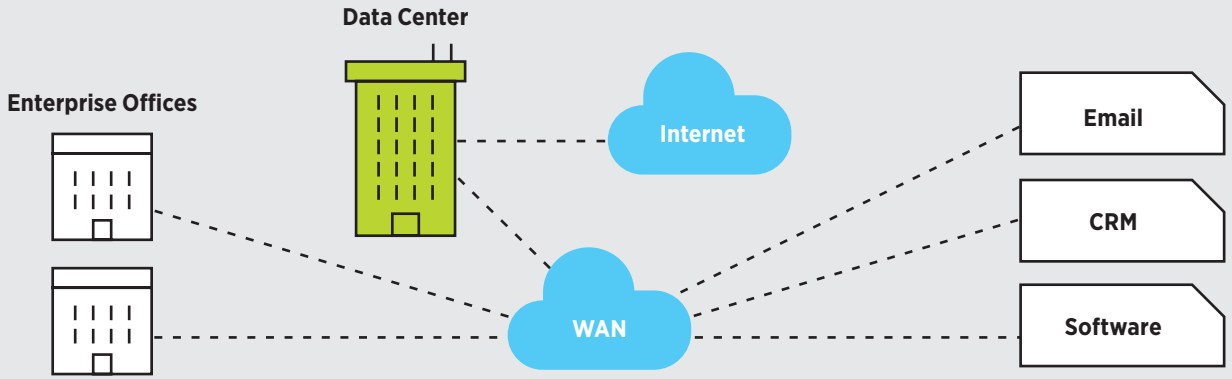


- ✔ **Accessibility**
  Cloud servers make it easy to access and maintain your data remotely from different geographical regions – but can also make it easy for others to access your data as well.
- ✔ **Instant Scalability**
  Because the storage is all virtual, cloud service providers allow you to easily grow as you need – by adding more virtual space anytime.
- ✔ **Mass Distribution of Public Information**
  Things like the daily weather report and cat videos belong on the cloud – along with your website – making them accessible at all times.

PRIVATE CLOUD ENVIRONMENT IN A DATA CENTER

- ✔ **Secure Infrastructure on a Private Backbone**
  Data center providers that also own their own network can help you to keep your critical equipment secure both physically and virtually by sending information via a private cloud. Your information never travels through the public internet.
- ✔ **Private Records Maintained**
  If you have information that you don't want others to access – like social security numbers and patent applications – data centers will keep those records physically secure.
- ✔ **Speed & Control**
  When you outsource to cloud providers, you're giving them the power to maintain your data for you. Outsourcing to a data center will help you maintain control.

Example of a Direct Hybrid Solution



Are you thinking about restructuring your IT resources? You should think about a data center that's well connected to a high-capacity network.

A Midco consultant is ready to discuss your needs and assist in designing an IT strategy that complements both your network and infrastructure needs.

Midco.com/Business/Contact | **1.800.888.1300**

Or learn more about Midco data center offerings at **Midco.com/DataCenters**.

ABOUT MIDCO | Founded in 1931, Midco is dedicated to providing industry-leading solutions to the businesses it serves. Midco currently owns and operates four state-of-the-art data centers, diversely located throughout the Midwest.

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