The Data Center in 2019: Hot Technologies & Trends

165 HALSEY STREET

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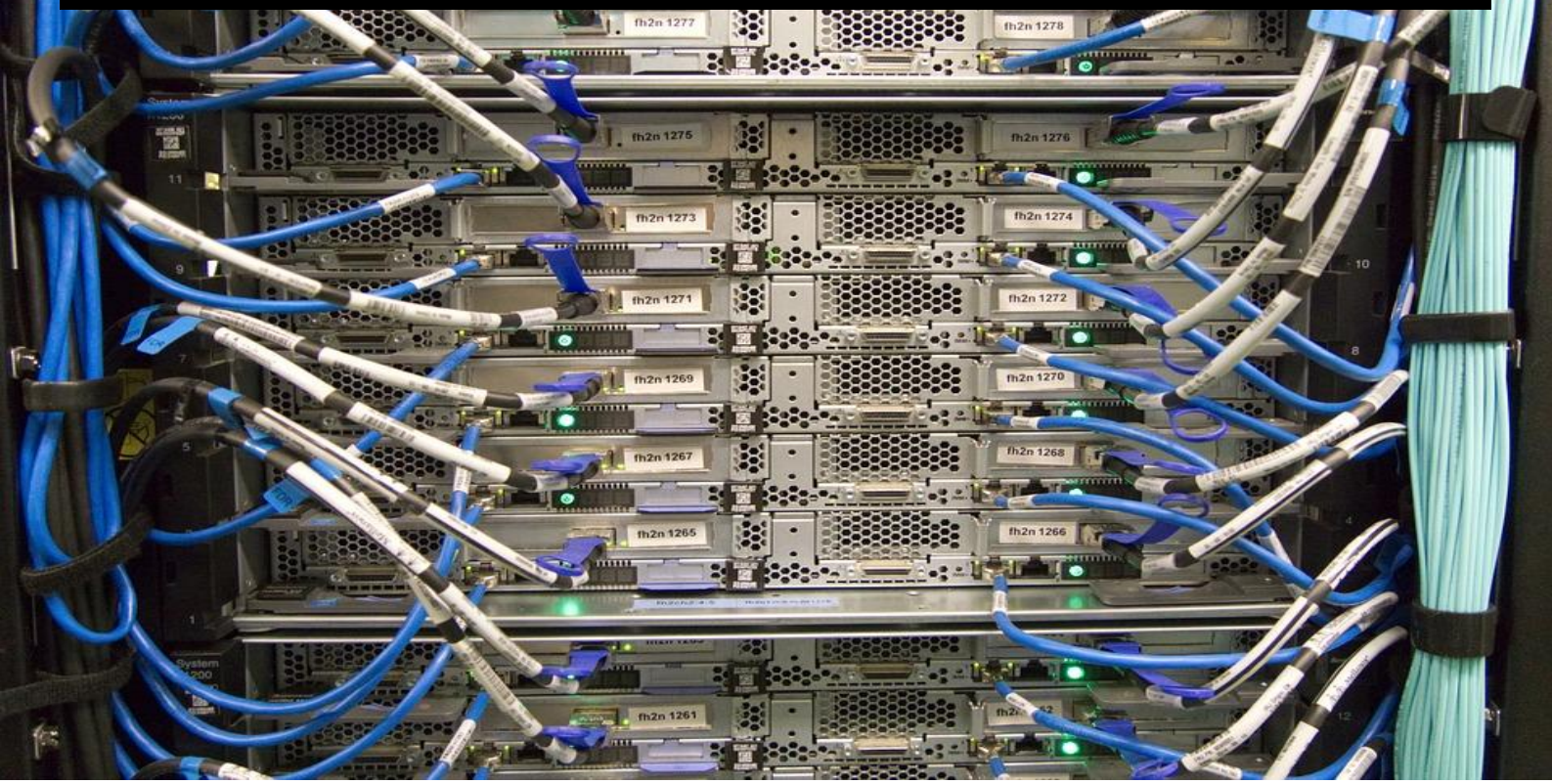
Introduction

Death of the Data Center? Hardly. The Data Center in 2019 remains a significant part of enterprise IT. The role of data centers continue to adapt to our world of evolving technologies. Mega data centers, such as those supporting the giants of Apple, Microsoft, Google and Facebook, continue to garner the most attention, but the corporate data centers remain firm and relevant. Today's modern data center supports IT workloads in new and innovative ways. In 2019, we observe an expansion of top technologies such as 5G hybrid operations, edge data centers, next-gen equipment for monitoring, Software-Defined Networking (SDN) &

In this ebook, we explore the top technology trends rising to the top for data centers in 2019.



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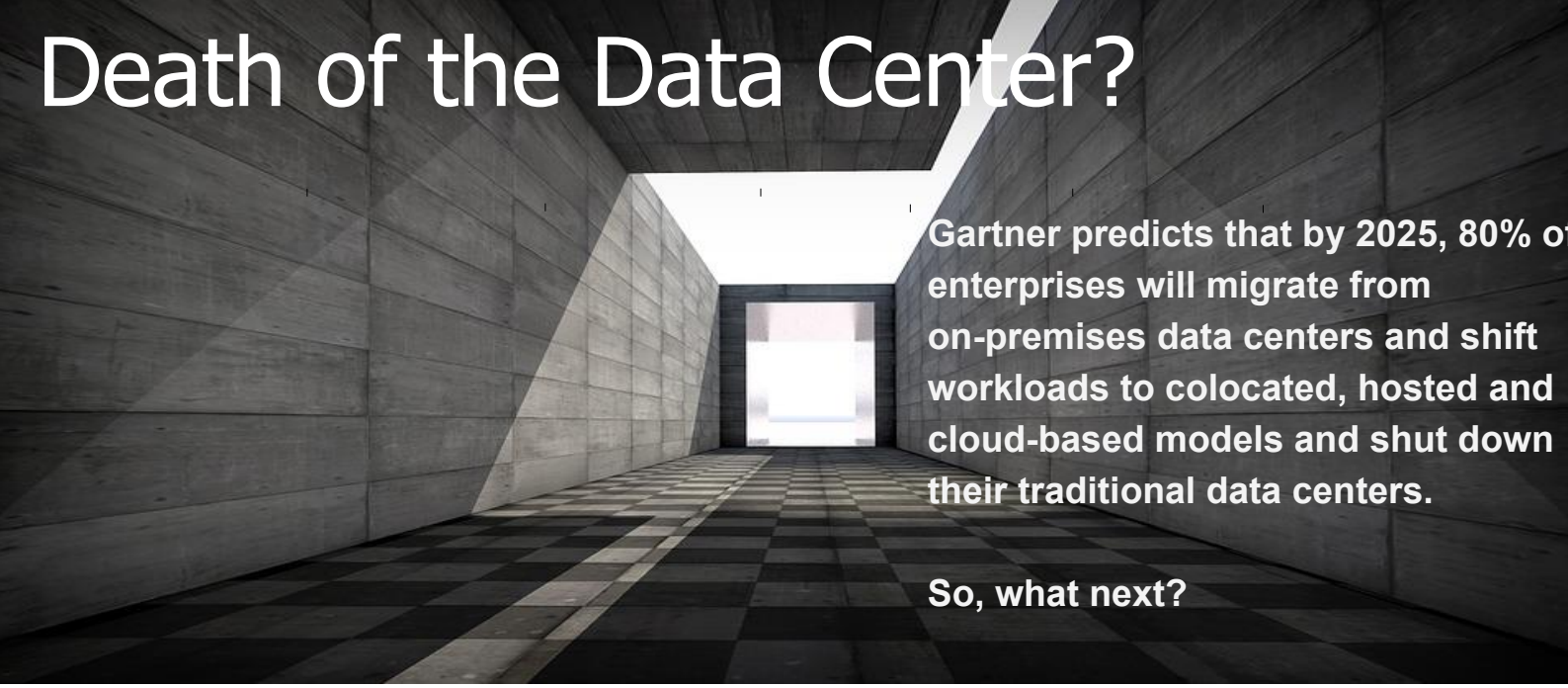
As your business keeps pace with new technology innovations, it's critical to have the right colocation / data center provider on your side. 165 Halsey Street offers today's enterprises increased security, reliability, scalability and cost savings. The 165 Halsey Street facility is designed for continuous IT equipment operation.

165 Halsey Street is the colocation business with no MRC cross connect fees that help businesses operate seamlessly and cost effectively.



The Data Center Isn't Dying; It's Becoming Repurposed and More Powerful and Versatile

Flashy headlines aside, data centers are driven by increasing complexity of technologies such as Artificial Intelligence (AI), the Internet of Things (IoT), edge services, and with that, comes the natural need for the data center to evolve accordingly.

More and more enterprises are discovering that their on-premises data center infrastructure has no strategic value for the company.

As on-premises infrastructure models shift to off-premises models, enterprises are weighing the options of managing all IT infrastructures themselves in-house or outsourcing and pushing workloads to the cloud or colocation. IT strategies are now based on workload placement. Factors such as compliance, data sovereignty, data latency and other key business requirements help enterprises determine whether applications should reside on-premises, in the cloud, at the edge, and so on.

As data centers evolve, what technologies are propelling the changes within? Read on to see.

165 Halsey Data Center Adapts To Emerging Technologies and Works Hard to Meet Today's Enterprise Requirements. Explore Our Colocation Services at 165Halsey.com

5G Demand

"In 2019, we can only expect the volume of data to increase exponentially [Gartner predicts the number of connected devices to grow from 23 billion to 31 billion by 2020.] as IoT devices continue to become more commonplace, and data can be processed at much faster speeds thanks to the rollout of 5G across the globe ..."
- Ken Tsai, Global VP, Head of Cloud Platform & Data Mgmt. for SAP

Referencing an IHS Economics and IHS Technology Report from 2017, 5G is expected to lay the groundwork for technologies such as enabling self-driving cars to be more responsive to traffic changes or IoT sensors being integrated into smart buildings and smart cities in the coming years. This report also finds that 5G has the potential to create a staggering $12.2 trillion in global economic output by 2035.

5G promises increased speeds and capacity, lower latency (less than 1 millisecond!), and an improved user experience. To stay relevant alongside 5G,, it is imperative for data centers to host and stream data at significant higher speeds, volumes, and lower latencies.

It is critical for data centers to offer low latency so as to not slow down the data transmission, as well as strong reliability and redundancy. With 5G, users will come to expect instant access whenever and wherever, and data centers who want to comply with these services must adhere.

Today's data centers, such as 165 Halsey Street, are well equipped for the new wave of mobile networks. The facilities that are not should consider focusing on hardware refreshes and upgrades to ensure the lowest latency possible, along with a wealth of bandwidth to manage the high volume that 5G and other technologies, such as Edge Computing will bring.

Hybrid Cloud

451 Research analysts predict that this year organizations anticipate that just under half (46%) of enterprise workloads will run in on-premise environments, with the remainder off-premise.

Enterprises today are striking a balance between cloud and on-premises systems. Such actions have even enabled companies like Microsoft to soar to the number two position in the cloud market very quickly and has given IBM a considerable boost. Other conglomerates like AWS and Google are quickly following suit.

In order to address increasing data center demands while adding advantages of agility, scalability and global reach, traditional data centers are transforming into hybrid data centers.

The following hybrid data center characteristics are emerging that differ from previously worn, traditional approaches:

- Application suitability – More enterprises are modernizing existing workloads when possible to develop new net applications suited for the cloud, as legacy applications are typically unsuited to run off-premise.

- Workload management – The variables that determine which data center environments prove most efficient include risk, cost and IT service performance.

- Advanced software tools – Companies that manage hybrid environments commonly invest in software tools offering greater visibility into each of the three data center iterations and their performance.

Additionally, centrally managing on-premise and public cloud security policies allows for security policy consistency and protects from cyber adversaries.

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Edge Data Centers

Edge computing allows connected devices to process data closer to where it is created - the location known as the “edge.” It is estimated that by next year (2020), the average person will generate 1.5 GB worth of data each per day. As more and more devices continue to connect to the internet to generate data, cloud computing may not be able to handle it all, especially at fast speeds we are getting accustomed to. And here is where edge computing comes in.

So, what is the Edge Data Center?

Edge data centers are facilities that extend the edge of the network, delivering cloud computing resources and caching streaming content to local end users. They are located closer to these end users; hence they can deliver faster services with minimal latency.

When it comes to IoT networks, edge data centers aptly serve as clearing houses for data being generated by the IoT devices that require additional processing, but are too time sensitive to be transmitted back to a centralized cloud server.

Up until now, edge data centers were limited to Tier-1 cities such as New York, LA and Chicago - and users in Tier 2 cities such as Kansas City would have to access internet-based content from the closest edge location of Chicago. But today, data center provides like 165 Halsey Street and others are looking to develop strategies for emerging opportunities in edge computing. Edge computing is evolving in these areas:

- Data centers in regional markets and smaller cities
- Micro data centers at telecom towers
- On-site IT enclosures and appliances to support IoT workloads
- End-user devices, including everything from smart speakers to drones and
- autonomous cars

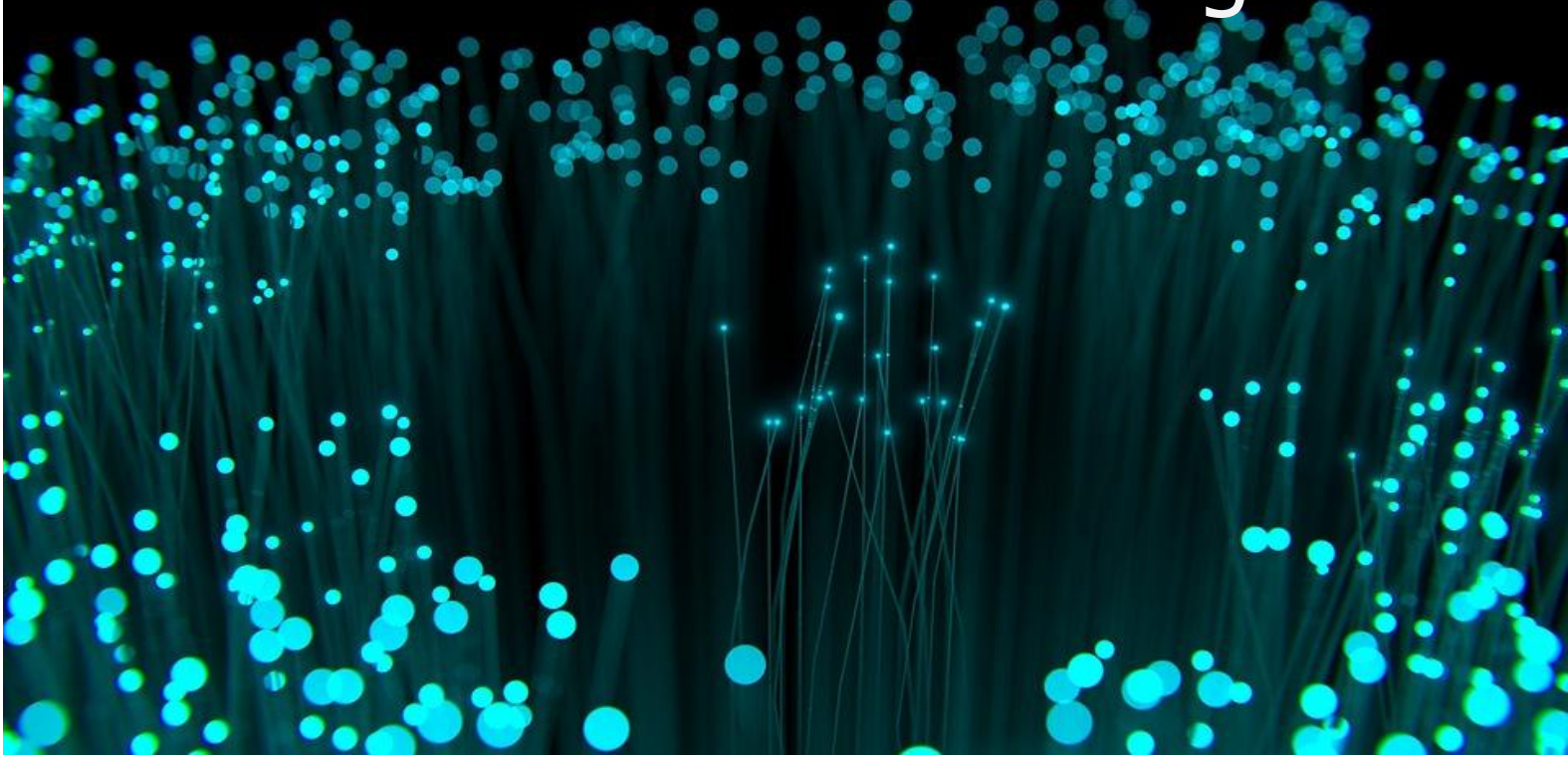
Next-Gen Security

We wish we didn't have to say it, but when will security NOT be an issue or a hot topic? Data centers must continue to address the critical issues around physical security as well as security of the IT workload. In 2019, there will be ongoing tightening of security standards and increased adoption of leading-edge security techniques, tools and softwares across the industry.

In 2018 alone, according to Datacenter Knowledge, the cybersecurity epidemic caused countless data breaches, exacerbated the cybersecurity skills shortage, and left organizations of all sizes struggling with ineffective security programs. As such, the three security predictions that Datacenter Knowledge makes for 2019 include:

- Cloud providers adopting a 'security by default' approach, in which they take the security controls already built into their platforms and ensure they are "on by default." Simplifying security in this way should reduce human error, along with associated vulnerabilities and gaps in security defenses.
- Enterprises will revert back to security basics by starting with simple again, prioritizing policies and processes that focus on tried and true basics such as "AAA" : Authentication, think User Directory and Multi-Factor Authentication; Authorization, which handles the permissions a user should have once authenticated; and Accounting, which watches and verifies the integrity of the user's account from internal and external changes.
- Companies will favor all-in-one security devices over standalone point products.

Software-defined Networking



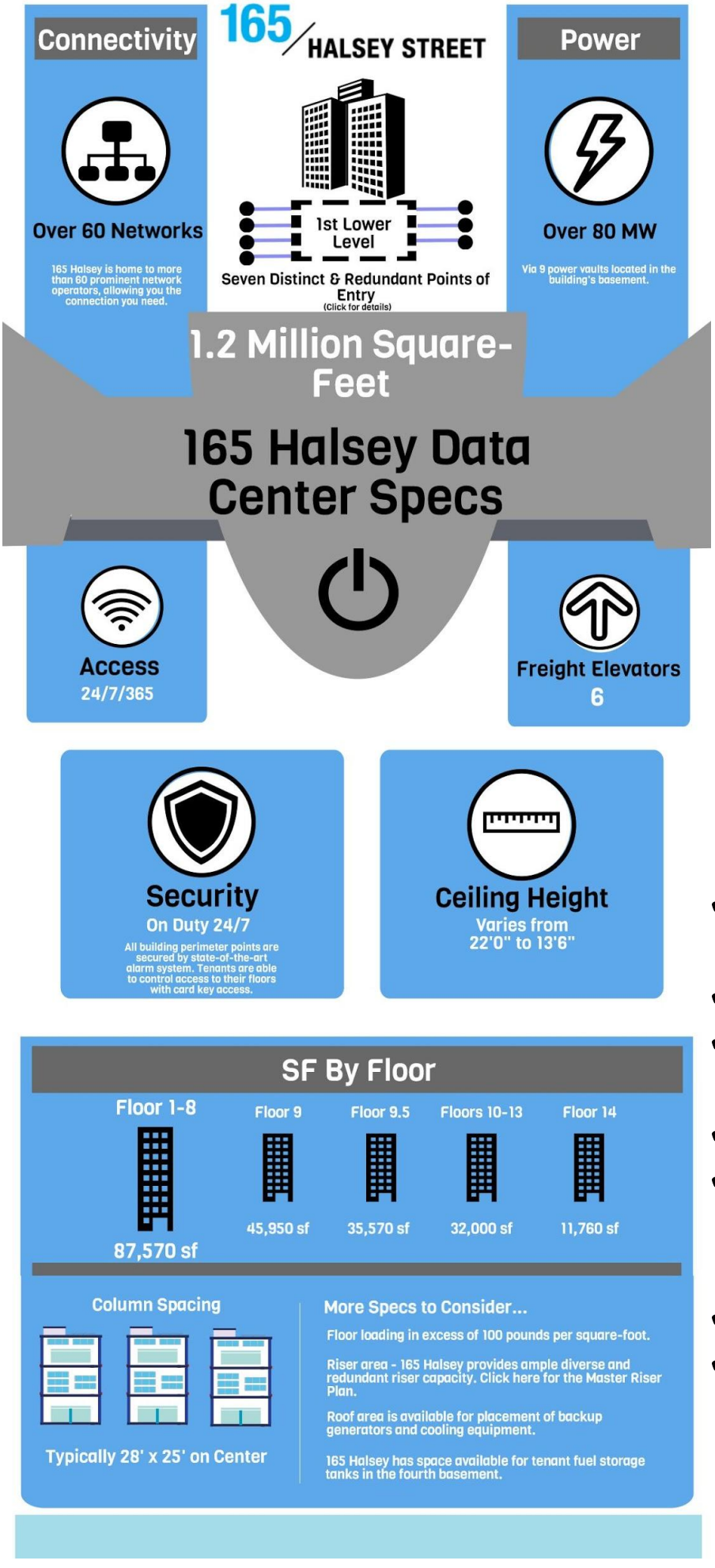
Ahh, SDN. You see it and hear it everywhere, and know it's here to stay. After all, Software-defined networks (SDNs) remove the limitations associated with network hardware so useful, responsive network infrastructures can be built. SDN can be thought of as the "software-ization" of infrastructure as well as an integral part of a software-defined data center.

There are many values associated with SDN, including that with SDN, the network can dynamically reconfigure in response to the needs of specific applications, and cost efficiency and application optimization can be realized.

In 2019, Microsoft claims that SDN will be going 'mainstream' in line with its Windows Server 2019, noting "the emerging open-standards-based and vendor-neutral virtualization architecture has disrupted the staid, proprietary networking industry with its software-centric approach that seeks to provide benefits such as programmability, central management and agility."

In 2019, the software-defined data center (SDDC) is set to become the standard model for data center operations, in both legacy and new deployments. Technologies such as hyperconvergence, composability, and software-defined networking and storage in the SDDC will continue to flourish. Hence, flexibility will be a keyword for data utilization and growth in 2019.

Why 165 Halsey Street?



165 Halsey Street is a dedicated 1.2M sf data center/colocation/telecom carrier hotel with over 80 MW of power. The building has been operating a carrier neutral colocation business for more than 15 years, and presently spans over 180, 000 square feet with **no MRC cross connect fees** and direct access to over 60 networks.

Located just 13 miles from Manhattan, 165 Halsey Street is independently owned and operated and SSAE 16-certified. With **165 Halsey Colocation**, there are no monthly recurring cross connect fees between customers, allowing safe, convenient and affordable interconnection.

If looking to colocate or build out in 2019 or the year ahead, look no further than 165 Halsey Street.

- ✓ **Prime Location – 13 mi from Manhattan**
- ✓ **80 MW Power**
- ✓ **Affordable Colocation; No Cross Connect Fees**
- ✓ **Disaster Recovery Planning**
- ✓ **Solid Communications Infrastructure: Access to Over 60 Networks**
- ✓ **Built Data Center Space**
- ✓ **Vacant Space**

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