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Data Center Securitizations—Supporting the Rising Tide of Digital Flow

By collecting, storing, and processing data to support the platforms and services that support the digital world, data centers play a critical role in the day-to-day functioning of the internet. These facilities, of which there are approximately 2,000 in the U.S., are supplying 17 gigawatts (GW) of power, house routers, switches, firewalls, storage systems, servers, and application delivery controllers to provide network and storage infrastructure, and computing resources.

Fueled by a proliferation of remote work and learning, the adoption of smart technologies, the expansion of cloud services, and growing requirements by media and social media companies, global internet traffic has increased at an average annual growth rate of 30% since 2018. Demand drivers include AI-powered workflows, autonomous vehicles, virtual and augmented reality, 5G connectivity, and the proliferation of the Internet of Things (IoT). This demand, measured by power consumption as an indicator of server capacity, is projected to increase from 17 GW to 35 GW by 2030, according to analysis by McKinsey & Company. To put this into perspective, consider that 1 GW = 1 billion watts and that 1 GW equates to 2.469 million solar panels or 100 million LED light bulbs.

There are three different center types: Hyperscale, Enterprise, and Colocation. Hyperscale data centers, as their name suggests, handle large-scale IT infrastructure, half of which are leased facilities, generally on terms of 10 to 15+ years. Designed to house a minimum of 5,000 servers and 10,000 sq ft of floor space, these monster campuses are mostly located on the outskirts of major cities—notably in Northern Virginia, Dallas, Silicon Valley, Phoenix, Chicago, Atlanta and Portland, OR. Enterprise data centers are leased or owned by a single organization, custom built for their unique needs—often located on-premises with the organization—and account for roughly 40% of data centers worldwide, according to Synergy Research. Retail Colocation, also called Multi-Tenant data centers, provide leased space inside of a data center, typically to unrated businesses with modest requirements or with a need for data in different geographic locations. This more flexible data center option now accounts for 23% of data centers.

Data Center Business Models Found in Securitizations

Metric	Hyperscale	Enterprise	Retail Colocation
Property Power Capacity (MW)	40+ MW	~ 5MW-40MW	~ 1MW-40MW
Number of Tenants	Low (1-3)	Low to Medium (1-20)	High to Very High (Dozens to Hundreds)
Power Allocation per Tenant	40+ MW	~ 1MW-40MW	3kW-5MW
Lease Duration	10-yr leases with multiple 5-yr renewals	7 to 10-yr leases with multiple renewals of varying length	1 to 3-yr contracts with automatic renewals
Operational Management Intensity	Low	Low	High

Note: Power capacity is given in megawatts (MW). Source: KBRA's Data Center in Securitization: A Primer.

A nascent fourth type, Edge data centers, are developing in response to expansion of the Internet of Things (IoT). Geographically situated closer to the people they serve, offering reduced communication delay, these smaller centers support diverse new technologies like autonomous vehicles, wearable healthcare technology, and smart electrical grids.
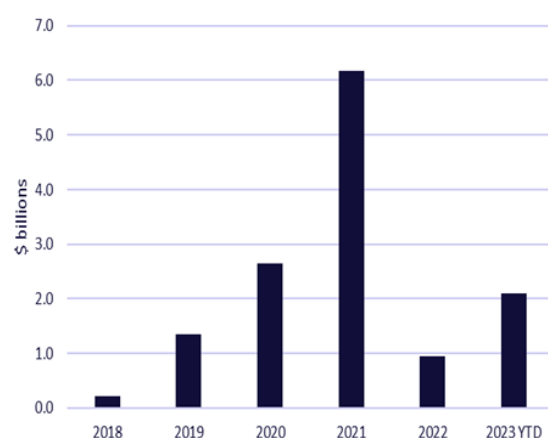
It should come as no surprise that delivering digital services is capital intensive. The cost of a new data center varies between $200 million for a small facility to over $1 billion due to the complex infrastructure and technology. It costs another estimated $10-$25 million annually to cover hardware, software, disaster recovery, continuous power supplies, networking, ongoing maintenance of applications and infrastructure, heating, cooling, property and sales tax, and labor costs.

Investment in data centers has been brisk. Funding sources run the gamut from real estate financing, unsecured corporate bonds, secured corporate loans, public and private equity or private debt. Securitization has provided data center operators with another funding source and access to often less costly capital from a broad range of investors through the capital markets.

This type of funding has come in two forms – commercial mortgage-backed securities (CMBS) or asset backed securities (ABS). According to KBRA, approximately $9.9 billion of data center commercial mortgage loans have ended up in CMBS and CRE CLO transactions since 2013. The loans are secured by interest in the data center building itself with proceeds often being used to recapitalize the property.

Data Center ABS Issuance History

Source: JPMorgan Chase ABS Weekly Volume Datasheet

Securitization can also be used to monetize future income generated through leases, services-related contracts, and fees associated with data center operations. This revenue stream becomes the expected cash flow that repays the outstanding bonds. The proceeds from the sale of securities are used by the data center operator to financing new data center construction, upgrade existing facilities, or manage debt. The first data center securitization closed in 2018. In 2021, $6.2 billion of ABS backed by data center revenue were issued. That number fell to $1 billion as issuers grappled with higher cost of funds. For year-to-date 2023, $2.1 billion have come to market

Recent Data Center Securitizations

Transaction	Deal Size ($ mm)	When Issued	Rating of Highest Rated Bond	Yield	Wtd Avg Life on Highest Rated Bond
Aligned Data Center 2023-1	540	Aug '23	A	6.63%	3-5 yrs
Stack Infrastructure Data Center 2023-2	250	Aug '23	A	6.50%	3-5 yrs
Tierpoint Issuer 2023-1	360	Jun '23	A	7.98%	2-3 yrs
Tierpoint Issuer 2023-2A	475	Jun '23	A	7.98%	5-7 yrs
CyrusOne Data Centers Issuer 2023-1A	596	Apr '23	A	6.73%	3-5 yrs
Sabey Data Center 2023-1	175	Apr '23	A	6.34%	3-5 yrs
Vantage Data Center 2023-1A	370	Mar '23	A	6.40%	3-5 yrs
Stack Infrastructure Data Center 2023-1A	250	Mar '23	A	6.44%	5-7 yrs
Databank 2023-1A	715	Feb '23	A	7.07%	3-5 yrs
Aligned Data Center 2022-1A	400	Nov '22	A	6.63%	3-5 yrs
Sabey Data Center 2022-1	175	Jul '22	A	5.42%	5-7 yrs
EdgeConneX Data Center 2022-1	375	Apr '22	A	4.88%	5-7 yrs

Source: Finsight.

Given the sustainability challenges associated with data center infrastructure—energy consumption and water usage being the foremost[1]—some data center operators have put in place a green bond framework. In 2021, Aligned Data Center created its Green Finance Framework that aligns to the International Capital Market Association's (ICMA)

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1   In 2022, data centers' consumption of energy was about 1.3% of global demand with data transmission centers accounting for another 1-1.5% according to the International Energy Agency (IEA). While data centers have improved energy-efficiency significantly, and the largest operators source renewable energy, demand has seen impressive increases between 2015 and 2022—340% increase in data center workloads. Data centers' operations are also water-intensive—hyperscale centers can consume on a par with a town of 10,000 to 50,000 people.

Green Bond principles. Any "green bonds, green loans, green asset-backed securities (ABS) and green tranches of ABS" issued under this framework are expected to support the financing or refinancing of green assets that meet the energy efficiency criteria of the UN Sustainable Development Goal. In March 2023, CyrusOne created a green finance framework around five eligibility criteria: energy efficiency, green buildings, renewable energy, sustainable water and wastewater management and clean transportation. Their framework also aligns with ICMA as well as LSTA's Green Loan Principles.

As advancing and next gen technologies continue to demand more capacity from data centers, expansion is not a question of if, but when. The world's collective internet use crossed 1 Zettabyte (ZB) in 2010 according to the International Data Corporation tracking of the Global DataSphere. To put this into context, 1 ZB = 1 billion Terabytes, and if each Terabyte in a ZB were a kilometer, it would be equivalent to 1,300 round trips to the moon and back. In 2023, we are expected to cross 120 ZB and, by 2026, 220 ZB—IDC forecasts that close to 80 ZB of data will be created by IoT devices alone. This vast quantity of data will need to be stored and processed by data centers, and securitization, already funding some of the infrastructure build-out, is well-positioned to support data centers' inevitable expansion.