



Data Castle

Cloud Storage

200Year Retention

Single Payment Storage
Never Erased Ever
Triple Factory Redundancy
100% Data Guarantee

**1 Tera Byte TB (tebi) (2^{40})
= 1,099,511,627,776 Bytes**

3,435,973 TB per \$1.00

**25GbE Starting Package 1st Year
One Time Hardware Cost
plus Annual Communications Cost**



All original Data located at customer site

Loss of Internet does not lose any access to Data

Factory Cloud provides Triple Redundant Plus Backup

Connects to Local Windows or Linux as Millions largest possible Local Disk Drives for direct program usage with NVMe-oF QSFP 25GbE or 400GbE Storage Area Network

One Time Payment for ALL DATA LIFETIME at your location

Multiple Annual Communications Options for

Factory Triple Redundant Plus Backup



**\$15,000 One Time
Hardware Cost
Plus
\$5,000 Annual
Communications**

Data Castle

Data compression and deduplication on *reducible data* are now available with a guaranteed 5:1 result, or more on typical systems. The fine print of *reducible data* does not include many pre-compressed or incompressible data formats, or *non-reducible data* formats such as compressed audio, compressed image and compressed video file formats, PDF, most office work file formats, all compression formats, pre-compressed Data Sets, and almost any professional commercial file format being used. Large voluminous amounts of Data storage can achieve 65:1 or more with pattern sensitive data, and deduplication. Actual performance may vary.

Data Castle is a dedicated computer intensive lossless subspace conversion system for digital data storage and communication that goes far beyond normal pattern sensitive digital data compression. Data Castle will work with most digital storage, and communication systems available without modification in any way, shape, or form.

Data Castle is a lossless subspace conversion unit that in no way, shape, or form ever does any Data content or pattern analysis. Data Castle is not pattern or content sensitive, and there is no such thing as non-compressible data, or *non-reducible data*. Data Castle has always been very unique since 1983 with an all data 6:1 ratio.

Data Castle lossless subspace conversion is up to $(2^{52}):1$ at this time, not including any file formatting or pre-compression ratio. Data Castle subspace conversion requires simultaneous software threads of intense complex instruction set computer (CISC) time. All CISC cores will be 100% saturated per server. GPU's are RISC.

Some custom hardware is included at each location for the physical security of Data Castle. Once installed, Data Castle can not be moved in any direction more than a couple of miles without termination of program. Special mobile Data Castle locations are possible, if justified.

Data Castle is a subspace conversion (state machine) only, and does not involve any normal processing of Data Center activity. Data is sent to Data Castle in a maximum ultra compressed 7zip formatted file with a hash number from the customer, and returned to the customer in a much smaller $(2^{52}):1$ maximum compressed Data Castle formatted file with a unique hash number. The processed data, serial number, time, conversion hash are all registered and stored into the Deep Freezer of the state machine to guarantee future returning file integrity.

Similar to a read head placed after the write head on a tape machine that reads back what has just been written on the tape, Data Castle reads back the subspace converted file and verifies the hash signature that every subspace conversion process starts with, that is provided by the customer when the original 7zip file is created. Read after Write subspace conversion system with hash, and a full bit level integrity comparison cycle will guarantee, and verify no bit loss for any future return to the original bit pattern before being sent out of the Data Castle machine with up to a (2^{52}) subspace conversion.

The $(2^{52}):1$ maximum compressed Data Castle formatted file can then be manipulated with any conventional program, however the internal compressed subspace converted data is not available for use by any conventional program without being returned, or having a CargpBit subspace conversion first.

Every Data Castle state machine is unique, and generate very different file contents that are not compatible with any other Data Castle state machine. A subspace conversion file can be intercepted on the public Internet forever, and only the one single Data Castle state machine that generated it will be able to return the data. The subspace converted file contents can only be returned by a customer authorized Data Castle unit, remote or on site. (HERE) option will allow the customer to decide which different Data Castle state machines can, and can not return the subspace conversion file. The factory has all customer signature data, and can be reconstructed in case of emergency.

Communication:

Data Castle subspace converted files are naturally coded to specific Data Castle units only, and the customer decides what if any remote Data Castle units can return the file. Data Castle subspace converted files are naturally secured without external encryption, and can be placed on the open unsecured Internet with millions of unauthorized intercepted copies made, and no copy can be returned without the customer specified authorized Data Castle unit anywhere on planet earth.

Communication with subspace conversion files between different Data Castle state machines that are typically located in the same building, or at great distances from each other with Starlink.

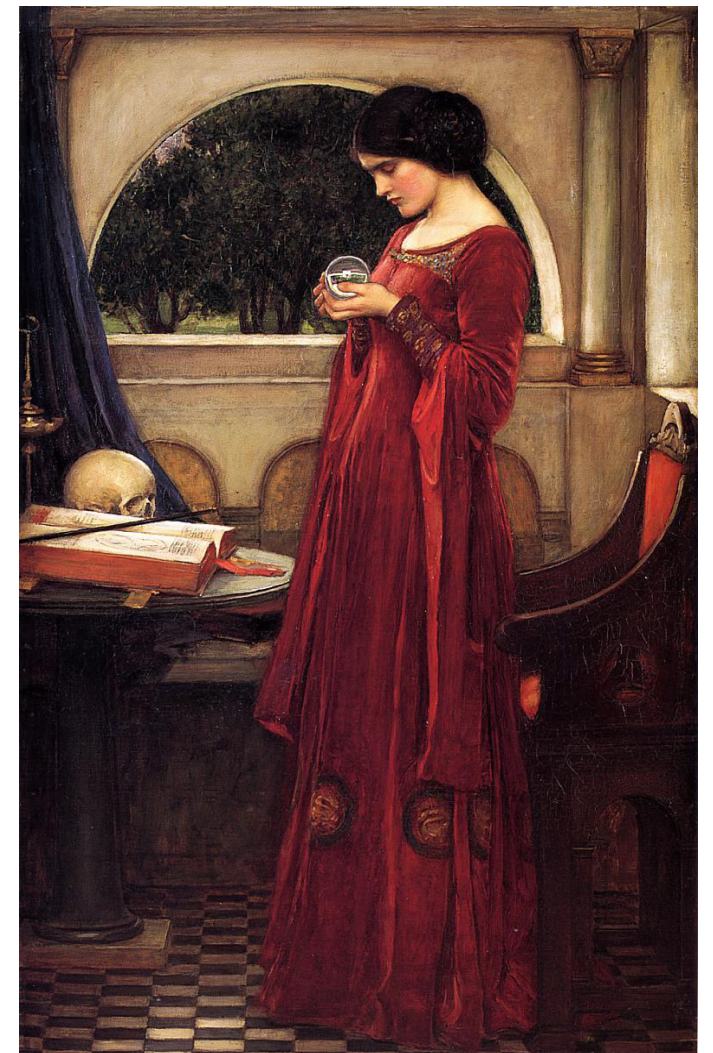
The reduced file size is a natural efficiency boost for any existing data communication link. The existing communication link with no modifications will achieve a (2^{52}) increase in both capacity and speed between the two Data Castle state machines, or storage to storage with subspace conversion occurring later.

Data communication performance at $(2^{52}):1$ achieved has:
99.999,999,999,999,977,795,539,507,496...% Efficiency.

1 bit remains light speed. For every single 1 bit transmitted over fiber optics, or any physical transmission system running at the speed of light, (2^{52}) another 4,503,599,627,370,495 bits will also arrive at the same exact time.

Data Security

$(2^{52}) \times 1 \text{ bit} = 4,503,599,627,370,496 \text{ bits}$ or
 $(2^{52}) \times 1 \text{ bit} = 4,503,599,627,370,495 \text{ bits}$ are missing for each 1 bit transmitted, making interception of communications a waste of time, and effort. The missing bits can possibly be seen with a crystal ball, however the amount of crystal balls required is enormous, and time consuming.





Data Castle Secured 222 HARDWARE Pages (5-11)

**Offline Remote Cold Data Storage
with Multiple ExabE+ over 1MbE+ Internet
Limited by Local 25GbE ONLY
216 Tera Bytes per 24 Hours MAX
One Cost for Hardware Upfront
One Low Cost per Year of Lifetime Storage
Triple Redundant 3-2-1 Lifetime Storage
Data 100% Guarenteed Never Erased**

**Please see 777 and 3600 for
Local Hot Live Disk Drive Storage**

**\$5,000 Dollars
\$1,200 Dollars**

**1Time
Every Year**

**Hardware Included
Factory Triple Backup**



Data Castle Secured 222
QSFP Fiber Optic
NIC - 25GbE
25GbE Full Duplex Near Real-Time

Secured 222

\$5,000 Dollars
\$1,200 Dollars

1Time
Every Year

Hardware Included
Factory Triple Backup

AI Overview

The cost for 216 TB of data storage using [Cloud Cold Storage](#) is **\$334.80 per month** (at a rate of \$1.55 per TB per month). [www.cloudcoldstorage.com](#)

Cost Breakdown

- Rate per TB: \$1.55 per TB / month
- Total Storage: 216 TB
- Base Monthly Cost: **\$334.80** / month [www.cloudcoldstorage.com](#)

Key Plan Features

- Egress Fees: \$0 (Free egress and data retrieval)
- Hidden/Surprise Fees: None reported by the provider for standard recovery and streaming
- Data Center Options: Available in US (e.g., Los Angeles) at **\$1.55/TB/month** and UK (London) at **£1.32 / €1.52 per TB/month** [www.cloudcoldstorage.com](#)

AI Overview

At a rate of **\$1.55 per TB per month** (via [Cloud Cold Storage](#)), storing 6,480 TB costs **\$10,044.00 per month** and **\$120,528.00 per year**. [www.cloudcoldstorage.com](#) +1

Cost Breakdown

- Per Terabyte Rate: \$1.55 / TB / month
- Total Storage: 6,480 TB
- Monthly Cost: \$10,044.00
- Annual Cost: \$120,528.00
- Retrieval & Egress Fees: \$0.00 (zero fees for data recovery or streaming back) [www.cloudcoldstorage.com](#) +1

If you would like to compare this against other providers (such as AWS S3 Glacier Deep Archive or Google Cloud Archive), let me know and I can run the calculation for those tiers as well.

Data Castle Secured 222

216TB per 24 Hours = No Cost per Transfer
another 6,480TB per every 30 Days = No Cost per Transfer
\$1,200 per Year Flat Fee Lifetime + Triple Backup 3-2-1

with Unique Multiple ExabE+ over 1MbE+ Internet
Limited by Local 25GbE ONLY

Data Castle

AMD EPYC 4585PX 16 Core
16 Cores ECC Ram
25GbE Full Duplex

Factory Triple Redundant Automated Backup
Data Sent to Factory is 100% Guaranteed
and Verified on every Data Castle unit

AI Overview

The cost for 216 TB of data storage using [Cloud Cold Storage](#) is **\$334.80 per month** (at a rate of \$1.55 per TB per month). [www.cloudcoldstorage.com](#)

216TB at \$1.55 per TB per Month = \$334.80 every Month
The same 216TB is ~\$4,017.60 per Year - every Year

365 Days X 216TB is ~\$1,466,424.00 per Year - every Year
78,840TB total - NO NEW DATA every Year

Data Castle

216TB per 24 Hours = No Cost per Transfer
The same 216TB is \$1,200.00 per Year - every Year

365 Days X 216TB is still \$1,200.00 per Year - every Year
78,840TB total - ALL NEW DATA every Year

Data Castle will never erase data for any reason. All data remains for Life. It is possible to purchase the optical disc option and purchase usable copies for local usage, without any Internet required.

ALL DATA is triple redundant remote backup storage plus Factory storage, and customer optical disc.

AI Overview

Cold cloud storage rates typically range from **\$1.00 to \$4.50 per TB per month** for base storage capacity across major providers, though extra fees apply for retrieval and data transfer.  Finout +1

Cold & Archive Rates by Provider (Per TB / Month)

- **AWS (Amazon S3):**
 - **S3 Glacier Flexible Retrieval:** ~\$3.69 per TB (\$0.0036 per GB)
 - **S3 Glacier Deep Archive:** ~\$1.01 per TB (\$0.00099 per GB) — lowest-cost archive tier  Eon.io +1
- **Microsoft Azure:**
 - **Cold Blob Storage:** ~\$4.61 per TB (\$0.0045 per GB)
 - **Archive Blob Storage:** ~\$1.01 per TB (\$0.00099 per GB)  Finout
- **Google Cloud Storage (GCP):**
 - **Coldline:** ~\$4.10 per TB (\$0.0040 per GB)
 - **Archive:** ~\$2.46 per TB (\$0.0024 per GB)  Finout
- **Alternative Providers:**
 - **Cloud Cold Storage:** \$1.55 per TB with zero retrieval or egress fees.
 - **IBM Cloud (One-Rate plan):** ~\$10.00 per TB flat-rate across eligible storage.
 - **Backblaze B2:** Starts at \$6.95 per TB per month (hot storage model with free egress/transactions).  Backblaze +2

Important Cost Factors to Consider

- **Retrieval & Egress Fees:** Pulling data out of cold or deep archive tiers usually triggers hefty per-GB retrieval charges and transit/egress costs.  Wasabi Technologies +1
- **Minimum Retention Periods:** Hyperscalers enforce mandatory minimum storage windows (e.g., 90 days for cold tiers and 180 to 365 days for archive tiers); deleting or overwriting files earlier incurs full-term penalties.  University of California,... +1

If you share **how much data you plan to store, how often you need to retrieve it, and your preferred cloud provider (AWS, Azure, GCP, or independent)**, I can help calculate a more accurate cost estimate.

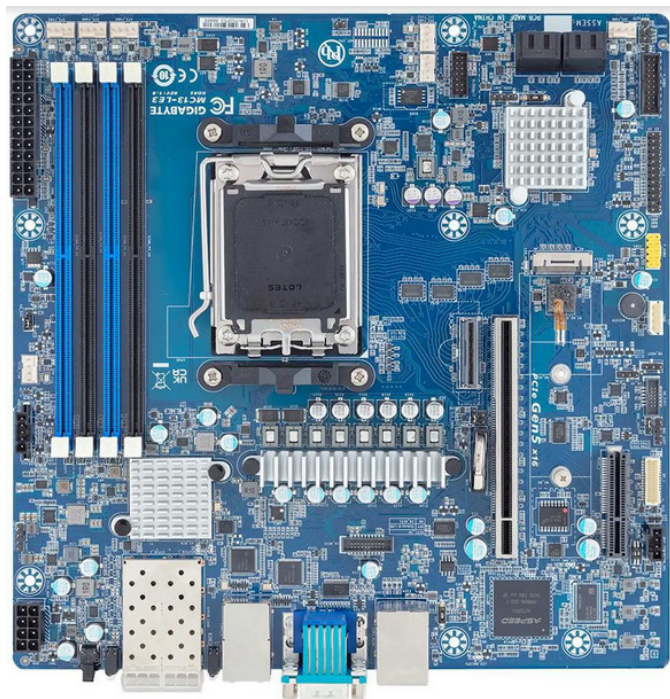
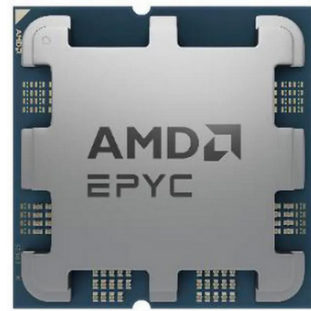
90TB sent to any NAS at 25GbE is 10 Hours
90TB returned to any NAS at 25GbE is 10 Hours
Actual time may be greater depending on Disk Drive Array

90TB sent with Starlink 22Mbps Uplink (No Data Castle)
Is 1.425 Years
90TB returned with Starlink 22Mbps Uplink (No Data Castle)
Is 1.425 Years

Data Castle Demo 60GB File at 25GbE is 24 Seconds

Data Castle 1TB Disk is Half Duplex 25GbE
469,124,961,184 Times More Storage than 600TB NAS
90TB sent to Data Castle at 25GbE is 10 Hours
Only 1.44MB is used to store the 90TB
1.44MB returned from Data Castle at 25GbE is 10 Hours

CargoBit (1Million Dollars+) is HDX 4 Tera bit Ethernet
90TB sent to Cargobit at 4TbE is 3.75 Minutes
Only 1.44MB is used to store the 90TB
1.44MB returned from Data Castle at 4TbE is 3.75 Minutes



Data Castle Secured 222
AMD EPYC 4585PX 16 Cores
16 Cores 2 QSFP 25GbE / 25GbE



**Store or Return in 24 Hours up to:
almost anything (216TB) or**



54 (4TB) Memory Cards or



5 (40TB) LTO-10 Cartridges or



2 (100TB) LTO-10 Cartridges or

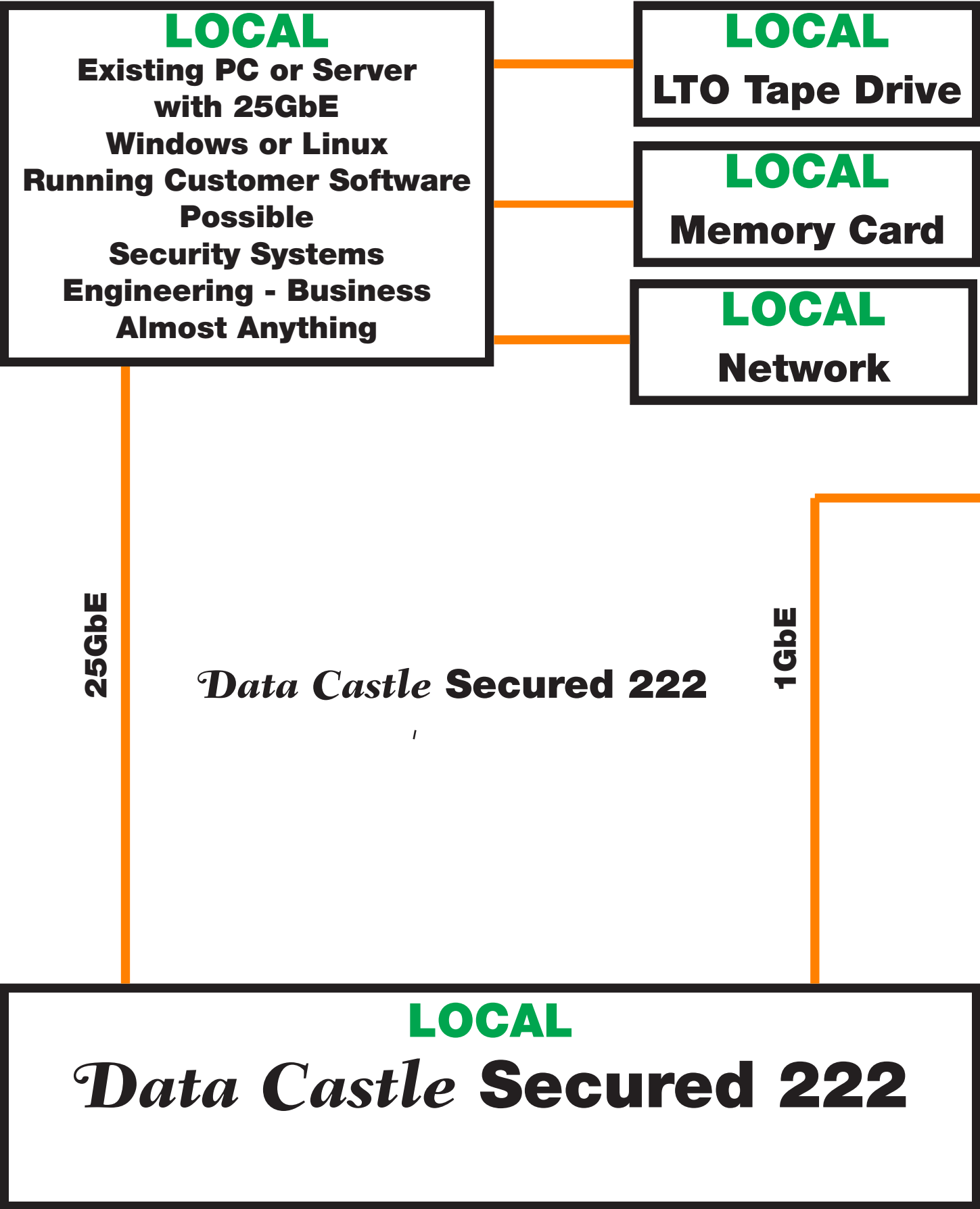


6.75 (32TB) Disk Drives or

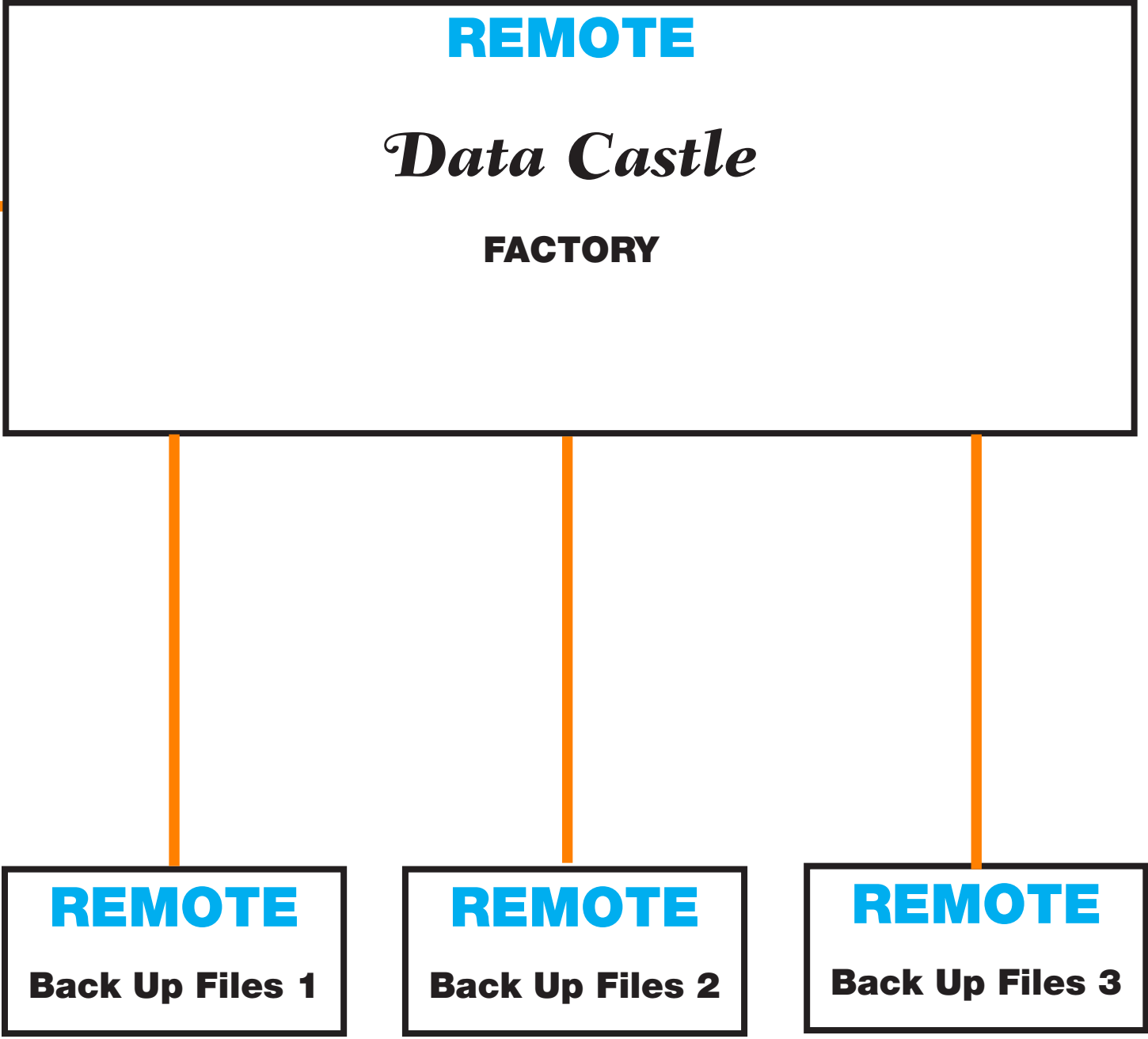


88.163% of (245TB) SSD or

Secured 222



Secured 222





Data Castle Secured 777 HARDWARE

Pages (13-21)

**\$20,000 / 256,000,000,000,000TB inside
Local 1TB Hard Disk Drive Formatted
12,800,000,000 TB per \$1.00**

**1 Tera Byte TB binary (tebi) (2^{40})
= 1,099,511,627,776 Bytes**

**25GbE Starting Package 1st Year
One Time Hardware Cost
plus Annual Communications Cost
Applied to 1TB Disk Drive**

3,435,973 TB per \$1.00

**25GbE Starting Package 1st Year
One Time Hardware Cost
plus Annual Communications Cost
Applied to 200 Year Data Cartridge**





Data Castle Secured 777
QSFP Fiber Optic
NIC - 25GbE

25GbE Full Duplex Near Real-Time
50GbE Half Duplex Near Real-Time

1TB Disk for Customer - 1TB Disk Internal System

FtlSpinUp Disk 281,474,976,710,656,000,000,000,000

25GbE FDX (Formatted) Yotta Zetta Exa Peta Tera Giga Mega Kilo Hecto

\$15,000 Dollars

1Time

Hardware Included

\$5,000 Dollars

Every Year

Factory Triple Backup

Checksummed Files to eliminate communications error are sent to Data Castle and converted to Zip Files for reduction of redundant data up to 90TB blocks that only require 1.44 MB on the 1TB Disk Drive. The 1.44 MB files are sent back to the factory for triple redundancy 100% Guaranteed return, and never erased. A simple email is used, and a return email for green light receipt. Automatic sha512sum checksum bits are used throughout the entire 1.44 MB file to ensure data communication integrity.

The 1.44MB file will fit onto a diskette, however it does not have any limitations as to storage media.

777 has two 25GbE QSFP Fiber Optics and one is Full Duplex at all times. Or the working cores can be redirected to Half Duplex one direction for both QSFP Fiber Optic cables at 50GbE.

Data Castle

AMD EPYC 4585PX 16 Core

16 Cores ECC Ram

25GbE Full Duplex / 50GbE Half Duplex

Factory Triple Redundant Automated Backup

Data Sent to Factory is 100% Guaranteed

and Verified on every Data Castle unit

90TB sent to any NAS at 50GbE is 5 Hours
90TB returned to any NAS at 50GbE is 5 Hours
Actual time may be greater depending on Disk Drive Array

90TB sent with Starlink 22Mbps Uplink (No Data Castle)

Is 1.425 Years

90TB returned with Starlink 22Mbps Uplink (No Data Castle)

Is 1.425 Years

Data Castle Demo 60GB File at 50GbE is 12 Seconds

Data Castle 1TB Disk is Half Duplex 50GbE

469,124,961,184 Times More Storage than 600TB NAS

90TB sent to Data Castle at 50GbE is 5 Hours

Only 1.44MB is used to store the 90TB

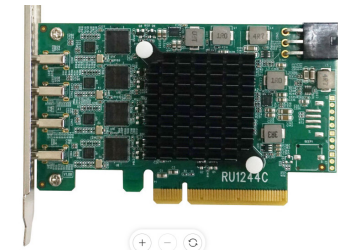
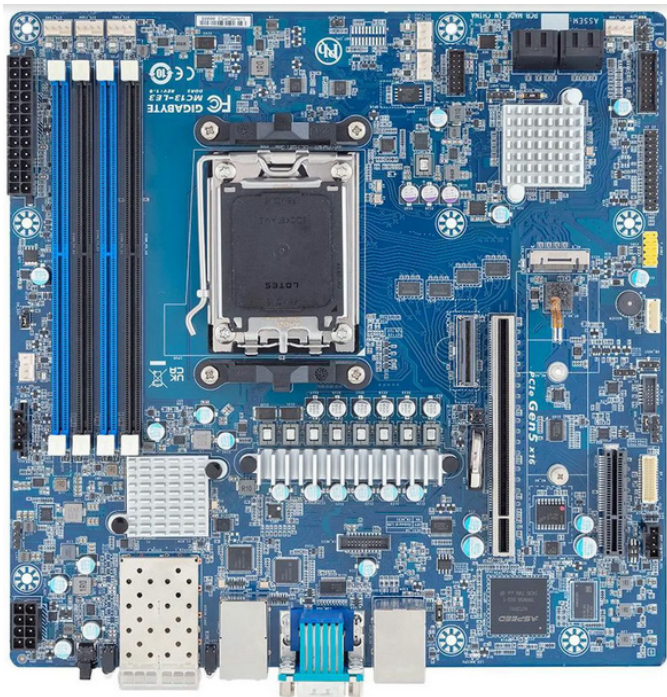
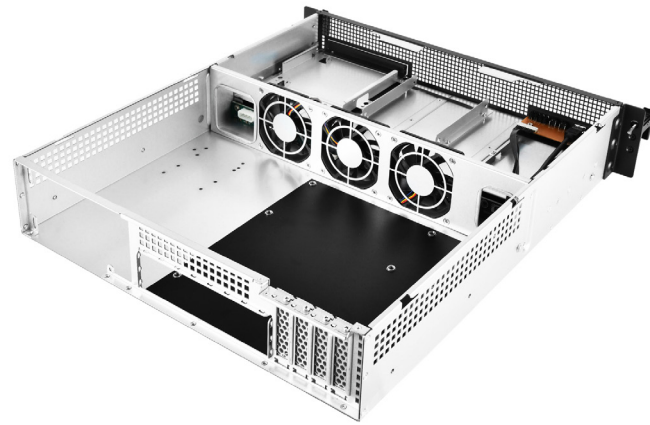
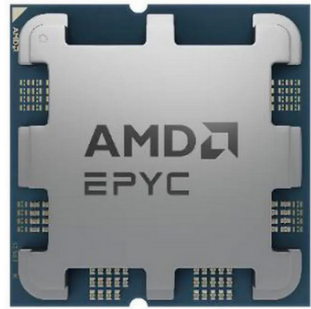
1.44MB returned from Data Castle at 50GbE is 5 Hours

CargoBit (1Million Dollars+) is HDX 4 Tera bit Ethernet

90TB sent to Cargobit at 4TbE is 3.75 Minutes

Only 1.44MB is used to store the 90TB

1.44MB returned from Data Castle at 4TbE is 3.75 Minutes



Data Castle Secured 777
AMD EPYC 4585PX 16 Cores
16 Cores 2 QSFP 25GbE / 25GbE



OPTIONAL - RAM DISK for Data Castle Secured 777

1TB Disk for Customer - 1TB Disk Internal System

Data Castle Disk	281,474,976,710,656,000,000,000,000
25GbE FDX (Formatted)	Yotta Zetta Exa Peta Tera Giga Mega Kilo Hecto
OPTIONAL RAM DISK (Formatted)	9,007,199,254,740,992,000,000,000
	Yotta Zetta Exa Peta Tera Giga Mega Kilo Hecto
\$10,000 Dollars Included	1Time Forever
	Hardware Included Factory Triple Backup

Additional customer 9.007 Yotta Byte RAM DISK and, 281.474 Yotta Byte disk drive with additional 1TB system support disk drive, 32 GB ram, 512 GB NVME SSD, and Eaton Tripp Lite SU1500RTXLCDN 1500VA Online Double-Conversion UPS 1350W SmartOnline Pure Sine Wave 2U Rackmount 8 Outlets AVR 2-Year Manufacturer’s Warranty & \$250 000 Insurance Electronics.

The ram disk is 32GB ram x $(2^{52}) = 9,007,199,254,740,992,000,000,000$ Bytes formatted of random access memory. Recommended for live Data, Data Set, and Data Base analysis, conversions, manipulations, calculations, with near real-time random access. When power is lost, the 32GB ram will be moved to the 512GB NVME SSD in under 1 minute. At power up the stored 32GB image is returned to the 32GB ram, and the additional 1TB Internal System disk drive. Occasional 32GB images are made to the 1TB Internal System disk drive also.

Please see (Pages 60 - 63) for OPTIONAL Data, Data Set, Data Base formatting. The data can be formatted for extremely fine grain to allow for random searching, analysis, conversions, manipulations, calculations, and mapping in near real-time. The Mobile Data 777 conversion rate is 25GbE FDX, or 50GbE HDX. Please see catalog for faster models.



Secured 777

LOCAL
Existing PC or Server
with 25GbE
Windows or Linux
Running Customer Software
Possible
Security Systems
Engineering - Business
Almost Anything

Secured 777

REMOTE
CLOUD
Services

25GbE

25GbE

1GbE

(In the Ball Park)
Linux + Windows limit of
Less Than 24.5 Exa Bytes per Drive
Requires about 100,000
245 Tera Byte SSDs to reach

Data Castle Secured 777
has Millions of
24.5 Exa Byte Drives **LOCAL**

> 1,024 24.5 Exa Byte Drives
can be sent over 1GbE Internet
from multiple customer authorized
777/3600 units located anywhere
thru Factory switch in under
1 Second

LOCAL
Data Castle Secured 777
Millions of 24.5 Exa Byte Disk Drives

REMOTE
Data Castle
FACTORY

REMOTE
Back Up Files 1

REMOTE
Back Up Files 2

REMOTE
Back Up Files 3



Data Castle Secured 3600 HARDWARE

Pages (23-33)

**\$90,000 / 256,000,000,000,000TB inside
Local 1TB Hard Disk Drive Formatted
2,844,444,444 TB per \$1.00**

**1 Tera Byte TB binary (tebi) (2^{40})
= 1,099,511,627,776 Bytes**

**400GbE Starting Package 1st Year
One Time Hardware Cost
plus Annual Communications Cost
Applied to 1TB Disk Drive**

**763,549 TB per \$1.00
400GbE Starting Package 1st Year
One Time Hardware Cost
plus Annual Communications Cost
Applied to 200 Year Data Cartridge**





Data Castle

Secured 3600

Amazon	=	10,000,000,000,000,000	Peta	Tera	Giga	Mega	Kilo	Hecto
\$2,000,000 Dollars + Every Year								
Azure	=	10,000,000,000,000,000	Peta	Tera	Giga	Mega	Kilo	Hecto
\$2,000,000 Dollars + Every Year								
Google	=	10,000,000,000,000,000	Peta	Tera	Giga	Mega	Kilo	Hecto
\$2,000,000 Dollars + Every Year								
Backblaze	=	10,000,000,000,000,000	Peta	Tera	Giga	Mega	Kilo	Hecto
\$834,000 Dollars Every Year								
Wasabi	=	10,000,000,000,000,000	Peta	Tera	Giga	Mega	Kilo	Hecto
\$958,800 Dollars Every Year								
Seagate Lyve Cloud	=	10,000,000,000,000,000	Peta	Tera	Giga	Mega	Kilo	Hecto
\$7.50 TB/Mo Standard								
\$900,000 Dollars Every Year								

Data Castle Disk	281,474,976,710,656,000,000,000,000	Yotta	Zetta	Exa	Peta	Tera	Giga	Mega	Kilo	Hecto
400GbE FDX (Formatted)										
RAM DISK (Formatted)	9,007,199,254,740,992,000,000,000	Yotta	Zetta	Exa	Peta	Tera	Giga	Mega	Kilo	Hecto
400GbE FDX										
\$85,000 Dollars per "modem" 1Time	Hardware Included									
\$5,000 Dollars (Once Per Customer) Every Year	Factory Triple Backup									

Optional Starlink Near Real-Time 50GbE HDX about 19,200 bps
288PB File at 44Mbps Uplink FDX = < 0.001 Sec = 12.384ZbE
75.557ZB Cartridge at 44Mbps Uplink FDX = 61 Sec = 12.384ZbE
Infinite Secured Desktop Data (2^52) Near Real-Time Base
All Data Never Erased and Guaranteed for LIFE



Data Castle Secured 3600
NIC 100GbE / 200GbE / 400GbE
100GbE Full Duplex Near Real-Time
200GbE Full Duplex Near Real-Time
400GbE Full Duplex Near Real-Time
One 1TB Disk with Customer Storage

Data Castle Disk	281,474,976,710,656,000,000,000,000	Yotta	Zetta	Exa	Peta	Tera	Giga	Mega	Kilo	Hecto
400GbE FDX (Formatted)										

\$85,000 Dollars 1Time
\$5,000 Dollars Every Year Hardware Included
Factory Triple Backup

Checksummed Files to eliminate communications error are sent to Data Castle and converted to Zip Files for reduction of redundant data up to 90TB blocks that only require 1.44 MB on the 1TB Disk Drive. The 1.44 MB files are sent back to the factory for triple redundancy 100% Guaranteed return, and never erased. A simple email is used, and a return email for green light receipt. Automatic sha512sum checksum bits are used throughout the entire 1.44 MB file to ensure data communication integrity.

The 1.44MB file will fit onto a diskette, however it does not have any limitations as to storage media.

Data Castle
Two AMD EPYC 9965
(192 + 192) = 384 Cores ECC RAM
1 Fiber Optic - 100GbE / 200GbE / 400GbE
Factory Triple Redundant Automated Backup
100% Guaranteed Data Sent to Factory

90TB sent to any NAS at 200GbE is **1.25 Hours**
90TB returned to any NAS at 200GbE is **1.25 Hours**
Actual time may be greater depending on Disk Drive Array

90TB sent to any NAS at 400GbE is **37.5 Minutes**
90TB returned to any NAS at 400GbE is **37.5 Minutes**
Actual time may be greater depending on Disk Drive Array

90TB sent with Starlink 22Mbps Uplink (No Data Castle)
Is **1.425 Years**
90TB returned with Starlink 22Mbps Uplink (No Data Castle)
Is **1.425 Years**

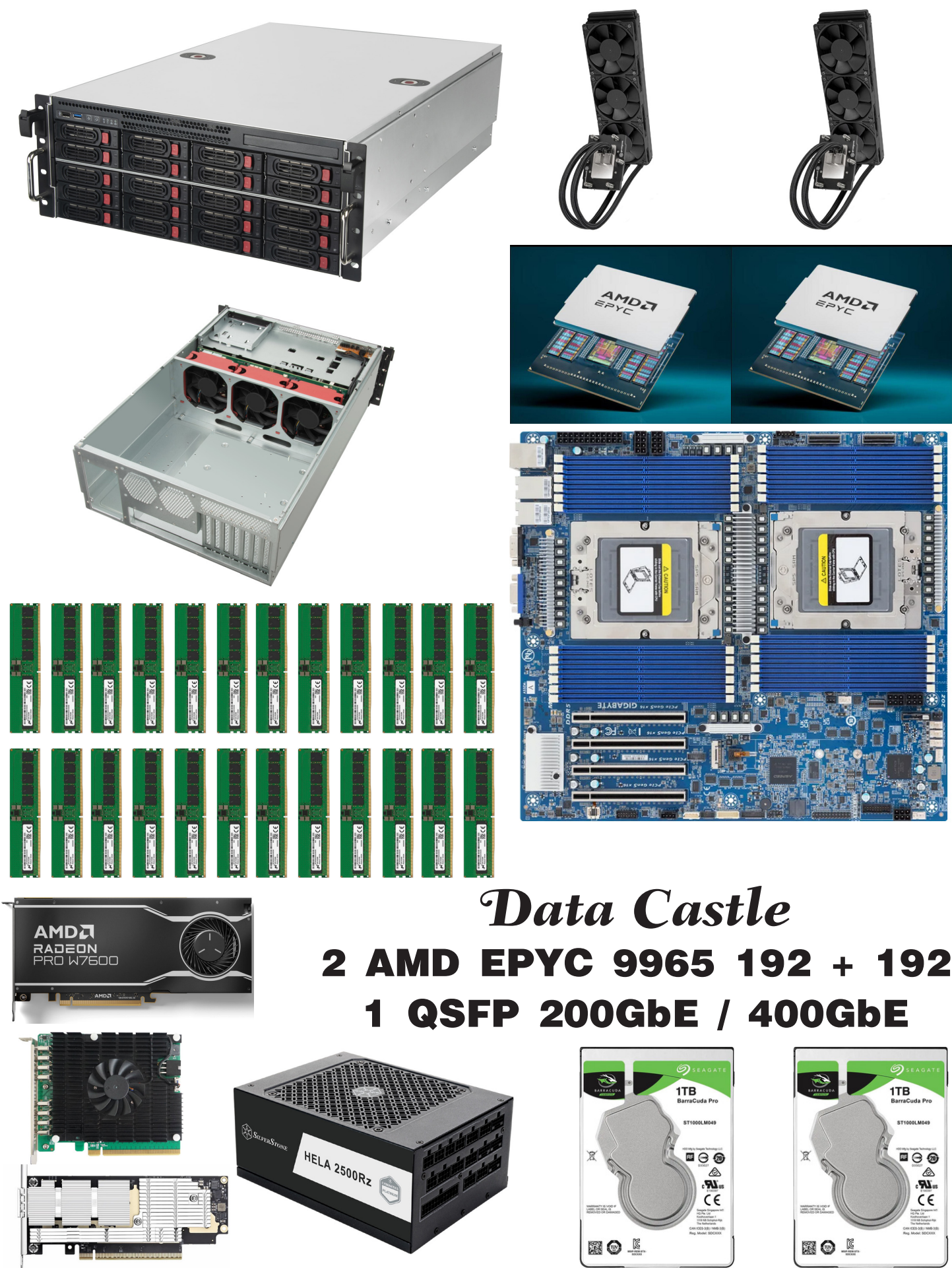
Data Castle Demo 60GB File at 400GbE is **1.5 Seconds**

Data Castle is Full Duplex 200GbE
2,236,962 Times More Storage than **600TB** NAS
90TB sent to Data Castle at 200GbE is **1.25 Hours**
Only 1.44MB is used to store the 90TB
1.44MB returned from Data Castle at 200GbE is **1.25 Hours**
1.44MB is separated into 64 individual segments

Data Castle is Full Duplex 400GbE
2,236,962 Times More Storage than **600TB** NAS
90TB sent to Data Castle at 400GbE is **37.5 Minutes**
Only 1.44MB is used to store the 90TB
1.44MB returned from Data Castle at 400GbE is **37.5 Min.**
1.44MB is separated into 64 individual segments

CargoBit (**1Million Dollars+**) is HDX 4 Tera bit Ethernet

90TB sent to Cargobit at 4TbE is **3.75 Minutes**
Only 1.44MB is used to store the 90TB
1.44MB returned from Data Castle at 4TbE is **3.75 Minutes**
1.44MB is separated into 64 individual segments





Data Castle **OPTIONAL** **RAM DISK**

Secured 3600

1TB Disk for Customer - 1TB Disk Internal System

Data Castle Disk	281,474,976,710,656,000,000,000,000								
400GbE FDX (Formatted)	Yotta	Zetta	Exa	Peta	Tera	Giga	Mega	Kilo	Hecto
OPTIONAL RAM DISK	9,007,199,254,740,992,000,000,000,000								
(Formatted)	Yotta	Zetta	Exa	Peta	Tera	Giga	Mega	Kilo	Hecto
\$15,000 Dollars	1Time				Hardware Included				
Included	Forever				Factory Triple Backup				

Additional customer 9.007 Yotta Byte RAM DISK and, 281.474 Yotta Byte disk drive with additional 1TB system support disk drive, 512 GB NVME SSD, Eaton Tripp Lite SU1500RTXLCDN 1500VA Online Double-Conversion UPS 1350W SmartOnline Pure Sine Wave 2U Rackmount 8 Outlets AVR 2-Year Manufacturer’s Warranty & \$250 000 Insurance Electronics.

The ram disk is 32GB ram x $(2^{52}) = 9,007,199,254,740,992,000,000,000$ Bytes formatted of random access memory. Recommended for live Data, Data Set, and Data Base analysis, conversions, manipulations, calculations, with near real-time random access. When power is lost, the 32GB ram will be moved to the 512GB NVME SSD in under 1 minute. At power up the stored 32GB image is returned to the 32GB ram, and the additional 1TB Internal System disk drive. Occasional 32GB images are made to the 1TB Internal System disk drive also.

Please see (Pages 60 - 63) for **OPTIONAL** Data, Data Set, Data Base formatting. The data can be formatted for extremely fine grain to allow for random searching, analysis, conversions, manipulations, calculations, and mapping in near real-time. The Desktop Data 3600 conversion rate is 400GbE FDX. Please see catalog for faster models.



Data Castle **OPTIONAL RAM DISK**
Secured 3600

9.007 Yotta Byte **RAM DISK** / 245.76 Tera Byte SSD =
36,650,387,592 SSD Drives at \$80,000 Each =
\$ 2,932,031,007,402,666 a.k.a. Multiple Data Centers

180,143,985,094 50TB Hard Disk Drives at \$2,000 Each =
\$360,287,970,189,639 a.k.a. Multiple Data Centers

Capacity comparison only, the Data Castle 3600 is limited to 400GbE FDX. IOPS (Input Output Per Second) is less than the billions of drives supported by individual input / output systems. Of course approx. \$100,000 Data Castle 3600 cost compared to over 36 billion of 245.76 SSD Drive cost alone \$3 Quadrillion Dollars may be one sided.

All compared to one single Data Castle 3600 with RAM DISK \$100,000

Pro

245.76TB Micron 6600 Ion SSD has a staggering 16GB RAM with a \$100,000+ price tag, and is 'the one to beat in its class', reviewer says

News By Efosa Udimwen | Published July 14, 2026

Micron packs 64GB of onboard memory into a colossal enterprise SSD

AI Overview

245TB (245.76TB) enterprise QLC SSDs deliver 1.3 million to 1.78 million random read IOPS and 42,000 to 50,000 random write IOPS, depending on the vendor model.

Performance by Model

Micron 6600 ION (245.76TB)

Random Read (4K): ~1.75M to 1.78M IOPS

Random Write (4K): ~42,000 IOPS

Sequential Read: Up to 13.7 GB/s

Sequential Write: Up to 3.0 GB/s

Google

245TB SSD iops

Random Read: Up to 1.3 million IOPS

Random Write: Up to 50,000 IOPS

Sequential Read: Up to 12 GB/s

Sequential Write: Up to 3 GB/s

Source announcement details: [Tom's Hardware](#)

Key Specifications

Interface: PCIe Gen5 x4 (NVMe 2.0)

Form Factor: EDSFF E3.L (and U.2 variants for Micron)

Max Power: ~30W under heavy load

Endurance: Typically rated around 0.3 DWPD (Drive Writes Per Day) for hyperscale storage

Are you planning a data center rack deployment, or do you need help comparing rebuild times and power efficiency (TB/watt) against traditional hard drives?

Data Castle **OPTIONAL RAM DISK**
Secured 3600

IOPS (Input Output per Second) rating is better addressed by the over \$80,000 cost for one single 245.76TB SSD Drive unit. The cost of 1 Data Castle 3600 unit with optional RAM DISK is about \$100,000 Dollars.

The total throughput is 400GbE FDX, meaning the IOPS of 1 Data Castle 3600 unit is much greater than one single 245.76TB SSD Drive unit.

The total capacity of 1 Data Castle 3600 units with optional RAM DISK is: 9,007,199,254,740,992,000,000,000 Bytes
or
36,650,387,592 (245.76)TB SSD Drive units
or
\$ 2,932,031,007,402,666 at \$80,000 each

Compared to 1 Data Castle 3600 with RAM DISK \$100,000

Support of Full 400GbE Input Output Full Duplex
No Write Endurance Limit of any kind, unlike SSD Drives

Content Addressable Random Access Memory
With Generated Index Tables
Please see Pages: (42 - 45)
Near Real-Time Performance
No Industry Standard 5 Year Licensing per TB
Additional High Speed SSD Local Disk for power down storage
Additional Battery for power down no loss storage support

Secured 3600

LOCAL
Existing PC or Server
with 400GbE
Windows or Linux
Running Customer Software
Possible
Security Systems
Engineering - Business
Almost Anything

(In the Ball Park)
Linux + Windows limit of
Less Than 24.5 Exa Bytes per Drive
Requires about 100,000
245 Tera Byte SSDs to reach

400GbE

Data Castle Secured 3600
has Millions of
24.5 Exa Byte Drives **LOCAL**

1GbE

> 1,024 24.5 Exa Byte Drives
can be sent over 1GbE Internet
from multiple customer authorized
777/3600 units located anywhere
thru Factory switch in under
1 Second

LOCAL
Data Castle Secured 3600
Millions of 24.5 Exa Byte Disk Drives

Secured 3600

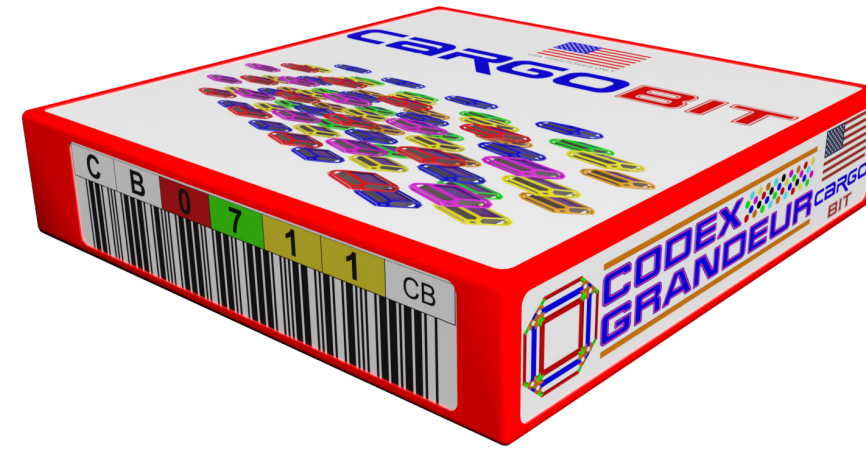
REMOTE
CLOUD
Services

REMOTE
Data Castle
FACTORY

REMOTE
Back Up Files 1

REMOTE
Back Up Files 2

REMOTE
Back Up Files 3



75.557 Zetta Byte
200 Yr Retention
100,000 Cycles
8 second R/W
\$512.00 Retail
Random Access
No Batteries
 ~ Size of LTO Tape Cartridge

Semiconductor Flash
x (2⁵²) (Formatted)

75,557,863,725,914,323,419,136
 Zetta Exa Peta Tera Giga Mega Kilo Hecto

1 Single Data Castle 75.557 Zetta Byte Semiconductor Cartridge
can hold over 755,578,637 Individual LTO 100TB Tapes

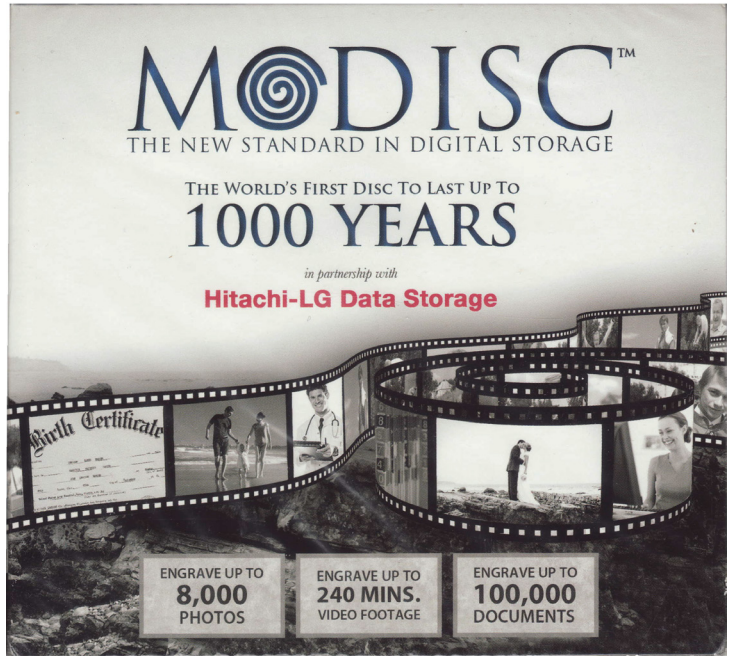
(755,578,637) LTO-10 100TB Tapes

Legacy Data Center storage as seen on the left page,
typically requires huge amounts of power, and electric
supply for cooling alone.

The Data Castle Trade Secret uses the 75.557 Zetta
Byte cartridge pictured above, along with 1,000 Year Discs
for permanent storage of Data that is never erased.

The Data is reduced by (2⁵²) (Formatted). This requires
many Complex Instruction Set Computers working in parallel
to store, verify, and Download Return the data.

The cartridge above, and 1,000 year discs require small
amounts of electric, and generate almost no heat for
centuries of online use.



The 100GB BDXL M-DISC is recommended, and any optical disc supported by the drive is usable, and can be multiplied by Data Castle (2^{52}) using the same (Formatted) data storage used with the 1.44 Diskette.

The special conversion formatting allows local storage of internal system Deep Freezer data.

The special subspace conversion will function at near real-time for the data storage and data return from the optical disc drive, limited by the speed of the optical drive used.

**100GB BDXL
(Formatted)
M-DISC (2^{52})**

28,147,497,671,065,600,000,000,000
Yotta Zetta Exa Peta Tera Giga Mega Kilo Hecto

**One 1,000 year disk will hold 352 CargoBit 75.557 Zeta
Byte cartridges.**



64 files at 22,528 Bytes each
sha512sum + Index
 $22,528 / 1024 = 22$ (Sub Files)

Storage Bytes x (2^52)

Each (Sub File) has its own
sha512sum + Index

Each (Sub File) stores

288,230,376,151,711,744

Peta Tera Giga Mega Kilo Hecto

**2,882 LTO-10 100TB Tapes
Per (Sub File)**

22 (Sub Files) = 1 Single File

6,341,068,275,337,658,368

Exa Peta Tera Giga Mega Kilo Hecto

64 Single Files = Total Diskette Useable Storage Capacity

405,828,369,621,610,135,552

Exa Peta Tera Giga Mega Kilo Hecto

**2,882 LTO-10 100TB Tapes/(Sub File) x 22 (Sub Files)
per - 22,528 Bytes**

x 64 - 22,528 Bytes = 1,441,792 Bytes / Diskette

2,882 100TB Tapes x 22 (Sub Files) x 64 Files = 4,057,856

LTO-10 100TB Tapes

4 Million, 57 Thousand, 8 Hundred Fifty Six

**One Single 1.44 diskette holds (4,057,856) 100TB LTO-10 Tapes
Of previous compressed video storage, programs, and data**

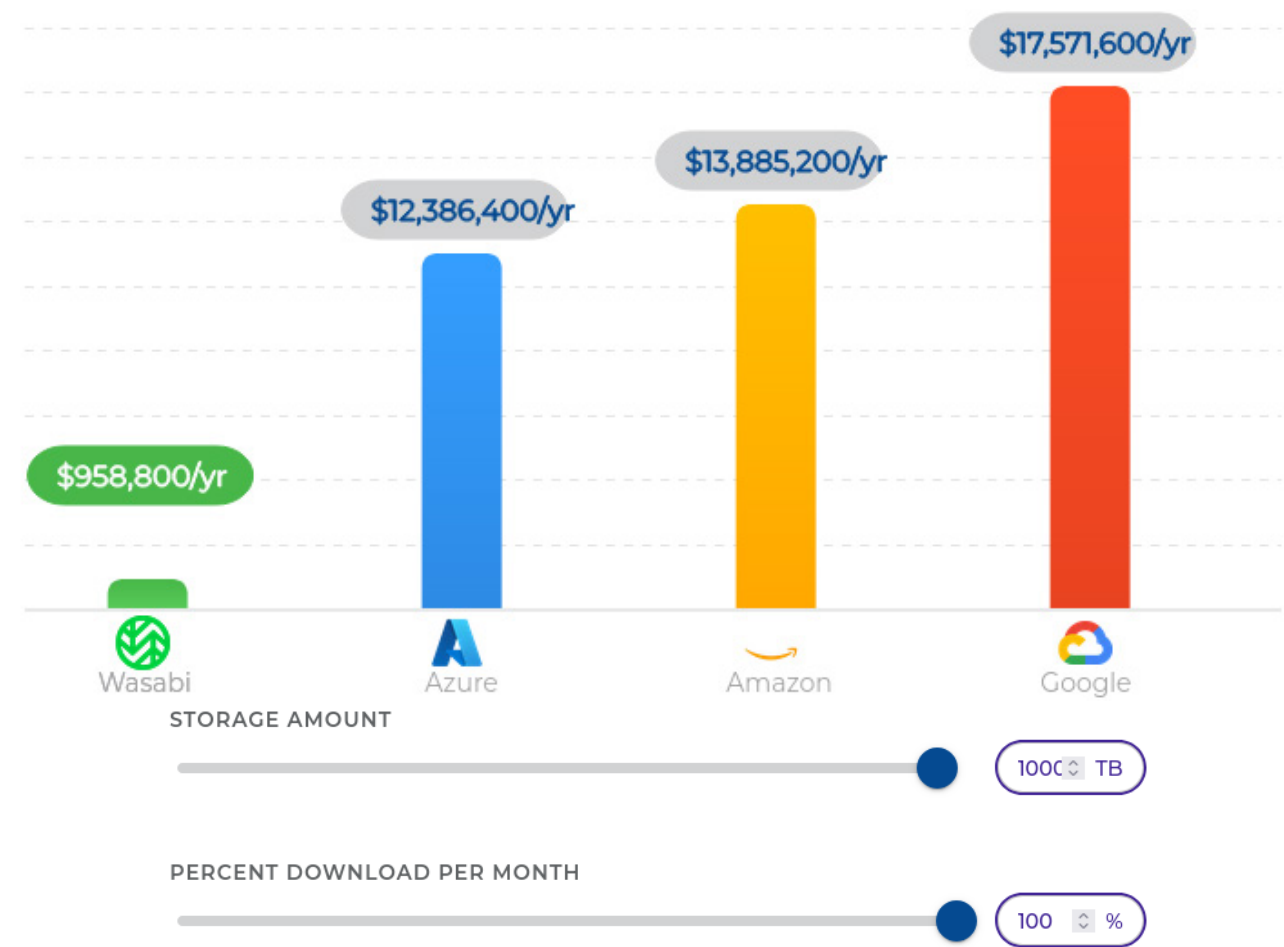
**LTO-10 40TB / 100TB Tapes are NOT REQUIRED for Data Castle
And used for comparison ONLY.**



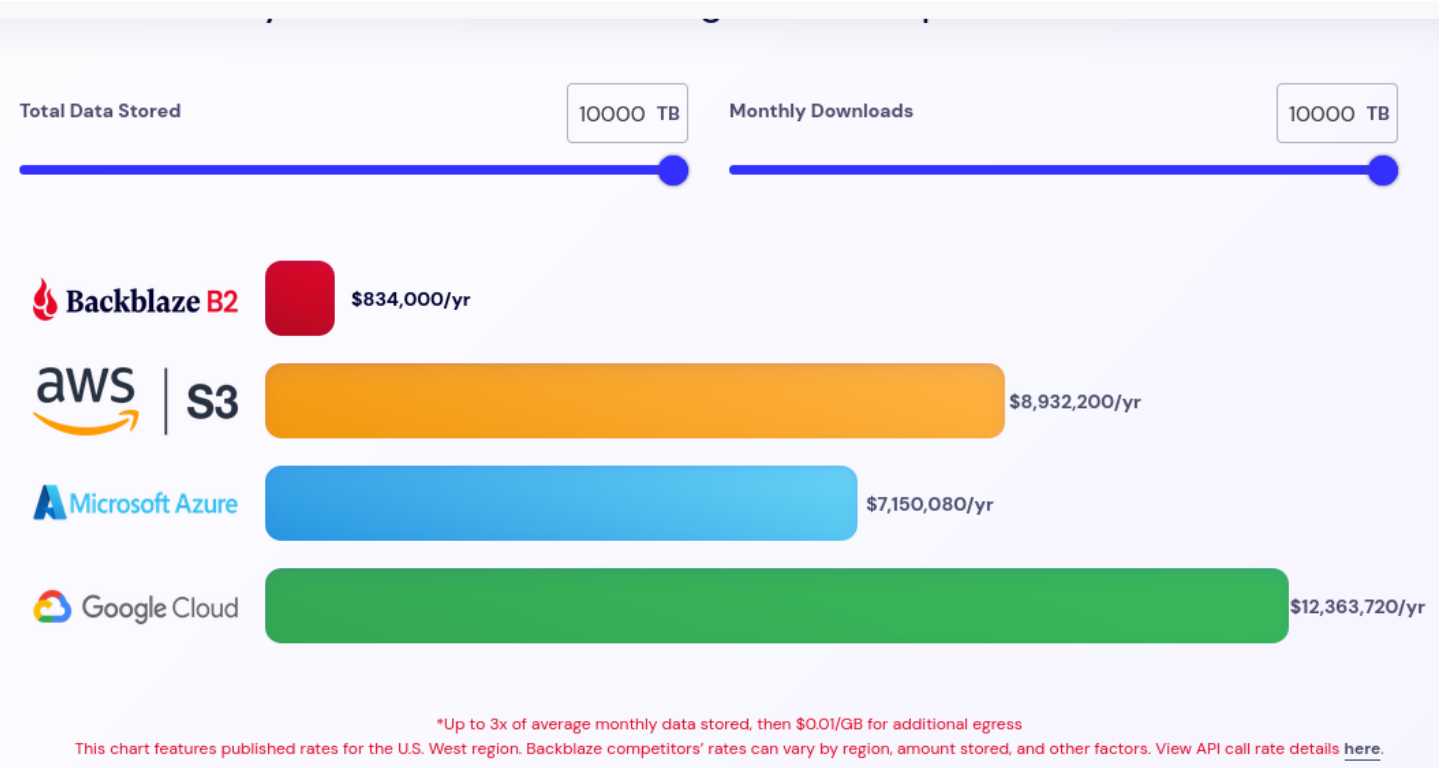
The Seagate Exos E SU84 storage enclosure supports 84 3.5 inch disk drives in a 5U box. A typical 42U rack cabinet will hold about 8-84 disk drive enclosures each.

CargoBit (2^52) will convert one single disk drive into the storage capacity of 4,503,599,627,370,496 disk drives, any size. $4,503,599,627,370,496 / 84 = 53,614,281,278,220$ disk drive enclosures pictured above. $53,614,281,278,220 / 8 = 6,701,785,159,777$ Cabinets full of disk drives. The electrical power and cost of physical space alone will pay for many, many CargoBit units instantly, not to mention the cost of all the disk drives that will wear out eventually, compared to the one single disk drive CargoBit uses.

\$79,900 per month **\$958,800** per year

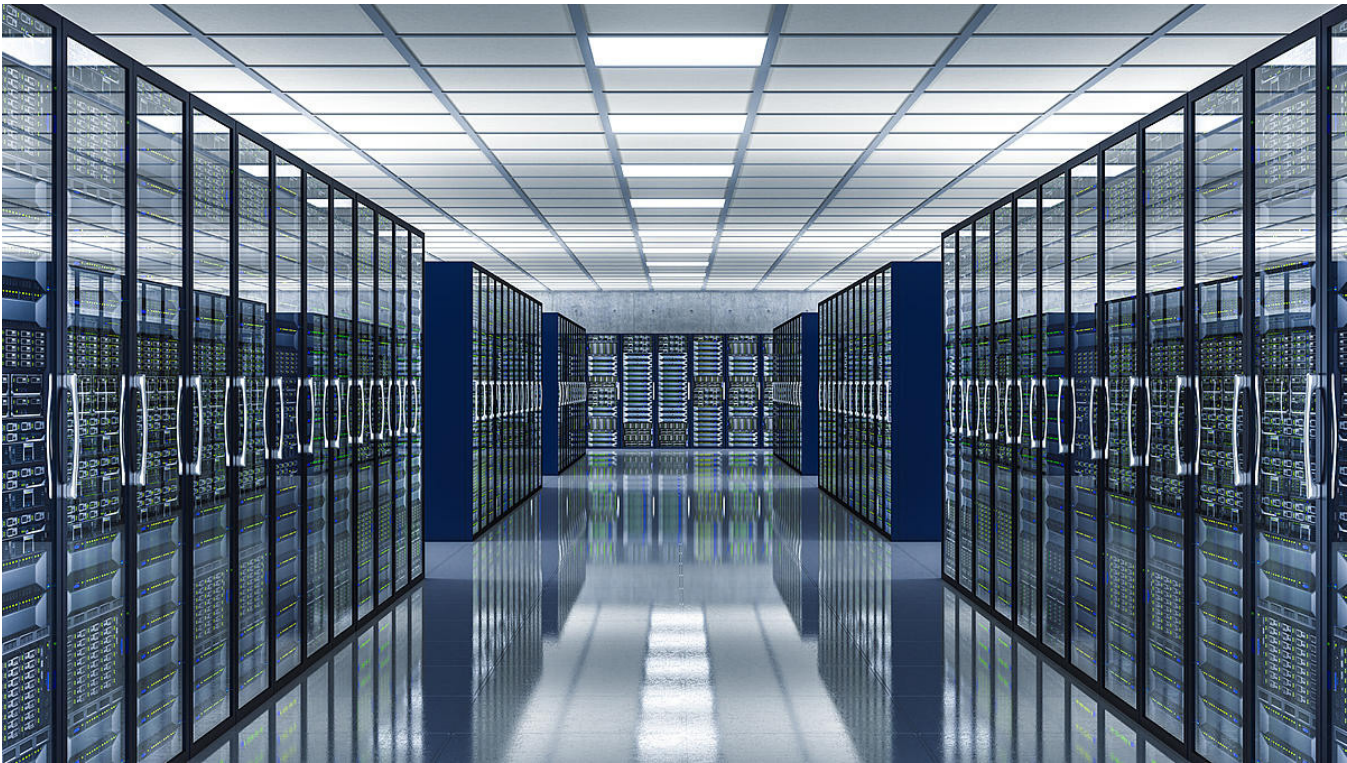


Amazon	=	10,000,000,000,000,000
\$2,000,000 Dollars + Every Year		Peta Tera Giga Mega Kilo Hecto
Azure	=	10,000,000,000,000,000
\$2,000,000 Dollars + Every Year		Peta Tera Giga Mega Kilo Hecto
Google	=	10,000,000,000,000,000
\$2,000,000 Dollars + Every Year		Peta Tera Giga Mega Kilo Hecto
Backblaze	=	10,000,000,000,000,000
\$834,000 Dollars Every Year		Peta Tera Giga Mega Kilo Hecto
Wasabi	=	10,000,000,000,000,000
\$958,800 Dollars Every Year		Peta Tera Giga Mega Kilo Hecto
Seagate Lyve Cloud	=	10,000,000,000,000,000
\$7.50 TB/Mo Standard \$900,000 Dollars Every Year		Peta Tera Giga Mega Kilo Hecto

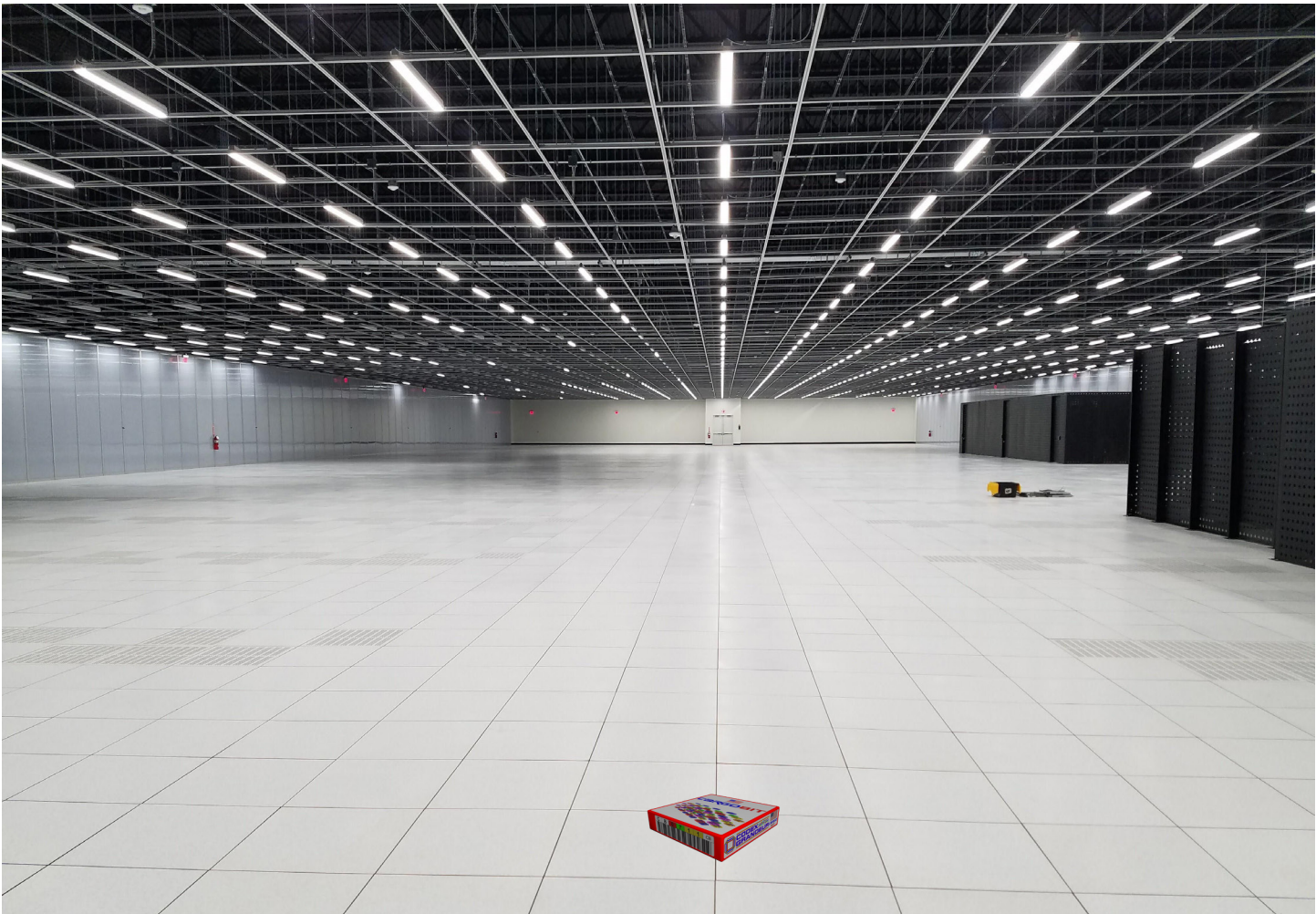


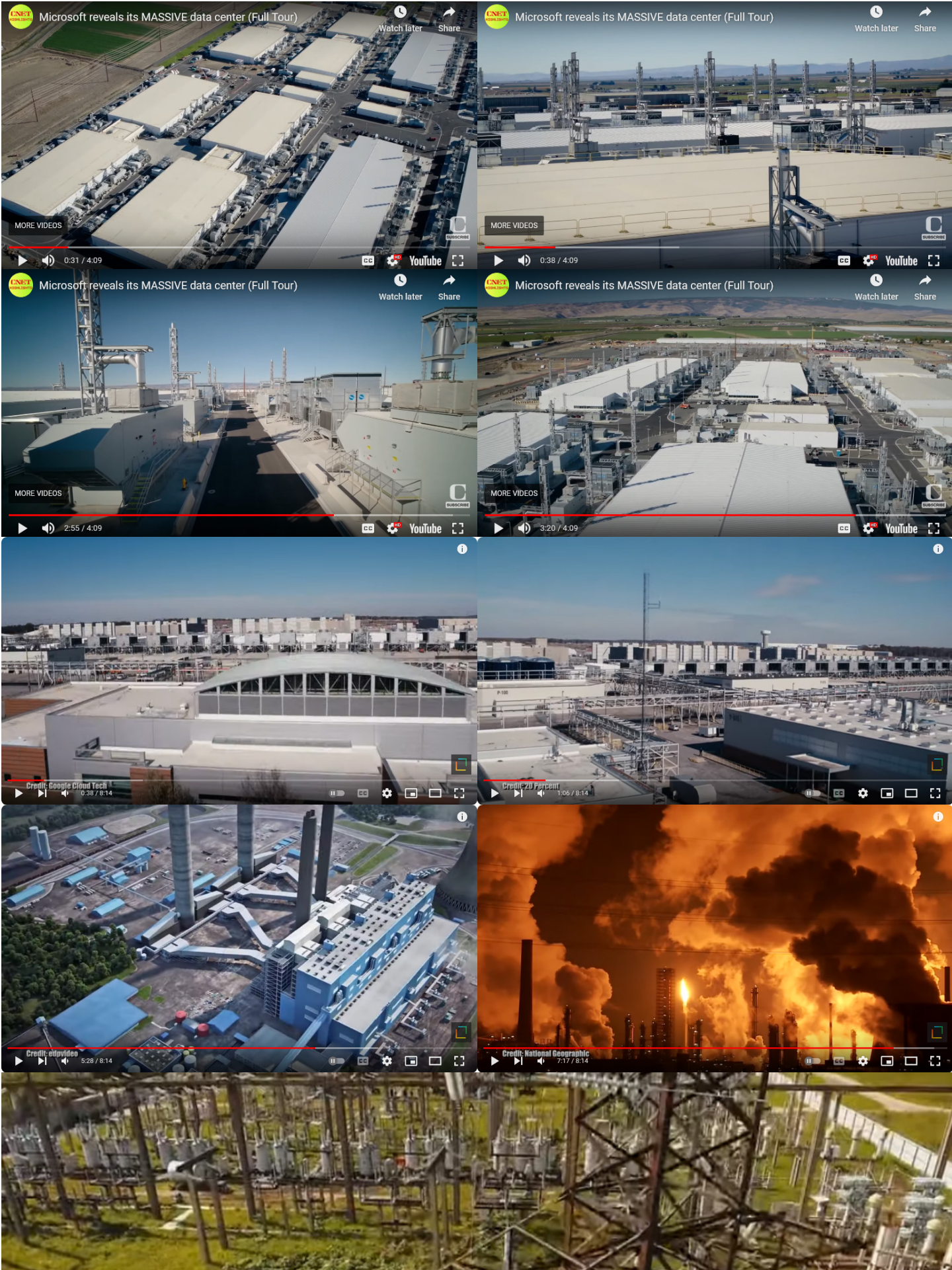


**Small Business Wins against Large Data Centers
With Data Castle**



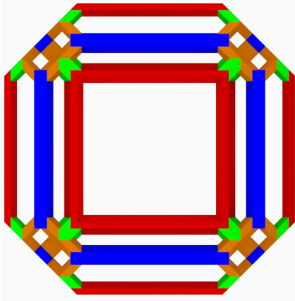
Magnitudes More Space with Magnitudes Less Data Storage





Prefix	Symbol	1000 ^m	10 ⁿ	Decimal	Short scale	Long scale	Since ^[n 1]
yotta	Y	1000 ⁸	10 ²⁴	1 000 000 000 000 000 000 000 000	Septillion	Quadrillion	1991
zetta	Z	1000 ⁷	10 ²¹	1 000 000 000 000 000 000 000	Sextillion	Trilliard	1991
exa	E	1000 ⁶	10 ¹⁸	1 000 000 000 000 000 000	Quintillion	Trillion	1975
peta	P	1000 ⁵	10 ¹⁵	1 000 000 000 000 000	Quadrillion	Billiard	1975
tera	T	1000 ⁴	10 ¹²	1 000 000 000 000	Trillion	Billion	1960
giga	G	1000 ³	10 ⁹	1 000 000 000	Billion	Milliard	1960
mega	M	1000 ²	10 ⁶	1 000 000	Million		1960
kilo	k	1000 ¹	10 ³	1 000	Thousand		1795
hecto	h	1000 ^{2/3}	10 ²	100	Hundred		1795
deca	da	1000 ^{1/3}	10 ¹	10	Ten		1795
		1000 ⁰	10 ⁰	1	One		–
deci	d	1000 ^{−1/3}	10 ^{−1}	0.1	Tenth		1795
centi	c	1000 ^{−2/3}	10 ^{−2}	0.01	Hundredth		1795
milli	m	1000 ^{−1}	10 ^{−3}	0.001	Thousandth		1795
micro	μ	1000 ^{−2}	10 ^{−6}	0.000 001	Millionth		1960
nano	n	1000 ^{−3}	10 ^{−9}	0.000 000 001	Billionth	Milliardth	1960
pico	p	1000 ^{−4}	10 ^{−12}	0.000 000 000 001	Trillionth	Billionth	1960
femto	f	1000 ^{−5}	10 ^{−15}	0.000 000 000 000 001	Quadrillionth	Billiardth	1964
atto	a	1000 ^{−6}	10 ^{−18}	0.000 000 000 000 000 001	Quintillionth	Trillionth	1964
zepto	z	1000 ^{−7}	10 ^{−21}	0.000 000 000 000 000 000 001	Sextillionth	Trilliardth	1991
yocto	y	1000 ^{−8}	10 ^{−24}	0.000 000 000 000 000 000 000 001	Septillionth	Quadrillionth	1991

Prefix		Binary ÷ Decimal		Decimal ÷ Binary	
kilo	kibi	1.024 (+2.4%)		0.9766 (−2.3%)	
mega	mebi	1.049 (+4.9%)		0.9537 (−4.6%)	
giga	gibi	1.074 (+7.4%)		0.9313 (−6.9%)	
tera	tebi	1.100 (+10.0%)		0.9095 (−9.1%)	
peta	pebi	1.126 (+12.6%)		0.8882 (−11.2%)	
exa	exbi	1.153 (+15.3%)		0.8674 (−13.3%)	
zetta	zebi	1.181 (+18.1%)		0.8470 (−15.3%)	
yotta	yobi	1.209 (+20.9%)		0.8272 (−17.3%)	
ronna	robi	1.238 (+23.8%)		0.8078 (−19.2%)	
quetta	quebi	1.268 (+26.8%)		0.7889 (−21.1%)	



CODEX GRANDEUR

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