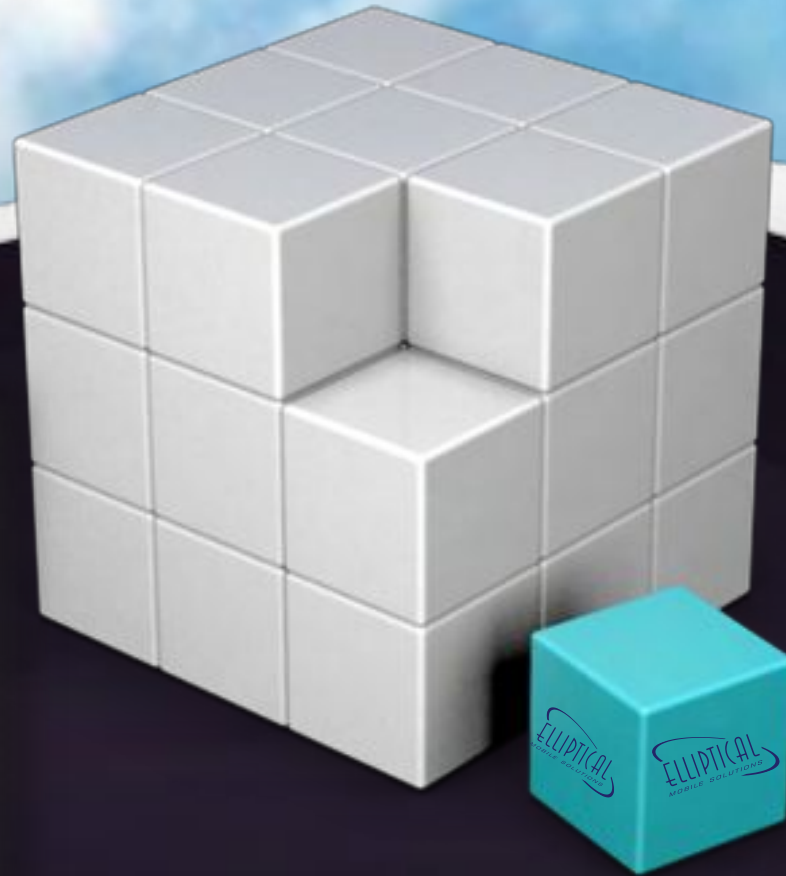




New Technology: Micro Modular Data Center Universal Chassis for Massive Digital Resource Deployment

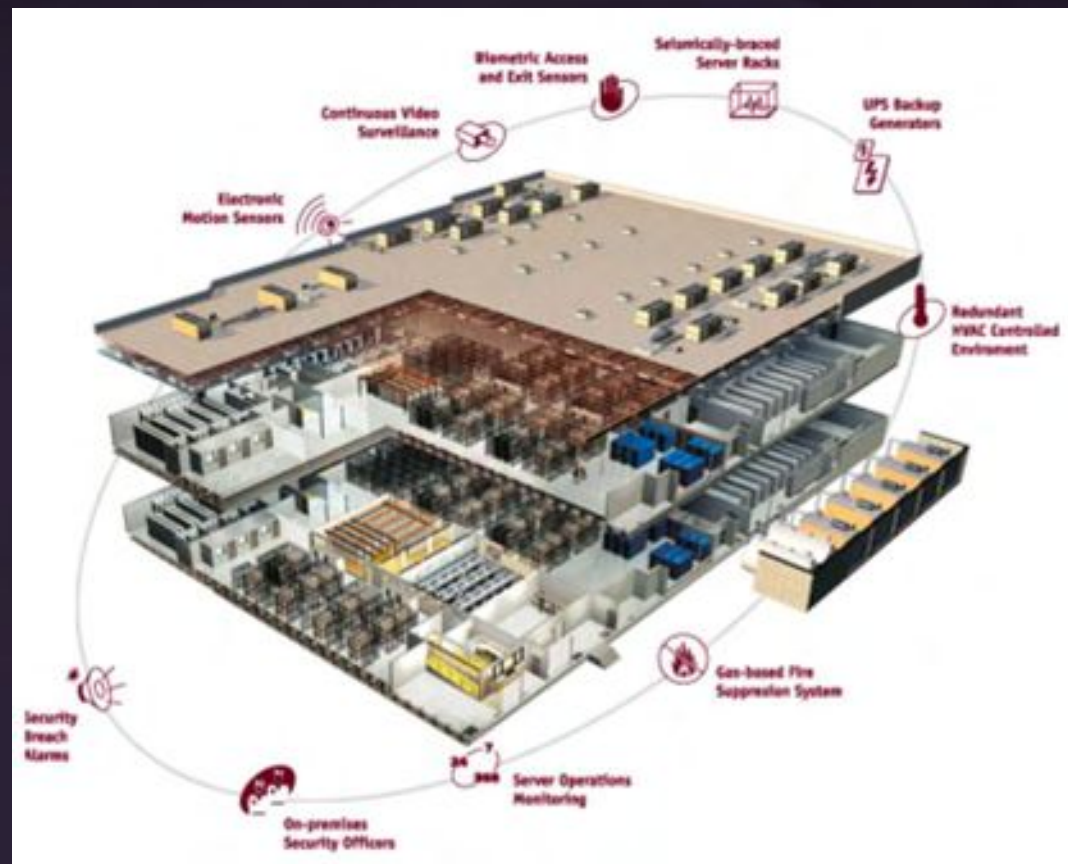


What is a Data Center?



The data center is a physical place that houses a network's most critical systems, including:

- backup power
- fire protection
- air conditioning
- security



Why Containerized Systems?



- Connect The “Facility” (Building Shell) Together With The Compute Package For The Best Possible Efficiency
- Reduce Starting Cost And Operational Expense
- Create A Standardized Platform That Can Adjust To The Rapidly Changing Information Technology Environment

Industry Change: Containerized Data Centers

Less \$ and More Efficient



Average Data Center Waste: 50% **Containerized Data Centers Waste: 5%**
\$/watt of Compute: \$15 - \$25 **\$/watt of Compute: \$4 - \$8**

Brick & Mortar



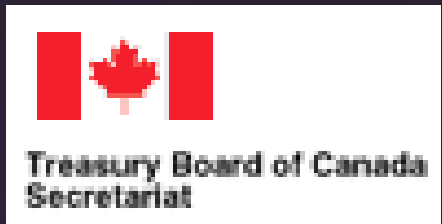
Container



MMDC



Early Adopters of Containerized Data Centers



National
Defence



Three Distinct Types of MMDC



**High Performance Computing
Detached Cooling Unit**



**Stand Alone with Self
Contained Cooling**



**Power Assisted Enhanced
Mobility**



Typical MMDC Characteristics



- ENERGY EFFICIENT
- LOW START COST
- PRE ENGINEERED
- “INSTANT OPERATION”
- ENVIRONMENTAL MONITORING
- BUILT-IN SHOCK AND VIBRATION ISOLATION
- SEISMIC RATING ABOVE ZONE 4
- ENCRYPTED SECURITY WITH LOG TRAIL
- MOBILE/PORTABLE



High Performance Features

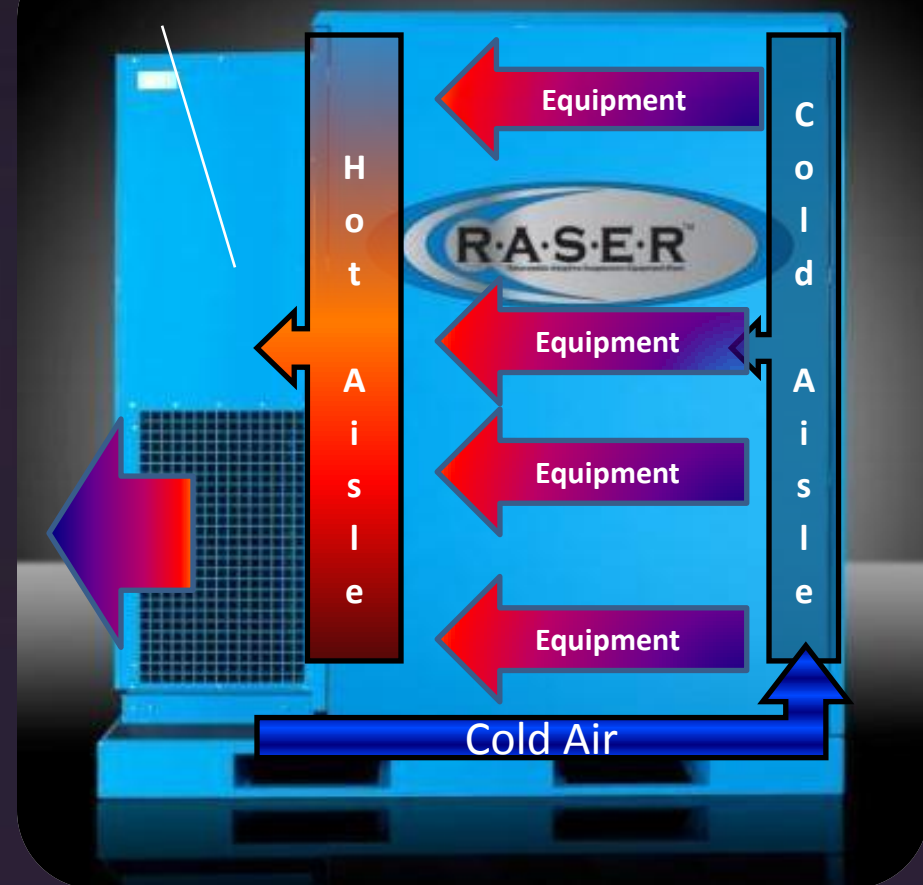
- **PLUG N PLAY DATA CENTER**
- **MAINFRAME ROOM**
- **SECONDARY DATA CENTER SITE**
- **40KW (ENOUGH TO POWER 8 HOMES)**
- **80KW (ENOUGH TO POWER 16 HOMES)**
- **REDUNDANT WATER INPUTS**
- **SEALED ENVIRONMENT**
- **“HIGH TEMPERATURE” WATER COOLING**
- **MULTIPLE HOT-SWAPPABLE FANS**
- **REDUNDANT (N+1 AND 2N), HOT SWAPPABLE HEAT EXCHANGER UNITS**



Self Contained MMDC Features

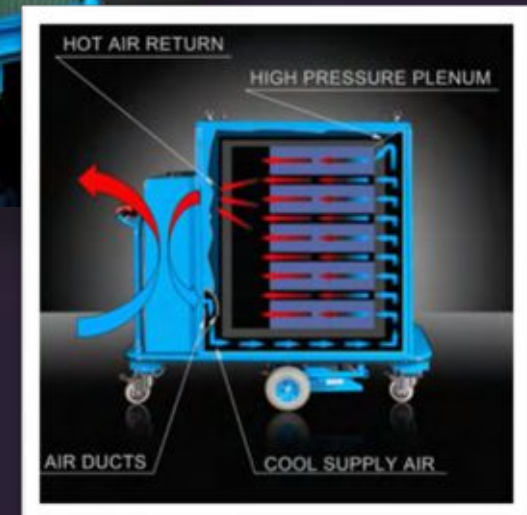
- ON BOARD COOLING
- ZERO WATER USE
- SHOCK AND VIBRATION ISOLATION
- HARDENED ENCLOSURE
- SELF CONTAINED ACTIVE AND PASSIVE FIRE SUPPRESSION SYSTEMS
- SEALED SYSTEM
- INDOOR/OUTDOOR ENVIRONMENT

Compressor
Condenser/
Evaporator



Mobile MMDC Features

- 24U OF BLADE READY RACK SPACE
- 2 SELF CONTAINED COOLING UNITS SUPPORT N+1 OR 2N Re
 - 2.5KW, REDUNDANT TO 2N
 - 6KW, REDUNDANT TO N+1
- POWER ASSSITED MOBILTY
- A/B POWER INPUT FOR IT
- A/B POWER INPUT FOR COOLING
- CUSTOM INTERCONNECTIONS AVAILABLE
 - WATERPROOF
 - SHIELDED
- SHOCK AND VIBRATION ISOLATION



AVAILABLE OPTIONS ON ALL



Active Fire Suppression System

- VESDA
- HSSD
- NOVEC 1230
- F-GAS



Cyber Lock Security System

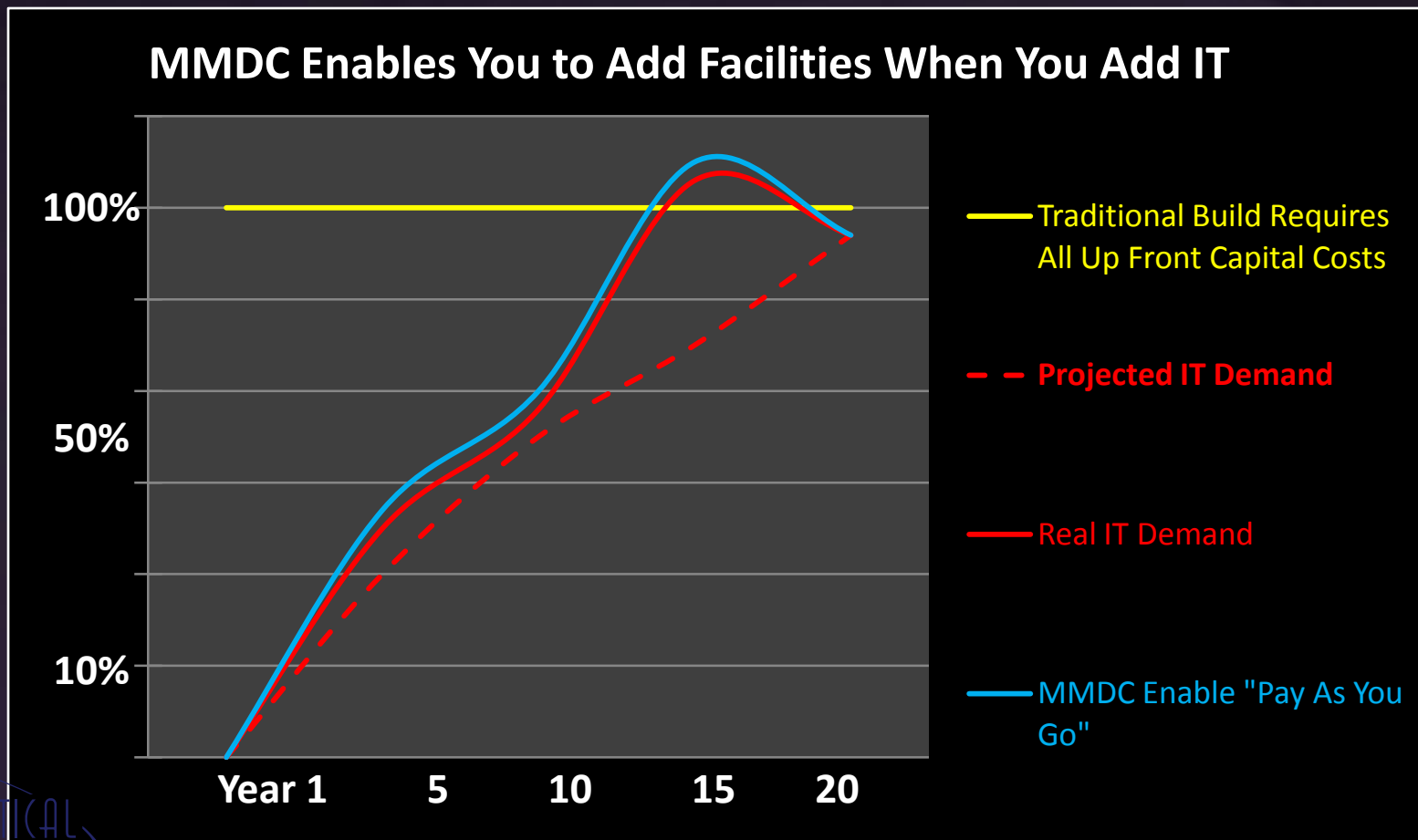
- STAND ALONE POWER
- 4,000 USER EVENT AUDIT TRAIL
- CARD READER SECURITY INTERFACE
- ENTERPRISE CLASS SOFTWARE
- REMOTE PROGRAMBLE

MMDC offer a path to "PAY AS YOU GO" Infrastructure



Brick and Mortar Data Centers Cannot Follow IT Demand

MMDC Enables You to Add Facilities When You Add IT



PRACTICAL APPLICATIONS



RASER DX



RASER HD



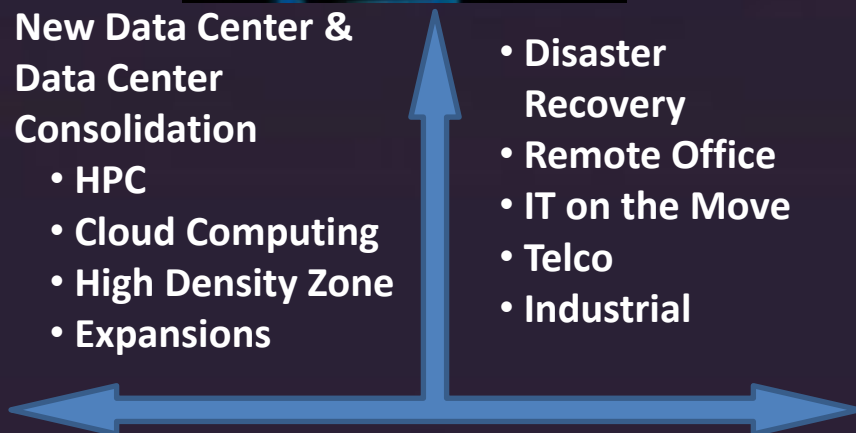
C3-SPEAR



**New Data Center &
Data Center
Consolidation**

- HPC
- Cloud Computing
- High Density Zone
- Expansions

- Disaster Recovery
- Remote Office
- IT on the Move
- Telco
- Industrial



Portable Rendering Infrastructure



- INSTANT CAPACITY ANYWHERE
- ZERO SKILL REQUIRED FOR DEPLOYMENT
- ARRIVE AND DEPART SEALED WITH AUTHORIZATION TRAIL
- HIGHEST “CORES PER SQFT” OF ANY INFRASTRUCTURE TYPE



Digital Audio Visual Production



- UPLINK STATION
- DOWNLINK STATIONS
- VIDEO RENDERING
- VIDEO STORAGE
- ONSITE PRE-RENDERING
- SUPPLEMENTAL CAPACITY



*A serious advantage
to the future of HD filming!
Going tapeless!*

Disaster Recovery



- SATCOM
- SECONDARY SITE
- RADIO BASE STATION
- MOBILE CELL TOWER
- AGILE INFRASTRUCTURE
- TEMPORARY OPERATIONS



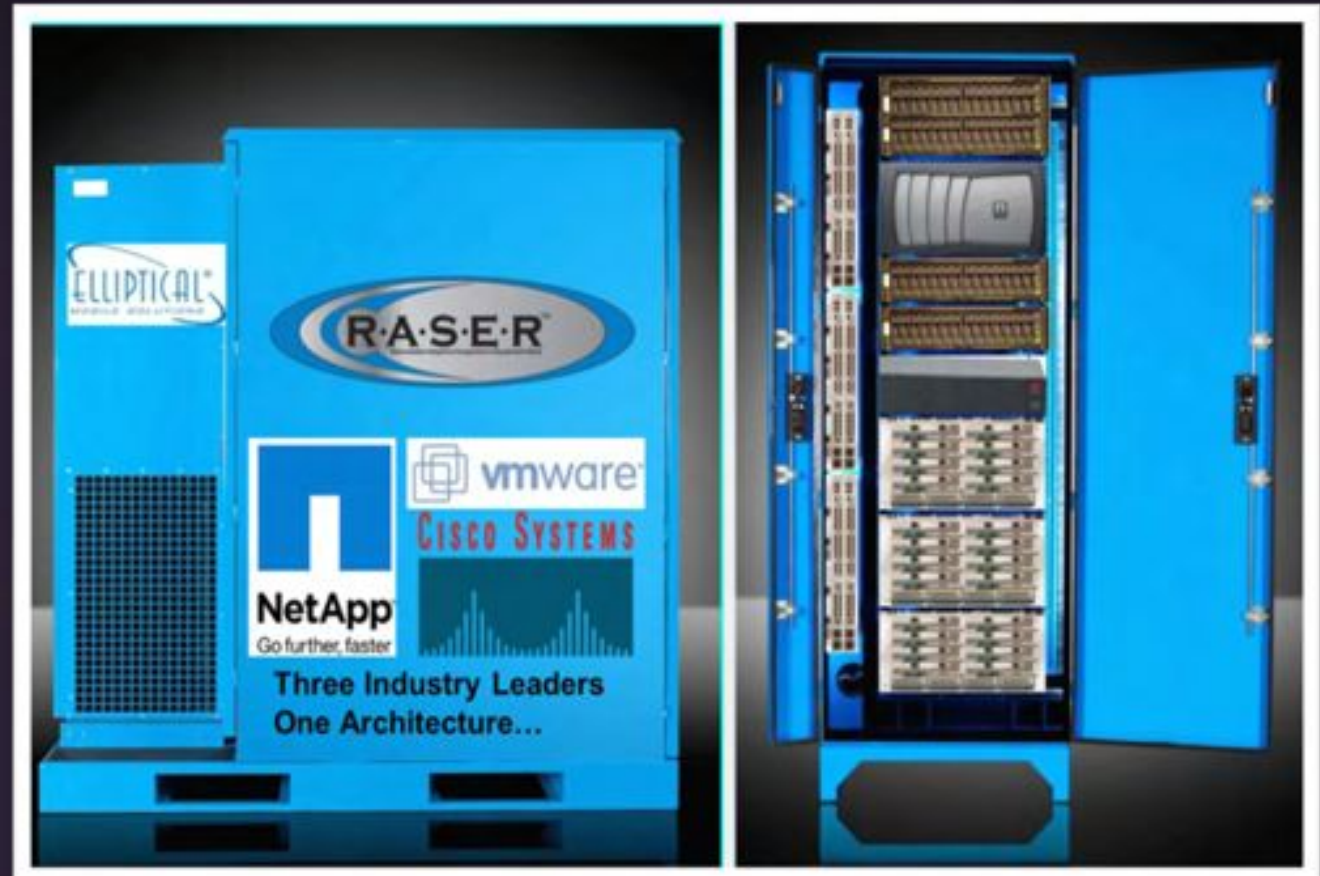
COMMUNICATIONS RE-ESTABLISHED

Cloud Computing:

(Flex Pod™)



- 24 Blades
- 42 TB Storage
- Virtualized
- Turnkey Cloud
 - Pre Designed
 - Expandable
 - Scalable



HIGH PERFORMANCE COMPUTING (CISCO)

CISCO UCS BLADE POD

6 UCS CHASSIS 48 BLADES
4 CISCO NEXUS SWITCHES
16,000BTU TYPICAL
63,000 BTU MAX

R.A.S.E.R. HD 20KW-40KW
72- 136,000 BTU



HIGH PERFORMANCE COMPUTING (HP)

HP C7000 BLADE POD

7 CHASSIS 56 BLADES
22,000BTU TYPICAL
63,000 BTU MAX

R.A.S.E.R. HD 20 – 40KW
72 – 136,000BTU



Datacenter Challenges Today

☑ Problems Solved



- ☑ Limited Cooling/ Electrical Capacity
- ☑ Unable to Adapt to Changing Requirements
- ☑ Runaway Electrical Bill Cost
- ☑ Expensive Retrofit for High Density Zone
- ☑ Constant Demand for Expansion
- ☑ Under Utilized Compute Resources
- ☑ Virtualization Infrastructure Challenges

- ☑ Technology Refresh
- ☑ Data Center Consolidation
- ☑ Energy Saving Initiatives
- ☑ Expensive Build Cost
- ☑ Floor Space Constraints
- ☑ Inflexible Infrastructure

Contact for more Info



- Simon Rohrich
 - Founder and Chief Technology Evangelist at Elliptical Mobile Solutions.
 - simonr@ellipticalmedia.com

Elliptical Mobile Solutions

465 East Chilton Road

Chandler, AZ 85225

888-924-0547

480-924-0547