



Intel® Corporation Presents:
The Eco-Technology Great Debates

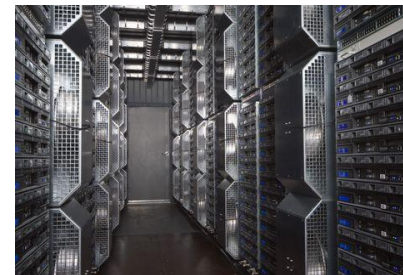
**“Container” Data Center
vs.
Brick-and-Mortar Data Center**



Change the Unit of Growth



- Server at a time:
 - 1 system
 - Racking and networking
- Cabinet at a time:
 - ~90 systems
 - Rack, stack and cable
 - Considerably more efficient and now the unit of growth in efficient centers
- Container at a time:
 - 300-2,800 systems
 - No packaging to remove
 - No installation required
 - Plug and play
- “Pay as you Grow” Datacenter



ISO Container as the unit

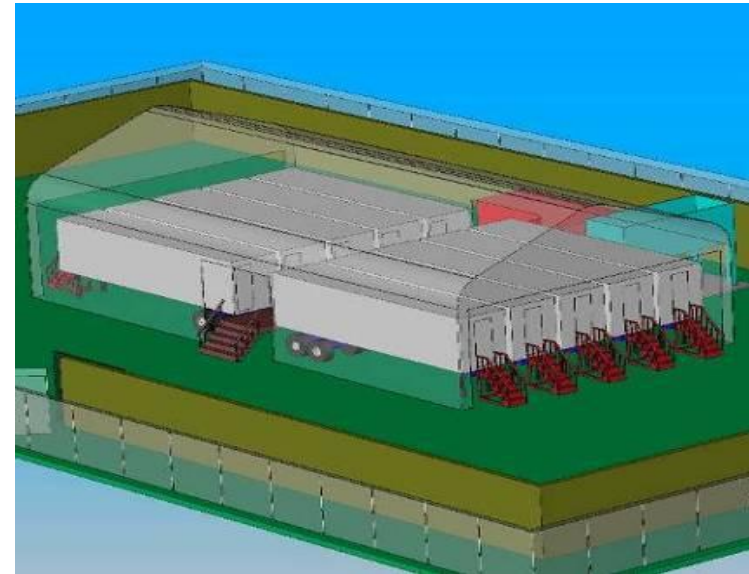
- All in one solution
 - Compute, storage, network, and cooling
 - Just plug in power, network, & chilled water
 - 40 or 20 foot containers, can be stacked
- Increased cooling efficiency
 - Localized heat exchange
 - Short air loop
 - Supports elevated operating temp
- Bring your own data center shell
 - Central networking, power, cooling, security and admin
 - Less regulatory issues
- Or be 100% self contained
- Single customs clearance on import
- Single FCC compliance certification
- Data center site flexibility



Location, location, location



- Dynamic data center:
 - Inexpensive intermodal transit anywhere in world
 - Move data center to cheap power & networking
 - Install capacity where or when needed
 - Conventional data centers cost millions & have long design & build schedules
- Build out a massively distributed data center fabric
 - Install satellite pico data centers near consumers, networks, data collection points
- Drive the unconventional:
 - Parking lot, adjacent to a data center
 - New data center construction
 - Airplane hanger, A-frame style building
 - Co-location facility or warehouse
 - Roof top, oil rig, boat, telco, or research station
 - Desert, jungle, or mountain
- Bring compute and storage closer
 - To the network, data collection points, or cheap power



Rapid deployment

- Configure and test in a convenient location
- Replicate and deploy world-wide
- Inexpensive intermodal transit anywhere in world (air, sea, rail, road, crane, copter)
- Order to fulfillment in weeks



Variations

- Variations on a theme
 - 20' or 40'
 - Customized servers or generic rack-mount
 - Cost-optimized or general purpose
 - Expanded thermal envelope
 - Certifications: Safety, EMI compliance, Fire Safety, Containment, Weather resistance, WEEE
- All variants leverage the container industry infrastructure for transport and after market products
- Use cases: fast deploy, short term demand, overflow space, small granularity high power, remoteability, harsh environment, primary delivery package.

Pros

- Single managed SKU, "optimal" granularity
- Portable, flexible
- Costs are short lead not long
- Optimizes shipping cost
- Technology test bed
- Energy efficient
- Expandable
- Good failure boundary at scale