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Flexible Pod Based Designs for OCP & Mixed Deployments

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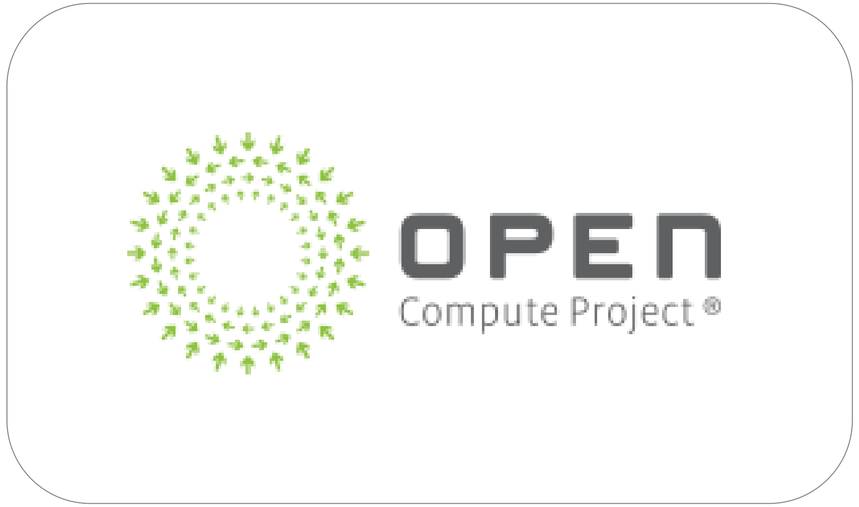
IT Technology Platform Shift

Evolving Platforms – resource pools utilized for varying workloads and applications



- Hyperscale platforms were viewed as developments purely for cloud providers
- Open Compute Project, and it's community, driving the benefits of hyperscale platforms beyond just the largest cloud providers
- Mutual interest in ensuring energy usage is efficient & sustainable

IT Technology Platform Shift

Deployment Method Shift – new platforms driving new way of deploying IT

- Legacy IT technology is traditionally installed onsite. Empty racks are deployed, IT devices racked and stacked on the whitespace floor
- Hyperscale platforms typically integrated/tested offsite, by an integrator, delivered as a fully loaded rack to the whitespace floor
- Integrated racks simply rolled into place, connected to power/network, and are ready to go!

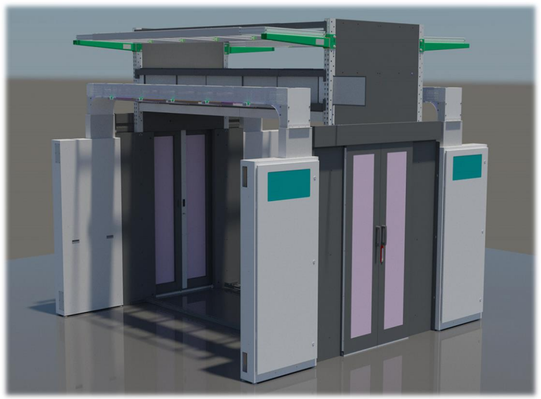
IT Technology Platform Shift

Deployment Method Shift – new platforms driving new way of deploying IT

IT Building Block

Server → Rack

Whitespace Building Block



Rack → Pod

Challenges In The Whitespace

Open Compute Project – dealing with hybrid deployments and rapid innovation

Hybrid Deployments

- Proof of Concept Stage
- Phased Approach for New Workloads

New Innovations

V1-V2
12v DC-48v DC
Olympus

- Multiple Platforms In Short Space of Time
- Innovation Continuing To Accelerate

Customers Are Asking For A Better Way To Deploy Their IT

How can we keep up with ever changing technology?

Is there a faster way to scale massive IT capacity?

How do we transition to OCP style deployment?

Is there a cleaner and more cost efficient way to deploy IT?

Can we pre-install a flexible IT backbone?

Traditional Data Centers Were Not Designed With Flexibility In Mind

- Containment typically mounts directly to IT racks
- Limited flexibility for varying rack sizes or different power/cooling architectures
- Requires cutting & drilling onsite to seal containment
- Makes adds/moves/changes difficult and time consuming

Data Center Deployment Is Harder Than It Needs To Be

- Ceiling support structures are inflexible, costly, time-consuming, and invasive

- Incorrect use of raised floors creates airflow obstructions

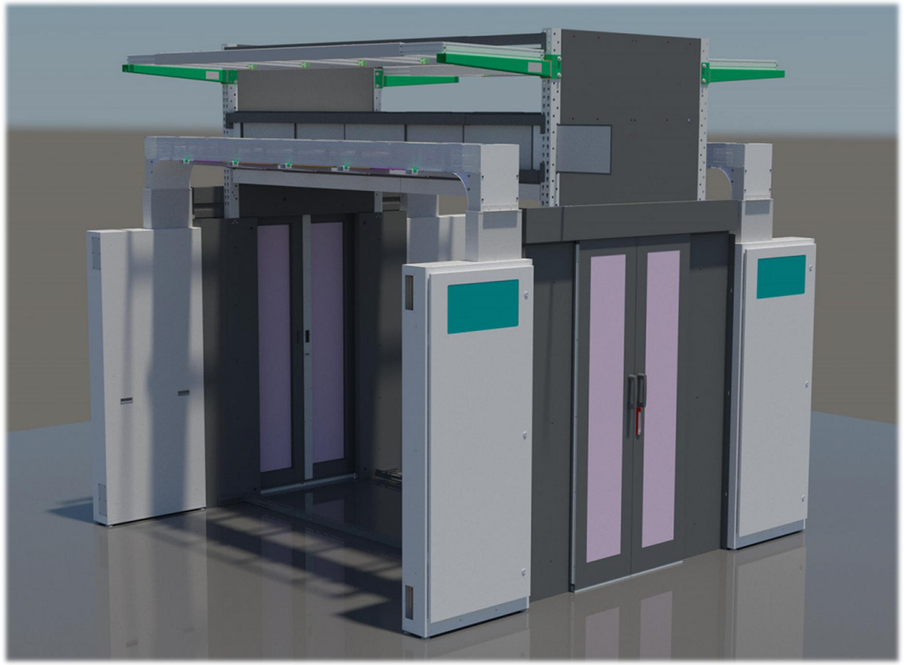
- Construction work in IT environments is difficult to manage

Traditional Data Centers Don’t Contemplate Integrated Racks

- Increasing trend of fully configured IT racks being integrated off site and rolled into the data center
- Traditional data center designs require racks be in place DURING construction
- IT equipment in an unfinished data center increases risk of damage or theft during construction

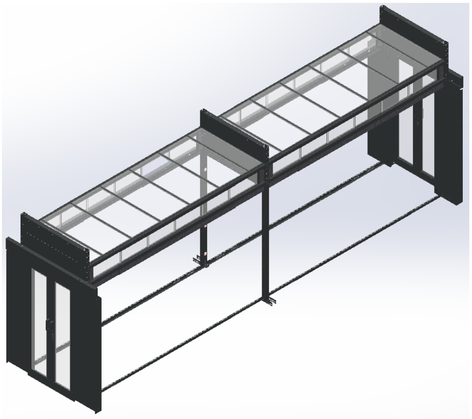
Pod Based System: A Better Way to Deploy Today's IT

- Shorten deployment cycle by building pods fully with containment before IT racks are delivered
- Easily mount power and data cables to the frame, ready for racks
- Roll racks into place & "plug" into the pod
- Predict infrastructure completion timeline more accurately



Pod Based System: Flexible Free-Standing Frame

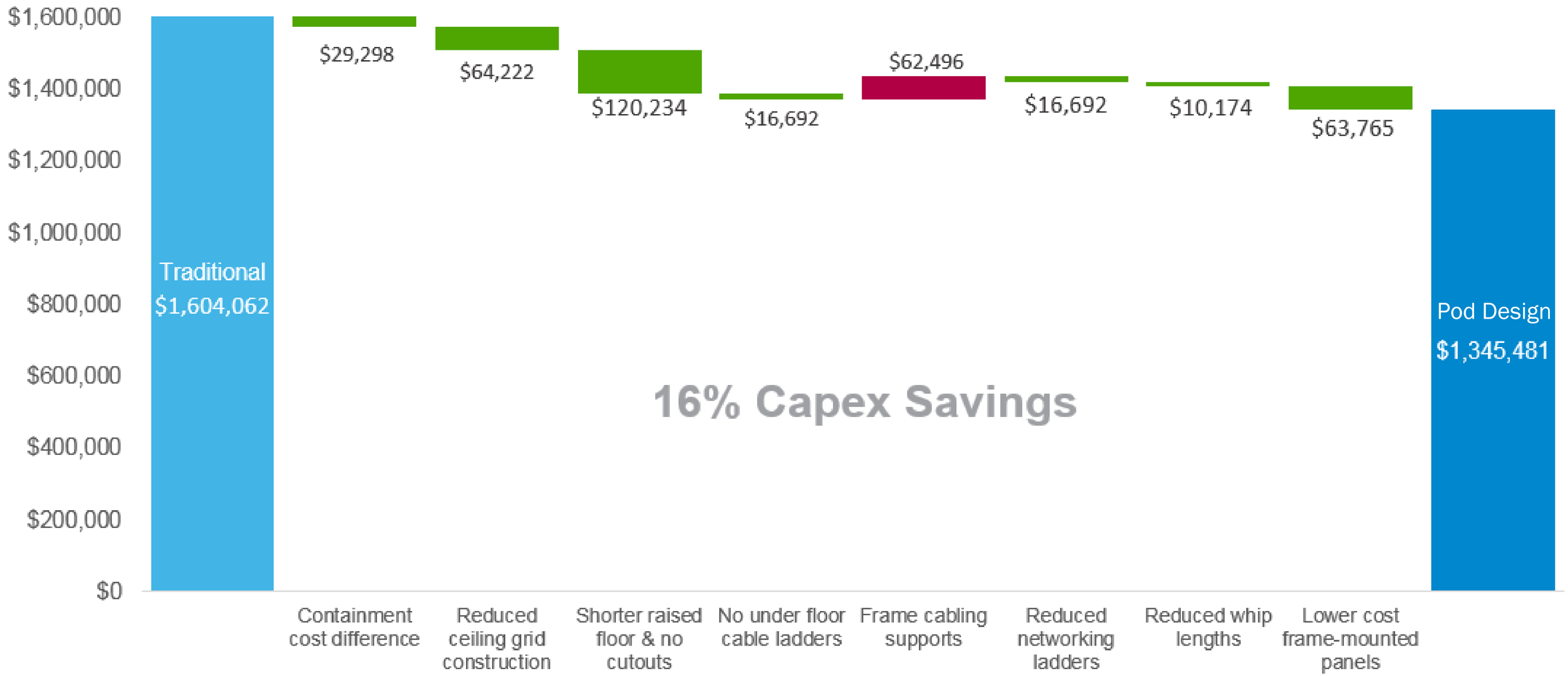
- Free- standing frame to allow racks to roll in and out
- Flexibility to adjust to different size and number of racks
- Ability to support a mix of IT rack platforms
- Expands to multi-frame deployments for larger pods
- Pod frame provides air containment (hot or cold)
- Support perimeter, row-based, or outside IT room cooling



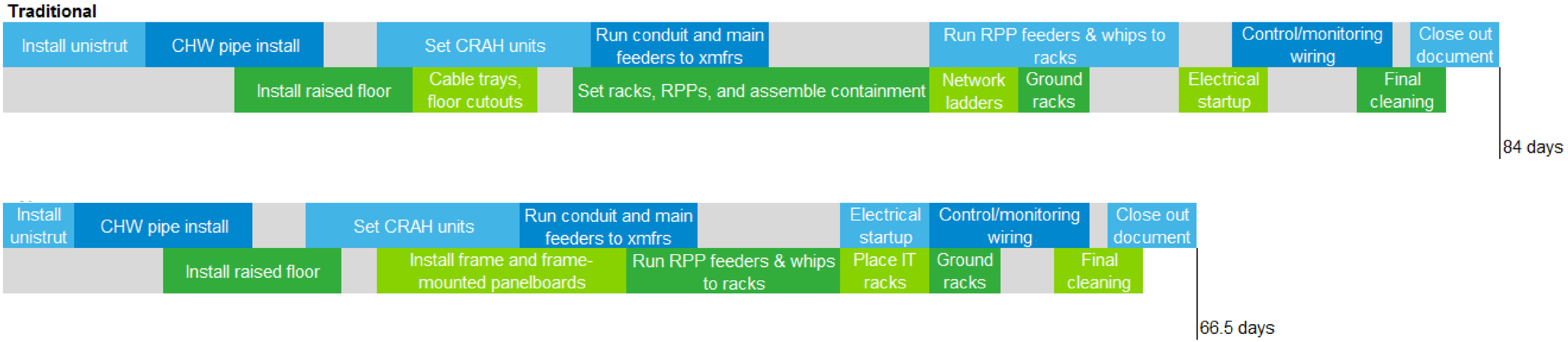
Pod Based System: Flexible Power Distribution

- Support branch power distribution on the pod frame
- Support for busway systems on the pod frame
- Incorporate row based power distribution panels into pod design
- Support copper cable trays and fiber runners on the pod frame

Pod Based Deployment Capex Savings



Pod Based Deployment Time Savings Entitlement



Labor savings

4 days	Reduced ceiling grid work
7 days	Install under-floor cable trays and cutouts/install grommets
1.5 days	Quicker containment assembly
2 days	Quicker running of power whips on pod vs. underfloor

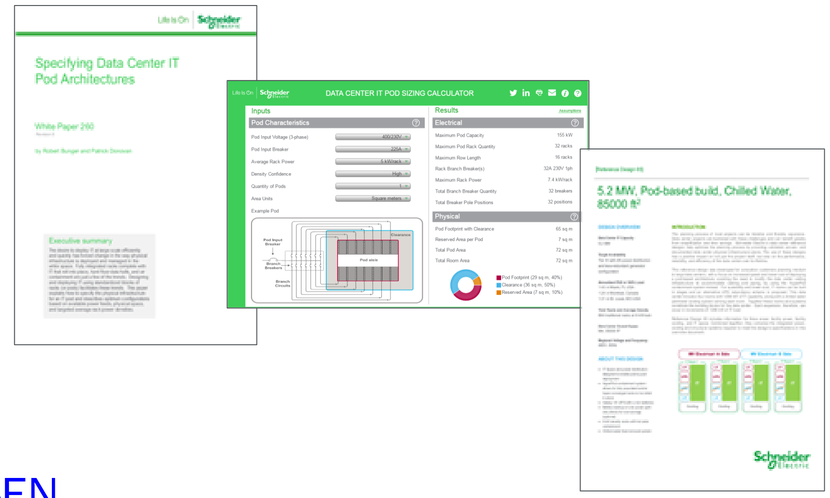
Total Project Timeline

84 days	Traditional
66.5 days	Hyperpod
17.5	Days saved
21%	% Savings

Pod Based Systems: Key Takeaways

- IT is changing rapidly requiring greater flexibility, increased speed, reduced deployment time, & reduced cost
- Addressing these needs has lead to the development of pod-based systems
- Benefits of pod-based architecture, using free standing pod frames:
  - Roll racks in and out more easily, providing greater flexibility with equipment
  - Deploy pods quickly, independent of IT rack delivery
  - Avoid costly, time consuming, and invasive construction
  - Save 16% capex and reduce deployment time by 21%

Pod Based Deployment Resources



- White Paper 260: Specifying Data Center IT Pod Architectures

http://download.schneider-electric.com/files?p_Doc_Ref=WTOL-AHAPRN_R0-EN

- White Paper 263: Data Center Pod Frames: Reduce Cost and Accelerate IT Rack Deployments

http://www.apc.com/salestools/WTOL-AJDHLT/WTOL-AJDHLT_R0_EN.pdf

- Reference Design 65: 5.2MW Pod-based Build

https://www.schneider-electric.com/en/download/document/RD65DSR0-pdf/

- Trade-off Tool: Pod Sizing Calculator

https://www.schneider-electric.com/en/work/solutions/system/s1/data-center-and-network-systems/trade-off-tools/data-center-it-pod-sizing-calculator/

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