

# Accelerate Deployments of VDI - VxRail Bundles & Sizing Rationale

Steve Fernandes

**DELL**Technologies

# VxRail VDI HW Bundles

## Option 1a

60 Users per Node  
(@ 4GB RAM / 1000MHz a Session)  
4 Node Cluster Spec)

**240 Users**



## Option 2a

120 Users per Node  
(@ 4GB RAM / 1000MHz a Session)  
4 Node Cluster Spec)

**480 Users**

## Option 1b

60 Users per Node  
(@ 8GB RAM / 1000MHz a Session)  
4 Node Cluster Spec)

**240 Users**

## Option 2b


120 Users per Node  
(@ 8GB RAM / 1000MHz a Session)  
4 Node Cluster Spec)

**480 Users**

# Why Dell Technologies VDI Bundles NOW?

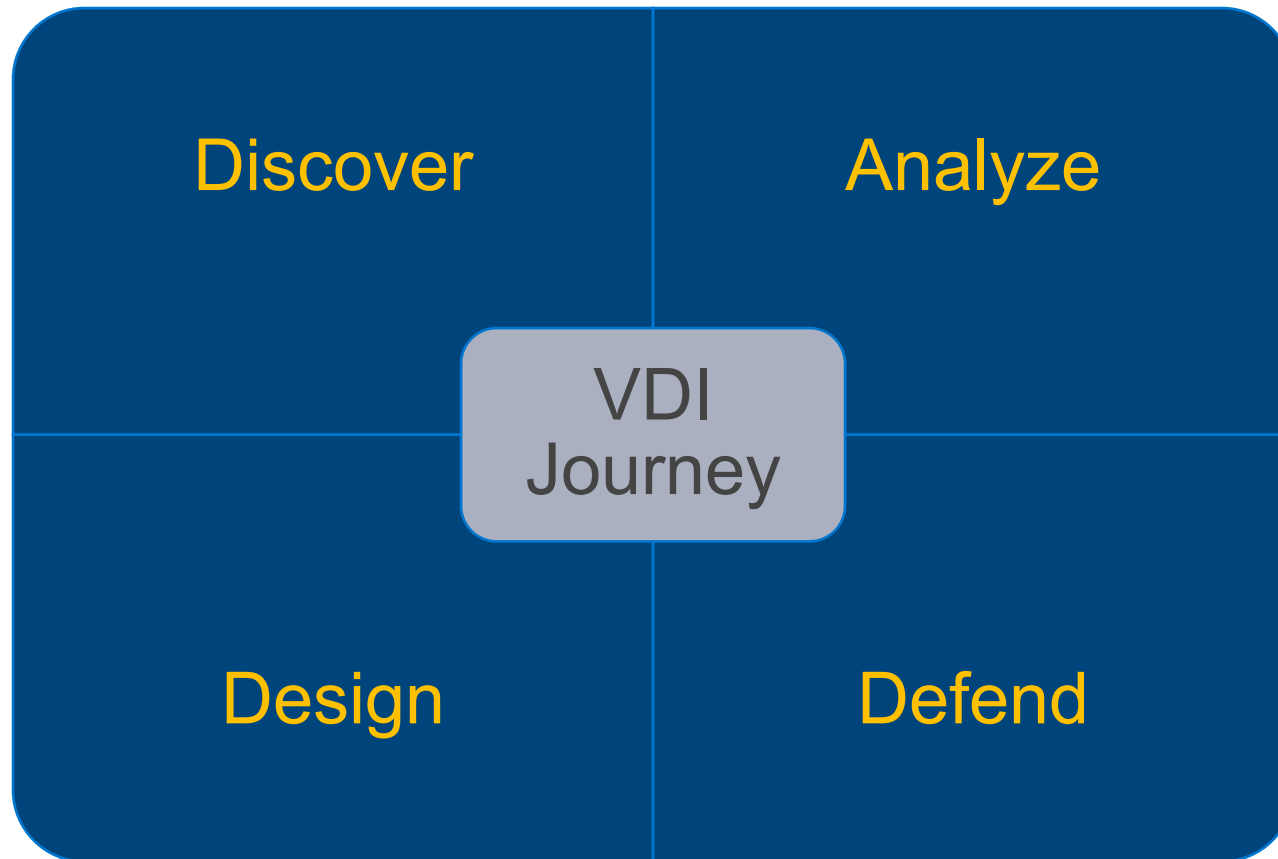
- Digital Workspace is the new norm!
- **Trusted Supply Chain for component availability and delivery time predictability.**
- End to End VDI Solution from 1 single vendor... Single procurement cycle.
- Ensured compatibility of different components in the VDI stack.
- **Blazing Fast Infrastructure Implementation**
- **Different Bundles catering for different user requirements with upgrade options.**
- Single line of support across full hardware/software stack!
- Proven to work with no VDI Mishaps.
- **The RIGHT Sizing key to many successful VDI Deployments in Region**
- Superior Technical capabilities

# VxRail unique value proposition across the system life cycle

	Phase	VxRail
	Engineer	Common Dell EMC + VMware engineering team
Day 0	Sell	Unique Dell technologies value proposition
	Size	Workload based, Predictive, Auto Ingest 
	Configure	Wizard Based, Appliance knowledge applied
	Ship	Pre Configured, Pre Loaded, known working image
Day 1	Deploy	<b>Fully Automated</b> , 1 Click for the whole cluster, automated switch setup
	Secure	Security bolted in appliance
Day 2	Operate	vCenter – VxRail fully embedded and automated
	Support	Single Contact, as a unified appliance
	Upgrade	<b>Continuously Validated State</b> , Fully Automated, 1 click
Day 3	Expand	Auto Discover, <b>Automated expansion</b>
	Refresh	Automated, Multiple Generations of HW
Other	Licenses	Included free licenses - vCenter, RP4VM, VRLI
	Cloud	<b>VCF on VxRail</b> , VMware Cloud on Dell EMC
	Analytics	ACE
	API	Fully consistent VxRail API for DC automation



# VDI Journey - From Drawing Board to Deployment



## Discover - Start of the VDI Journey

- How many concurrent users will need VDI?
- **Do I know the current performance I expect out of my VDI deployment?**
- Do I need virtual desktops or just Remote Terminal Services (RDSH)
- What is the expected “file capacity” per user?
- Do users need the capability to customize their desktops?
- **Do any of the users require advanced graphics capabilities?**
- Do users already have Laptops or PCs? Can I re use them?
- Are there any Legacy Applications that are hard to maintain?
- **Do I need an Active /Active or Active/ Passive Deployment ?**
- How will I handle security?
- How much does your existing End Point cost?
- Is there a valid TCO?
- How much time is spend on fixing laptops/PCs? Any costs associated with it?
- When are your PCs and Laptops due for refresh?
- **Who can help me deliver my business outcomes end to end who can guide me on this journey?**



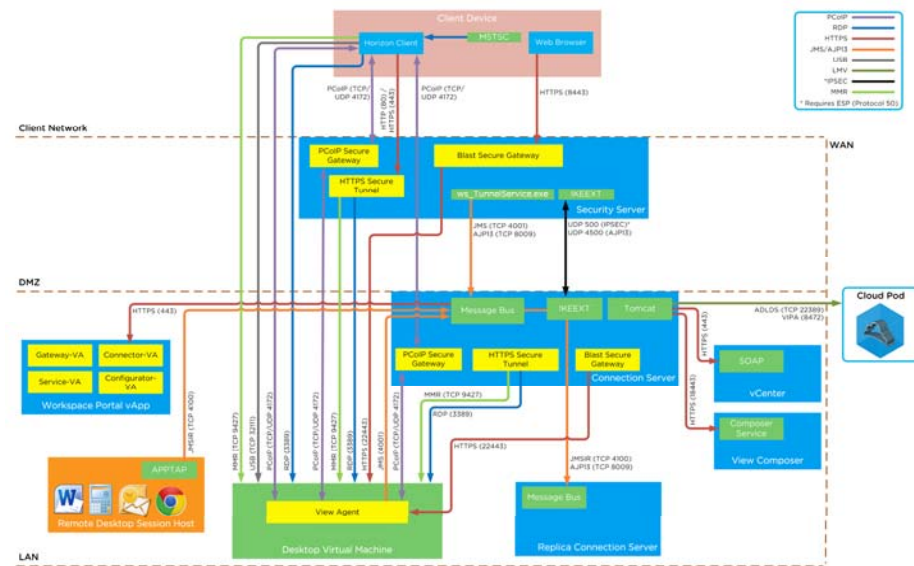
## Analyze –Review the collected Data

- Review the collected Metrics ( Desktop / Applications Speak with Stakeholders)
- Analyze patterns and anomalies ( Highlight patterns that are observed High Spike times)
- Cross check data with IT Teams



# Design –Build the Solution

- Start the Sizing exercise
  - The easy one – Storage or vSAN is often going to be the easier part about sizing VDI
  - Compute resources, memory and CPU, are the most challenging to properly size for.
  - **Don't size VDI based on per desktop vCPU metric. Failed VDI deployments are littered with this type of sizing. Get used MHz/GHz if you can.**





# Defend –Show the value in your design

- Help you validated the value in the design.
- Be the trusted advisor.

Enter Your Values
Calculation Output

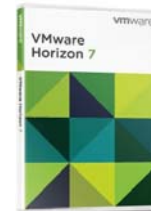
Apply the Spectre/Meltdown patches	No
Spectre/Meltdown CPU impact	1.3
Include HA	Yes

## STEP-1-Describe the user Types

User Profiles							
USER PROFILES	NO OF USERS	VCPU	RAM (GB)	MHz	Total MHz	Total RAM (GB)	
Power Worker	0	4	8	900	0	0	
Knowledge Worker	0	2	6	700	0	0	
Task Worker	0	2	4	600	0	0	
Custom-0	0	2	8	400	0	0	
Custom-1	0	2	16	1200	0	0	
Custom-2	0	2	8	600	0	0	
Citrix Specific : Hosted Shared Desktops (Windows Server based)							
USER PROFILES	NO OF USERS	VM config	# users /VM	RAM (GB)	MHz	Total MHz	Total RAM (GB)
Desktops	0	8 vCPU - 4 Cores	50	32	0	0	0
Application Server 1	0	8 vCPU - 4 Cores	36	48	0	0	0
Application Server 2	0	8 vCPU - 6 Cores	36	48	0	0	0
Application Server 3	0	8 vCPU - 8 Cores	36	64	0	0	0
Custom Application Server 1	0	8 vCPU - 4 Cores	40	38	12400	0	0
Custom Application Server 5	0	8 vCPU - 4 Cores	24	64	12400	0	0

# Option 1a – 180 > 240 Users

60 Users per node (@ 4GB RAM / 1000 MHz a session)



2 x Intel Gold 6226R (16) Cores @ 2.9GHz, 384GB RAM, 1 X 400GB SSD Cache  
2 x 3.84TB SATA Capacity SSD

## 4 x Node Cluster Spec



### Per 4 node Cluster Mirrored Protection

- 8.4 TB Usable Storage for n+1
- 11.2TB Usable Storage without n+1

### Per Node

- 60 users @ 4GB RAM and 1000 MHz per session
- $60 * 4GB = 240GB$  &  $60 * 1000MHz = 60,000MHz$

### Per 4 Node Cluster

- 180 users for n+1
- 240 without n+1

NAS

Load  
Balancers

Thin Clients

Networking

Peripheral  
devices

Misc. Hardware/  
Software & Services

# Option 1a – Design

60 Users per node (@ 4GB RAM / 1000 MHz a session)



2 x Intel Gold 6226R (16) Cores @ 2.9GHz, 384GB RAM, 1 X 400GB SSD Cache  
2 x 3.84TB SATA Capacity SSD

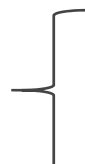
- **Design Methodology**

- Design is based on 16 cores and above.
- Design is based on processor above "2.6GHz"
- Memory is 384GB ( Balanced)
- Profile per user is 4GB RAM & 1000MHz
- MHz sizing

Option 1a	
Based on 1000MHz @4GB RAM	
Nodes	Users
1	60
4	180
8	420
12	660
16	900
19	1140

CPU		Memory
Cpu1	cpu2	Clock Speed GHz
16	16	2.9
Total cores per node		Total GHz per node
32		92.8
Total MHz per node		Total Memory per node (GB)
92,800		384
Remove overhead MHz		Remove Overhead Memory
64,960		269
MHz	User Density per node	4GB Profile
500	130	520
600	108	433
700	93	371
800	81	325
900	72	289
1000	65	260
1100	59	236
1200	54	217
1300	50	200
1400	46	186

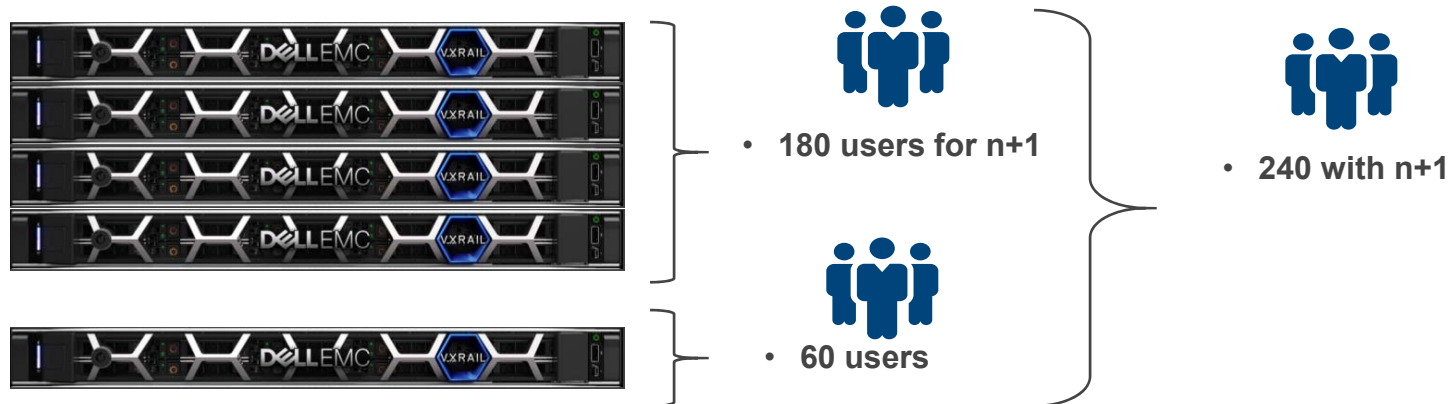
Safe zone



# Option 1a – Scale

## 60 Users per node (@ 4GB RAM / 1000 MHz a session)

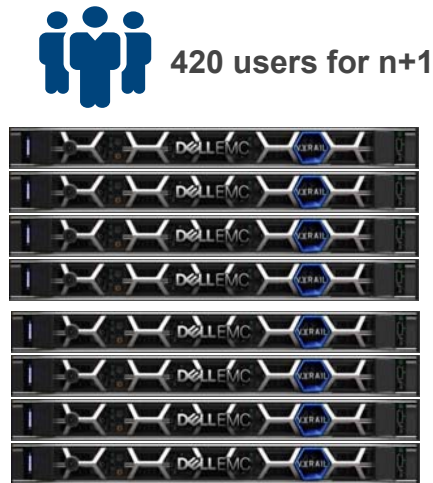
2 x Intel Gold 6226R (16) Cores @ 2.9GHz, 384GB RAM, 1 X 400GB SSD Cache  
2 x 3.84TB SATA Capacity SSD



# Option 1a – Scale

## 60 Users per node (@ 4GB RAM / 1000 MHz a session)

2 x Intel Gold 6226R (16) Cores @ 2.9GHz, 384GB RAM, 1 X 400GB SSD Cache  
2 x 3.84TB SATA Capacity SSD



# Bundle Summary

1a

Option 1a	
Based on 1000MHz @4GB RAM	
Nodes	Users
1	60
4	180
8	420
12	660
16	900
19	1140

2 x Intel Gold **6226R (16) Cores @ 2.9GHz**,  
**384GB RAM**, 1 X 400GB SSD Cache  
 2 x 3.84TB SATA Capacity SSD



1b

Option 1b	
Based on 1000MHz @8GB RAM	
Nodes	Users
1	60
4	180
8	420
12	660
16	900
19	1140

2 x Intel Gold **6226R (16) Cores @ 2.9GHz**,  
**768GB RAM**, 1 X 400GB SSD Cache  
 2 x 3.84TB SATA Capacity SSD



2a

Option 2a	
Based on 1000MHz @4GB RAM	
Nodes	Users
1	120
4	360
8	840
12	1320
16	1800
19	2160

2 x Intel **Gold 6248R (24) Cores @ 3.0GHz**, **768GB RAM**, 2 X 1.6TB NVMe  
 Cache 4 x 3.84TB SATA Capacity SSD



2b

Option 2b	
Based on 1000MHz @8GB RAM	
Nodes	Users
1	120
4	360
8	840
12	1320
16	1800
19	2160

2 x Intel Gold **6248R (24) Cores @ 3.0GHz**, **1536GB RAM**, 2 X 1.6TB NVMe  
 Cache 4 x 3.84TB SATA Capacity SSD



DELL Technologies

**DELL**Technologies