PBTECH

# 2 Node HCI NVMe Solution

# INTRO

PB's 2 Node HCI NVMe Solution is a 2nd generation multi-purpose platform built to run workloads of NZ businesses and leverages Microsoft's HCI technology stack.

Built from certified components with performance in mind, our 2 Node HCI NVMe Solution provides your business with the HCI power plant to reach your business objectives.

# USE CASES?

Common or suited use cases for PB's 2 Node HCI NVMe Solution include:

- Virtual machines containing business applications,
- Virtual desktop fleet or VDI environment,
- Remote office/branch office workloads,
- A true Hybrid Cloud stack.

# WHY PB VALIDATED SOLUTIONS?

PB knows hardware. We've hand selected components that create our 2nd generation HCI solution that is performant and unmatched at PB's price point.

To ensure businesses get the most from our hardware selection, we've created automation code to configure the operating system to take advantage of the underlying hardware. This provides solution consistency and ensures your business gets the associated performance benefits from day 1.

Solution automation used during implementation significantly saves time, reducing time required to have the platform ready for your business apps from weeks to only a couple of days.

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# WHAT'S IN THE BOX/SOLUTION?

PB Tech's 2 Node HCI NVMe Solution comprises of the following components:

1. 2 Compute / Storage Nodes
2. Management Appliance / Witness (Optional)
3. Management Switch (Optional)
4. Automated Solution Configuration (used for initial solution deployment)


# WHAT'S CONFIGURABLE?

We've made our solution customisable allowing your business to change CPU, memory and storage capacity to meet the specific needs of your business. Customisable components and their specifics can be viewed at the end of this data sheet.

Shared storage required for node redundancy within the solution is provided by Microsoft's Storage Spaces Direct (S2D) running on top of Microsoft Windows Datacentre 2022.

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# SOLUTION GUIDANCE FOR HIGH AVAILABILITY (HA)

| Node Memory / HA CPU Overcommit | No VM with Profile: 2 vCPUs, 4GB RAM | 2 vCPUs 8GB RAM | 2 vCPUs 12GB RAM |
|---|---|---|---|
| 128GB - 256GB HA CPU Overcommit | 32 - 64 2x - 4x | 16 - 32 1x - 2x | 10 - 21 <1x - 1x |
| 384GB - 512GB HA CPU Overcommit | 64 4x | 48 - 64 3x - 4x | 32 - 42 2x - <3x |
| 768GB + HA CPU Overcommit | 64 4x | 64 4x | 64 4x |

*Note: HA CPU Overcommit numbers within the table above are based on 32 CPU Cores (per node) and CPU core overcommit experienced during server maintenance or HA event. These are aligned with the associated VM profile.*

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# SOLUTION BENEFITS

## Multi-Purpose Infrastructure Stack:

PB's 2 Node HCI NVMe Solution is a modern and versatile infrastructure stack that is suited to a number of today's business workloads. Whether your workload is running virtual machines containing business applications, a VDI environment, remote office/branch office workloads, or a true hybrid cloud stack. Our 2 Node HCI NVMe Solution meets your requirements.

## Workload Location:

Our 2 Node HCI NVMe Solution provides the ability for businesses to choose where they want workloads situated. Whether that be on premise, in a Public Cloud or a combination of the two. PB's HCI NVMe Solutions provides this flexibility as well as the ability to seamlessly move workloads between different locations.

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# SOLUTION BENEFITS

## Return on Investment:

Maximise investment in both hardware and software while purchasing the raw compute power to provide significant performance boost to business applications. PB's 2 Node HCI NVMe Solution makes it possible to put a smile on the faces of both financial and technical personnel.

## Solution Security & Administration Best Practices:

Our 2 Node HCI NVMe Solution is deployed and configured with security front and centre. The compute nodes are configured and managed from the management appliance with only necessary Windows features installed. This reduces the attack surface of the solution while providing hardening possibilities required or desired to meet company policy.

## Speed of Deployment & Optimised Configuration:

The automation code that accompanies our 2 Node HCI NVMe Solution ensures optimal solution configuration and that our solution performs at its peak from day 1. It also significantly reduces solution deployment time whilst removing potential human anomalies.

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# SOLUTION BENEFITS

## Hyper-converged Infrastructure (HCI):

Our 2 Node HCI NVMe solution leverages HCI technology. This removes the need for separate storage and compute devices, simplifying infrastructure and removing associated forklift upgrades. HCI provides a true single pane of glass for complete solution visibility of compute, storage and running workloads.

## Simplicity / Reduces the Knowledge Curve:

PB's 2 Node HCI NVMe Solution has been developed to provide an optimised solution that leverages the latest Microsoft technologies. We want to provide business a solution that simply allows internal teams to continue to focus on supporting your business applications because we've taken care of the rest. If your internal IT team is familiar with Window's Admin Centre or a Hyper-V failover cluster, then they have all the required knowledge to administer this solution.

## Solution Assurance / Ongoing Solution Hardware Support:

PB stands behind our HCI Infrastructure Solutions and encourages businesses to purchase ongoing solution hardware support. This means that a hardware component will be replaced if a hardware fault occurs. We want to ensure that your business enjoys the peace of mind that comes with a resilient and supported solution.

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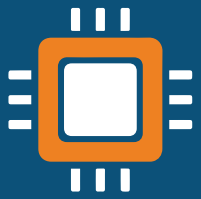
# SOLUTION PHYSICAL SPECIFICATIONS

| Solution Component | Power Consumption (W) | Weight (KG) | Rack Units (U) |
|---|---|---|---|
| 2 Node HCI NVMe Solution | 1600 | 37.2 | 2 |
| Management Appliance / Witness | 200 | 5.4 | 1 |
| Management Switch | 23 | 2.4 | 1 |

# WHAT'S CUSTOMISABLE?



Our 2 Node HCI NVMe Solution is customisable to meet the specific needs of your business. The below tables outline the available customisable CPU, compute memory and storage options and the specifics of each.

## CPU/Processor Options:

| CPU | # of Cores / # of Threads | Base / Max Turbo Frequency (GHz) | Cache (MB) | Max Memory Speed (MHz) |
|---|---|---|---|---|
| Intel 5315Y (Ice Lake) | 8 / 16 | 3.20 / 3.60 | 12 | DDR4-2933 |
| Intel 5317 (Ice Lake) | 12 / 24 | 3.00 / 3.60 | 18 | DDR4-2933 |
| Intel 6326 (Ice Lake) | 16 / 32 | 2.90 / 3.50 | 24 | DDR4-3200 |
| Intel 6336Y (Ice Lake) | 24 / 48 | 2.40 / 3.60 | 36 | DDR4-3200 |

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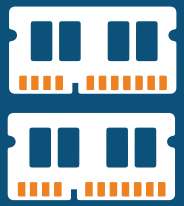

## Memory Options:

| Memory per Node (GB) | Total Cluster Memory (GB) | Memory Type | # of DIMMS Per Node | Size of DIMMS (GB) |
|---|---|---|---|---|
| 128 | 256 | DDR4-2933 RDIMM | 8 | 16 |
| 256 | 512 | DDR4-2933 RDIMM | 8 | 32 |
| 512 | 1024 | DDR4-3200 RDIMM | 8 | 64 |
| 1024 | 2048 | DDR4-3200 RDIMM | 16 | 64 |

## Storage Options:

| Usable Storage (TB) | Storage Type | Storage Interface | # of Drives Per Node | Size of Drives (TB) |
|---|---|---|---|---|
| 5 | SSD | NVMe | 4 | 1.9 |
| 10 | SSD | NVMe | 4 | 3.8 |
| 20 | SSD | NVMe | 7 | 3.8 |
| 30 | SSD | NVMe | 8 | 3.8 |
| 40 | SSD | NVMe | 7 | 7.68 |
| 60 | SSD | NVMe | 5 | 15.3 |
| 100 | SSD | NVMe | 8 | 15.3 |

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To know more about our 2 Node HCI NVMe solution,
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