

**Major Product Category - Data Center Services (UNSPSC code - 811120)**

**Product category - Hyper Converged Infrastructure Cluster for Mini-Clouds (UNSPSC code - 81112003)**

<b>HARDWARE REQUIREMENT FOR HCI</b>				
1	Number of Nodes in HCI	Enumerable	3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,24,30,36,40,48,50,56,60,64,	Golden
2	Number of Sockets per Node	Enumerable	2, 4	Golden
3	Number of Cores per Sockets	Numeric	12 - 40	Golden (Higher is better)
4	Number of Processor offered per Node	Enumerable	1,2,4	Golden
5	Type of Processor offered in the system	Enumerable	AMD Processor of latest Series, Intel® Xeon® Platinum Processors, Intel® Xeon® Gold Processors, Intel® Xeon® Silver Processor, Intel® Xeon® Bronze Processor	Golden
6	Inticate Processor Model Model number with Make	Text		Mandatory
7	Storage capacity (RAW) offered per node with SSD/SAS/NL SAS Drives or a combination of both in TB	Numeric	10-1000	Golden (Higher is better)
8	Storage capacity offered per node with SAS drives in TB	Numeric	1-1000	Golden (Higher is better)
9	Storage Scalability per node with SAS drives in TB	Numeric	0-8000	Golden (Higher is better)
10	Storage capacity offered per node with SSD drives in TB	Numeric	1-1000	Golden (Higher is better)
11	Storage Scalability per node with SSD drives in TB	Numeric	0-8000	Golden (Higher is better)
12	Storage capacity offered per node with NL SAS drives in TB	Numeric	1-1000	Golden (Higher is better)
13	Storage Scalability per node with NL SAS drives in TB	Numeric	0-8000	Golden (Higher is better)
14	RAM Capacity offered per node in GB	Numeric	256-8192	Golden (Higher is better)
15	RAM scalability per node	Numeric	0-8192	Golden (Higher is better)
	No of cache drives per node	Enumerable	1,2,3,4	Golden (Higher is better)
	Cache offered per node in GB	Numeric	400GB- 6400GB	Golden (Higher is better)
	Cache scalability per node	Numeric	400GB- 6400GB	Golden (Higher is better)
<b>HCI Interconnect Switches</b>				
16	Number of L2 Switches Offered	Enumerable	2,4,6,8	Golden (Higher is better)
17	Throughput Available per Switch	Enumerable	1 Gbps, 10 Gbps, 25 Gbps, 40 Gbps, 100 Gbps	Golden (Multi Select)
18	Number of Available Ports for 1 Gbps throughput per Switch	Numeric	0-100	Golden (Higher is better)
19	Number of Enabled Ports for 1 Gbps throughput per Switch	Numeric	0-100	Golden (Higher is better)

20	Number of Available Ports for 10 Gbps throughput per Switch	Numeric	0-100	Golden (Higher is better)
21	Number of Enabled Ports for 10 Gbps throughput per Switch	Numeric	0-100	Golden (Higher is better)
22	Number of Available Ports for 25 Gbps throughput per Switch	Numeric	0-100	Golden (Higher is better)
23	Number of Enabled Ports for 25 Gbps throughput per Switch	Numeric	0-100	Golden (Higher is better)
24	Number of Available Ports for 40 Gbps throughput per Switch	Numeric	0-100	Golden (Higher is better)
25	Number of Enabled Ports for 40 Gbps throughput per Switch	Numeric	0-100	Golden (Higher is better)
26	Number of Available Ports for 100 Gbps throughput per Switch	Numeric	0-100	Golden (Higher is better)
27	Number of Enabled Ports for 100 Gbps throughput per Switch	Numeric	0-100	Golden (Higher is better)
<b>PERFORMANCE</b>				
28	IOPS delivered at 70:30 Read:Write Ratio on 8K block size with latency of 5ms maximum for each node	Numeric	2000-100000	Golden (Higher is better)
29	After Upgrading additional node/storage/RAM added to the cluster to augment compute/storage/memory capacities, the same performance on upgraded node / Storage / RAM	Boolean	Yes / No	Golden
<b>FEATURES of HCI</b>				
30	HCI Features 1	Enumerable	<ol style="list-style-type: none"> <li>1. HCI have all the features of any industry standard hypervisor</li> <li>2. HCI have independently scale storage and compute as and when needed without any downtime.</li> <li>3. HCI have mechanism for Metadata protection for all offered nodes within the cluster so as to provide high availability and no single point of failure.</li> <li>4. HCI is of hybrid configuration of SSD/SAS/NL SAS then the caching must be on appropriate capacity of SSD drives to meet the IOPS/performance requirements.</li> <li>5. HCI supports thin provisioning of both storage entities and virtual machine hard disks</li> <li>6. HCI provides automatic failover in case of hardware failure</li> <li>7. HCI supports industry protocols NFS/SMB/iSCSI/equivalent IP storage protocol</li> <li>8. Support for layer-2 VLAN for networking and integrated VM IP's Management capabilities</li> <li>9. HCI has security compliance methodology to ensure highly secure environment.</li> <li>10. HCI has data replication with WAN optimization</li> </ol>	Golden (Multi Select)

31	HCI Features 2	Enumerable	<ol style="list-style-type: none"> <li>1. HCI works with cloud orchestration software for self service cloud capability, that allows OS Catalogue and OS provisioning with role based access to virtual machines</li> <li>2. HCI provides management through a remote GUI console. Also provides storage, compute &amp; hypervisor metrics on a per VM level as well as health and monitoring of entire platform.</li> <li>3. Platform support LDAP Active Directory integration. The clients installed on any major Operating System.</li> <li>4. Platform supports monitoring via SNMPv3 , email alerting via SMTP and SMS alerting via SMPP/SMS gateway.</li> <li>5. HCI supports fault tolerance of at least two nodes failure within a cluster or an equivalent mechanism offering minimum two levels of tolerance.</li> <li>6. Capable of creating instant snapshots of virtual machines and maintaining multiple copies of snapshots &amp; clones</li> <li>7. Capabability to support native VM level replication for installed Hypervisor</li> <li>8. Capable to support migration of workloads with leading cloud providers.</li> <li>9. HCI supports File/Block Services over NFS/CIFS/SMB/iSCSI/equivalent IP Storage protocol and file/block replication across clusters</li> <li>10. ALL Flash HCI</li> <li>11. Hybrid HCI</li> </ol>	Golden (Multi Select)
32	HCI Features 3	Enumerable	<ol style="list-style-type: none"> <li>1. Redundant components with no single point of failure in the system</li> <li>2. Intelligent data distribution across all nodes and uniform capacity utilization across all nodes at all time</li> <li>3. Compression &amp; Deduplication on disks</li> <li>4. HCI support container based application</li> <li>5. Intelligent Data Tiering across capacity drives.</li> <li>6. HCI support hardware agnostic architecture</li> <li>7. Single management tool supports multiple clusters</li> <li>8. Management tool is built into the solution, scales with the cluster</li> <li>9. Factory Integrated OEM Appliance</li> <li>10. Offered Switch from the same HCI OEM for Interconnecting HCI's</li> </ol>	Golden (Multi Select)

### HCI Generic Parameters

33	Number of nodes HCI supports in same cluster/deployment, such that any node out of the offered be able to use the storage of all other nodes.	Numeric	2-64	Filter (Higher is Better)
34	Certifications Available	Enumerable	<ol style="list-style-type: none"> <li>1. NIST</li> <li>2. FIPS140-2</li> <li>3. EAL2 CCC-Common Criteria Certified</li> <li>4. DISA-approved STIG</li> <li>5. Others</li> </ol>	Filter
35	If others in above parameter then indicate certifications available	Text		Mandatory
36	Hypervisor to be integrated with SDS	Enumerable	within Kernel, outside kernel	Filter
37	HCI support	Enumerable	<ol style="list-style-type: none"> <li>1. AHV (Acropolis Hypervisor),</li> <li>2. Hypervisor Agnostic Solution,</li> <li>3. Hyper-V</li> <li>4. VMWare</li> <li>5. Xen Server</li> <li>6. Others</li> </ol>	Golden (Multi Select)
38	If others, indicate HCI support	Text		Mandatory

39	Bare-metal / Non Bare metal type of virtualization hypervisor	Enumerable	Bare Metal, Non Bare Metal	Filter
40	Integration with Third Party FC Storage	Enumerable	1. Dell EMC 2. HITACHI 3. NETAPP 4. IBM 5. HP 6. NA	Filter (Multi Select)
41	The length of cable connecting the Nodes to the Switch (meters)	Numeric	10-50	Filter (Higher is Better)
42	Support Applications		1. Microsoft Exchange 2. Oracle / Java Exchange 3. Zimbra Exchange 4. Open Source Exchange 5. DHCP 6. DNS 7. Active Directory applications 8. MS SQL 9. Oracle DB 10. IBM DB2 11. MY SQL 12. NA	Filter (Multi Select)
<b>GENERIC PARAMETERS</b>				
43	Free Upgradation to Higher Version of Software WITHIN WARRANTY PERIOD	Enumerable	Yes	Golden
44	Valid full feature Licence copy to be provided	Enumerable	Yes	Golden
45	Installation, Configuration, Demonstration	Boolean	Yes, No	Golden
46	Number of days Training Provided at Site by OEM	Enumerable	0,1,2,3,5,8,10	Golden
47	Number of years of service and support from OEM	Enumerable	3, 5, 7	Golden
48	Hyper link to Data sheet	Text		Mandatory

























