Oracle Database Appliance

Hardware

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Oracle Database Appliance Generations

|	ODA V1 – Oct 2011	ODA X3-2 – Mar 2013	ODA X4-2 – Dec 2013
Processor	Intel X5675	Intel E5-2690	Intel E5-2697 V2
Node	Built-in (X4370 M2)	X3-2	X4-2
Sockets/node	2	2	2
Cores / node (total)	12(24)	**16(32)**	**24(48)**
Max Memory / node (total)	96GB (192GB)	**256GB (512GB)**	256GB (512GB)
Boot disks (Free space)	500GB (250GB)	**600GB (350GB)**	600GB (350GB)
Networking	6 x 1GbE NICs 2 x 10GbE fiber NICs	**4 x 10GbE Copper NICs**	4 x 10GbE Copper NICs (**opt public fiber interface**)
Form Factor/RU	Single 4U chassis	**2 x 1RU servers & 1 x 2RU disk shelf**	2 x 1RU servers & 1 x 2RU disk shelf
Shared Storage	292GB SSDs 12TB SAS raw	**800GB SSDs 18TB SAS raw**	800GB SSDs 18TB SAS raw
Storage Expansion	N/A	**Additional Storage Shelf**	Additional Storage Shelf

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INAF

X4-2 Hardware Front View
With Storage Expansion Shelf

1. Server Node 1
2. Server Node 0
3. Storage Shelf
4. Optional Storage Expansion shelf
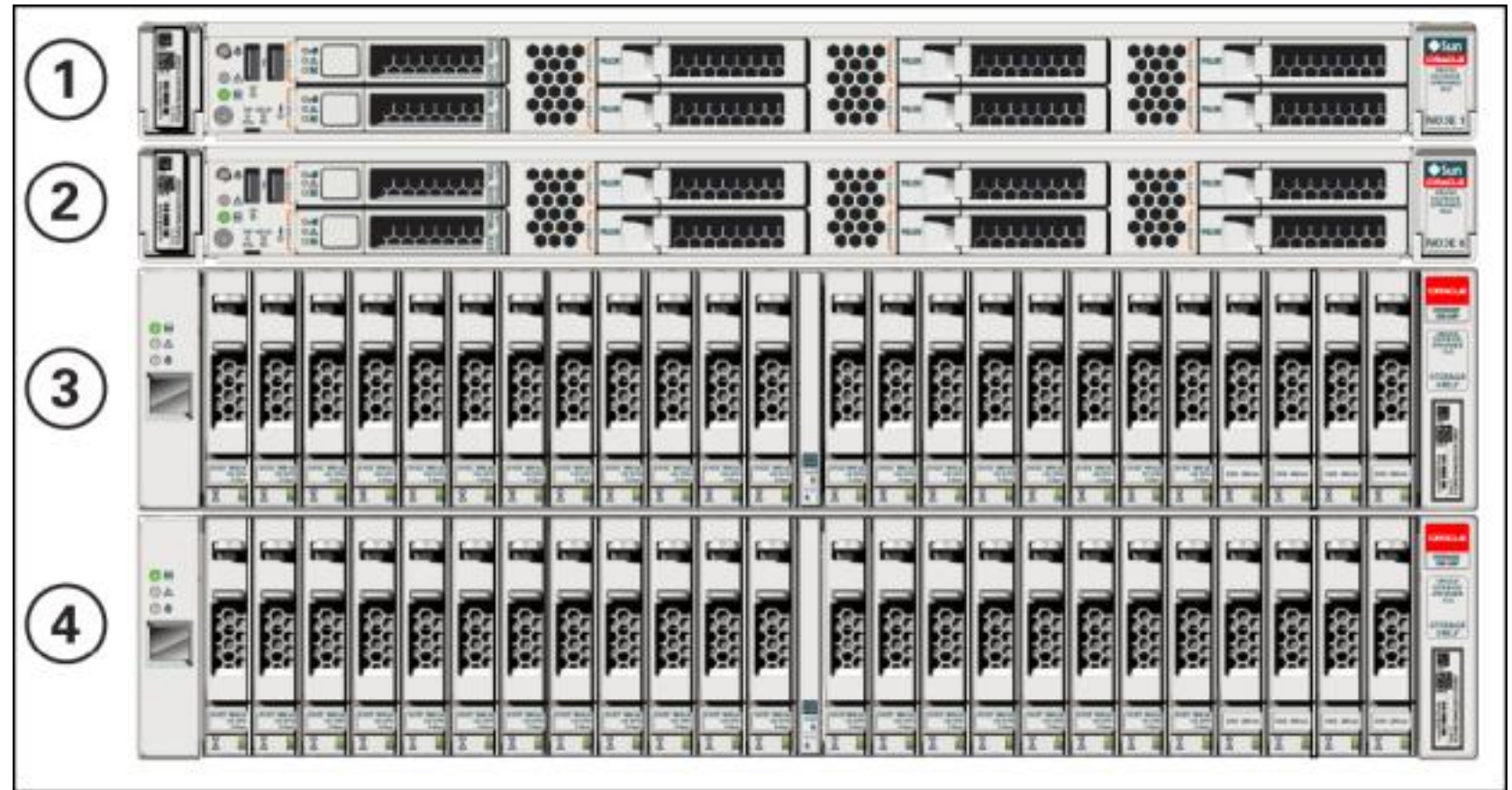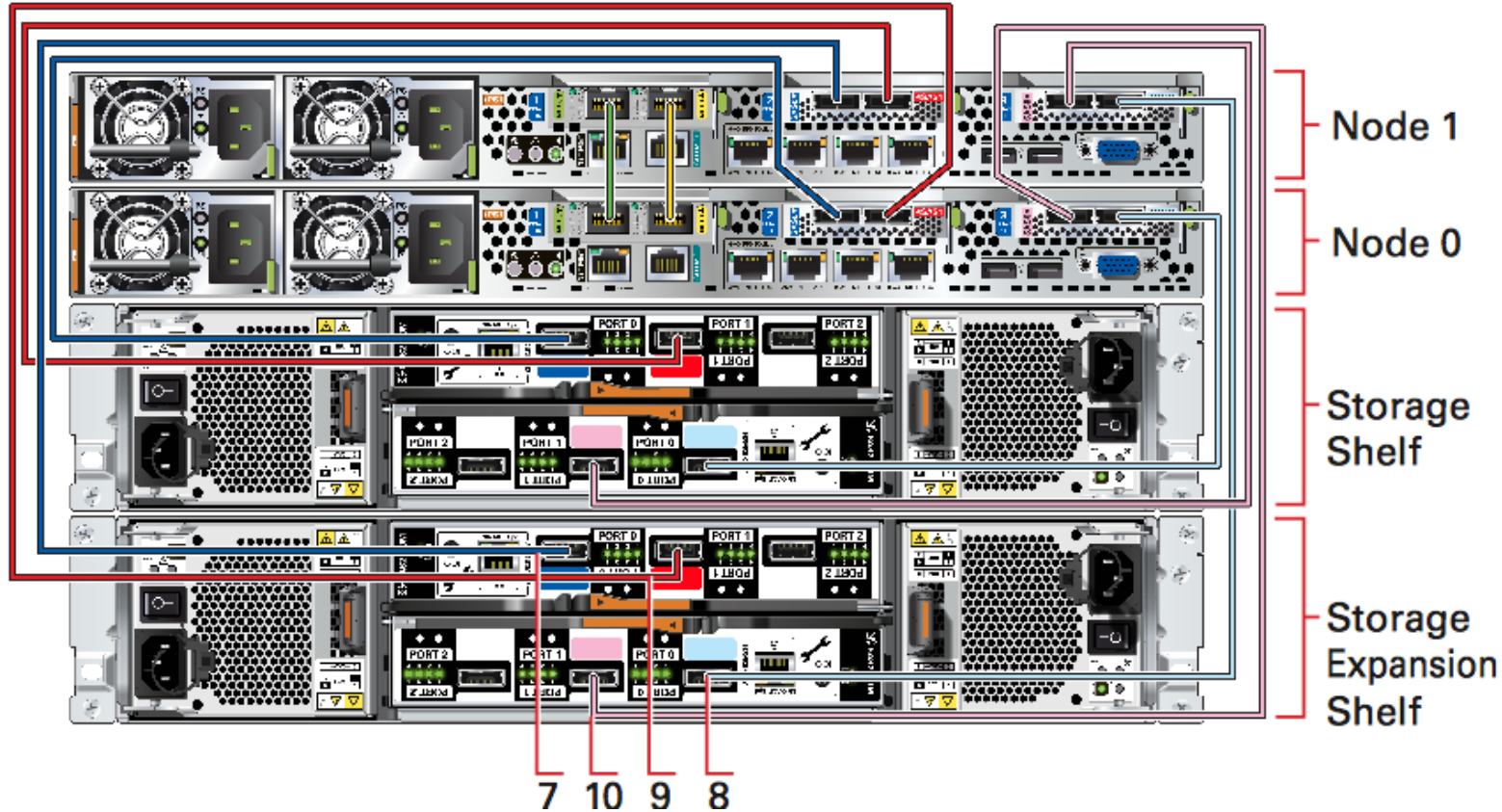
Cable the Oracle Database Appliance X4-2
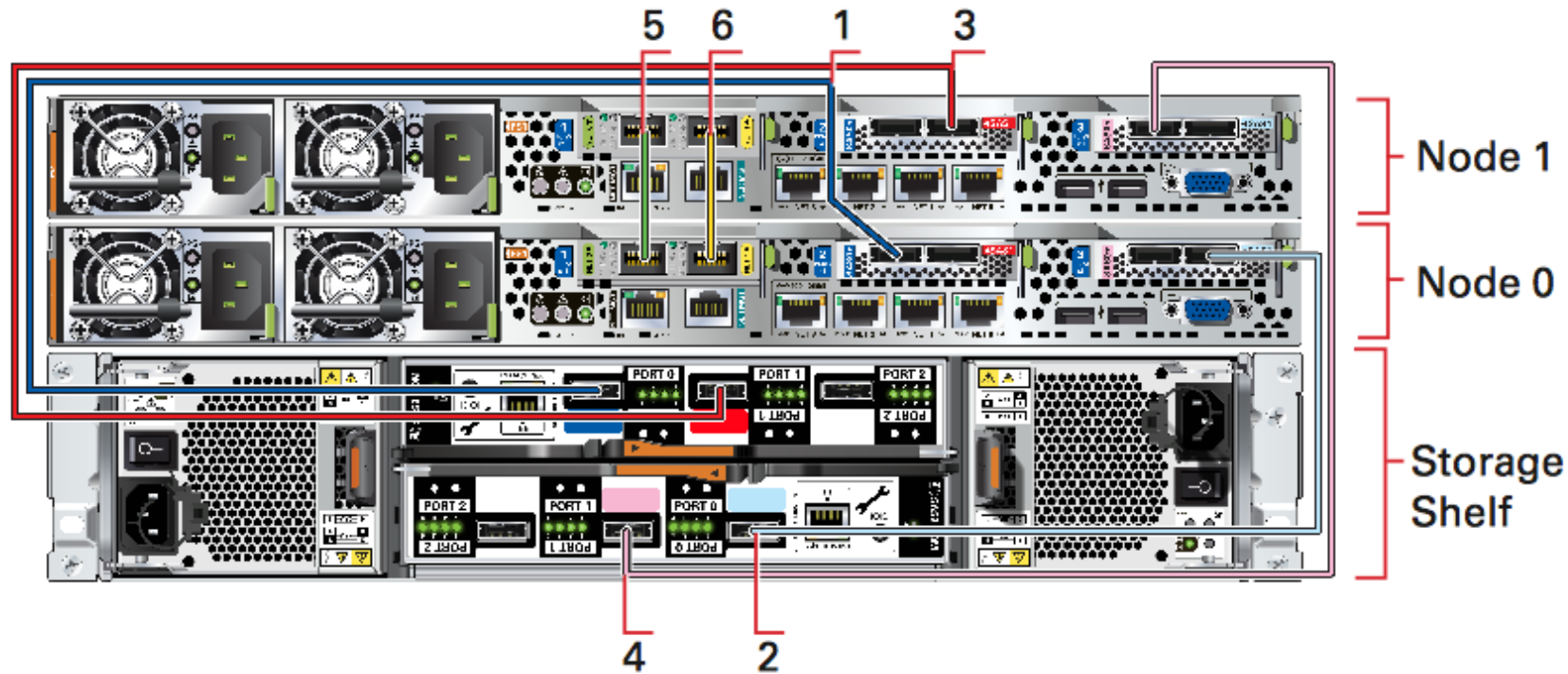
Purpose – Cabling Storage	Start - Compute Node	End - Storage Shelf
1. Connect dark blue SAS cable	Connect into dark blue port (SAS0) in PCIe slot 2 in node 0	Connect into dark blue port in top IO Module (port 0)
2. Connect light blue SAS cable	Connect into light blue port (SAS1) in PCIe slot 3 in node 0	Connect into light blue port in bottom IO Module (port 0)
3. Connect dark red SAS cable	Connect into dark red port (SAS1) in PCIe slot 2 node 1	Connect into dark red port in top IO Module (port 1)
4. Connect light red SAS cable	Connect into light red port (SAS0) in PCIe slot 3 node 1	Connect into light red port in bottom IO Module (port 1)

| Purpose – Cabling Interconnect	Start - Node 0	End - Node1
5. Connect green CAT-6 cable	Connect into green port (Net0) in PCIe slot 1	Connect into green port (NET0) in PCIe slot 1
6. Connect yellow CAt-6 cable	Connect into yellow port (Net1) in PCIe slot 1	Connect into yellow port (NET1) in PCIe slot 1

Cable the ODA X4-2 w/ Storage Expansion Shelf

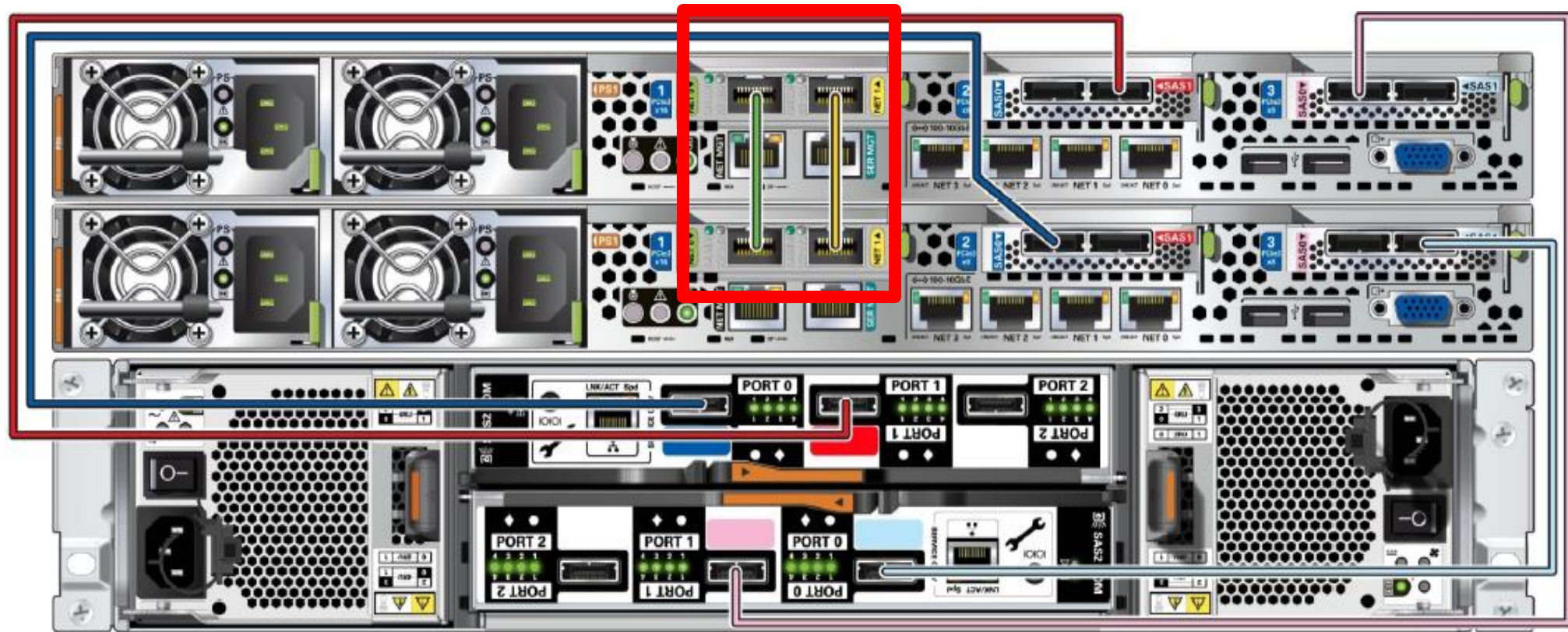| Purpose – Cabling Storage Expansion	Start - Compute Node	End - Storage Expansion Shelf
7. Connect dark blue SAS cable	Connect into dark blue port (SAS0) in PCIe slot 2 in node 1	Connect into dark blue port in top IO Module (port 0)
8. Connect light blue SAS cable	Connect into light blue port (SAS1) in PCIe slot 3 in node 1	Connect into light blue port in bottom IO Module (port 0)
9. Connect dark red SAS cable	Connect into dark red port (SAS1) in PCIe slot 2 in node 0	Connect into dark red port in top IO Module (port 1)
10. Connect light red SAS cable	Connect into light red port (SAS0) in PCIe slot 3 in node 0	Connect into light red port in bottom IO Module (port 1)

Networking

- 2 x 10GbE – Cluster Interconnect
  - HA-IP Enabled
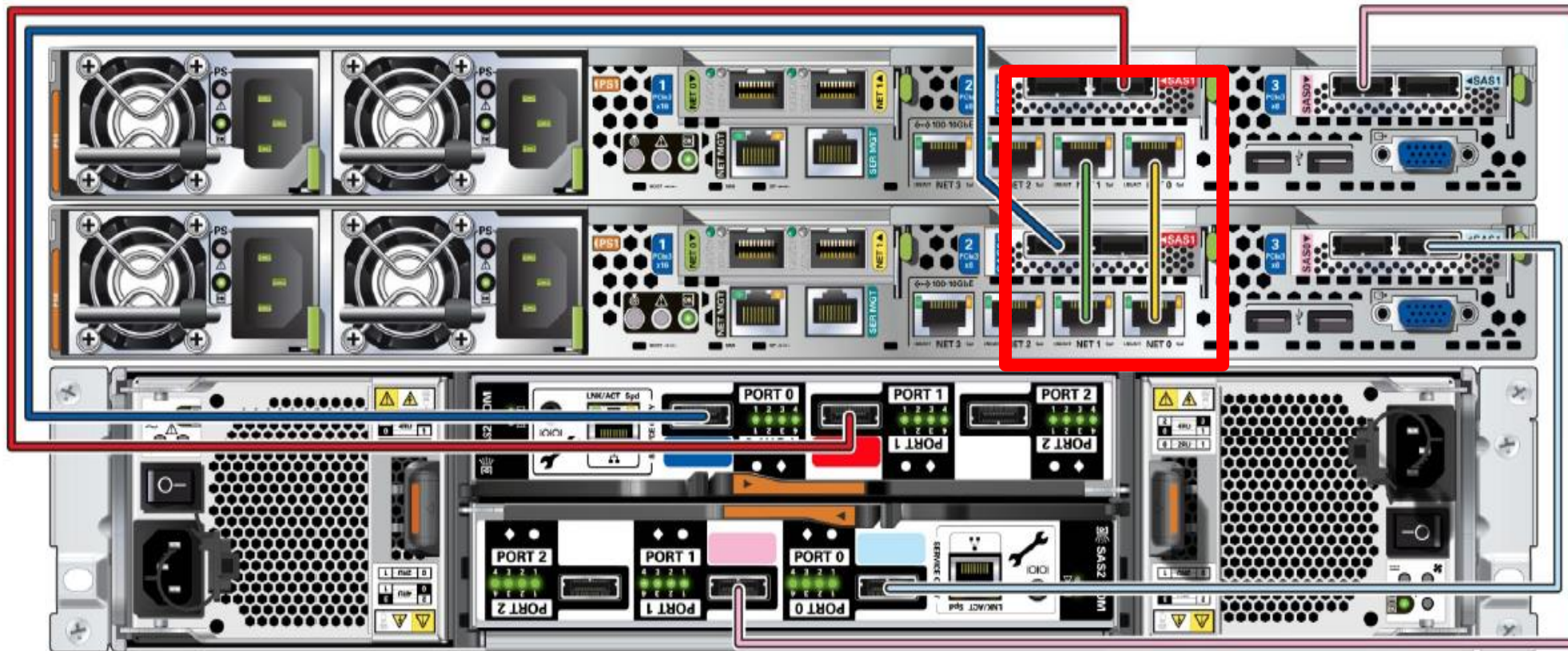- 4 x 10GbE – Public Network per Server
  - 2 x 10 GbE Bonded Network

Interconnect Ports

ILOM

External Networking Ports
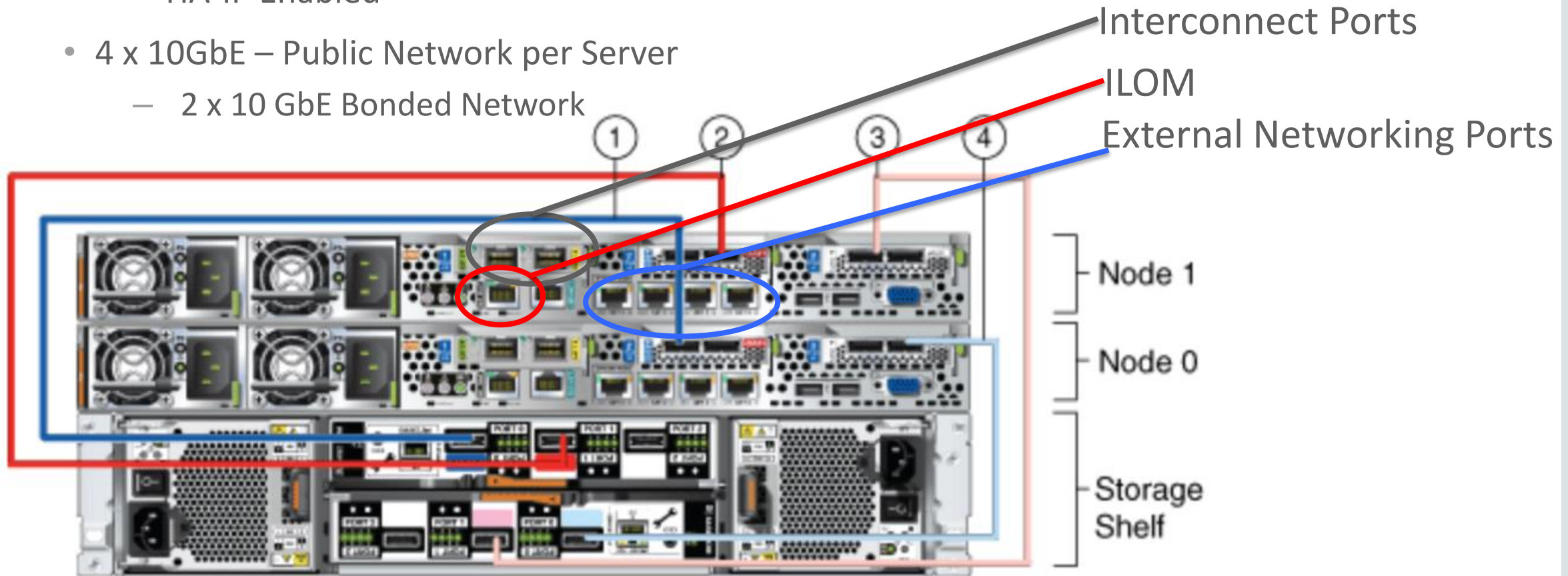
ODA X4-2 – Fully connected w/TwinAx

Standard Interconnet Configuration

Optional Public SFP+ Fiber - Interconnect Connection

Cable up Network & Storage, Power up
Power on the system

- Always power on storage shelf and expansion storage shelf (if used) first

- On the server nodes, let SP boot up (will show steady green light)

- Now power on server nodes

* **Use alternate power sources for redundant power slots on each server/storage shelf.**

Important: *You must power on the storage shelf (shelves) before powering on the server nodes.*

Verify storage connectivity (topology)

- Connect to <u>each</u> server node and run command

  – **oakcli validate –c storagetopology** (as root user)

- Verify output

  – Look for any error messages, such as -

  ERROR   : Display wrong connection found on Node

Database Appliance Networking

Network Requirements

- Minimum IP requirement for ODA Deployment is
  - *2 Host IPs*
  - *2 RAC VIPs*
  - *2 SCAN IPs (resolving to the same SCAN Host name)*
  - *2 DOM-0 Host IP (Only For Virtualized Platform)*
  - *2 ILOM IPs*
- All these IPs(except ILOM) should belong to the same subnet
- These IPs should be resolved by the DNS

Network Layout
Network Ports/Default IP addresses : Bare Metal

Interface Name	Bond	Default IP address
eth0	**N/A**	**192.168.16.24(Node 0)** **192.168.16.25(Node1)**
eth1	**N/A**	**192.168.17.24(Node 0)** **192.168.17.25(Node1)**
eth2	bond0	-
eth3	bond0	-
eth4	bond1	-
eth5	bond1	-

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Network Layout
Network Ports & Default IP addresses : Virtualization (Dom-0)

Interface Name	Bond/Bridge	Default IP address
eth0	**Icbond0/priv1**	**192.168.16.24(Node 0)**
eth1	**Icbond0/priv1**	**192.168.16.24(Node 1)**
eth2	Bond0/net1	-
eth3	Bond0/net1	-
eth4	Bond1/net2	-
eth5	Bond1/net2	-

Network Layout

Network Ports & Default IP addresses : Virtualization (ODA_BASE)

Interface Name	Bridge Name	Default IP address
eth0	**priv1**	**192.168.16.27(Node 0)** **192.168.16.28(Node 1)**
eth1	net1	-
eth2	net2	-

- eth0 is used for private interconnect between the nodes

X4-2 – Public Interface Selection

- During the First boot, system prompts for the Network Selection.

- Select "Yes" if the Fiber needs to be configured for Public network .

- The interface types are currently not auto detected.


```
ovs-network-bridge Start: No such device icbond0
ovs-network-bridge Start: Bridge net1 Is in Use
ovs-network-bridge Start: No such device bond1
ovs-network-bridge Start: No such device icbond0
ovs-network-bridge Start: Bridge net1 Is in Use
ovs-network-bridge Start: No such device bond1
xend daemon (pid 14490) is running...
                                                              [  OK  ]

Trying to get node number from Topology Validation tool. It may take few minutes
Topology Validation tool returned node number:0
INFO: Initialized logging, detailed log messages will be available in /opt/oracl
e/oak/log//setupNet-2013-11-20-03-06.log

Do you want to use Fiber cards for  public network?
[yes: Fiber cards will be configured for public network]
[no : Copper cards will be cofigured for public network]
INIT: version 2.86 reloading

Please enter yes | no :
Please enter yes | no :
Please enter yes | no :
```

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Hardware and Software

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