

Understanding VMWare & iSCSI

Basic iSCSI Configuration v3.5

Single Path – No Load Balancing Network (Layer 2) based Failover (Fast)

**** I think that this is the most reliable ****

**** Let the network layer handle failover ****

Notes

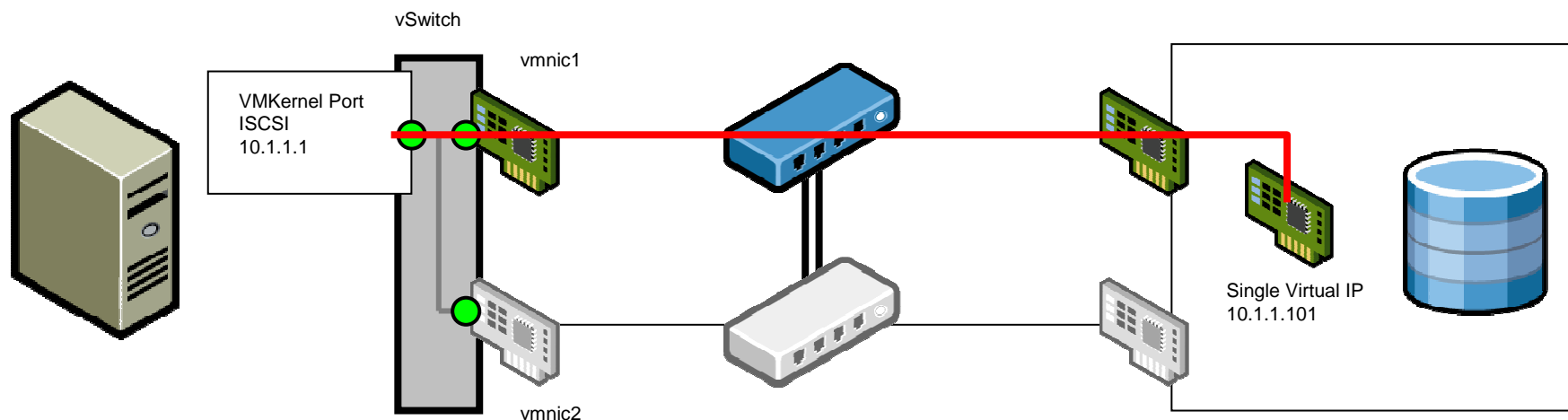
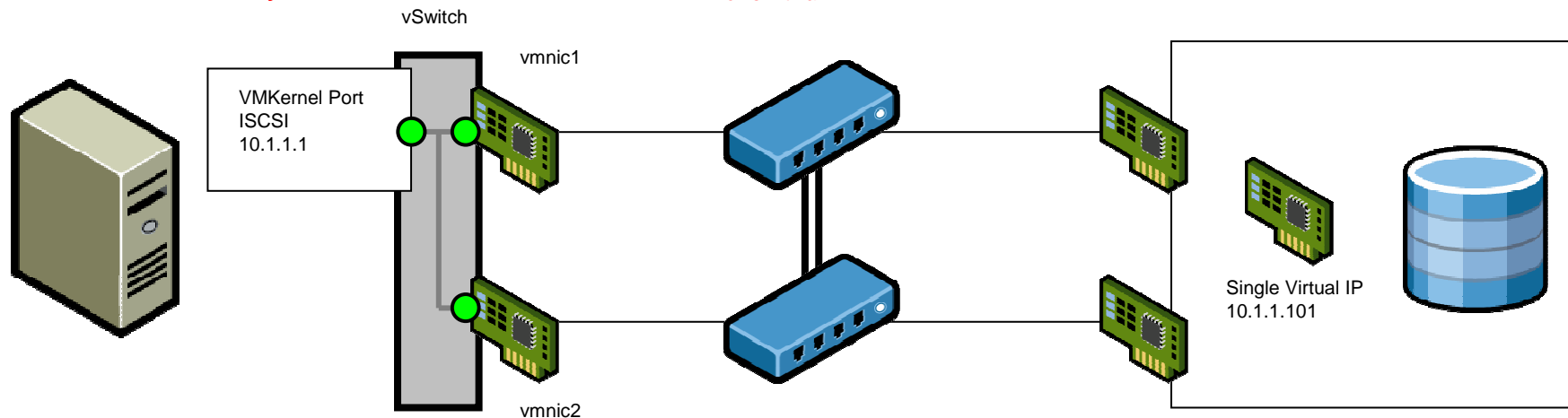
- Single iSCSI Enabled VMKernel Port
- Single vSwitch
- Default NIC Teaming (Route Based)
- Storage has single Virtual IP
- Teaming could be failover or LACP
- Works with all

Paths

- 10.1.1.1 to 10.1.1.101

There is only a single path

v3.5 will only allow a single initiator:target connection
Even with LACP or Etherchannel there will only be a single path as the IP addresses never change.



Understanding VMWare & iSCSI

Basic iSCSI Configuration v3.5

Dual Path – No Load Balancing
Network (Layer 2) based Failover (Fast)
IP (Layer 3) based Failover (Slow ~ 60sec)

Notes

- Single iSCSI Enabled VMKernel Port
- Single vSwitch
- Default NIC Teaming (Route Based)

- Storage has two Virtual IPs
- The IPs are fixed to the adaptors

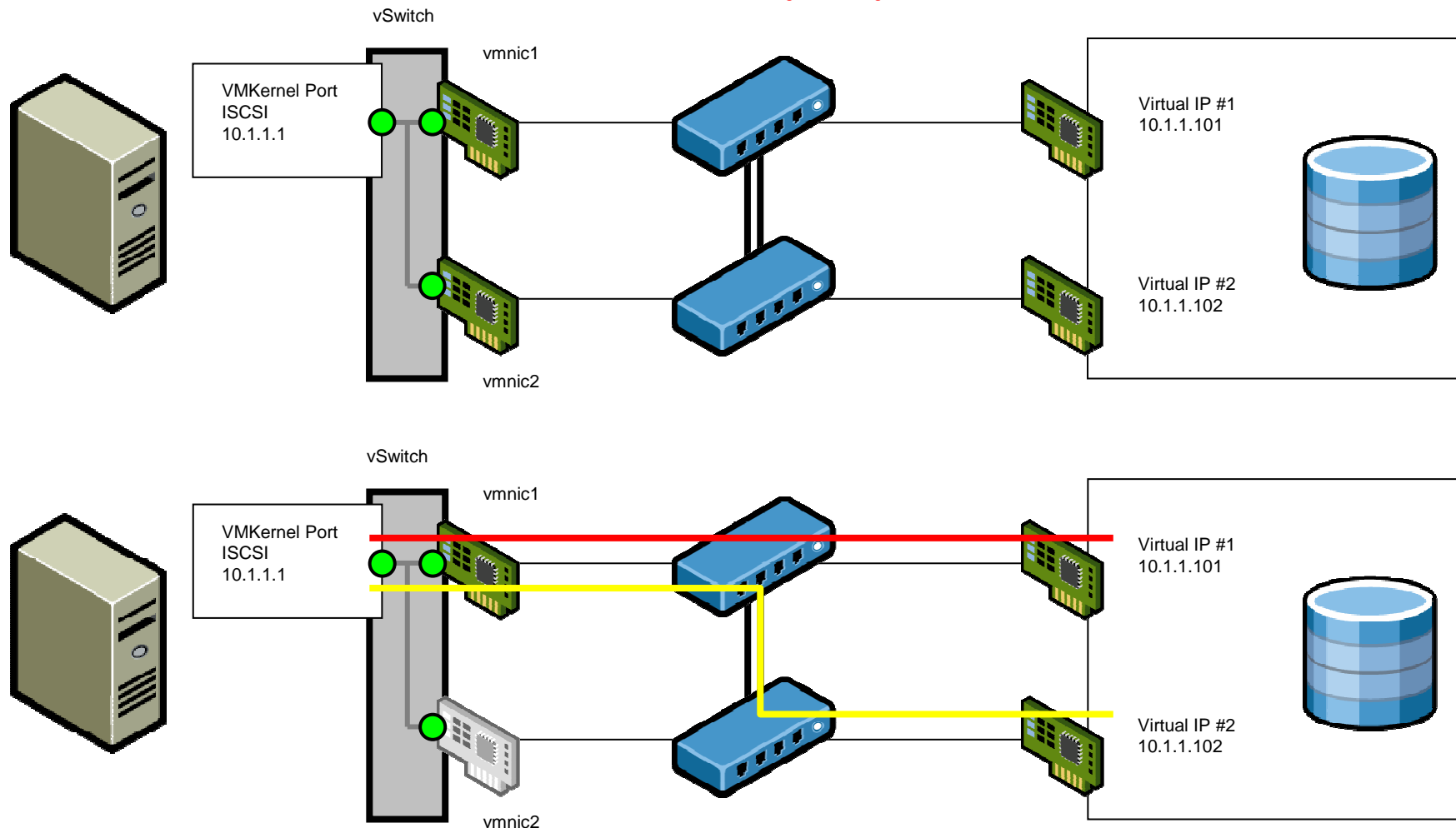
•ESX Server hangs on storage NIC failure

Paths

- 10.1.1.1 to 10.1.1.101
- 10.1.1.1 to 10.1.1.102

There are 2 paths, but no load balancing

v3.5 will only allow a single initiator:target connection
v4 may allow both paths to be active, but not working in test



Understanding VMWare & iSCSI

Advanced iSCSI Configuration v4.0

Single VLAN

Multipath I/O – Load Balancing

IP (Layer 3) based Failover (Slow ~ 60sec)

Notes

- Two iSCSI Enabled VMKernel Port
- Single vSwitch
- NIC Teaming overridden
- 1:1 Mapping of VMKernel to NIC

- Storage has single Virtual IP
- Teaming could be failover or LACP

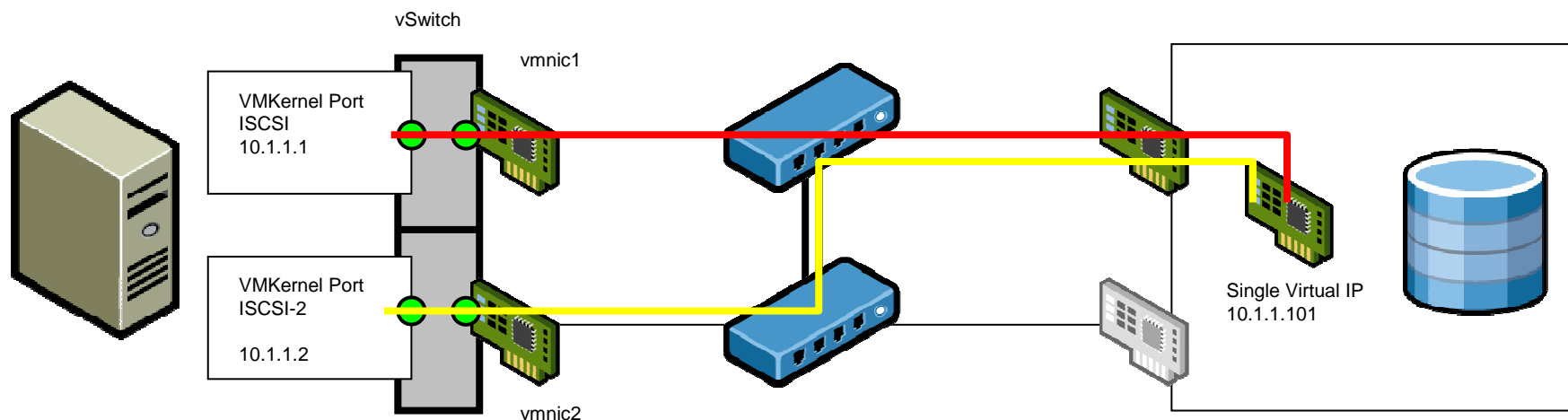
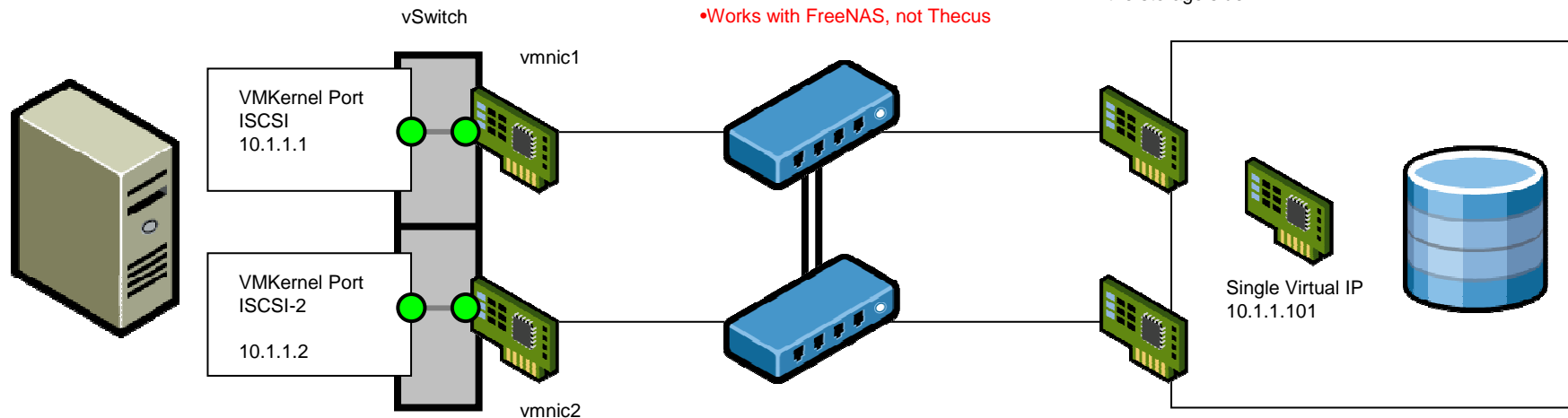
• Works with FreeNAS, not Thecus

Paths

- 10.1.1.1 to 10.1.1.101
- 10.1.1.2 to 10.1.1.101

There are 2 paths, with load balancing at ESX side
NO Layer 2 failover at ESX side, only IP Path selection

LACP or Etherchannel may allow some load balancing on the storage side



Understanding VMWare & iSCSI

Advanced iSCSI Configuration v4.0

Single VLAN

Multipath I/O – Load Balancing

IP (Layer 3) based Failover (Slow ~ 60sec)

Notes

- Two iSCSI Enabled VMKernel Port
- Single vSwitch
- NIC Teaming overridden
- 1:1 Mapping of VMKernel to NIC

- Storage has two Virtual IPs
- The IPs are fixed to the adaptors

•ESX Server hangs on storage NIC failure

Paths

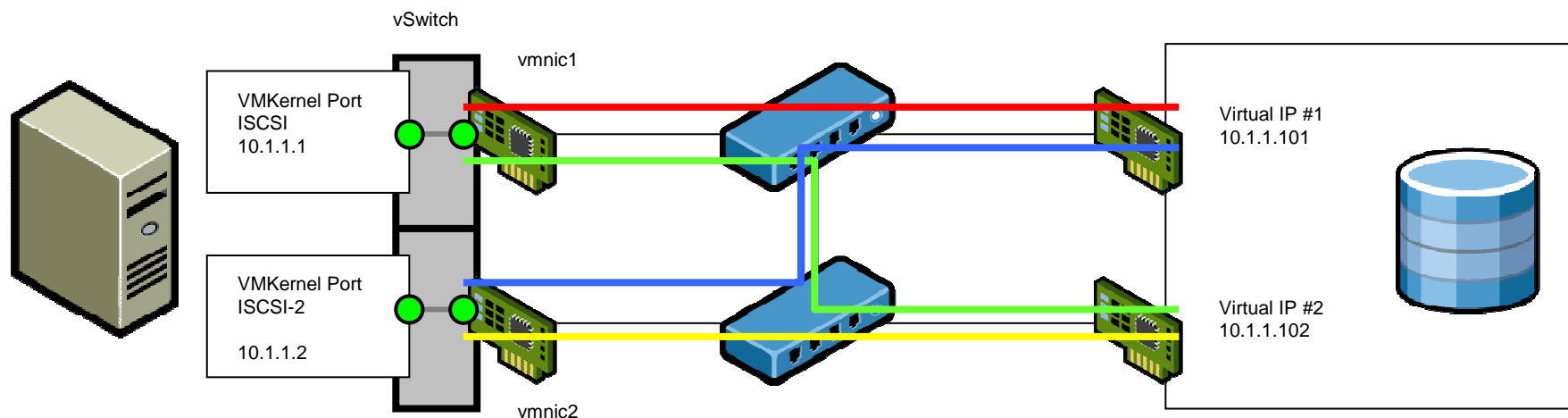
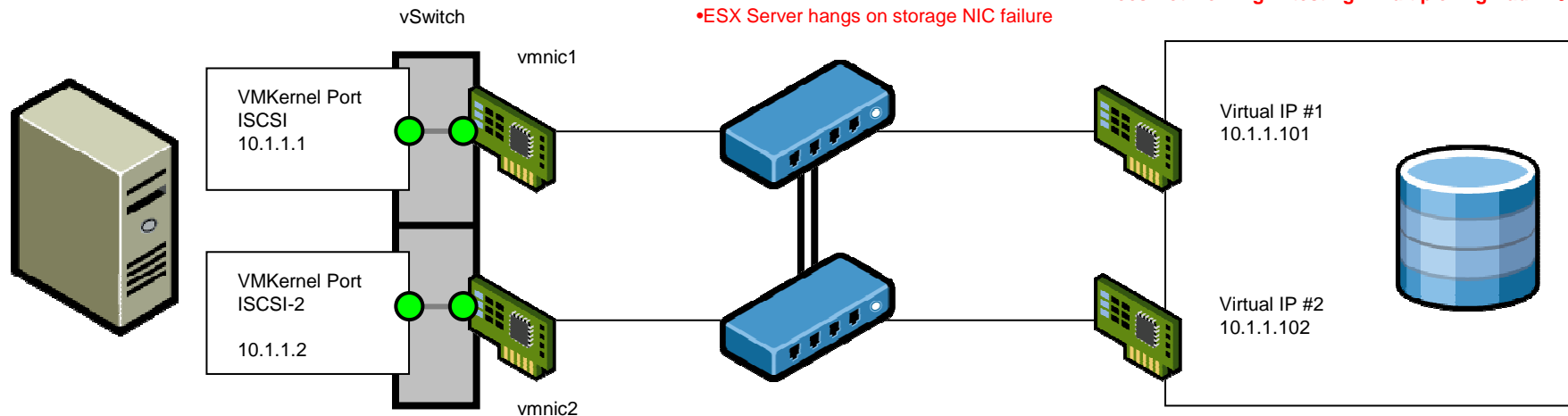
- 10.1.1.1 to 10.1.1.101 10.1.1.1 to 10.1.1.102
- 10.1.1.2 to 10.1.1.101 10.1.1.2 to 10.1.1.102

There are 4 paths, with load balancing

NO Layer 2 failover at ESX side, only IP Path selection

NO Layer 2 failover at storage side

Does Not working in testing – Multiplexing Bad... ☹



Understanding VMWare & iSCSI

Advanced iSCSI Configuration v4.0

Dual VLAN

Multipath I/O – Load Balancing

IP (Layer 3) based Failover (Slow ~ 60sec)

**** This is best compromise for throughput ****

Notes

- Two iSCSI Enabled VMKernel Port
- Single vSwitch
- NIC Teaming overridden
- 1:1 Mapping of VMKernel to NIC
- Storage has two Virtual IPs
- The IPs are fixed to the adaptors

- Works in FreeNAS, failover is slow
- Have to use Static iSCSI Targets

Paths

- 10.1.1.1 to 10.1.1.101
- 10.1.254.1 to 10.1.254.101

There are 2 paths, with load balancing

NO Layer 2 failover at ESX side, only IP Path selection

NO Layer 2 failover at storage side

