# TODO-InBox

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# Node-Red References to Read

https://nodered.org/about/#flow-based-programming

https://flows.nodered.org/node/smart-nodes

https://flows.nodered.org/node/node-red-dashboard

# Long Numbered List Randomly Changes

# Documentation

1. Open the Network VLANs listing, and add a new entry for the VLAN.

# Main Switch Config

The main switch will need to be updated, so VMs in the new VLAN can reach the router.

2. Log into the main switch at: 192.168.1.20.
3. From the main switch UI, add a new VLAN entry, like this:

4. If machines in the VLAN will need to route to other machines or the internet, you will need to add the VLAN ID to the list of VLAN tags for the following switch ports:
   1. Port 1 - the trunk connection to the router:

   2. Port 25 - the trunk connection to the ESX host:

      The above two ports allow VLAN traffic from the ESX host (25) to get routed by OpnSense (via port 1).
5. Make a backup of the updated switch configuration, and store it here:

   ```
   \\192.168.1.211\Backups\Backups\main_switch_1930
   ```

## VSphere Updates

For VMs to use the new VLAN, the ESX host will need a port group that tags any trunked traffic (heading to the router) with the new VLAN Id.

We already have a virtual switch in the ESX host, named: vs_home.
It has a physical adapter that connects to the main switch at port 25.
And, it contains all the VLAN port groups that trunk to the router.

So, we need to add a port group (to our virtual switch in the ESX) for the new VLAN.

6. Open a UI session to the ESX host at: 192.168.1.243.
7. Navigate to the Port Groups tab on the Networking page.

8. Click Add Port Group, to open the popup.
9. Give the new port group a name. Something that indicates its purpose.
10. Set the new vlanid to match what was reserved above.
11. Choose the virtual switch, vs_home, so traffic from the port group can trunk to the main switch.

12. Click OK to add the new port group for our VLAN.

# VSphere

We need to confirm the new port group is accessible in VCenter.

13. Open the web UI for the VSphere instance at: 192.168.1.242.
14. Navigate to the Networking tree, for the datacenter, and verify the new port group is listed.

15. Once confirmed, we can now assign VM network adapters to the new port group.

# OpnSense

Last, we need to configure the main router for the new VLAN.
This includes:

- Adding a new VLAN, so traffic is recognized
- Creating a virtual interface for the new VLAN
- Adding DHCP service to the VLAN
- Adding firewall rules for internet visibility

16. Open the main router UI at: 192.168.1.1.

# Adding the New VLAN

17. Navigate to the VLAN page at: Interfaces / Other Types / VLAN.

18. Click the plus sign to reach the new VLAN popup.

19. Leave the Device field blank for now. We will revise it after it is auto-generated.
20. Set the Parent interface as: em4 (our trunk interface from main switch Port 1).
21. Set the VLAN tag to our new VLAN id.
22. Add a description that makes sense.
23. Hit save to add the pending VLAN, but don’t click Apply yet.

24. Reopen the pending VLAN popup by clicking the pencil on the right.
25. Revise the autogenerated vlan Device name to include the VLAN Id, like this:

26. Now, click Apply to establish the VLAN interface.
27. Navigate to the Interface Assignments page, at: Interfaces / Assignments.

28. Scroll past the listing, to the Assign a New Interface section.
29. Select the new VLAN interface, in the Device field.
    It should be colored Green, as ready to add.
30. Add a description to it, that makes sense.
31. Click Add, to add the new VLAN interface.
32. Click Apply to accept the change.
    Now, the interface will appear in the upper Interfaces list.
33. Click on the name of the interface, so we can update its config.
34. Check the Enable Interface box, so it will be active.
35. Check the Prevent Interface Removal box, so it will not be trivial to delete it.
36. Make sure the Description field is set.
37. We want the router to provide a gateway listener in the VLAN. So we set the IPv4 Configuration Type to Static IPv4.

38. As well. We need to assign a gateway address in the Static IPv4 Configuration block.
    We standardize on 24-bit subnets, in 192.168.x.x.
    We also standardize on the gateway listening at x.x.x.1.
    And, we standardize on the third octet being the VLAN Id for easy identification.
    So for example: The gateway address in the 152 VLAN would be: 192.168.152.1.
39. Set the subnet size to 24.

40. Click Save to update the gateway listener.
41. Click Apply Changes so the router activates a new gateway listener for the VLAN.

# DHCP Service

Now, we need to setup DHCP and DNS.

42. Navigate to the DHCP config at: Services / ISC DHCPv4.
43. In the navigation tree, click on our new VLAN interface, under the ISC DHCPv4 service.
44. Check the Enable DHCP server box.
45. In the Range block, set our DHCP range.
    Normally, we use 100 to 199.
    So, a range for the 152 VLAN will be: 192.168.152.100 through 192.168.152.199.
46. Set the DNS server IP to our PiHole instance at: 192.168.1.2.
47. Click Save to update the config.
48. Numbered list entries are working, above here.

# Some Small Heading

49. So far, the numbered list is working, here.
    A paragraph within numbered list entry 49.
50. Numbered list increments, properly.

> Information Callout that somehow skews the numbered list...

51. Not sure why the numbered list rolled back because of the above callout.
    This numbered list entry presents a bad ordinal, but appears to occupy its correct entry, because the next one is correct.

## Another Small Heading

52. Numbered list entry appears to have fixed itself.
53. Still working as expected.
54. Still working as expected.
55. Still working as expected.
56. Still working as expected.

> Information Callout has skewed later numbered list entries.

57. Numbered list is messed up, again.
58. Continues from the skewed offset.
59. Continues from the skewed offset.

> Information Callout has skewed later numbered list entries.

60. Numbered list entry is skewed again.
61. It continues from the skewed value.

# WYSIWYG Numbered List Resetting Issue

1. Some list number text, starting a numbered list.
2. More list number text, continuing the same numbered list.
3. More list number text, continuing the same numbered list.
4. More list number text, continuing the same numbered list.

> Callout NOTE entered here.

1. After the Informational Callout, the numbered list resets, starting a new numbered list.

# RAFT in C# To Read

https://www.linkedin.com/pulse/raft-leader-election-net-practical-guide-david-boyarov-z5x4e/

https://raft.github.io/

https://thesecretlivesofdata.com/raft/

https://medium.com/microsoftazure/geo-redundant-stateful-service-made-easy-with-asp-net-core-next-and-azure-virtual-machines-950843bb26fd