Troubleshooting SAN Connectivity

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NX-OS:

1. Check running config. show run; show run | in feature; show run | sec "vlan|vsan|vfc"
   a. For FCoE, is the correct FCoE VSAN mapped to the correct VLAN?
   b. For FCoE, is the VLAN being trunked on the correct interfaces?
2. Check VSAN configuration
   a. Are the correct interfaces members of the correct VSAN? show vsan membership
   b. Is the VSAN active? show vsan; no vsan <vsan-number> suspend
3. Check port type & port configuration on downlinks and uplinks
   a. For downlinks, the switchport mode should be F.
   b. For uplinks, if you are connected to another switch, the switchport mode should be E. If you are connected to the storage array, the switchport mode should be F.
   c. For SAN port-channels, make sure the correct interfaces are in the port-channel.
   d. Make sure the links are UP
   e. VERY IMPORTANT: Make sure to flap the links after making a config change to re-init FLOGI!
4. Check zoning configuration
   a. Are both FCID and WWPN showing in the active zoneset? show zoneset active; zoneset activate name <zoneset-name> vsan <vsan-number>
   b. Does the zone/zoneset show in the zone status output? show zone status
   c. Check the zoning running config. show run zone
   d. Are the correct WWPNs or device aliases configured in the zone? show run zone
   e. Is the zone/zoneset configuration committed? zone commit vsan <vsan-number>
5. Check device alias configuration
   a. Is the correct device alias mapped to the correct device WWPN? show device-alias database
   b. Is the device-alias configuration committed? device-alias commit
6. Check FLOGI and FCNS DB
   a. Verify that both initiator and target WWPNs/device-aliases are present in both tables.

FI CLI:

1. Check running config. show run; show run | in feature; show run | sec "vlan|vsan|vfc"
   a. For FCoE, is the correct FCoE VSAN mapped to the correct VLAN?
   b. For FCoE, is the VLAN being trunked on the correct interfaces?
2. Check VSAN configuration
   a. Are the correct interfaces members of the correct VSAN? show vsan membership
   b. Is the VSAN active? show vsan; no vsan <vsan-number> suspend
3. Check port type on uplinks
   a. Switchport mode should be NP
   b. Make sure the links are UP

UCSM:

1. Check port configuration
   a. If using FC port, does is have the right configuration? For FC storage port, FC switching mode must be set to Switching, and not End Host, for these ports to be valid.
   b. If using Eth port, does is have the right configuration? FCoE uplink/unified uplink for uplinks, server port for downlinks
   c. If port type is wrong in UCSM or FI CLI, and manually changing it doesn't seem to have an effect (meaning config goes back to wrong config, etc.), then re-ack the chassis and reboot

the FIs. That should fix the port types.
   d. For FC/FCoE port-channels, are the correct interfaces in the port-channel?
   e. VERY IMPORTANT: Make sure to flap the links after making a config change to re-init FLOGI!
2. Check VSAN configuration
   a. Are the correct VSANs configured in SAN Cloud? Keep in mind that Fab A and Fab B need to be strictly separated; they will have different VSANs.
   b. For FCoE, is the correct FCoE VSAN mapped to the correct VLAN?
   c. Is the correct VSAN mapped to the correct vHBA? This can be configured manually, or in vHBA templates, or in Storage Connection Policies and SAN Connectivity Policies.
3. Check WWxN configuration
   a. Are we using a valid WWNN from the WWNN pool?
      i. Is it correctly mapped to the right SP template/SP?
   b. VERY IMPORTANT: are we using the correct WWPN (for initiator and target) from the WWPN pool?
      i. We can use the WWPNs from the WWPN pool directly in the SP template/SP using vHBA templates or SAN Connectivity Policy.
4. Check the vHBA placement either manually or via the placement policy.
   a. Sometimes we need them to be in descending order. For instance, fc0 for Fab A need to be 1st and fc1 for Fab B needs to be 2nd.
5. Check the boot policy/boot order
   a. Is SAN boot configured?
      i. SAN boot is the ONLY thing that HAS to be configured. You do NOT have to configure other boot devices if you don't need to.
   b. Are the correct primary and secondary target WWPNs configured and mapped to the correct vHBAs? Remember, you have to manually type in the vHBA ID, so make sure this is correct!
6. Check zoning configuration (Optional)
   a. Most of the time, we will not need this, so only check this if it is being used. For instance, if the FIs are in Switching mode.

CIMC:

1. Check FC SAN Boot option
   a. Make sure that it is enabled in Networking --> Adapter Card MLOM --> vHBAs --> vHBA Properties
2. Check the WWPN configuration
   a. Make sure the correct target WWPN is configured in Networking --> Adapter Card MLOM --> vHBAs --> vHBA Properties
3. For FCoE, check the VLAN configuration
   a. Make sure the correct FCoE VLAN is configured in Networking --> Adapter Card MLOM --> vHBAs --> vHBA Properties
4. Check the Boot Table
   a. Make sure the correct target WWPN is configured and mapped to the correct LUN ID. If there are multiple targets, make sure they are in the correct order.
5. For FCoE, check the Enable FIP Mode option
   a. Make sure that it is enabled in in Networking --> Adapter Card MLOM --> General when using FCoE or else the server will not perform a FLOGI.
   b. You will need to power cycle the server after making this change in order for it to take effect.