Configuring your environment so VLANs are dynamically created

Use the steps in this quick start guide to set up your environment so that switch VLAN configuration is automatically performed when you deploy or relocate virtual servers. You can also use this procedure to set up different tenants or groups of users with separate network connections using Network Control and VMControl.

Prerequisites:

Make sure that you have met the following prerequisites before you complete the steps in this quick start guide:

- Completed all steps in *Configuring network resources to support virtual server relocation* quick start guide to prepare your environment.
- Assigned top-of-rack port(s) to the tenants (the different client groups that you want to separate on the network). Determine which top of rack switch ports will connect to each tenant's network.
- Assigned VLAN IDs to the tenants.
- Connected the tenant network to the assigned top-of-rack ports.

In addition to these prerequisites, the following terminology may be helpful as you perform the steps in this quick start guide:

- Server system pool – logically groups similar hosts and facilitates the relocation of virtual servers from one host to other hosts in the system pool.
- Network system pool – defines the set of switches and their attached servers that Automated Logical Network Provisioning will configure.
- Logical network profile – a template that defines a VLAN ID and optionally other characteristics of network connectivity required by a virtual machine or set of virtual machines.
- Uplink port – a port on a switch in a network system pool that connects the network system pool to a switch outside the network system pool.

Steps:

Complete the following steps to set up your environment so that switch VLAN configuration is automatically performed when you deploy or relocate virtual servers:

1. Create a logical network profile for each tenant (client group):

   a) Log in to the IBM Flex System Manager user interface with a user account that has sufficient privileges to configure devices managed by the IBM Flex System Manager management node.
   b) On the Home page, select the Plug-ins tab.
   c) Select **Configuration Manager**.
   d) Under Configuration tasks, select **Create configuration template**.

e) On the Configuration Templates page, click **Create**. Complete the wizard using the following values:
- Template type - System Pool
- Configuration to create a template – Logical Network Configuration
- Name – The name to be used for the template. For example: NSPTemplate.

f) On the Logical Network Configuration page, click **Create**. Complete the wizard using the following values:
- On the VLAN Configuration page, type in the VLAN ID assigned to the tenant.
- (Optional) On the VSI Configuration page, type the ID of an IEEE 802.1Qbg VSI Type profile. You must create IEEE 802.1Qbg VSI Type profiles using the IBM System Network Element Manager product.
  Repeat this step until you have created a logical network configuration for each tenant. Then, click **Save** on the Logical Network Configuration page.

2. Create a logical network profile for the management network.

   a) On the Logical Network Configuration page, click **Create**. Complete the wizard using the following values:
   - On the VLAN Configuration page, type in the VLAN ID used for the management network. For Power Systems compute nodes, it is usually the VLAN ID of the shared Ethernet adapter.
   - (Optional) On the VSI Configuration page, type the ID of an IEEE 802.1Qbg VSI Type profile. You must create IEEE 802.1Qbg VSI Type profiles must be done using the IBM System Network Element Manager product.
     When you complete the wizard, click **Save** on the Logical Network Configuration page.

3. Create a network system pool.
   a) On the Plug-ins tab on the Home page, select **VMControl**.
   b) On the VMControl summary page, select the System Pools tab. Then, select **Network system pools** from the View drop-down.
   c) Click **Create**. Complete the Create Network System Pool wizard:
   - On the Initial System page, select the name of the top-of-rack switch.
   - On the Additional Systems page, click **Add** to add all switches and compute nodes.
   - On the Pool Uplink Connections page, click **Add** and select the top-of-rack ports that are assigned to the tenants. Then, select one of the uplink ports and click **Edit**.
   - On the Edit Pool Uplink Connection page, select **All VLAN tagged frames are discarded** and **Assign untagged frames to the Port VLAN ID (PVID)**. Then, type in the VLAN ID assigned to the tenant. Select **OK** when you are finished.

     Repeat this step for each uplink port for all selected uplink ports.
   - On the Logical Network Profiles page, click **Add**. On the Add Logical Network Profiles page, select all of the logical network profiles that you created for the tenants and the management network.

d) Click **Finish** on the Summary page to complete the wizard. Click **Run immediately** on the task activation page.

4. Create a server system pool.

    A server system pool logically groups similar hosts and facilitates the relocation of virtual servers from one host to other hosts in the system pool. In this step, create a server system pool that contains two or more compute nodes that are part of a network system pool.

    To create a server system pool, follow the instructions in the *Creating a system pool that supports relocation* quick start guide.

5. Deploy a virtual server so that it can use two virtual network interface cards.

    Deploy a virtual appliance using the instructions in the *Deploying a virtual appliance workload* quick start guide. Use the following information to help you set up the network:

    - On the Target page, select the server system pool.
    - On the Target→Network Mapping page, select the logical network profile for the tenant for the first network.
    - On the Target→Network Mapping page, select the logical network profile for the management network for the second network.
    - On the Product page, enter the network attributes (such as IP address and gateway) that correspond to each of the network profiles.

6. (Optional) Relocate a virtual server within the system server pool.

    To move a virtual server to a different host (compute node), right-click on the virtual server and select **Availability→Relocate**.