

The diagram illustrates the mapping of a Virtual Network (VN) to a Physical Network (PN). The VN is enclosed in a dashed rounded rectangle and contains the following components and connections:

- Nodes:**
 - vLR1, vLR2, vLR3:** Virtual Local Routers, represented by blue cylinders with a white 'X' and four arrows.
 - vE1, vE2, vE3:** Virtual End-nodes, represented by blue squares with a white 'V' and four arrows.
 - vEC1, vEC2, vEC3:** Virtual Edge Controllers, represented by blue squares with a white 'X' and four arrows.
 - vROADM1, vROADM2, vROADM3:** Virtual Reconfigurable Optical Add-Drop Multiplexers, represented by blue cylinders with a white 'X' and four arrows.
 - vOXC1:** Virtual Optical Cross-Connect, represented by a blue square with a white 'X' and four arrows.
- Connections:**
 - Red solid lines:** Represent physical connections. vLR1 is connected to vE1 and vEC1. vE1 is connected to vEC1. vEC1 is connected to vLR3. vLR3 is connected to vE3. vE3 is connected to vEC3. vEC3 is connected to vLR2. vLR2 is connected to vE2. vE2 is connected to vEC2. vEC2 is connected to vLR1.
 - Blue dashed lines:** Represent virtual connections. vLR1 is connected to vROADM1. vROADM1 is connected to vROADM2. vROADM2 is connected to vOXC1. vOXC1 is connected to vROADM3. vROADM3 is connected to vLR3. vLR3 is connected to vEC3. vEC3 is connected to vLR2. vLR2 is connected to vEC2. vEC2 is connected to vLR1.

The PN is enclosed in a solid rounded rectangle and contains the following components and connections:

- Nodes:**
 - LR1, LR2, LR3:** Physical Local Routers, represented by blue cylinders with a white 'X' and four arrows.
 - SwCE1, SwCE2, SwCE3:** Physical Software-Controlled Edge Routers, represented by blue squares with a white 'X' and four arrows.
- Connections:**
 - Red solid lines:** Represent physical connections. LR1 is connected to SwCE1. SwCE1 is connected to SwCE2. SwCE2 is connected to LR2. LR2 is connected to SwCE3. SwCE3 is connected to LR3. LR3 is connected to SwCE1.

The mapping between the VN and PN is shown by dashed lines connecting the virtual nodes to their physical counterparts: vLR1 to LR1, vLR2 to LR2, vLR3 to LR3, vE1 to SwCE1, vE2 to SwCE2, vE3 to SwCE3, vEC1 to SwCE1, vEC2 to SwCE2, and vEC3 to SwCE3.

