



# Licensing Requirements for Cisco Programmable Fabric

Following are the licensing requirements for Cisco Programmable Fabric with virtual extensible LAN (VXLAN) Border Gateway Protocol Ethernet VPN (BGP EVPN). Review the hardware and software components of your existing fabric with respect to the Cisco Programmable Fabric release requirements and compatibility constraints. Because Cisco Programmable Fabric implements an architectural solution with a switch topology, devices might be required to perform different roles when used in a Cisco Programmable Fabric implementation, and might be subject to new licensing requirements.

Product	License Requirement
Cisco Nexus 5600 Switches	<ul style="list-style-type: none"> <li>• For a Cisco Nexus 5600 Switch as a Cisco Programmable Fabric spine, leaf, or border leaf, the Layer-3 Base Services Package (LAN_BASE_SERVICES_PKG) is required.</li> <li>• For a Cisco Nexus 5600 Switch as a Cisco Programmable Fabric spine, leaf, or border leaf, the Enterprise Services Package (LAN_ENTERPRISE_SERVICES_PKG) is required.</li> </ul> <p>For the Cisco NX-OS licensing scheme and how to obtain and apply licenses, see the <a href="#">Cisco NX-OS Licensing Guide</a>.</p>
Cisco Nexus 7000 Series Switches and Cisco Nexus 7700 Switches <sup>1</sup>	<ul style="list-style-type: none"> <li>• For a Cisco Nexus 7000 Series Switch and Cisco Nexus 7700 Switch as a Cisco Programmable Fabric spine, leaf, border leaf, or border PE switch, the LAN Enterprise Services Package (LAN_ENTERPRISE_SERVICES_PKG) is required.</li> <li>• For a Cisco Nexus 7000 Series Switch and Cisco Nexus 7700 Switch as a border PE, the Multiprotocol Label Switching (MPLS) Service Package (MPLS_PKG) is required. The border PE combines an MPLS PE and border leaf functionalities in a single box.</li> </ul> <p>For the Cisco NX-OS licensing scheme and how to obtain and apply licenses, see the <a href="#">Cisco NX-OS Licensing Guide</a>.</p>

Product	License Requirement
Cisco Nexus 9000 Series switches	<ul style="list-style-type: none"> <li>For a Cisco Nexus 9000 Series switch as a Cisco Programmable Fabric spine, leaf, or border leaf, the LAN Enterprise Services Package (LAN_ENTERPRISE_SERVICES_PKG) is required.</li> </ul> <p>For the Cisco NX-OS licensing scheme and how to obtain and apply licenses, see the <a href="#">Cisco NX-OS Licensing Guide</a>.</p>
Cisco Data Center Network Manager (DCNM)	<p><b>Note</b> The switch feature licenses must be installed before you install the Cisco DCNM license.</p> <p>Cisco DCNM includes a base functionality for Cisco Programmable Fabric management, LAN management, and limited SAN or Storage management. You do not have to install an Advanced feature license for the base functionality. The Advanced functionality, including performance monitoring, configuration archive, and extended SAN management, requires an Advanced feature license for LAN or SAN for each managed switch.</p> <p>For example, if you require the Advanced LAN functionality, and have to manage a Cisco Nexus 5600 Switch, then you should order one process ID (PID) DCNM-LAN-N5K-K9 when you order the PID with the switch or DCNM-LAN-N5K-K9= when you order it as a spare PID.</p> <p>All LAN operations use this type of Cisco DCNM Server-based license. If you need LAN and SAN functionalities for Cisco Nexus 7000 Series Switches and Cisco Nexus 7700 Switches, order the combination LAN and SAN ('LS') license [for example: DCNM-LS-N77-K9=]. The SAN and Storage functionalities are also available as switch based licenses, where the license is installed on the switch the same way a feature license is installed.</p>

<sup>1</sup> The Cisco Nexus 7000 Series Switches and Cisco Nexus 7700 Switches as a Cisco Programmable Fabric leaf, border leaf, or border PE requires the F3 line card .