

# Cisco Multi-Layer Switching - MLS

Uses a combination of layer-2 switching technology, with layer-3 routing and layer-4 applications

## MLS Requirements:

(Required hardware to see the packet header information and cache it)

Cisco **5000** Series Catalyst switches require:

*NetFlow Feature Card (NFFC)*

Cisco **6000** Series Catalyst switches require:

*Multilayer Switch Feature Card (MSFC) and*

*Policy Feature Card (PFC)*

*Multilayer Switching Protocol (MLSP)* - A protocol that runs on the router and allows it to communicate to the MLS-SE regarding topology or security changes.

*Multilayer Switching Router Processor (MLS-RP)* - An MLS capable router or an RSM installed in the switch.

*Multilayer Switching Switching Engine (MLS-SE)* - An MLS-capable switch.

## Four-step process to enable MLS layer-3 switching

**1- MLSP Discovery:** The switching-router uses MLSP to discover all interfaces to discover the switching-engine and establish SE neighbor relationships.

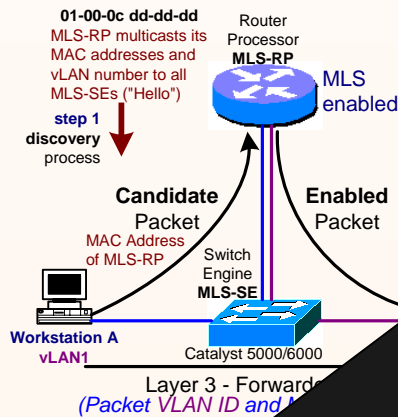
The *hello* packet is sent every 15 seconds to discover the MLS-SE.

The *01-00-0c dd-dd-dd*, intended for a switch, is a multicast address. *XTAG* is a unique identifier that switches use to identify other switching-routers in the network and to identify themselves locally.

**2- Identification of candidate packets:** The switching-router identifies packets and creates potential candidate packets.

**3- Identification of candidate packets:** The switching-router identifies packets coming from the source and matches them to the destination.

**4- Forwarding:** The switching-router forwards the packets to the destination.



The above diagram illustrates the MLSP discovery process completed (using MLSP) and the switch is now an enabler and caching.

- \* "Router-on-a-stick"
- \* Router interface
- \* Using host
- \* MLS-SE
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