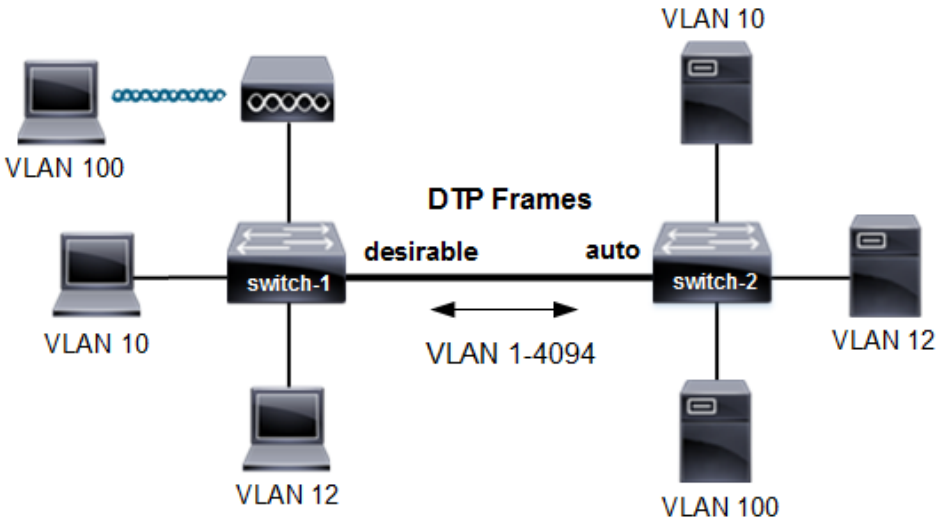
Dynamic Trunking Protocol (DTP)

There is an option to enable trunking based on dynamic negotiation with a neighbor switch. DTP enables dynamic trunk negotiation between two connected switches. Cisco switch interfaces enable DTP auto mode as a default on all switch ports. That however does not negotiate a trunk.

DTP operational modes include **nonegotiate**, **desirable** and **auto**. DTP auto mode only listens for DTP packets from neighbors. The switch port is operational as an access port when DTP is disabled.

Figure 1 DTP Trunking Configuration



Any switch port configured with desirable mode sends DTP request frames to a neighbor switch and listens as well. The switch will form a trunk with a connected neighbor when at least one switch interface is configured with **desirable mode**.

Configuring **switchport nonegotiate** command on a switch port explicitly configured as a static trunk will disable DTP frames. The command disables and prevents advertising DTP frames. The following are two methods that will disable DTP frames on a switch interface.

- **switchport mode access** command
- **switchport nonegotiate** command

DTP is a Cisco proprietary protocol that only supports Cisco equipment and network interfaces. Connecting third party equipment would require configuration of static trunk mode on the Cisco interface. The switch interface configured with the **switchport mode trunk** command is a static trunk with **on** mode.

- DTP enables dynamic negotiation of a trunk between switches
- DTP is Cisco proprietary protocol only
- DTP modes are **nonegotiate**, **desirable** and **auto**.
- DTP auto mode is enabled by default on switch ports
- There is no trunk created with the default DTP mode setting

DTP Configuration

DTP provides dynamic negotiation based on the **switchport mode dynamic auto** or **switchport mode dynamic desirable** interface commands. DTP frames are sent at one second intervals during negotiation and every 30 seconds after that.

```
switch-1(config)# interface fastethernet0/1
switch-1(config-if)# switchport mode dynamic desirable
switch-1(config-if)# end

switch-2(config)# interface fastethernet0/1
switch-2(config-if)# switchport mode dynamic auto
switch-2(config-if)# end
```

DTP Operational Modes

The following describe the IOS configuration and switch port operational mode that results.

- switchport mode access = access port only (no trunk)
- switchport mode trunk (on) = static trunk formed
- switchport mode dynamic auto = interface listens for DTP requests
- switchport mode dynamic desirable = listens and sends DTP requests
- switchport nonegotiate = disable DTP frames on access or static trunk

Table 1 describe how each trunk mode will affect trunk setup between connected neighbor switches. For example, consider switch neighbors with mixed static and dynamic trunking configuration. It is preferable to deploy common methods and protocols for best results.

Table 1 Cisco Trunking Protocol Modes

Switch-1	Switch-2	Result
auto mode (default)	auto mode (default)	access port
auto mode	desirable mode	trunk
auto mode	static (on)	trunk
desirable mode	static (on)	trunk
nonegotiate	nonegotiate	access port