week9

VLAN Trunking Protocol (VTP) VLAN中继协议（VTP）

VTP reduces administration in a switched network. Configure a new VLAN on one VTP server, the VLAN is distributed through all switches in the domain. VTP is a Cisco-proprietary protocol. VTP减少了交换网络中的管理工作量。在一个VTP服务器上配置一个新的VLAN，该VLAN将会同步到域中的所有交换机中。VTP是思科专有的协议。

- VTP Version 1,2,3 VTP版本1,2,3
  - VTPv3 is able to distribute information about extended range VLANs, private VLANs, provides protection against unwanted overwriting of the VLAN database by a switch with a higher revision number VTPv3能够分发有关扩展范围VLAN和专用VLAN的相关信息，并提供保 护，以防止版本号更高的交 换机意外覆盖VLAN数据库
- VTP Server Mode VTP服务器模式
  - can create, modify, and delete VLANs and specify other configuration parameters, such as VTP version and VTP pruning, for the entire VTP domain 可以为整个VTP域创建，修改和 删除VLAN并指定其他配置参数，例如 VTP版本和VTP修剪
- VTP Client Mode VTP客户端模式
  - cannot create, change, or delete VLANs on a VTP client 无法在VTP客户端上创建，更改或 删除VLAN
- VTP Transparent Mode VTP透明模式
  - does not advertise its VLAN configuration and does not synchronize its VLAN configuration based on received advertisements, but transparent switches do forward VTP advertisements that they receive out their trunk ports in VTP Version 2 不会发布其VLAN配置，也不会根据收到的通告同步其 VLAN配置，但是透明交 换机会转发VTP通告，因为它们接收了VTP版本2中的中继端口
- Configuration Revision 配置修订
  - Each time that you make a VLAN change in a VTP device, the configuration revision is incremented by one. 每次在VTP设备中进行VLAN更改时，configuration revision 都会增加一。
- VTP must run on Trunk port VTP必须在中继端口上运行

VLAN Trunking Protocol (VTP) VLAN中继协议（VTP）

Server:

SW(config)#vtp version 2
SW(config)#vtp mode server
SW(config)#vtp domain ccna++
SW(config)#vtp password pwd
SW(config)#do show vtp status

Client:

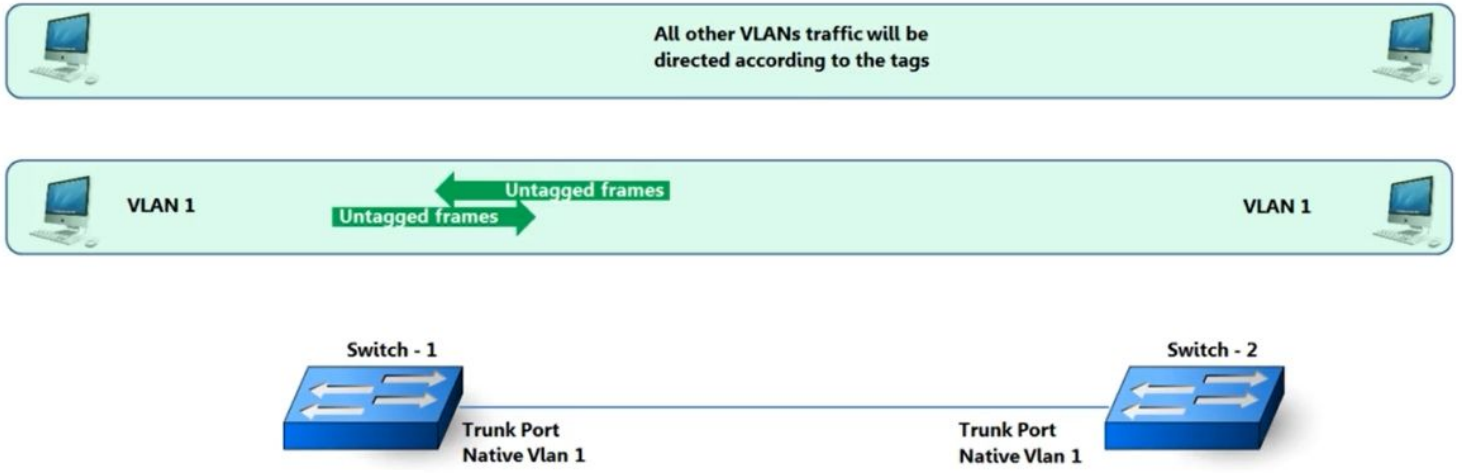
SW(config)#vtp version 2
SW(config)#vtp mode client
SW(config)#vtp domain ccna++
SW(config)#vtp password pwd
SW(config)#do show vtp status

Transparent:

SW(config)#vtp version 2
SW(config)#vtp mode transparent

Native VLAN

The trunk port is assigned a default port VLAN ID (PVID) for a VLAN upon which all untagged traffic will travel. This VLAN is also called the native VLAN and is always VLAN 1 by default, but it can be changed to any VLAN number. Trunk Port中会有一个默认的Vlan专门负责无标签的流量通过。该Vlan被称为 native vlan，通常情况下，该vlan是vlan1，但它可以被改成任何的vlan ID。



Can PCs in different VLAN talk to each other? 不同vlan中的电脑能相互通信吗？

Native VLAN

SW_A FaO/1 —> VLAN 10
SW_A Fa0/2 —> Trunk but Native VLAN is 10

SW_B FaO/1 ---> VLAN 20
SW_B Fa0/2 ---> Trunk but Native VLAN is 20

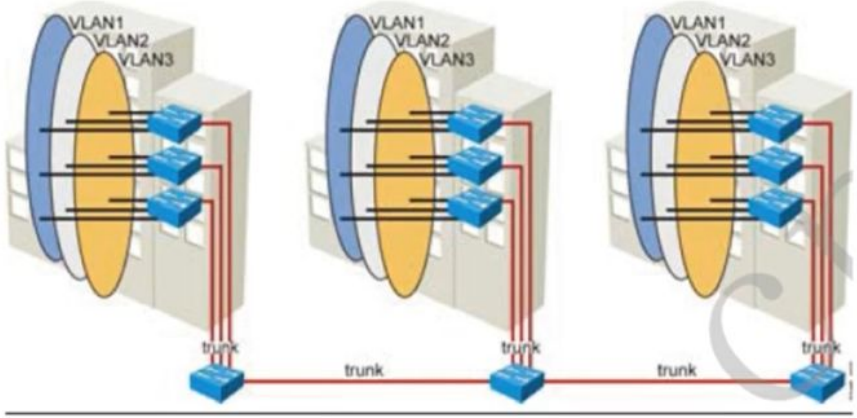
Disable CDP (Cisco Discovery Protocol) on both switch
Disable STP (Spanning Tree) on both switch

PC_A is able to ping PC_B

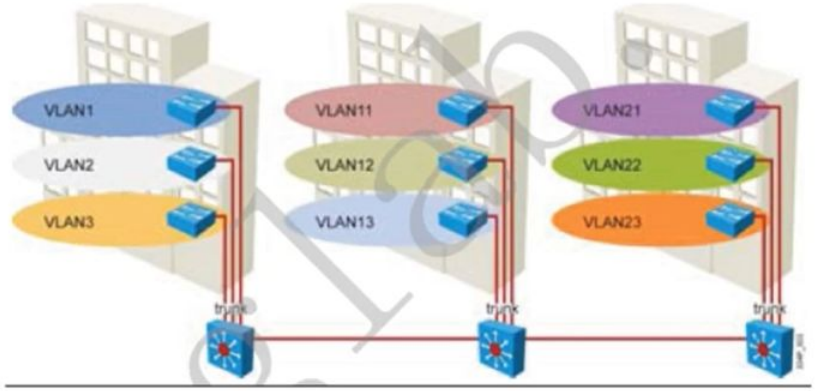
Configure Native VLAN:
interface FastEthernet0/2
switchport trunk native vlan 10
switchport mode trunk

Disable STP:
Switch(config)#no spanning-tree vlan 10

VLAN Deployment VLAN部署



End-to-end VLANs 端到端VLANs
Users are grouped into VLANs independent of physical location. If users are moved within the campus, their VLAN membership remains the same. 用户分为与物理位置无关的VLAN。如果用户在园区内移动，则其VLAN身份保持不变。



Local VLANs (recommended) 本地VLANs（推荐）
Users are grouped into VLANs depending of physical location. If Users are moved within the campus, their VLAN membership changes. 根据物理位置将用户分为不同的VLAN。如果用户在园区内移动，则其VLAN身份也会更改。