

# Trunking Between a Catalyst 5000 and a Router over FDDI

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## Introduction

This sample configuration shows how to configure a Fiber Distributed Data Interface (FDDI) trunk between a Catalyst 5000 and a router. In the following diagram, we want the PC in VLAN 20 to have access to the router R across a FDDI trunk between Catalyst 5000 and router R. If VLANs are present on multiple switches connected by FDDI link, a trunk can be configured between the switches over FDDI link to carry multiple VLAN packets. To learn more about creating a trunk link over FDDI, refer to the following:

[Connecting Ethernet VLANs Over FDDI Using 802.10 Encapsulation](#)

## Prerequisites

### Requirements

There are no specific requirements for this document.

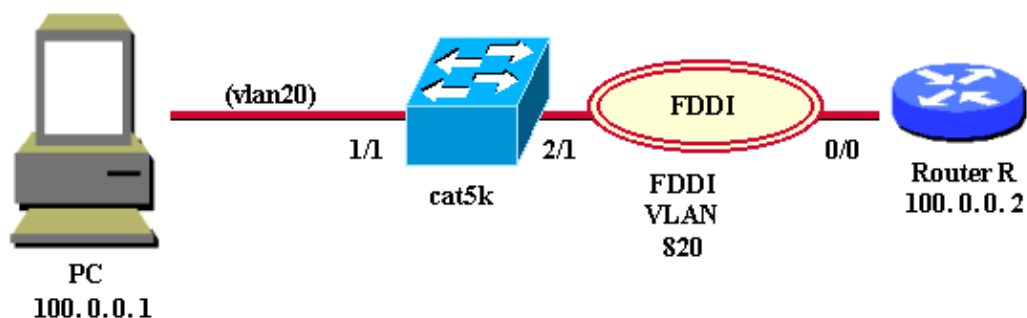
### Components Used

This document is not restricted to specific software and hardware versions.

### Conventions

Refer to Cisco Technical Tips Conventions for more information on document conventions.

## Network Diagram



## Configuration for Catalyst 5000

Follow the steps below for this configuration:

Step 1: Set VTP domain to "cisco". There must be a VTP domain on the switch (assuming it is already VTP server, which is the default) in order to be able to create VLANs:

```
cat5k> (enable) set vtp domain cisco
```

Step 2: Create Ethernet VLAN 20, where the PC is connected, and FDDI VLAN 820. VLAN 820 will propagate VLAN 20 over the FDDI link:

```
cat5k> (enable) set vlan 20>
cat5k> (enable) set vlan 820 type fddi
```

Step 3: This command specifies the SAID value for VLAN 820. The SAID is the tag that is added to 802.10 frames and that is used to identify the VLAN to which they belong. The switch assigns a SAID value that is 100000+ vlan number by default. This command was not necessary as it re-specifies the default value 100000+820=100820:

```
cat5k> (enable) set vlan 820 said 100820
```

Step 4: Translate Ethernet VLAN 20 into FDDI VLAN 820. This basically merges the two VLANs:

```
cat5k> (enable) set vlan 20 translation 820
```

Step 5: Enable 802.10 trunking on FDDI link, using secure data exchange (SDE) encapsulation:

```
cat5k> (enable) set trunk 2/1 on
```

## Configuration for the Router

The commands below create a sub-interface FDDI 0/0.1 for VLAN 820. If there are multiple VLANs on the switch, InterVLAN routing can be done between different VLANs by creating sub-interfaces on the router for every VLAN on the switch. Traffic from VLAN 820 on the FDDI is identified by the SAID value. A sub-interface needs to be created (with a SAID value specification) for every VLAN except the native VLAN on the FDDI link. For this specific one, no SAID tag is added on the link. Configuration for this VLAN (IP address, and so on) is done on the main interface FDDI 0/0:

```
interface Fddi0/0
no ip address
no keepalive
!
interface Fddi0/0.1
encapsulation sde 100820
ip address 100.0.0.2 255.0.0.0
!
```

## Debug and Verification Tips to Use for Troubleshooting

Check the status of the trunk and the VLAN carried by the trunk with the following commands:

- **show trunk**
- **show trunk vlan**

Verify the status of the VLANs using the following command:

**show vlan**

Pay attention to the SAID shown in the command **show vlan** and also the one configured on the router.

On the router, the command **show interface fddi** will show the status of the interface.

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## Related Information

- **Routing between Virtual LANs Overview (from the *Cisco IOS Release 12.0 Switching Services Configuration Guide*)**
- **Configuring Routing Between VLANs with IEEE 802.10 Encapsulation**
- **LAN Product Support Pages**
- **LAN Switching Support Page**
- **Technical Support & Documentation – Cisco Systems**

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