

# Table of Contents

<b><u>Using POTS Splitters and Microfilters in a DSL Environment</u></b> .....	1
<u>Document ID: 12933</u> .....	1
<u>Introduction</u> .....	1
<u>Prerequisites</u> .....	1
<u>Requirements</u> .....	1
<u>Components Used</u> .....	1
<u>Conventions</u> .....	1
<u>Splitters and Filters</u> .....	1
<u>POTS Splitters</u> .....	1
<u>Microfilters</u> .....	2
<u>Common Splitter and Microfilter Configurations</u> .....	2
<u>NetPro Discussion Forums – Featured Conversations</u> .....	3
<u>Related Information</u> .....	4

# Using POTS Splitters and Microfilters in a DSL Environment

Document ID: 12933

---

## **Introduction**

### **Prerequisites**

Requirements

Components Used

Conventions

### **Splitters and Filters**

POTS Splitters

Microfilters

Common Splitter and Microfilter Configurations

### **NetPro Discussion Forums – Featured Conversations**

### **Related Information**

---

## **Introduction**

Plain old telephone service (POTS) splitters and microfilters are used on telephone lines to ensure voice and data call quality. This document describes splitters and microfilters and how and when to use them. POTS splitters result in the best data and voice performance when the router and the telephone are used on the same telephone line.

## **Prerequisites**

### **Requirements**

There are no specific requirements for this document.

### **Components Used**

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

### **Conventions**

For more information on document conventions, refer to the Cisco Technical Tips Conventions.

## **Splitters and Filters**

This section explains the general purpose and design of POTS splitters and filters.

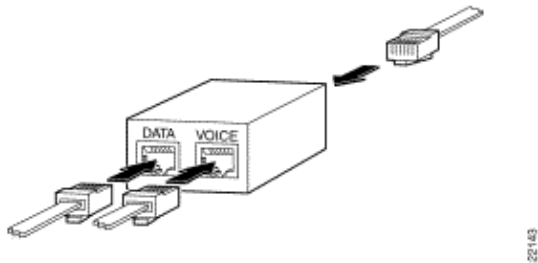
### **POTS Splitters**

A POTS splitter (also called a splitter) is installed on a telephone line that is connected to both data (high-frequency) and voice (low-frequency) devices. The splitter routes the high-frequency and low-frequency signals on the telephone line to the correct device. Signals intended for the router disrupt voice

calls. Signals intended for voice calls affect router operation.

Most splitters must be installed by the telephone company. However, some are installed by the customer. If you are not sure what type of splitter to use, contact your service provider.

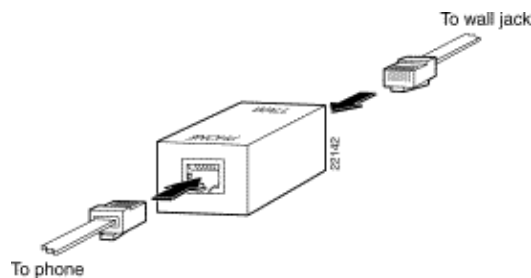
This figure is an example of a type of POTS splitter that is installed at the customer premises by the customer. Other types of splitters are installed by the telephone company on an exterior wall of the customer premises.



## Microfilters

Microfilters are installed on telephones to improve voice call quality when voice and data equipment use the same telephone line (twisted pair). You should use microfilters when either of these two conditions exist:

- The documentation for the telephone(s) you use with the router states that microfilters should be used with the phone.
- Poor telephone call quality is resolved by installing a microfilter on the phone line.



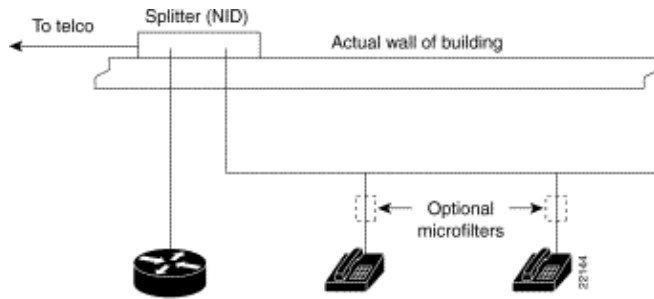
## Common Splitter and Microfilter Configurations

This section describes the most common scenarios that use splitters and microfilters listed from most common to least common.

### Telco-Installed Splitter

This splitter, also referred to as a network interface device (NID), is installed by the telephone company on the customer premises.

The router and telephone are on separate lines (twisted pair) to the splitter. They share the same telephone line (twisted pair) to the Telco. Microfilters are optional. They should be installed only if they improve telephone call quality.

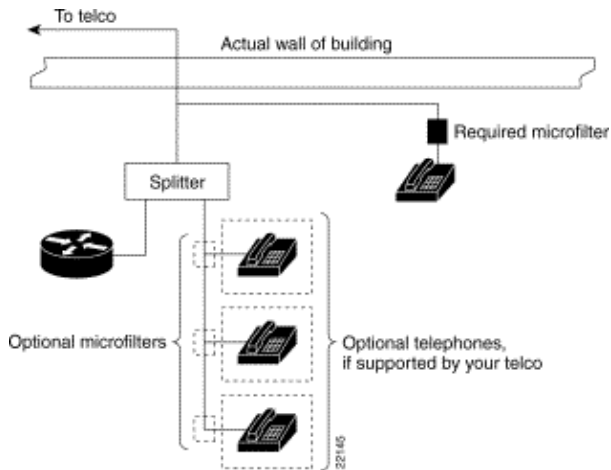


### Customer-Installed Splitter

This splitter is installed by the customer on the customer premises. The router and telephone share the same telephone line (twisted pair) to the telco. Also, they are directly connected to the splitter. The splitter is connected to the telephone line.

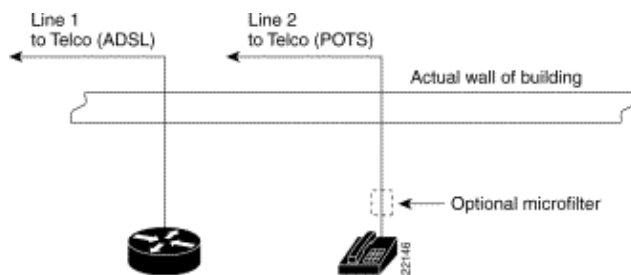
For additional telephones connected through the splitter, microfilters are optional and should be installed only if they improve telephone call quality.

For telephones connected directly to the telephone line, microfilters are required.



### Router and Telephone Using Separate Telephone Lines

The router and telephone are connected to separate telephone lines to the Telco. The microfilter is optional. It should be installed only if it improves telephone call quality.



## NetPro Discussion Forums – Featured Conversations

Networking Professionals Connection is a forum for networking professionals to share questions, suggestions, and information about networking solutions, products, and technologies. The featured links are some of the most recent conversations available in this technology.

NetPro Discussion Forums – Featured Conversations for DSL
Network Infrastructure: Remote Access
Service Providers: VPN Service Architectures

---

## Related Information

- **DSL Technical Support**
- **Technical Support – Cisco Systems**

---

All contents are Copyright © 1992–2005 Cisco Systems, Inc. All rights reserved. Important Notices and Privacy Statement.

---

Updated: Jan 07, 2005

Document ID: 12933

---