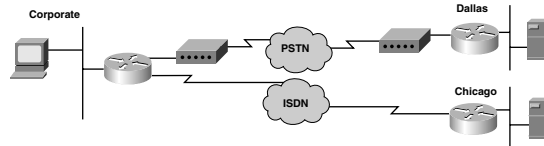


Dial-on-Demand Overview

Dial-on-demand routing (DDR)

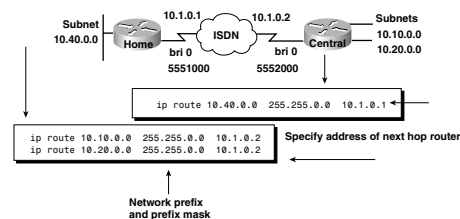
refers to an as-needed connection service over the PSTN. DDR is typically used for low-volume, periodic connections. It can offer substantial savings over traditional WAN connections. DDR is well-suited for telecommuters, satellite offices sending sales transactions or order requests, and automated customer order systems.



DDR Process

DDR uses the concept of “interesting traffic” to determine when a dialup connection should be made. Interesting traffic is defined in a router lookup table. When traffic is defined as interesting, the router locates the next-hop router and any dialing instructions (located in a dialer map). If the link is not already up, the router initiates a connection, and traffic is sent. As soon as a link is enabled, the router transmits both interesting and uninteresting traffic. The call is terminated if no more additional interesting traffic is sent within a specified time period.

Defining Static Routes for DDR



```
ip route [network prefix] [prefix mask] {address | interface}
[distance [permanent]]
```

Static routes are a necessity for DDR, because you want to maintain exact control over which routes are used to reach each destination. These routes must be manually configured on all participating routers, because static routes have no routing updates. To manually configure a route, use the following command:

network prefix is the address of the destination network, *address | interface* are the address and interface of the next-hop router, and **permanent** sets the static condition.

Specifying Interesting Traffic for DDR

Interesting packets are determined by the network administrator. They can be defined by protocol type, source address, or destination host. Use the following command to define interesting packets:

```
dialer-list dialer-group protocol protocol-name {permit | deny |
list access-list-number}
```

dialer-group maps the dialer list to an interface, and **list access-list-number** assigns an access list to the dialer group.

Other important DDR commands are **dialer-group**, which links interesting traffic created in the **dialer-list** command to the interface, and **dialer-map**, which defines one or more dial-on-demand numbers.

Dial-on-Demand Summary

- DDR refers to dynamic connections made over dialup facilities on an as-needed basis.
- DDR is best-suited for low-volume, periodic connections.
- To configure legacy DDR, define static routes (**ip route** command), specify interesting traffic (**dialer-list** command), and configure the dialer information (**dialer-group** command).
- All participating routers must have static routes defined to reach the remote networks.

Frame Relay Overview

Frame Relay is a connection-oriented Layer 2 protocol that allows several data connections (called virtual circuits) to be multiplexed onto a single physical link. Frame Relay relies on upper-layer protocols for error correction. Frame Relay specifies only the connection between a router and a service provider's local access switching equipment. The data transmission within the service provider's Frame Relay cloud is not specified.

A connection identifier is used to map packets to outbound ports on the service provider's switch. When the switch receives a frame, a lookup table is used to map the frame to the correct outbound port. The entire path to the destination is determined before the frame is sent.