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DDR Snapshot Using Dialer Profiles

Document ID: 9347

Introduction

Prerequisites

- Requirements
- Components Used
- Conventions

Configure

- Network Diagram
- Configurations

Verify

- Client Side (Initiates Calls)
- Server Side (Receives Calls)

Troubleshoot

- Troubleshooting Commands

NetPro Discussion Forums – Featured Conversations

Related Information

Introduction

This document provides a sample configuration for Dial-on-Demand Routing (DDR) snapshot configured with dialer-profile instead of rotary dialer, as is usually the case.

Prerequisites

Requirements

There are no specific requirements for this document.

Components Used

The information in this document is based on these software and hardware versions:

- Cisco IOS® Software Release 12.0(15).
- Cisco IOS Software Release 12.0(16).

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, make sure that you understand the potential impact of any command.

Conventions

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

Configure

In this section, you are presented with the information to configure the features described in this document.

Note: To find additional information on the commands used in this document, use the Command Lookup Tool (registered customers only).

Network Diagram

This document uses this network setup:



Configurations

This document uses these configurations:

- Client Side (Initiates Calls)
- Server Side (Receives Calls)

Client Side (Initiates Calls)

```

kheops
service timestamps debug datetime msec
service timestamps log datetime msec
!
hostname kheops
!
username djeser password 0 <password>
isdn switch-type basic-net3
!
!
interface BRI0
description line isdn 6116
no ip address
no ip directed-broadcast
encapsulation ppp
no ip route-cache
no ip mroute-cache
dialer pool-member 1
isdn switch-type basic-net3
!
interface Dialer1
ip address 10.10.0.1 255.255.255.252
no ip directed-broadcast
encapsulation ppp
dialer remote-name djeser
dialer idle-timeout 30
dialer string 6115
```

```

dialer snapshot 1

!--- Enable snapshot for the dialer.

dialer pool 1
dialer-group 1
snapshot client 5 8 dialer

!--- Defined as the client.

ppp authentication chap
!
router ripnetwork 10.0.0.0
network 200.200.0.0
!
!
dialer-list 1 protocol ip permit
!
line con 0
line aux 0
line vty 0 4
!
end

```

Server Side (Receives Calls)

djeser
<pre> service timestamps debug datetime msec service timestamps log datetime msec ! hostname djeser ! username kheops password 0 <password> isdn switch-type basic-net3 ! interface Loopback0 ip address 201.0.0.1 255.255.255.0 no ip directed-broadcast ! interface BRI0 description line isdn 6115 no ip address no ip directed-broadcast encapsulation ppp dialer pool-member 1 isdn switch-type basic-net3 no peer default ip address ppp authentication chap ! interface Dialer1 ip address 10.10.0.2 255.255.255.252 no ip directed-broadcast encapsulation ppp dialer remote-name kheops dialer string 6116 dialer pool 1 dialer-group 1 snapshot server 5 dialer !--- This is the same as legacy DDR. ppp authentication chap </pre>

```

end
!
router rip
passive-interface Ethernet0
network 10.0.0.0
network 201.0.0.0
!
ip route 0.0.0.0 0.0.0.0 10.200.16.1
!
dialer-list 1 protocol ip permit
!
!
line con 0
exec-timeout 0 0
password <password>
length 0
transport input none
line aux 0
x25 subaddress 4
rotary 5
autocommand x28
line vty 0 4
password <password>
login
!
end

```

Verify

This section provides information you can use to confirm your configuration is working properly.

Certain **show** commands are supported by the Output Interpreter Tool (registered customers only) , which allows you to view an analysis of **show** command output.

- **show dialer** shows general diagnostic information for interfaces configured for DDR.
- **show snapshot** displays snapshot routing parameters associated with an interface.
- **show ip route** displays IP routing table entries.

Client Side (Initiates Calls)

```
kheops#show dialer
```

```
BRI0 - dialer type = ISDN
```

```
Dial String Successes Failures Last called Last status
0 incoming call(s) have been screened.
0 incoming call(s) rejected for callback.
```

```
BRI0:1 - dialer type = ISDN
Idle timer (30 secs), Fast idle timer (20 secs)
Wait for carrier (30 secs), Re-enable (15 secs)
Dialer state is data link layer up
Dial reason: snapshot
```

```
!--- Snapshot triggered the call.
```

```
Interface bound to profile Di1
Time until disconnect 29 secs
Current call connected 00:05:20
Connected to 6115 (6115)
```

```
BRI0:2 - dialer type = ISDN
Idle timer (120 secs), Fast idle timer (20 secs)
Wait for carrier (30 secs), Re-enable (15 secs)
Dialer state is idle
```

```
Dil - dialer type = DIALER PROFILE
Idle timer (30 secs), Fast idle timer (20 secs)
Wait for carrier (30 secs), Re-enable (15 secs)
Dialer state is data link layer up
```

```
Dial String Successes Failures Last called Last status
6115 11 0 00:05:20 successful Default
```

```
kheops#show snapshot
Dialer1 is up, line protocol is upSnapshot client
Options: dialer support
Length of active period: 5 minutes
Length of quiet period: 8 minutes
Length of retry period: 8 minutes
For dialer address 1
Current state: active, remaining/exchange time: 0/6 minutes
Connected dialer interface:
BRI0:1
Updates received this cycle: ip
```

```
kheops#show snapshot
Dialer1 is up, line protocol is upSnapshot client
Options: dialer support
Length of active period: 5 minutes
Length of quiet period: 8 minutes
Length of retry period: 8 minutes
For dialer address 1
Current state: client post active->quiet, remaining time: 2 minutes
Updates received this cycle: ip
```

```
*Mar 2 15:33:59.138: BR0:1 DDR: idle timeout
*Mar 2 15:33:59.142: BR0 DDR: has total 2 call(s), dial_out 0, dial_in 0
*Mar 2 15:33:59.142: %DIALER-6-UNBIND: Interface BR0:1 unbound from profile Dil
*Mar 2 15:33:59.146: BR0:1 DDR: disconnecting call
*Mar 2 15:33:59.150: %ISDN-6-DISCONNECT: Interface BRI0:1 disconnected from 6115
6115, call lasted 388 seconds
*Mar 2 15:33:59.222: %LINK-3-UPDOWN: Interface BRI0:1, changed state to down
*Mar 2 15:33:59.250: BR0:1 DDR: disconnecting call
*Mar 2 15:33:59.258: BR0:1 DDR: disconnecting call
*Mar 2 15:34:00.222: %LINEPROTO-5-UPDOWN: Line protocol on Interface BRI0:1,
changed statel to down
```

```
!--- Here, the call is disconnected due to the idle-timeout.
!--- Snapshot in post active state:
```

```
kheops#show snapshot
Dialer1 is up, line protocol is upSnapshot client
Options: dialer support
Length of active period: 5 minutes
Length of quiet period: 8 minutes
Length of retry period: 8 minutes
For dialer address 1
Current state: client post active->quiet, remaining time: 0 minutes
Updates received this cycle: ip
```

```
*Mar 2 15:36:29.866: SNAPSHOT: Dialer1[1]: moving to quiet queue
```

!--- The snapshot state changes to quiet:

```
kheops#show snapshot
Dialer1 is up, line protocol is upSnapshot client
Options: dialer support
Length of active period: 5 minutes
Length of quiet period: 8 minutes
Length of retry period: 8 minutes
For dialer address 1
Current state: quiet, remaining: 7 minutes
```

!--- This changes from snapshot state to active call generated:

```
*Mar 2 16:01:31.130: BR0 DDR: rotor dialout [priority]
*Mar 2 16:01:31.134: BR0 DDR: Dialing cause snapshot
*Mar 2 16:01:31.134: BR0 DDR: Attempting to dial 6115
*Mar 2 16:01:31.138: SNAPSHOT: Dialer1[1]: Move to active queue
(Quiet timer expired)
*Mar 2 16:01:31.138: SNAPSHOT: Dialer1[1]: moving to active queue
*Mar 2 16:01:31.394: %LINK-3-UPDOWN: Interface BRI0:1, changed state to up
*Mar 2 16:01:31.426: SNAPSHOT: Dialer1[1]: Avoiding active: in active queue
(Dial connection set)
*Mar 2 16:01:31.430: %DIALER-6-BIND: Interface BR0:1 bound to profile Dil
*Mar 2 16:01:31.434: %ISDN-6-CONNECT: Interface BRI0:1 is now connected to 6115
*Mar 2 16:01:31.506: BR0:1 DDR: dialer protocol up
*Mar 2 16:01:32.486: %LINEPROTO-5-UPDOWN: Line protocol on Interface BRI0:1,
changed state to up
*Mar 2 16:01:37.438: %ISDN-6-CONNECT: Interface BRI0:1 is now connected to 6115
6115
```

```
kehosp#show snapshot
Dialer1 is up, line protocol is upSnapshot client
Options: dialer support
Length of active period: 5 minutes
Length of quiet period: 8 minutes
Length of retry period: 8 minutes
For dialer address 1
Current state: active, remaining/exchange time: 5/0 minutes
Connected dialer interface:
BRI0:1
```

```
kheops#show dialer
```

```
BRI0 - dialer type = ISDN
```

```
Dial String Successes Failures Last called Last status
0 incoming call(s) have been screened.
0 incoming call(s) rejected for callback.
```

```
BRI0:1 - dialer type = ISDN
Idle timer (30 secs), Fast idle timer (20 secs)
Wait for carrier (30 secs), Re-enable (15 secs)
Dialer state is data link layer up
Dial reason: snapshot
Interface bound to profile Dil
Time until disconnect 29 secs
Current call connected 00:00:15
Connected to 6115 (6115)
```

```
BRI0:2 - dialer type = ISDN
Idle timer (120 secs), Fast idle timer (20 secs)
Wait for carrier (30 secs), Re-enable (15 secs)
```

Dialer state is idle

```
Dil - dialer type = DIALER PROFILE
Idle timer (30 secs), Fast idle timer (20 secs)
Wait for carrier (30 secs), Re-enable (15 secs)
Dialer state is data link layer up
```

```
Dial String Successes Failures Last called Last status
6115 13 0 00:00:15 successful Default
*Mar 2 16:02:01.166: SNAPSHOT: Dialer1[1]: Starting aging of ip protocol
```

kheops#**show ip route**

```
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, * - candidate default
U - per-user static route, o - ODR
```

Gateway of last resort is 10.10.0.2 to network 0.0.0.0

```
C 200.200.0.0/24 is directly connected, Loopback0
R 201.0.0.0/24 [120/1] via 10.10.0.2, 00:00:04, Dialer1
10.0.0.0/8 is variably subnetted, 3 subnets, 3 masks
C 10.10.0.0/30 is directly connected, Dialer1
C 10.10.0.2/32 is directly connected, Dialer1
C 10.200.16.0/24 is directly connected, Ethernet0
R* 0.0.0.0/0 [120/1] via 10.10.0.2, 00:00:04, Dialer1
```

Server Side (Receives Calls)

djeser#**show ip route**

```
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, * - candidate default
U - per-user static route, o - ODR
```

Gateway of last resort is 10.200.16.1 to network 0.0.0.0

```
R 200.200.0.0/24 [120/1] via 10.10.0.1, 00:00:10, Dialer1
C 201.0.0.0/24 is directly connected, Loopback0
172.17.0.0/24 is subnetted, 1 subnets
S 172.17.247.0 [1/0] via 10.200.16.1
S 144.254.0.0/16 [1/0] via 10.200.16.1
10.0.0.0/8 is variably subnetted, 3 subnets, 2 masks
C 10.10.0.0/30 is directly connected, Dialer1
C 10.200.16.0/24 is directly connected, Ethernet0
S 10.200.20.0/24 [1/0] via 10.200.16.1
S* 0.0.0.0/0 [1/0] via 10.200.16.1
```

!--- There are no active calls, but the route is included in the table:

djeser#**show dialer**

BRI0 - dialer type = ISDN

```
Dial String Successes Failures Last called Last status
0 incoming call(s) have been screened.
0 incoming call(s) rejected for callback.
```

```
BRI0:1 - dialer type = ISDN
Idle timer (120 secs), Fast idle timer (20 secs)
Wait for carrier (30 secs), Re-enable (15 secs)
Dialer state is idle
```

```
BRI0:2 - dialer type = ISDN
Idle timer (120 secs), Fast idle timer (20 secs)
Wait for carrier (30 secs), Re-enable (15 secs)
Dialer state is idle
```

```
Dil - dialer type = DIALER PROFILE
Idle timer (120 secs), Fast idle timer (20 secs)
Wait for carrier (30 secs), Re-enable (15 secs)
Dialer state is idle
```

```
Dial String Successes Failures Last called Last status
6116 1 0 00:00:38 successful Default
```

!--- Here, the call is triggered by the snapshot client:

```
*Mar 8 21:48:40.484: %DIALER-6-BIND: Interface BR0:1 bound to profile Dil
*Mar 8 21:48:40.484: %LINK-3-UPDOWN: Interface BRI0:1, changed state to up
*Mar 8 21:48:41.696: %LINEPROTO-5-UPDOWN: Line protocol on Interface BRI0:1,
changed state to up
*Mar 8 21:48:46.520: %ISDN-6-CONNECT: Interface BRI0:1 is now connected to 6116
kheops
```

djeser#show dialer

```
BRI0 - dialer type = ISDN
```

```
Dial String Successes Failures Last called Last status
0 incoming call(s) have been screened.
0 incoming call(s) rejected for callback.
```

```
BRI0:1 - dialer type = ISDN
Idle timer (120 secs), Fast idle timer (20 secs)
Wait for carrier (30 secs), Re-enable (15 secs)
Dialer state is data link layer up
Interface bound to profile Dil
Time until disconnect 119 secs
Current call connected 00:01:10
Connected to 6116 (kheops)
```

```
BRI0:2 - dialer type = ISDN
Idle timer (120 secs), Fast idle timer (20 secs)
Wait for carrier (30 secs), Re-enable (15 secs)
Dialer state is idle
```

```
Dil - dialer type = DIALER PROFILE
Idle timer (120 secs), Fast idle timer (20 secs)
Wait for carrier (30 secs), Re-enable (15 secs)
Dialer state is data link layer up
```

```
Dial String Successes Failures Last called Last status
6116 1 0 00:01:11 successful Default
```

djeser#show snapshot

```
Dialer1 is up, line protocol is upSnapshot server
Options: dialer support
Length of active period: 5 minutes
For ip address: 10.10.0.1
Current state: active, remaining time: 4 minutes
```

```
Connected dialer interfaces:  
BRI0:1, BRI0:2
```

```
djeser#show ip route  
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP  
D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area  
N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2  
E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP  
i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, * - candidate default  
U - per-user static route, o - ODR
```

```
Gateway of last resort is 10.200.16.1 to network 0.0.0.0
```

```
R 200.200.0.0/24 [120/1] via 10.10.0.1, 00:00:11, Dialer1  
C 201.0.0.0/24 is directly connected, Loopback0  
172.17.0.0/24 is subnetted, 1 subnets  
S 172.17.247.0 [1/0] via 10.200.16.1  
S 144.254.0.0/16 [1/0] via 10.200.16.1  
10.0.0.0/8 is variably subnetted, 4 subnets, 3 masks  
C 10.10.0.0/30 is directly connected, Dialer1  
C 10.10.0.1/32 is directly connected, Dialer1  
C 10.200.16.0/24 is directly connected, Ethernet0  
S 10.200.20.0/24 [1/0] via 10.200.16.1  
S* 0.0.0.0/0 [1/0] via 10.200.16.1
```

Troubleshoot

Troubleshooting Commands

Certain **show** commands are supported by the Output Interpreter Tool (registered customers only) , which allows you to view an analysis of **show** command output.

Note: Before issuing **debug** commands, refer to Important Information on Debug Commands.

- **debug dialer [events | packets]** displays DDR debugging information about the packets received on a dialer interface.
- **debug snapshot** lists the change in state of the snapshot operation.

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 Access
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Network Infrastructure: Remote Access

Related Information

- **Dial Technology Support Pages**
 - **Technical Support & Documentation – Cisco Systems**
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