

Title:

Cisco CCNA Certification Exam Tutorial: ISDN Details You Must Know

Word Count:

422

Summary:

Learn vital ISDN details you need to know to pass the CCNA exam from Chris Bryant, CCIE #12933.

Keywords:

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Article Body:

CCNA exam success depends partially on knowing the details of ISDN, and there are plenty of them! To help you review for your CCNA exam, here are a few ISDN details that you must know on exam day. (They help in the real world, too - and there are still plenty of ISDN networks out there!

The Cisco-proprietary version of HDLC is the default encapsulation type for serial and ISDN interfaces.

```
R2#show interface serial0
```

```
Serial0 is up, line protocol is up
```

```
Hardware is HD64570
```

```
MTU 1500 bytes, BW 1544 Kbit, DLY 20000 usec, rely 255/255, load 1/255
```

```
Encapsulation HDLC, loopback not set, keepalive set (10 sec)
```

While there's only one D-channel in BRI, PRI (US) and PRI (EU), the bandwidth of that D-channel does vary from BRI to PRI. It's 16 kbps in BRI and 64 kbps in both PRI versions.

The global command `isdn switch-type` must be configured before you can even begin to have ISDN work. `show isdn status` will tell you whether or not you've done this correctly.

```
R2#show isdn status
```

```
**** No Global ISDN Switchtype currently defined ****
```

```
ISDN BRI0 interface
```

```
dsl 0, interface ISDN Switchtype = none
```

```
Layer 1 Status:
```

```
DEACTIVATED
```

```
Layer 2 Status:
```

```
Layer 2 NOT Activated
```

```
Layer 3 Status:
```

```
0 Active Layer 3 Call(s)
```

PAP allows passwords to be different; CHAP requires that they be the same.

PAP requires the "ppp pap sent-username" interface-level command. CHAP has no equivalent command.

Define interesting traffic with dialer-list and link that list to the interface with dialer-group.

```
R2#conf t
```

```
R2(config)#dialer-list 1 proto ip permit
```

```
R2(config)#int bri0
```

```
R2(config-if)#dialer-group 1
```

The dialer idle-timeout value is expressed in seconds, not minutes. (Even IOS Help isn't totally clear on this.)

```
R2(config)#int bri0
```

```
R2(config-if)#dialer-group 1
```

```
R2(config-if)#dialer idle-timeout ?
```

```
<1-2147483> Idle timeout before disconnecting a call
```

```
R2(config-if)#dialer idle-timeout 120
```

Dialer map maps a remote IP address to a remote phone number. You never dial the local router's phone number.

dialer load-threshold requires the ppp multilink command to be configured, and the value of dialer load-threshold is expressed as a ratio of 255, NOT 100. For example, if you want the second b-channel to come up when the first reaches 50% of capacity, the value to express with dialer load-threshold would be 50% of 255 - which equals 127.

```
R2(config)#int bri0
```

```
R2(config-if)#encap ppp
```

```
R2(config-if)#ppp multilink
```

```
R2(config-if)#dialer load-threshold ?
```

```
<1-255> Load threshold to place another call
```

Success on the CCNA exam depends on knowing the details. Keep studying, keep practicing on real Cisco routers and switches, keep a positive attitude, and you're on your way to CCNA exam success!