

# Cernet 河北省主节点 运行服务

Cernet 河北省主节点

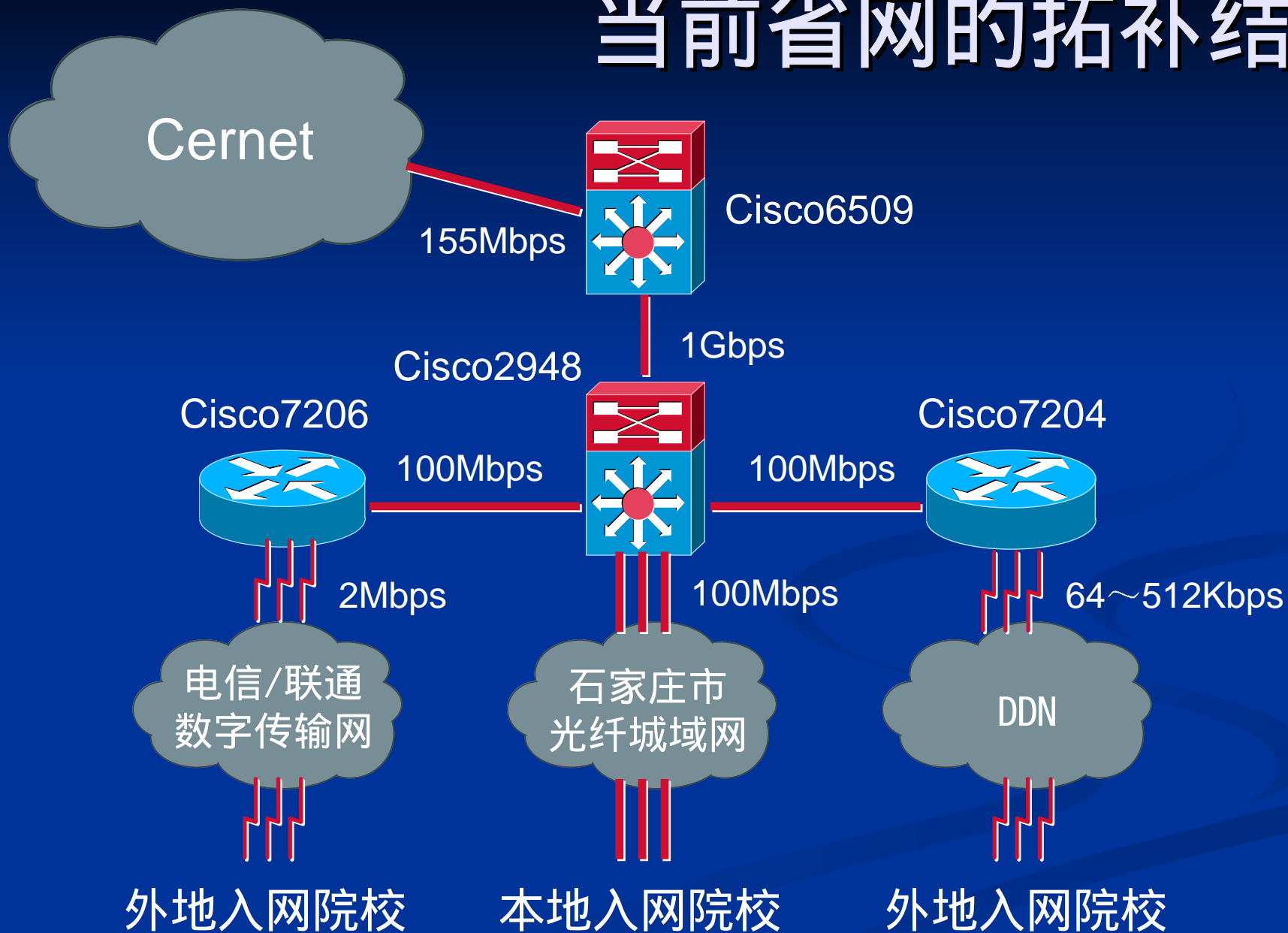
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liuhz@hebtu.edu.cn

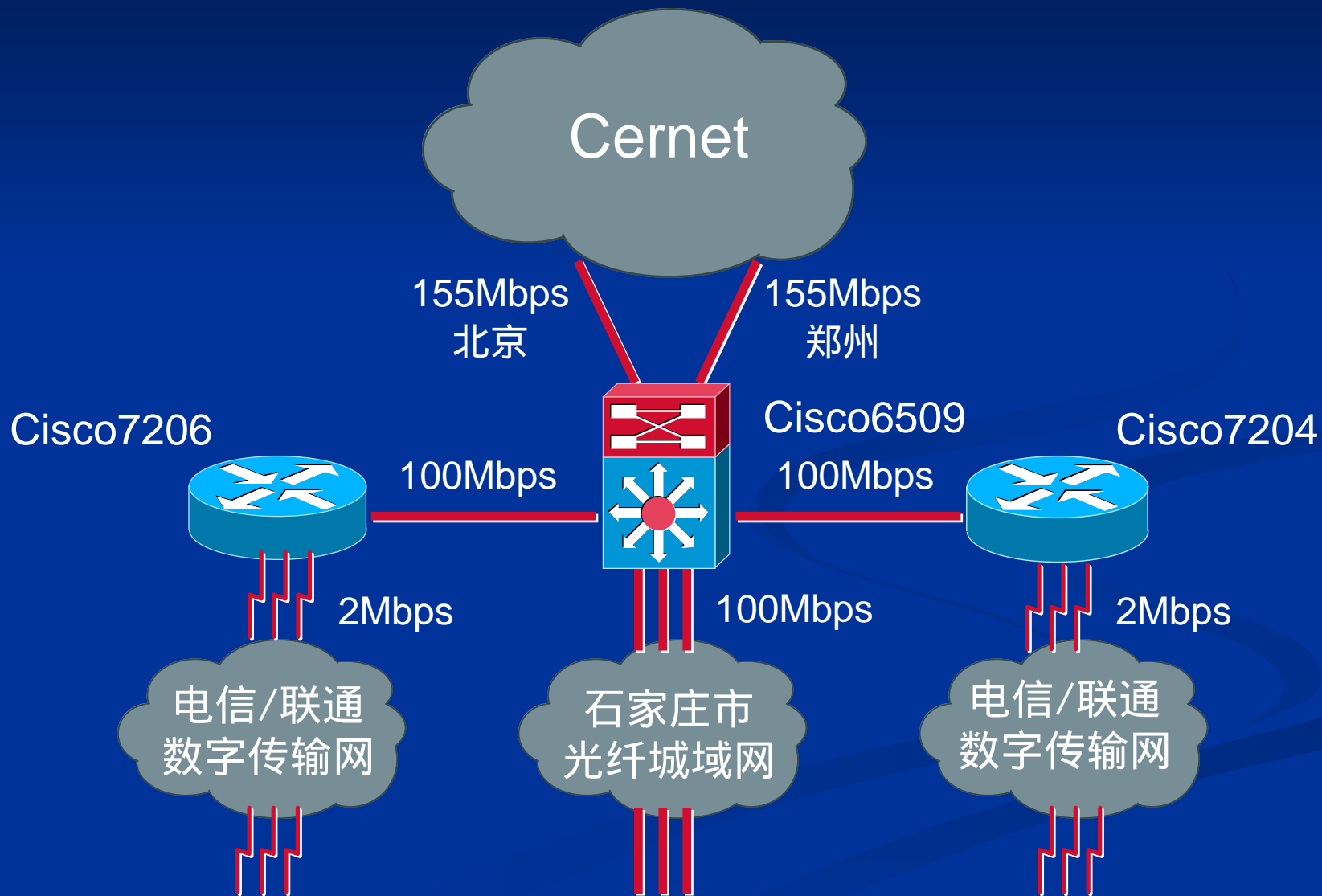
# Topics

- 当前省网的拓补结构
- 常见问题与故障排查
- 我们的服务

# 当前省网的拓补结构

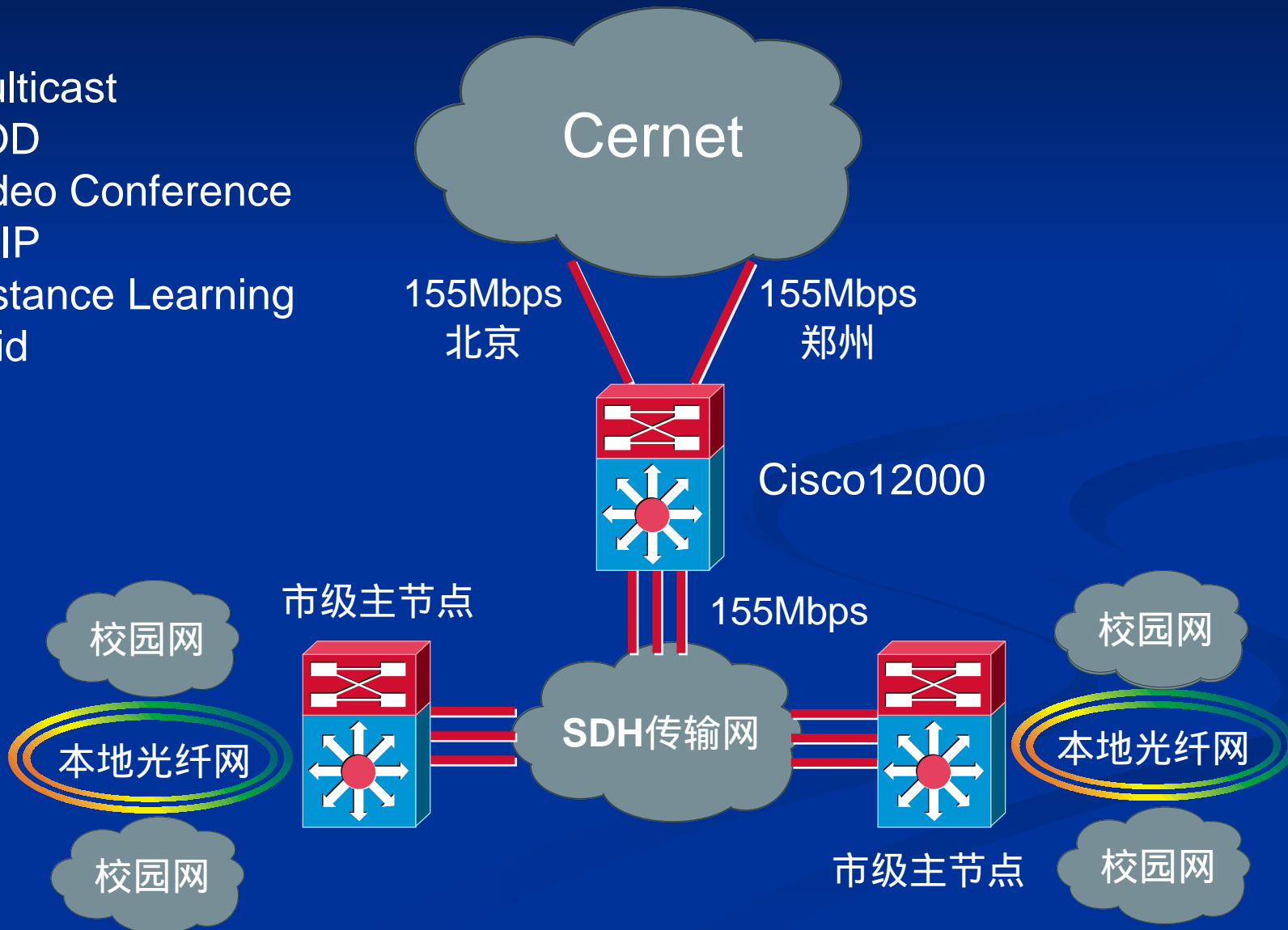


# 较理想的省网结构



# 我们的目标

Multicast  
VOD  
Video Conference  
VoIP  
Distance Learning  
Grid  
...



# Common Problem

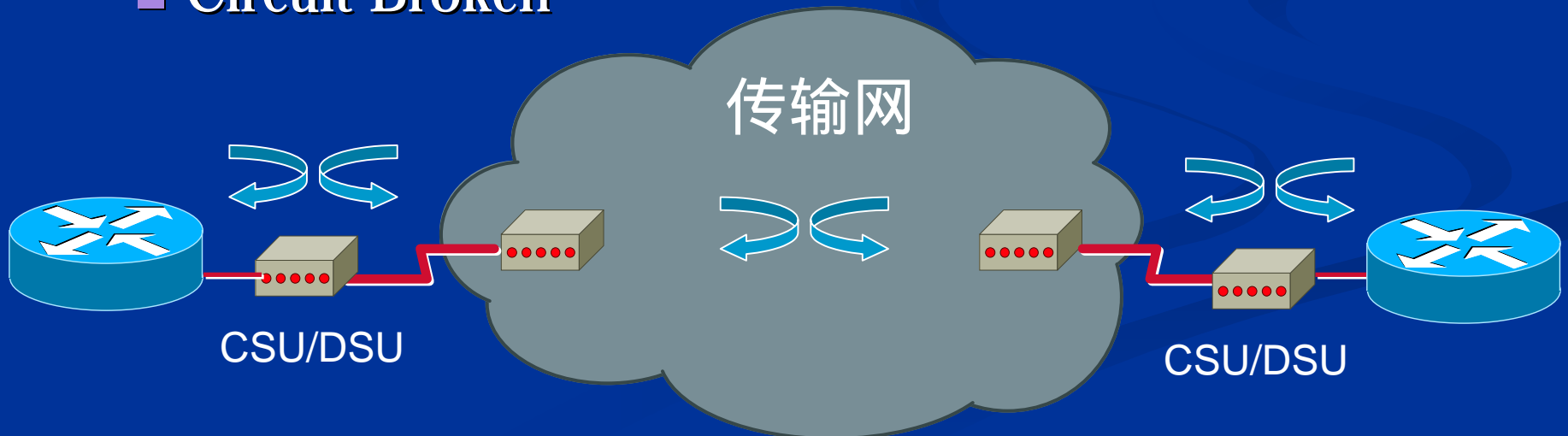
- Fast Ethernet

- Auto negotiation

- Router(config-if)# speed 100
    - Router(config-if)# duplex full

- Serial Line

- Clock Setting Error
  - Circuit Broken



C2948G-L3# **show int f4**

FastEthernet4 is up, line protocol is up

Hardware is epif\_port, address is 0003.9f45.240a (bia 0003.9f45.240a)

Description: To KeDa

Internet address is 202.206.233.225/30

MTU 1500 bytes, BW 100000 Kbit, DLY 100 usec, rely 255/255, load 4/255

Encapsulation ARPA, loopback not set, keepalive set (10 sec)

**Auto-duplex, Auto Speed, 100BaseTX**

ARP type: ARPA, ARP Timeout 04:00:00

Last input 00:00:00, output never, output hang never

Last clearing of "show interface" counters never

Queueing strategy: fifo

**Output queue 0/40, 0 drops; input queue 0/75, 0 drops**

**5 minute input rate 602000 bits/sec, 397 packets/sec**

**5 minute output rate 1739000 bits/sec, 407 packets/sec**

**920286111 packets input**, 1719881315 bytes, 0 no buffer

Received 81163 broadcasts, 0 runts, 0 giants, 0 throttles

**0 input errors**, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort

0 watchdog, 37452 multicast

0 input packets with dribble condition detected

**1163314313 packets output**, 3443090592 bytes, 0 underruns(0/0/0)

**0 output errors, 33739497 collisions**, 0 interface resets

0 babbles, 0 late collision, 0 deferred

0 lost carrier, 0 no carrier

0 output buffer failures, 0 output buffers swapped out

C2948G-L3# **clear count f4**

HE7206# **show int s4/3**

Serial4/3 is up, line protocol is up (Looped)

Hardware is M4T

Description: TangShan GaoZhuan

Internet address is 202.206.233.145/30

MTU 1500 bytes, BW 2048 Kbit, DLY 20000 usec, rely 255/255, load 1/255

**Encapsulation HDLC**, crc 16, loopback not set

Keepalive set (10 sec)

Last input 2w0d, output 00:00:08, output hang never

Last clearing of "show interface" counters 2w0d

Input queue: 0/75/0 (size/max/drops); Total output drops: 0

Queueing strategy: weighted fair

**Output queue: 0/1000/64/0 (size/max total/threshold/drops)**

Conversations 0/15/256 (active/max active/max total)

Reserved Conversations 0/0 (allocated/max allocated)

**5 minute input rate 0 bits/sec, 0 packets/sec**

**5 minute output rate 0 bits/sec, 0 packets/sec**

**459237 packets input**, 25732039 bytes, 0 no buffer

Received 0 broadcasts, 0 runts, 0 giants, 0 throttles

**400 input errors, 356 CRC**, 0 frame, 0 overrun, 0 ignored, 44 abort

**590359 packets output**, 28927549 bytes, 0 underruns

**0 output errors, 0 collisions**, 43140 interface resets

0 output buffer failures, 0 output buffers swapped out

43144 carrier transitions **DCD=up DSR=up DTR=up RTS=up CTS=up**

HE7206# **clear count s4/3**

# 路由故障排查

## ■ Cisco 7206用户

```
C:\> tracert www.edu.cn
```

```
Tracing route to www.edu.cn [202.205.11.3]  
over a maximum of 30 hops:
```

1	<1 ms	<1 ms	<1 ms	202.206.100.1	← 校内路由器
2	<1 ms	<1 ms	<1 ms	202.206.233.253	← 7206
3	<1 ms	<1 ms	<1 ms	202.206.233.6	← 2948G-L3
4	<1 ms	<1 ms	<1 ms	202.112.53.197	← 6509
5	4 ms	4 ms	3 ms	bjsj3.cernet.net [202.112.46.105]	
6	4 ms	4 ms	4 ms	202.112.53.254	
7	4 ms	4 ms	4 ms	wdc1.cernet.net [202.112.38.82]	
8	4 ms	4 ms	4 ms	202.205.13.254	
9	4 ms	4 ms	4 ms	202.205.11.3	

```
Trace complete.
```

## ■ Cisco 7204用户

```
C:\> tracert www.edu.cn
```

Tracing route to www.edu.cn [202.205.11.3]  
over a maximum of 30 hops:

1	<1 ms	<1 ms	<1 ms	202.206.100.1	← 校内路由器
2	<1 ms	<1 ms	<1 ms	202.206.233.253	← 7204
3	<1 ms	<1 ms	<1 ms	202.206.233.129	← 2948G-L3
4	<1 ms	<1 ms	<1 ms	202.112.53.197	← 6509
5	4 ms	4 ms	3 ms	bjsj3.cernet.net [202.112.46.105]	
6	4 ms	4 ms	4 ms	202.112.53.254	
7	4 ms	4 ms	4 ms	wdc1.cernet.net [202.112.38.82]	
8	4 ms	4 ms	4 ms	202.205.13.254	
9	4 ms	4 ms	4 ms	202.205.11.3	

Trace complete.

## ■ Cisco 2948G-L3用户

```
C:\> tracertr www.edu.cn
```

Tracing route to www.edu.cn [202.205.11.3]  
over a maximum of 30 hops:

1	<1 ms	<1 ms	<1 ms	202.206.100.1	← 校内交换机
2	<1 ms	<1 ms	<1 ms	202.206.233.253	← 2948G-L3
3	<1 ms	<1 ms	<1 ms	202.112.53.197	← 6509
4	4 ms	4 ms	3 ms	bjsj3.cernet.net [202.112.46.105]	
5	4 ms	4 ms	4 ms	202.112.53.254	
6	4 ms	4 ms	4 ms	wdc1.cernet.net [202.112.38.82]	
7	4 ms	4 ms	4 ms	202.205.13.254	
8	4 ms	4 ms	4 ms	202.205.11.3	

Trace complete.

# 我们的服务

## ■ NIC

### ■ 联系人

胡永杰, croal@hebtu.edu.cn, 8852016

### ■ 地址申请

单位申请--> 主节点--> 地区中心--> CerNIC核准

■ 建议: 不使用NAT, 地址不够可二次申请

### ■ 信息服务

#### ■ 省主节点主页

希望建成省内信息资源黄页

#### ■ 网管员论坛

### ■ 咨询 / 培训服务

#### ■ 思科网络技术学院

# ■ NOC

## ■ 联系人

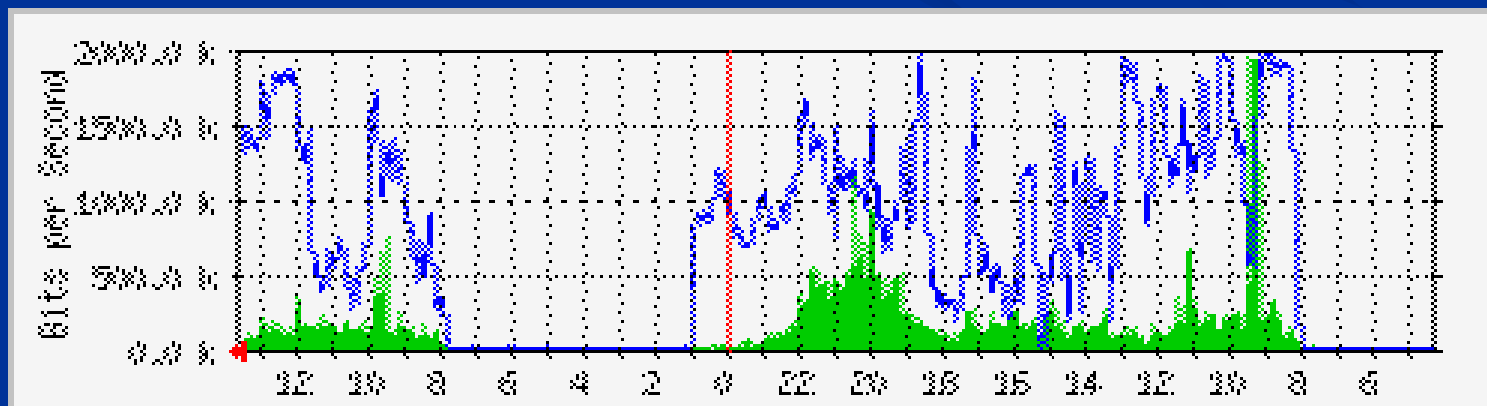
刘宏忠, liuhz@hebtu.edu.cn, 8852068

## ■ 运行维护

- 线路故障（需要第三方配合）
- 路由故障

## ■ 流量统计

<http://apple.he.edu.cn>



让我们共同努力，把我们的网络  
运行的更好！

谢谢！