

H3C MSR (V5) 系列路由器常用 MIB 清单

拟制	路由器产品线 马文斌	Date	2015/8/4
Prepared by		日期	
评审人	路由器产品线	Date	
Reviewed by		日期	
批准		Date	
Approved by		日期	



杭州华三通信技术有限公司

版权所有 侵权必究

All rights reserved

目录

H3C MSR (V5) 系列路由器常用 MIB 清单	1
1 获取设备系统信息	5
1.1 获取设备系统描述	5
1.2 获取设备 ObjectID	5
1.3 获取设备启动时间	6
1.4 获取设备联系信息	6
1.5 获取设备名称	6
1.6 获取设备联系地址	7
1.7 获取设备操作系统版本	7
1.8 获取设备 SN 号	7
1.9 获取设备模块型号	8
2 获取端口属性	8
2.1 获取端口名称	8
2.2 获取端口描述	10
2.3 获取端口速度	12
2.4 获取端口管理状态	12
2.5 获取端口运行状态	13
2.6 获取端口入方向错包数	13
2.7 获取端口出方向错包数	14
2.8 获取端口入方向字节数	14
2.9 获取端口出方向字节数	15
2.10 获取端口入方向单播报文数	15
2.11 获取端口入方向组播报文数	16
2.12 获取端口入方向广播报文数	16
2.13 获取端口出方向单播报文数	17
2.14 获取端口出方向组播报文数	17
2.15 获取端口出方向广播报文数	17
2.16 端口入/出方向实际速率/错包率计算方法	18
3 获取接口 IP 属性	18
3.1 获取所有接口 IP	18
3.2 获取所有接口 IP 掩码	19
3.3 获取 VLAN 接口的主 IP	20
3.4 获取 VLAN 接口的主 IP 掩码	20
3.5 获取 VLAN 接口的主/从 IP	21
3.6 获取 VLAN 接口的主/从 IP 掩码	22
3.7 获取 VLAN 描述信息	23
4 获取路由相关信息	24
4.1 获取路由的目的网段/下一跳/出接口信息	24
4.2 获取路由表项的 metric 值	25
4.3 获取路由表项协议类型	25
5 获取 OSPF 相关信息	26
5.1 获取 OSPF 接口 IP	26

5.2	获取 OSPF 接口对应的 Area.....	26
5.3	获取 OSPF 接口对应的 Cost.....	27
6	获取转发相关表项.....	27
6.1	ARP 表.....	28
7	获取启动文件信息.....	28
7.1	获取启动文件名.....	28
7.2	获取启动文件大小.....	29
7.3	获取启动文件路径.....	29
7.4	获取启动文件类型.....	30
8	获取配置文件信息.....	31
8.1	获取配置文件名.....	31
8.2	获取配置文件大小.....	31
8.3	获取配置文件路径.....	32
9	获取实体相关信息.....	32
9.1	获取实体描述信息.....	32
9.2	获取实体名称信息.....	38
9.3	获取实体硬件类型.....	44
9.4	获取实体软件版本.....	45
9.5	获取实体序列号.....	46
9.6	获取实体厂商.....	46
9.7	获取实体生产日期.....	48
9.8	获取实体型号.....	49
9.9	获取单板 CPU 利用率.....	49
9.10	获取单板内存利用率.....	50
9.11	获取单板上各个传感器的温度信息.....	51
9.12	获取主用主控板的 CPU 和内存利用率.....	51
10	获取光模块信息.....	52
10.1	获取光模块硬件类型.....	52
10.2	获取光模块类型.....	52
10.3	获取光模块波长.....	53
10.4	获取光模块厂商.....	53
10.5	获取光模块序列号.....	54
10.6	获取光纤直径.....	54
10.7	获取光模块传输距离.....	55
10.8	获取光模块诊断功能.....	55
10.9	获取光模块发光功率.....	55
10.10	获取光模块最大发光功率.....	56
10.11	获取光模块最小发光功率.....	56
10.12	获取光模块收光功率.....	57
10.13	获取光模块最大收光功率.....	57
10.14	获取光模块最小收光功率.....	58
10.15	获取光模块温度.....	58
10.16	获取光模块电压.....	58

10.17	获取光模块偏移电流.....	59
11	获取电源和风扇状态.....	59
11.1	获取电源模块的状态.....	59
11.2	获取风扇的状态.....	60

本文档的所有举例都是用在 new 风格下完成的，在参考本文档之前，请先确认设备的 MIB 风格。

```
[MSR3020] display mib-style
```

```
Current MIB style: new
```

```
Next reboot MIB style: new
```

1 获取设备系统信息

1.1 获取设备系统描述

设备系统描述的节点名称：

```
sysDescr
```

节点 OID 值：

```
1.3.6.1.2.1.1.1
```

获取设备系统描述：

```
1: sysDescr.0 (octet string) H3C Series Router MSR30-20<0D><0A>H3C Comware Platform
Software<0D><0A>Comware Software Version 5.20, Release 2312,
Standard<0D><0A>Copyright (c) 2004-2012 Hangzhou H3C Technologies Co., Ltd. <0D><0A>
[48.33.43.20.53.65.72.69.65.73.20.52.6F.75.74.65.72.20.4D.53.52.33.30.2D.32.30.
0D.0A.48.33.43.20.43.6F.6D.77.61.72.65.20.50.6C.61.74.66.6F.72.6D.20.53.6F.66.7
4.77.61.72.65.0D.0A.43.6F.6D.77.61.72.65.20.53.6F.66.74.77.61.72.65.20.56.65.72
.73.69.6F.6E.20.35.2E.32.30.2C.20.52.65.6C.65.61.73.65.20.32.33.31.32.2C.20.53.
74.61.6E.64.61.72.64.0D.0A.43.6F.70.79.72.69.67.68.74.28.63.29.20.32.30.30.34.2
D.32.30.31.32.20.48.61.6E.67.7A.68.6F.75.20.48.33.43.20.54.65.63.68.6E.6F.6C.6F
.67.69.65.73.20.43.6F.2E.2C.20.4C.74.64.2E.0D.0A (hex)]
```

说明：设备系统描述中包含了设备型号MSR3020，设备版本号R2312。

1.2 获取设备 ObjectID

设备 ObjectID 节点名称：

```
sysObjectID
```

节点 OID 值：

1.3.6.1.2.1.1.2

获取设备 ObjectID 信息，默认就是机框类型：

1: sysObjectID.0 (object identifier) hh3c-msr30-20

1.3 获取设备启动时间

设备启动时间的节点名称：

sysUpTime

节点 OID 值：

1.3.6.1.2.1.1.3

获取设备启动时间：

1: sysUpTime.0 (timeticks) 19 days 02h:16m:17s.52th (164977752)

1.4 获取设备联系信息

节点名称：

sysContact

节点 OID 值：

1.3.6.1.2.1.1.4

获取设备联系信息，默认就是生产该设备的公司名：

1: sysContact.0 (octet string) R&D Hangzhou, Hangzhou H3C Technologies Co., Ltd.
[52.26.44.20.48.61.6E.67.7A.68.6F.75.2C.20.48.61.6E.67.7A.68.6F.75.20.48.33.43.
20.54.65.63.68.6E.6F.6C.6F.67.69.65.73.20.43.6F.2E.2C.20.4C.74.64.2E (hex)]

1.5 获取设备名称

设备名称的节点：

sysName

节点 OID 值：

1.3.6.1.2.1.1.5

获取设备名称：

1: sysName.0 (octet string) MSR3020 [4D. 53. 52. 33. 30. 32. 30 (hex)]

说明：当前设备名称为MSR3020，它是用户可以配置的。

1.6 获取设备联系地址

设备联系地址的节点名称：

sysLocation

节点 OID 值：

1. 3. 6. 1. 2. 1. 1. 6

获取设备联系地址，默认是 Hangzhou, China：

1: sysLocation.0 (octet string) Hangzhou, China

[48. 61. 6E. 67. 7A. 68. 6F. 75. 2C. 20. 43. 68. 69. 6E. 61 (hex)]

1.7 获取设备操作系统版本

设备操作系统版本的节点：

hh3cLswSysVersion

节点 OID 值：

1. 3. 6. 1. 4. 1. 25506. 8. 35. 18. 1. 4

获取设备操作系统版本：

1: hh3cLswSysVersion.0 (octet string) 5. 20 [35. 2E. 32. 30 (hex)]

1.8 获取设备 SN 号

设备 SN 条码的节点

entPhysicalSerialNum

节点 OID 值：

1. 3. 6. 1. 2. 1. 47. 1. 1. 1. 1. 11

获取设备 SN 条码：

1:entPhysicalSerialNum.1 (octet string) 210235a19gb126000281

[32. 31. 30. 32. 33. 35. 61. 31. 39. 67. 62. 31. 32. 36. 30. 30. 30. 32. 38. 31 (hex)]

1.9 获取设备模块型号

设备模块的节点

entPhysicalModelName

节点 OID 值:

1.3.6.1.2.1.47.1.1.1.1.13

获取设备模块:

1: entPhysicalModelName.1 (octet string) MSR30-20 [4D.53.52.33.30.2D.32.30 (hex)]

.....

28: entPhysicalModelName.36 (octet string) MSR30-20 RPU Board
[4D.53.52.33.30.2D.32.30.20.52.50.55.20.42.6F.61.72.64 (hex)]

29: entPhysicalModelName.38 (octet string) DSIC-9FSW [44.53.49.43.2D.39.46.53.57
(hex)]

30: entPhysicalModelName.39 (octet string) SIC-EPRI [53.49.43.2D.45.50.52.49
(hex)]

31: entPhysicalModelName.40 (octet string) SIC-2FXS [53.49.43.2D.32.46.58.53
(hex)]

32: entPhysicalModelName.41 (octet string) MIM-2SAE [4D.49.4D.2D.32.53.41.45
(hex)]

2 获取端口属性

2.1 获取端口名称

节点名称:

ifDescr

节点 OID 值:

1.3.6.1.2.1.2.2.1.2

通过这个 MIB 节点可以获取端口名称和端口索引之间的对应关系,比如 GigabitEthernet0/0 的端口索引为 3, GigabitEthernet0/1 的端口索引为 4。

获取端口名称:

1: ifDescr.1 (octet string) Aux0 [41.75.78.30 (hex)]

2: ifDescr.2 (octet string) Cellular0/0 [43.65.6C.6C.75.6C.61.72.30.2F.30 (hex)]

3: ifDescr.3 (octet string) GigabitEthernet0/0
[47.69.67.61.62.69.74.45.74.68.65.72.6E.65.74.30.2F.30 (hex)]

4: ifDescr.4 (octet string) GigabitEthernet0/1
[47.69.67.61.62.69.74.45.74.68.65.72.6E.65.74.30.2F.31 (hex)]

5: ifDescr.5 (octet string) NULL0 [4E.55.4C.4C.30 (hex)]

6: ifDescr.6 (octet string) Serial5/0 [53.65.72.69.61.6C.35.2F.30 (hex)]

7: ifDescr.7 (octet string) E1 3/0 [45.31.20.33.2F.30 (hex)]

8: ifDescr.8 (octet string) Ethernet2/0 [45.74.68.65.72.6E.65.74.32.2F.30 (hex)]

9: ifDescr.9 (octet string) Serial5/1 [53.65.72.69.61.6C.35.2F.31 (hex)]

10: ifDescr.10 (octet string) Ethernet2/1 [45.74.68.65.72.6E.65.74.32.2F.31 (hex)]

11: ifDescr.11 (octet string) Ethernet2/2 [45.74.68.65.72.6E.65.74.32.2F.32 (hex)]

12: ifDescr.12 (octet string) Ethernet2/3 [45.74.68.65.72.6E.65.74.32.2F.33 (hex)]

13: ifDescr.13 (octet string) Ethernet2/4 [45.74.68.65.72.6E.65.74.32.2F.34 (hex)]

14: ifDescr.14 (octet string) Ethernet2/5 [45.74.68.65.72.6E.65.74.32.2F.35 (hex)]

15: ifDescr.15 (octet string) Ethernet2/6 [45.74.68.65.72.6E.65.74.32.2F.36 (hex)]

16: ifDescr.16 (octet string) Ethernet2/7 [45.74.68.65.72.6E.65.74.32.2F.37 (hex)]

17: ifDescr.17 (octet string) Ethernet2/8 [45.74.68.65.72.6E.65.74.32.2F.38 (hex)]

18: ifDescr.18 (octet string) subscriber-line4/0
[73.75.62.73.63.72.69.62.65.72.2D.6C.69.6E.65.34.2F.30 (hex)]

19: ifDescr.19 (octet string) subscriber-line4/1
[73.75.62.73.63.72.69.62.65.72.2D.6C.69.6E.65.34.2F.31 (hex)]

20: ifDescr.21 (octet string) LoopBack0 [4C.6F.6F.70.42.61.63.6B.30 (hex)]

21: ifDescr.26 (octet string) Vlan-interface100
[56.6C.61.6E.2D.69.6E.74.65.72.66.61.63.65.31.30.30 (hex)]

22: ifDescr.27 (octet string) Vlan-interface200
[56.6C.61.6E.2D.69.6E.74.65.72.66.61.63.65.32.30.30 (hex)]

说明：端口名称是不可以配置的，对于每个端口可以配置端口描述信息，参考端口描述的 MIB 节点 ifAlias，OID：1.3.6.1.2.1.31.1.1.1.18。

2.2 获取端口描述

节点名称:

ifAlias

节点 OID 值:

1.3.6.1.2.1.31.1.1.1.18

参考节点ifDescr, 1.3.6.1.2.1.2.2.1.2, 来获取端口名称与端口索引之间的对应关系, 比如GigabitEthernet0/0的端口索引为3, 根据ifAlias知道索引为3的端口描述(接口下配置的description)为to-MSR5040, 如果接口没有配置描述信息, 默认显示接口名称。

获取端口描述:

1: ifAlias.1 (octet string) Aux0 Interface

[41.75.78.30.20.49.6E.74.65.72.66.61.63.65 (hex)]

2: ifAlias.2 (octet string) Cellular0/0 Interface

[43.65.6C.6C.75.6C.61.72.30.2F.30.20.49.6E.74.65.72.66.61.63.65 (hex)]

3: ifAlias.3 (octet string) to-MSR5040 [74.6F.2D.4D.53.52.35.30.34.30 (hex)]

4: ifAlias.4 (octet string) GigabitEthernet0/1 Interface

[47.69.67.61.62.69.74.45.74.68.65.72.6E.65.74.30.2F.31.20.49.6E.74.65.72.66.61.63.65 (hex)]

5: ifAlias.5 (octet string) NULL0 Interface

[4E.55.4C.4C.30.20.49.6E.74.65.72.66.61.63.65 (hex)]

6: ifAlias.6 (octet string) Serial5/0 Interface

[53.65.72.69.61.6C.35.2F.30.20.49.6E.74.65.72.66.61.63.65 (hex)]

7: ifAlias.7 (octet string) E1 3/0 Interface

[45.31.20.33.2F.30.20.49.6E.74.65.72.66.61.63.65 (hex)]

8: ifAlias.8 (octet string) Ethernet2/0 Interface

[45.74.68.65.72.6E.65.74.32.2F.30.20.49.6E.74.65.72.66.61.63.65 (hex)]

9: ifAlias.9 (octet string) Serial5/1 Interface

[53.65.72.69.61.6C.35.2F.31.20.49.6E.74.65.72.66.61.63.65 (hex)]

10: ifAlias.10 (octet string) Ethernet2/1 Interface

[45. 74. 68. 65. 72. 6E. 65. 74. 32. 2F. 31. 20. 49. 6E. 74. 65. 72. 66. 61. 63. 65 (hex)]
11: ifAlias.11 (octet string) Ethernet2/2 Interface
[45. 74. 68. 65. 72. 6E. 65. 74. 32. 2F. 32. 20. 49. 6E. 74. 65. 72. 66. 61. 63. 65 (hex)]
12: ifAlias.12 (octet string) Ethernet2/3 Interface
[45. 74. 68. 65. 72. 6E. 65. 74. 32. 2F. 33. 20. 49. 6E. 74. 65. 72. 66. 61. 63. 65 (hex)]
13: ifAlias.13 (octet string) Ethernet2/4 Interface
[45. 74. 68. 65. 72. 6E. 65. 74. 32. 2F. 34. 20. 49. 6E. 74. 65. 72. 66. 61. 63. 65 (hex)]
14: ifAlias.14 (octet string) Ethernet2/5 Interface
[45. 74. 68. 65. 72. 6E. 65. 74. 32. 2F. 35. 20. 49. 6E. 74. 65. 72. 66. 61. 63. 65 (hex)]
15: ifAlias.15 (octet string) Ethernet2/6 Interface
[45. 74. 68. 65. 72. 6E. 65. 74. 32. 2F. 36. 20. 49. 6E. 74. 65. 72. 66. 61. 63. 65 (hex)]
16: ifAlias.16 (octet string) Ethernet2/7 Interface
[45. 74. 68. 65. 72. 6E. 65. 74. 32. 2F. 37. 20. 49. 6E. 74. 65. 72. 66. 61. 63. 65 (hex)]
17: ifAlias.17 (octet string) Ethernet2/8 Interface
[45. 74. 68. 65. 72. 6E. 65. 74. 32. 2F. 38. 20. 49. 6E. 74. 65. 72. 66. 61. 63. 65 (hex)]
18: ifAlias.18 (octet string) subscriber-line4/0 Interface
[73. 75. 62. 73. 63. 72. 69. 62. 65. 72. 2D. 6C. 69. 6E. 65. 34. 2F. 30. 20. 49. 6E. 74. 65. 72. 66. 61.
63. 65 (hex)]
19: ifAlias.19 (octet string) subscriber-line4/1 Interface
[73. 75. 62. 73. 63. 72. 69. 62. 65. 72. 2D. 6C. 69. 6E. 65. 34. 2F. 31. 20. 49. 6E. 74. 65. 72. 66. 61.
63. 65 (hex)]
20: ifAlias.21 (octet string) LoopBack0 Interface
[4C. 6F. 6F. 70. 42. 61. 63. 6B. 30. 20. 49. 6E. 74. 65. 72. 66. 61. 63. 65 (hex)]
21: ifAlias.26 (octet string) Vlan-interface100 Interface
[56. 6C. 61. 6E. 2D. 69. 6E. 74. 65. 72. 66. 61. 63. 65. 31. 30. 30. 20. 49. 6E. 74. 65. 72. 66. 61. 63.
65 (hex)]
22: ifAlias.27 (octet string) Vlan-interface200 Interface
[56. 6C. 61. 6E. 2D. 69. 6E. 74. 65. 72. 66. 61. 63. 65. 32. 30. 30. 20. 49. 6E. 74. 65. 72. 66. 61. 63.
65 (hex)]

说明：端口描述信息是用户可以配置的。

2.3 获取端口速度

端口速度有两个MIB节点，推荐用ifHighSpeed (OID:1.3.6.1.2.1.31.1.1.1.15)，不推荐用ifSpeed (OID:1.3.6.1.2.1.2.2.1.5)，因为ifSpeed不支持10GE及其以上带宽的端口。

节点名称：

ifHighSpeed

节点OID值：

1.3.6.1.2.1.31.1.1.1.15

参考节点ifDescr, 1.3.6.1.2.1.2.2.1.2, 来获取端口名称与端口索引之间的对应关系，比如GigabitEthernet0/0的端口索引为3，根据ifHighSpeed知道索引为3的端口速度为100M，GigabitEthernet0/0的端口索引为4，就可以知道GigabitEthernet0/1的端口速度是1000M。

获取端口速度：

```
1: ifHighSpeed.1 (gauge) 0
2: ifHighSpeed.2 (gauge) 0
3: ifHighSpeed.3 (gauge) 100
4: ifHighSpeed.4 (gauge) 1000
```

2.4 获取端口管理状态

节点名称：

ifAdminStatus

节点OID值：

1.3.6.1.2.1.2.2.1.7

参考节点ifDescr, 1.3.6.1.2.1.2.2.1.2, 来获取端口名称与端口索引之间的对应关系，比如GigabitEthernet0/0的端口索引为3，根据ifAdminStatus知道索引为3的端口管理状态是UP的，就可以知道GigabitEthernet0/0的端口管理状态是UP的。

获取端口管理状态：

```
1: ifAdminStatus.1 (integer) up(1)
2: ifAdminStatus.2 (integer) up(1)
```

```
3: ifAdminStatus.3 (integer) up(1)
4: ifAdminStatus.4 (integer) up(1)
5: ifAdminStatus.5 (integer) up(1)
```

2.5 获取端口运行状态

节点名称:

ifOperStatus

节点OID值:

1.3.6.1.2.1.2.2.1.8

参考节点ifDescr, 1.3.6.1.2.1.2.2.1.2, 来获取端口名称与端口索引之间的对应关系, 比如GigabitEthernet0/0的端口索引为3, 根据ifOperStatus知道索引为3的端口运行状态是UP的, 就可以知道GigabitEthernet0/0的端口运行状态是UP的。

获取端口运行状态:

```
1: ifOperStatus.1 (integer) down(2)
2: ifOperStatus.2 (integer) down(2)
3: ifOperStatus.3 (integer) up(1)
4: ifOperStatus.4 (integer) up(1)
```

2.6 获取端口入方向错包数

节点名称:

ifInErrors

节点OID值:

1.3.6.1.2.1.2.2.1.14

参考节点ifDescr, 1.3.6.1.2.1.2.2.1.2, 来获取端口名称与端口索引之间的对应关系, 比如GigabitEthernet0/0的端口索引为3, 根据ifInErrors知道索引为3的端口入方向错包数为0, 就可以知道GigabitEthernet0/0的端口入方向错包数为0。

获取端口入方向错包数:

```
1: ifInErrors.1 (counter) 0
2: ifInErrors.2 (counter) 0
```

```
3: ifInErrors.3 (counter) 0
4: ifInErrors.4 (counter) 0
```

2.7 获取端口出方向错包数

节点名称:

ifOutErrors

节点OID值:

1.3.6.1.2.1.2.2.1.20

参考节点ifDescr, 1.3.6.1.2.1.2.2.1.2, 来获取端口名称与端口索引之间的对应关系, 比如GigabitEthernet0/0的端口索引为3, 根据ifOutErrors知道索引为3的端口出方向错包数为0, 就可以知道GigabitEthernet0/0的端口出方向错包数为0。

获取端口出方向错包数:

```
1: ifOutErrors.1 (counter) 0
2: ifOutErrors.2 (counter) 0
3: ifOutErrors.3 (counter) 0
4: ifOutErrors.4 (counter) 0
```

2.8 获取端口入方向字节数

节点名称:

ifHCInOctets

节点OID值:

1.3.6.1.2.1.31.1.1.1.6

参考节点ifDescr, 1.3.6.1.2.1.2.2.1.2, 来获取端口名称与端口索引之间的对应关系, 比如GigabitEthernet0/0的端口索引为3, 根据ifHCInOctets知道索引为3的端口入方向字节数为68 bytes, 就可以知道GigabitEthernet0/0的端口入方向字节数为68 bytes。

获取端口入方向字节数:

```
1: ifHCInOctets.1 (counter64) 0
2: ifHCInOctets.2 (counter64) 0
3: ifHCInOctets.3 (counter64) 68
```

```
4: ifHCInOctets.4 (counter64) 68
```

2.9 获取端口出方向字节数

节点名称:

```
ifHCOutOctets
```

节点OID值:

```
1.3.6.1.2.1.31.1.1.1.10
```

参考节点ifDescr, 1.3.6.1.2.1.2.2.1.2, 来获取端口名称与端口索引之间的对应关系, 比如GigabitEthernet0/0的端口索引为3, 根据ifHCOutOctets知道索引为3的端口出方向字节数为68 bytes, 就可以知道GigabitEthernet0/0的端口出方向字节数为68 bytes。

获取端口出方向字节数:

```
1: ifHCOutOctets.1 (counter64) 0
```

```
2: ifHCOutOctets.2 (counter64) 0
```

```
3: ifHCOutOctets.3 (counter64) 68
```

```
4: ifHCOutOctets.4 (counter64) 68
```

2.10 获取端口入方向单播报文数

节点名称:

```
ifHCInUcastPkts
```

节点OID值:

```
1.3.6.1.2.1.31.1.1.1.7
```

参考节点ifDescr, 1.3.6.1.2.1.2.2.1.2, 来获取端口名称与端口索引之间的对应关系, 比如GigabitEthernet0/0的端口索引为3, 根据ifHCInUcastPkts知道索引为3的端口入方向单播报文数为1, 就可以知道GigabitEthernet0/0的端口入方向单播报文数为1。

获取端口入方向单播报文数:

```
1: ifHCInUcastPkts.1 (counter64) 0
```

```
2: ifHCInUcastPkts.2 (counter64) 0
```

```
3: ifHCInUcastPkts.3 (counter64) 1
```

```
4: ifHCInUcastPkts.4 (counter64) 1
```

2.11 获取端口入方向组播报文数

节点名称:

ifHCInMulticastPkts

节点OID值:

1.3.6.1.2.1.31.1.1.1.8

参考节点ifDescr, 1.3.6.1.2.1.2.2.1.2, 来获取端口名称与端口索引之间的对应关系, 比如GigabitEthernet0/0的端口索引为3, 根据ifHCInMulticastPkts知道索引为3的端口入方向组播报文数为0, 就可以知道GigabitEthernet0/0的端口入方向组播报文数为0。

获取端口入方向组播报文数:

1: ifHCInMulticastPkts.1 (counter64) 0

2: ifHCInMulticastPkts.2 (counter64) 0

3: ifHCInMulticastPkts.3 (counter64) 0

4: ifHCInMulticastPkts.4 (counter64) 0

2.12 获取端口入方向广播报文数

节点名称:

ifHCInBroadcastPkts

节点OID值:

1.3.6.1.2.1.31.1.1.1.9

参考节点ifDescr, 1.3.6.1.2.1.2.2.1.2, 来获取端口名称与端口索引之间的对应关系, 比如GigabitEthernet0/0的端口索引为3, 根据ifHCInBroadcastPkts知道索引为3的端口入方向广播报文数为0, 就可以知道GigabitEthernet0/0的端口入方向广播报文数为0。

获取端口入方向广播报文数:

1: ifHCInBroadcastPkts.1 (counter64) 0

2: ifHCInBroadcastPkts.2 (counter64) 0

3: ifHCInBroadcastPkts.3 (counter64) 0

4: ifHCInBroadcastPkts.4 (counter64) 0

2.13 获取端口出方向单播报文数

节点名称:

ifHCOutUcastPkts

节点OID值:

1.3.6.1.2.1.31.1.1.11

参考节点ifDescr, 1.3.6.1.2.1.2.2.1.2, 来获取端口名称与端口索引之间的对应关系, 比如GigabitEthernet0/0的端口索引为3, 根据ifHCOutUcastPkts知道索引为3的端口出方向单播报文数为100, 就可以知道GigabitEthernet0/0的端口出方向单播报文数为100。

获取端口出方向单播报文数:

1: ifHCOutUcastPkts.1 (counter64) 0

2: ifHCOutUcastPkts.2 (counter64) 0

3: ifHCOutUcastPkts.3 (counter64) 100

4: ifHCOutUcastPkts.4 (counter64) 0

2.14 获取端口出方向组播报文数

节点名称:

ifHCOutMulticastPkts

节点OID值:

1.3.6.1.2.1.31.1.1.12

参考节点ifDescr, 1.3.6.1.2.1.2.2.1.2, 来获取端口名称与端口索引之间的对应关系, 比如GigabitEthernet0/0的端口索引为3, 根据ifHCOutMulticastPkts知道索引为3的端口出方向组播报文数为10, 就可以知道GigabitEthernet0/0的端口出方向组播报文数为10。

获取端口出方向组播报文数:

1: ifHCOutMulticastPkts.1 (counter64) 0

2: ifHCOutMulticastPkts.2 (counter64) 0

3: ifHCOutMulticastPkts.3 (counter64) 10

4: ifHCOutMulticastPkts.4 (counter64) 0

2.15 获取端口出方向广播报文数

节点名称:

ifHCOutBroadcastPkts

节点OID值:

1.3.6.1.2.1.31.1.1.1.13

参考节点ifDescr, 1.3.6.1.2.1.2.2.1.2, 来获取端口名称与端口索引之间的对应关系, 比如GigabitEthernet0/0的端口索引为3, 根据ifHCOutBroadcastPkts知道索引为3的端口出方向广播报文数为50, 就可以知道GigabitEthernet0/0的端口出方向广播报文数为50。

获取端口出方向广播报文数:

```
1: ifHCOutBroadcastPkts.1 (counter64) 0
2: ifHCOutBroadcastPkts.2 (counter64) 0
3: ifHCOutBroadcastPkts.3 (counter64) 50
4: ifHCOutBroadcastPkts.4 (counter64) 0
```

2.16 端口入/出方向实际速率/错包率计算方法

端口入方向的实际速率 = $8 \times [\text{ifHCInOctets}(t1\text{时刻的值}) - \text{ifHCInOctets}(t2\text{时刻的值})] / (t1 - t2)$

端口出方向的实际速率 = $8 \times [\text{ifHCOutOctets}(t1\text{时刻的值}) - \text{ifHCOutOctets}(t2\text{时刻的值})] / (t1 - t2)$

端口入方向错包率 = $[\text{ifInErrors}(t1\text{时刻}) - \text{ifInErrors}(t2\text{时刻})] / [\text{ifInErrors}(t1\text{时刻}) - \text{ifInErrors}(t2\text{时刻}) + \text{ifHCInUcastPkts}(t1\text{时刻}) - \text{ifHCInUcastPkts}(t2\text{时刻}) + \text{ifHCInMulticastPkts}(t1\text{时刻}) - \text{ifHCInMulticastPkts}(t2\text{时刻}) + \text{ifHCInBroadcastPkts}(t1\text{时刻}) - \text{ifHCInBroadcastPkts}(t2\text{时刻})]$

端口出方向错包率 = $[\text{ifOutErrors}(t1\text{时刻}) - \text{ifOutErrors}(t2\text{时刻})] / [\text{ifOutErrors}(t1\text{时刻}) - \text{ifOutErrors}(t2\text{时刻}) + \text{ifHCOutUcastPkts}(t1\text{时刻}) - \text{ifHCOutUcastPkts}(t2\text{时刻}) + \text{ifHCOutMulticastPkts}(t1\text{时刻}) - \text{ifHCOutMulticastPkts}(t2\text{时刻}) + \text{ifHCOutBroadcastPkts}(t1\text{时刻}) - \text{ifHCOutBroadcastPkts}(t2\text{时刻})]$

3 获取接口 IP 属性

3.1 获取所有接口 IP

所有接口 IP 节点:

ipAdEntAddr

节点 OID 值:

1. 3. 6. 1. 2. 1. 4. 20. 1. 1

支持各种类型接口, 包含接口的主 IP 地址和从 IP 地址, 获取接口配置的 IP:

1: ipAdEntAddr. 2. 0. 0. 4 (ipaddress) 2. 0. 0. 4

2: ipAdEntAddr. 2. 1. 1. 1 (ipaddress) 2. 1. 1. 1

3: ipAdEntAddr. 3. 1. 1. 2 (ipaddress) 3. 1. 1. 2

4: ipAdEntAddr. 4. 1. 1. 1 (ipaddress) 4. 1. 1. 1

5: ipAdEntAddr. 10. 5. 0. 1 (ipaddress) 10. 5. 0. 1

6: ipAdEntAddr. 20. 0. 0. 2 (ipaddress) 20. 0. 0. 2

7: ipAdEntAddr. 20. 5. 0. 1 (ipaddress) 20. 5. 0. 1

8: ipAdEntAddr. 30. 5. 0. 1 (ipaddress) 30. 5. 0. 1

9: ipAdEntAddr. 33. 1. 1. 1 (ipaddress) 33. 1. 1. 1

10: ipAdEntAddr. 40. 5. 0. 1 (ipaddress) 40. 5. 0. 1

11: ipAdEntAddr. 192. 168. 213. 8 (ipaddress) 192. 168. 213. 8

说明: 节点的索引和值是一样的, 都是接口的IP地址。

3.2 获取所有接口 IP 掩码

所有接口 IP 掩码的节点:

ipAdEntNetMask

节点 OID 值:

1. 3. 6. 1. 2. 1. 4. 20. 1. 3

支持各种类型接口, 包含接口的主 IP 掩码和从 IP 掩码, 获取接口 IP 的掩码:

1: ipAdEntNetMask. 2. 0. 0. 4 (ipaddress) 255. 255. 255. 255

2: ipAdEntNetMask. 2. 1. 1. 1 (ipaddress) 255. 255. 255. 0

3: ipAdEntNetMask. 3. 1. 1. 2 (ipaddress) 255. 255. 255. 0

4: ipAdEntNetMask. 4. 1. 1. 1 (ipaddress) 255. 255. 255. 0

5: ipAdEntNetMask. 10. 5. 0. 1 (ipaddress) 255. 255. 255. 252

```
6: ipAdEntNetMask.20.0.0.2 (ipaddress) 255.255.255.252
7: ipAdEntNetMask.20.5.0.1 (ipaddress) 255.255.255.252
8: ipAdEntNetMask.30.5.0.1 (ipaddress) 255.255.255.252
9: ipAdEntNetMask.33.1.1.1 (ipaddress) 255.255.255.0
10: ipAdEntNetMask.40.5.0.1 (ipaddress) 255.255.255.252
11: ipAdEntNetMask.192.168.213.8 (ipaddress) 255.255.255.0
```

说明：节点的索引表示接口的IP地址，节点的值表示对应的掩码。

3.3 获取 VLAN 接口的主 IP

VLAN 接口主 IP 的节点：

hh3cdot1qVlanIpAddress

节点OID值：

1.3.6.1.4.1.25506.8.35.2.1.2.1.3

仅支持 VLAN 接口的主 IP 地址，获取 VLAN 接口主 IP：

```
1: hh3cdot1qVlanIpAddress.2 (ipaddress) 2.1.1.1
2: hh3cdot1qVlanIpAddress.3 (ipaddress) 3.1.1.2
3: hh3cdot1qVlanIpAddress.4 (ipaddress) 4.1.1.1
4: hh3cdot1qVlanIpAddress.105 (ipaddress) 10.5.0.1
5: hh3cdot1qVlanIpAddress.200 (ipaddress) 20.0.0.2
6: hh3cdot1qVlanIpAddress.205 (ipaddress) 20.5.0.1
7: hh3cdot1qVlanIpAddress.305 (ipaddress) 30.5.0.1
8: hh3cdot1qVlanIpAddress.405 (ipaddress) 40.5.0.1
```

说明：节点的索引表示VLAN ID，获取不到VLAN接口的从IP。

3.4 获取 VLAN 接口的主 IP 掩码

VLAN 接口主 IP 掩码的节点：

hh3cdot1qVlanIpAddressMask

节点OID值：

1.3.6.1.4.1.25506.8.35.2.1.2.1.4

仅支持 VLAN 接口的主 IP 掩码，获取 VLAN 接口主 IP 的掩码：

- 1: hh3cdot1qVlanIpAddressMask.2 (ipaddress) 255.255.255.0
- 2: hh3cdot1qVlanIpAddressMask.3 (ipaddress) 255.255.255.0
- 3: hh3cdot1qVlanIpAddressMask.4 (ipaddress) 255.255.255.0
- 4: hh3cdot1qVlanIpAddressMask.105 (ipaddress) 255.255.255.252
- 5: hh3cdot1qVlanIpAddressMask.200 (ipaddress) 255.255.255.252
- 6: hh3cdot1qVlanIpAddressMask.205 (ipaddress) 255.255.255.252
- 7: hh3cdot1qVlanIpAddressMask.305 (ipaddress) 255.255.255.252
- 8: hh3cdot1qVlanIpAddressMask.405 (ipaddress) 255.255.255.252

说明：节点的索引表示VLAN ID，获取不到VLAN接口的从IP掩码。

3.5 获取 VLAN 接口的主/从 IP

VLAN 接口主/从 IP 的节点：

hh3cVlanInterfaceIpType

节点OID值：

- 1.3.6.1.4.1.25506.8.35.2.1.5.1.4

仅支持 VLAN 接口，获取 VLAN 接口的主/从 IP：

- 1: hh3cVlanInterfaceIpType.15.3.1.1.2 (integer) primary(1)
- 2: hh3cVlanInterfaceIpType.15.33.1.1.1 (integer) sub(2)
- 3: hh3cVlanInterfaceIpType.16.4.1.1.1 (integer) primary(1)
- 4: hh3cVlanInterfaceIpType.18.2.1.1.1 (integer) primary(1)
- 5: hh3cVlanInterfaceIpType.89.20.0.0.2 (integer) primary(1)
- 6: hh3cVlanInterfaceIpType.90.10.5.0.1 (integer) primary(1)
- 7: hh3cVlanInterfaceIpType.91.20.5.0.1 (integer) primary(1)
- 8: hh3cVlanInterfaceIpType.92.30.5.0.1 (integer) primary(1)
- 9: hh3cVlanInterfaceIpType.93.40.5.0.1 (integer) primary(1)

说明：节点的索引*.*.*.*中第一个*表示VLAN接口对应的端口索引，参考

hh3cVlanInterfaceIfIndex, 1.3.6.1.4.1.25506.8.35.2.1.2.1.9。后面4个*表示VLAN接口的IP地址，节点的值1表示主IP，即primary，节点的值2表示从IP，即sub。

以hh3cVlanInterfaceIpType.15.33.1.1.1 (integer) sub(2)为例,可以看出该VLAN接口的端口索引为15,配置了从IP地址33.1.1.1,参考MIB节点ifDescr,OID:1.3.6.1.2.1.2.2.1.2,知道这是Vlan-interface3。

```
14: ifDescr.15 (octet string) Vlan-interface3
[56.6C.61.6E.2D.69.6E.74.65.72.66.61.63.65.33 (hex)]
15: ifDescr.16 (octet string) Vlan-interface4
[56.6C.61.6E.2D.69.6E.74.65.72.66.61.63.65.34 (hex)]
16: ifDescr.17 (octet string) Bridge-Aggregation2
[42.72.69.64.67.65.2D.41.67.67.72.65.67.61.74.69.6F.6E.32 (hex)]
17: ifDescr.18 (octet string) Vlan-interface2
[56.6C.61.6E.2D.69.6E.74.65.72.66.61.63.65.32 (hex)]
```

3.6 获取 VLAN 接口的主/从 IP 掩码

VLAN 接口主/从 IP 掩码的节点:

hh3cVlanInterfaceIpMask

节点OID值:

1.3.6.1.4.1.25506.8.35.2.1.5.1.3

仅支持 VLAN 接口,获取 VLAN 接口的主/从 IP 掩码:

```
1: hh3cVlanInterfaceIpMask.15.3.1.1.2 (ipaddress) 255.255.255.0
2: hh3cVlanInterfaceIpMask.15.33.1.1.1 (ipaddress) 255.255.255.0
3: hh3cVlanInterfaceIpMask.16.4.1.1.1 (ipaddress) 255.255.255.0
4: hh3cVlanInterfaceIpMask.18.2.1.1.1 (ipaddress) 255.255.255.0
5: hh3cVlanInterfaceIpMask.89.20.0.0.2 (ipaddress) 255.255.255.252
6: hh3cVlanInterfaceIpMask.90.10.5.0.1 (ipaddress) 255.255.255.252
7: hh3cVlanInterfaceIpMask.91.20.5.0.1 (ipaddress) 255.255.255.252
8: hh3cVlanInterfaceIpMask.92.30.5.0.1 (ipaddress) 255.255.255.252
9: hh3cVlanInterfaceIpMask.93.40.5.0.1 (ipaddress) 255.255.255.252
```

说明:节点的索引*.*.*.*中第一个*表示VLAN接口对应的端口索引,参考

hh3cVlanInterfaceIfIndex,1.3.6.1.4.1.25506.8.35.2.1.2.1.9。后面4个*表示VLAN接口

的IP地址，节点的值表示IP掩码。

以hh3cVlanInterfaceIpMask.15.33.1.1.1 (ipaddress) 255.255.255.0为例，可以看出该VLAN接口的端口索引为15，配置了IP地址33.1.1.1，掩码为255.255.255.0，参考MIB节点ifDescr, OID: 1.3.6.1.2.1.2.1.2，知道这是Vlan-interface3。

14: ifDescr.15 (octet string) Vlan-interface3

[56.6C.61.6E.2D.69.6E.74.65.72.66.61.63.65.33 (hex)]

15: ifDescr.16 (octet string) Vlan-interface4

[56.6C.61.6E.2D.69.6E.74.65.72.66.61.63.65.34 (hex)]

16: ifDescr.17 (octet string) Bridge-Aggregation2

[42.72.69.64.67.65.2D.41.67.67.72.65.67.61.74.69.6F.6E.32 (hex)]

17: ifDescr.18 (octet string) Vlan-interface2

[56.6C.61.6E.2D.69.6E.74.65.72.66.61.63.65.32 (hex)]

3.7 获取 VLAN 描述信息

节点名称:

hh3cdot1qVlanName

节点 OID 值:

1.3.6.1.4.1.25506.8.35.2.1.1.1.2

VLAN 描述信息是可以配置的，获取 VLAN 描述信息:

1: hh3cdot1qVlanName.1 (octet string) VLAN 0001 [56.4C.41.4E.20.30.30.30.31 (hex)]

2: hh3cdot1qVlanName.2 (octet string) VLAN 0002 [56.4C.41.4E.20.30.30.30.32 (hex)]

3: hh3cdot1qVlanName.3 (octet string) Zhongxinjifang

[5A.68.6F.6E.67.78.69.6E.6A.69.66.61.6E.67 (hex)]

4: hh3cdot1qVlanName.4 (octet string) VLAN 0004 [56.4C.41.4E.20.30.30.30.34 (hex)]

5: hh3cdot1qVlanName.105 (octet string) VLAN 0105 [56.4C.41.4E.20.30.31.30.35 (hex)]

6: hh3cdot1qVlanName.200 (octet string) VLAN 0200 [56.4C.41.4E.20.30.32.30.30 (hex)]

7: hh3cdot1qVlanName.205 (octet string) VLAN 0205 [56.4C.41.4E.20.30.32.30.35

(hex)]

8: hh3cdot1qVlanName.305 (octet string) VLAN 0305 [56.4C.41.4E.20.30.33.30.35

(hex)]

9: hh3cdot1qVlanName.405 (octet string) VLAN 0405 [56.4C.41.4E.20.30.34.30.35

(hex)]

10: hh3cdot1qVlanName.500 (octet string) VLAN 0500 [56.4C.41.4E.20.30.35.30.30

(hex)]

11: hh3cdot1qVlanName.1500 (octet string) VLAN 1500 [56.4C.41.4E.20.31.35.30.30

(hex)]

以hh3cdot1qVlanName.3 (octet string) Zhongxinjifang

[5A.68.6F.6E.67.78.69.6E.6A.69.66.61.6E.67 (hex)]为例，索引3表示VLAN3，配置的描述信息为Zhongxinjifang。

这个节点是获取VLAN的描述信息，参考命令行：

```
vlan 3
  description Zhongxinjifang
```

如果要获取 VLAN 接口的描述的信息：

```
interface Vlan-interface3
  description ABCDEF
```

参考节点 ifAlias, OID1.3.6.1.2.1.31.1.1.1.18。

4 获取路由相关信息

4.1 获取路由的目的网段/下一跳/出接口信息

节点名称：

ipCidrRouteIfIndex

节点 OID 值：

1.3.6.1.2.1.4.24.4.1.5

获取路由表下一跳接口索引如下，以

ipCidrRouteIfIndex.3.1.1.0.255.255.255.0.0.3.1.1.2 (integer) 4为例，说明设备上有一条到目的网段3.1.1.0/255.255.255.0的路由，下一跳为3.1.1.2，出接口的端口索引为4，

端口索引参考节点ifDescr, 1.3.6.1.2.1.2.2.1.2。

77: ipCidrRouteIfIndex.3.1.1.0.255.255.255.0.0.3.1.1.2 (integer) 4

78: ipCidrRouteIfIndex.4.1.1.0.255.255.255.0.0.4.1.1.2 (integer) 5

79: ipCidrRouteIfIndex.5.1.1.0.255.255.255.0.0.5.1.1.2 (integer) 6

80: ipCidrRouteIfIndex.123.1.1.1.255.255.255.255.0.3.1.1.1 (integer) 4

81: ipCidrRouteIfIndex.123.1.1.1.255.255.255.255.0.4.1.1.1 (integer) 5

82: ipCidrRouteIfIndex.123.1.1.1.255.255.255.255.0.5.1.1.1 (integer) 6

4.2 获取路由表项的 metric 值

节点名称:

ipCidrRouteMetric1

节点 OID 值:

1.3.6.1.2.1.4.24.4.1.11

获取路由表项的 metric 值:

191: ipCidrRouteMetric1.3.1.1.0.255.255.255.0.0.3.1.1.2 (integer) 0

192: ipCidrRouteMetric1.4.1.1.0.255.255.255.0.0.4.1.1.2 (integer) 0

193: ipCidrRouteMetric1.5.1.1.0.255.255.255.0.0.5.1.1.2 (integer) 0

194: ipCidrRouteMetric1.123.1.1.1.255.255.255.255.0.3.1.1.1 (integer) 1

195: ipCidrRouteMetric1.123.1.1.1.255.255.255.255.0.4.1.1.1 (integer) 1

196: ipCidrRouteMetric1.123.1.1.1.255.255.255.255.0.5.1.1.1 (integer) 1

索引信息参考 MIB 节点 ipCidrRouteIfIndex, OID: 1.3.6.1.2.1.4.24.4.1.5。

4.3 获取路由表项协议类型

节点名称:

ipCidrRouteProto

节点 OID 值:

1.3.6.1.2.1.4.24.4.1.7

获取路由表项的协议类型:

115: ipCidrRouteProto.3.1.1.0.255.255.255.0.0.3.1.1.2 (integer) local(2)

```
116: ipCidrRouteProto.4.1.1.0.255.255.255.0.0.4.1.1.2 (integer) local(2)
117: ipCidrRouteProto.5.1.1.0.255.255.255.0.0.5.1.1.2 (integer) local(2)
118: ipCidrRouteProto.123.1.1.1.255.255.255.255.0.3.1.1.1 (integer) ospf(13)
119: ipCidrRouteProto.123.1.1.1.255.255.255.255.0.4.1.1.1 (integer) ospf(13)
120: ipCidrRouteProto.123.1.1.1.255.255.255.255.0.5.1.1.1 (integer) ospf(13)
索引信息参考MIB节点ipCidrRouteIfIndex, OID: 1.3.6.1.2.1.4.24.4.1.5。
```

5 获取 OSPF 相关信息

5.1 获取 OSPF 接口 IP

OSPF 对应 IP:

ospfIfIpAddress

节点 OID 值:

1.3.6.1.2.1.14.7.1.1

获取 OSPF 的接口 IP 地址:

```
1: ospfIfIpAddress.1.1.1.1.0 (ipaddress) 1.1.1.1
2: ospfIfIpAddress.95.0.0.2.0 (ipaddress) 95.0.0.2
3: ospfIfIpAddress.95.1.2.2.0 (ipaddress) 95.1.2.2
4: ospfIfIpAddress.95.2.3.2.0 (ipaddress) 95.2.3.2
5: ospfIfIpAddress.95.2.4.2.0 (ipaddress) 95.2.4.2
6: ospfIfIpAddress.95.2.5.2.0 (ipaddress) 95.2.5.2
```

5.2 获取 OSPF 接口对应的 Area

OSPF 对应 Area:

ospfIfAreaId

节点 OID 值:

1.3.6.1.2.1.14.7.1.3

获取 OSPF 的接口对应的 AreaID:

```
1: ospfIfAreaId.1.1.1.1.0 (ipaddress) 0.0.0.0
2: ospfIfAreaId.95.0.0.2.0 (ipaddress) 0.0.0.0
```

3: ospfIfAreaId.95.1.2.2.0 (ipaddress) 0.0.0.0

4: ospfIfAreaId.95.2.3.2.0 (ipaddress) 0.0.0.0

5: ospfIfAreaId.95.2.4.2.0 (ipaddress) 0.0.0.0

6: ospfIfAreaId.95.2.5.2.0 (ipaddress) 0.0.0.1

以ospfIfAreaId.95.2.5.2.0 (ipaddress) 0.0.0.1为例，使能OSPF的接口95.2.5.2在区域0.0.0.1中。

5.3 获取 OSPF 接口对应的 Cost

OSPF 的 Cost:

ospfIfMetricValue

节点 OID 值:

1.3.6.1.2.1.14.8.1.4

获取 OSPF 接口对应 Cost:

1: ospfIfMetricValue.1.1.1.1.0.0 (integer) 1

2: ospfIfMetricValue.95.0.0.2.0.0 (integer) 0

3: ospfIfMetricValue.95.1.2.2.0.0 (integer) 1

4: ospfIfMetricValue.95.2.3.2.0.0 (integer) 65500

5: ospfIfMetricValue.95.2.4.2.0.0 (integer) 1

6: ospfIfMetricValue.95.2.5.2.0.0 (integer) 1

7: ospfIfMetricValue.95.120.151.1.0.0 (integer) 1

8: ospfIfMetricValue.95.120.152.1.0.0 (integer) 1

9: ospfIfMetricValue.95.120.153.1.0.0 (integer) 1

10: ospfIfMetricValue.95.120.154.1.0.0 (integer) 1

11: ospfIfMetricValue.95.120.155.1.0.0 (integer) 1

12: ospfIfMetricValue.95.120.156.1.0.0 (integer) 1

以4: ospfIfMetricValue.95.2.3.2.0.0 (integer) 65500为例，95.2.3.2表示接口IP地址，65500表示配置的接口cost。

6 获取转发相关表项

6.1 ARP 表

设备 ARP 表:

ipNetToMediaPhysAddress

节点 OID 值:

1.3.6.1.2.1.4.22.1.2

获取设备 ARP 表项:

1: ipNetToMediaPhysAddress.95.192.168.213.1 (octet string) 00:0F:E2:41:A0:01

[00.0F.E2.41.A0.01 (hex)]

2: ipNetToMediaPhysAddress.95.192.168.213.8 (octet string) 00:0F:37:49:00:01

[00.0F.37.49.00.01 (hex)]

3: ipNetToMediaPhysAddress.95.192.168.213.9 (octet string) 3C:E5:A6:59:F0:01

[3C.E5.A6.59.F0.01 (hex)]

4: ipNetToMediaPhysAddress.95.192.168.213.10 (octet string) 00:23:89:56:7A:01

[00.23.89.56.7A.01 (hex)]

5: ipNetToMediaPhysAddress.95.192.168.213.11 (octet string) 00:23:89:56:80:01

[00.23.89.56.80.01 (hex)]

以ipNetToMediaPhysAddress.95.192.168.213.11 (octet string) 00:23:89:56:80:01

[00.23.89.56.80.01 (hex)]为例, 节点索引95.192.168.213.11表示arp表项的端口索引为95, 端口索引参考节点ifDescr, 1.3.6.1.2.1.2.2.1.2, arp表项中的ip为192.168.213.11, 节点的值对应的mac地址00:23:89:56:80:01。

7 获取启动文件信息

7.1 获取启动文件名

启动文件名节点:

hh3cSysImageName

节点 OID 值:

1.3.6.1.4.1.25506.2.3.1.4.2.1.2

获取启动文件名:

1: hh3cSysImageName.196609 (octet string) msr30-cmw520-r2507-si.bin

```
[6D. 73. 72. 33. 30. 2D. 63. 6D. 77. 35. 32. 30. 2D. 72. 32. 35. 30. 37. 2D. 73. 69. 2E. 62. 6E
(hex)]
2: hh3cSysImageName.196610 (octet string) msr30-cmw520-r1910p09-si.bin
[6D. 73. 72. 33. 30. 2D. 63. 6D. 77. 35. 32. 30. 2D. 72. 31. 39. 31. 30. 70. 30. 39. 2D. 73. 69. 2E. 62.
69. 6E (hex)]
3: hh3cSysImageName.196611 (octet string) msr30-cmw520-r2207p23-si.bin
[6D. 73. 72. 33. 30. 2D. 63. 6D. 77. 35. 32. 30. 2D. 72. 32. 32. 30. 37. 70. 32. 33. 2D. 73. 69. 2E. 62.
69. 6E (hex)]
4: hh3cSysImageName.196612 (octet string) msr30-cmw520-r2511p02-bi.bin
[6D. 73. 72. 33. 30. 2D. 63. 6D. 77. 35. 32. 30. 2D. 72. 32. 35. 31. 31. 70. 30. 32. 2D. 62. 69. 2E. 62.
69. 6E (hex)]
5: hh3cSysImageName.196613 (octet string) msr30-cmw520-r2312-si.bin
[6D. 73. 72. 33. 30. 2D. 63. 6D. 77. 35. 32. 30. 2D. 72. 32. 33. 31. 32. 2D. 73. 69. 2E. 62. 69. 6E
(hex)]
```

7.2 获取启动文件大小

启动文件大小节点:

hh3cSysImageSize

节点 OID 值:

1. 3. 6. 1. 4. 1. 25506. 2. 3. 1. 4. 2. 1. 3

获取启动文件大小, 单位字节:

```
1: hh3cSysImageSize.196609 (integer) 27134976
2: hh3cSysImageSize.196610 (integer) 21758888
3: hh3cSysImageSize.196611 (integer) 24884868
4: hh3cSysImageSize.196612 (integer) 19649536
5: hh3cSysImageSize.196613 (integer) 26130432
```

7.3 获取启动文件路径

启动文件路径节点:

hh3cSysImageLocation

节点 OID 值:

1. 3. 6. 1. 4. 1. 25506. 2. 3. 1. 4. 2. 1. 4

获取启动文件路径:

1: hh3cSysImageLocation.196609 (octet string) cfa0:/ [63.66.61.30.3A.2F (hex)]

2: hh3cSysImageLocation.196610 (octet string) cfa0:/ [63.66.61.30.3A.2F (hex)]

3: hh3cSysImageLocation.196611 (octet string) cfa0:/ [63.66.61.30.3A.2F (hex)]

4: hh3cSysImageLocation.196612 (octet string) cfa0:/ [63.66.61.30.3A.2F (hex)]

5: hh3cSysImageLocation.196613 (octet string) cfa0:/ [63.66.61.30.3A.2F (hex)]

7.4 获取启动文件类型

启动文件类型节点:

hh3cSysImageType

节点 OID 值:

1. 3. 6. 1. 4. 1. 25506. 2. 3. 1. 4. 2. 1. 5

获取启动文件类型:

1: hh3cSysImageType.196609 (integer) none(3)

2: hh3cSysImageType.196610 (integer) none(3)

3: hh3cSysImageType.196611 (integer) none(3)

4: hh3cSysImageType.196612 (integer) none(3)

5: hh3cSysImageType.196613 (integer) main(1)

文件类型有如下几种:

1: main(1) ——主用启动文件

2: backup(2) ——备用启动文件

3: none(3) ——既不是主用启动文件，也不是备用启动文件

4: secure(4)

5: main-backup(5)

6: main-secure(6)

7: backup-secure(7)

8: main-backup-secure(8)

8 获取配置文件信息

8.1 获取配置文件名

配置文件名节点:

hh3cSysCFGFileName

节点OID值:

1.3.6.1.4.1.25506.2.3.1.5.2.1.2

获取配置文件名:

1: hh3cSysCFGFileName.1761476609 (octet string) config.cfg

[63.6F.6E.66.69.67.2E.63.66.67 (hex)]

2: hh3cSysCFGFileName.1761476610 (octet string) fanh07.cfg

[66.61.6E.68.30.37.2E.63.66.67 (hex)]

3: hh3cSysCFGFileName.1761476611 (octet string) qq-router2.cfg

[71.71.2D.72.6F.75.74.65.72.32.2E.63.66.67 (hex)]

4: hh3cSysCFGFileName.1761476612 (octet string) sysconfigmode.cfg

[73.79.73.63.6F.6E.66.69.67.6D.6F.64.65.2E.63.66.67 (hex)]

5: hh3cSysCFGFileName.1761476613 (octet string) szl.cfg [73.7A.6C.2E.63.66.67 (hex)]

6: hh3cSysCFGFileName.1761476614 (octet string) s06.cfg [73.30.36.2E.63.66.67 (hex)]

8.2 获取配置文件大小

配置文件大小节点:

hh3cSysCFGFileSize

节点OID值:

1.3.6.1.4.1.25506.2.3.1.5.2.1.3

获取配置文件大小, 单位字节:

1: hh3cSysCFGFileSize.1761476609 (integer) 7425

```
2: hh3cSysCFGFileSize.1761476610 (integer) 10862
3: hh3cSysCFGFileSize.1761476611 (integer) 7453
4: hh3cSysCFGFileSize.1761476612 (integer) 1646
5: hh3cSysCFGFileSize.1761476613 (integer) 9405
6: hh3cSysCFGFileSize.1761476614 (integer) 13284
```

8.3 获取配置文件路径

配置文件路径节点:

hh3cSysCFGFileLocation

节点OID值:

1.3.6.1.4.1.25506.2.3.1.5.2.1.3

获取配置文件路径:

```
1: hh3cSysCFGFileLocation.1761476609 (octet string) cfa0:/ [66.6C.61.73.68.3A.2F
(hex)]
2: hh3cSysCFGFileLocation.1761476610 (octet string) cfa0:/ [66.6C.61.73.68.3A.2F
(hex)]
3: hh3cSysCFGFileLocation.1761476611 (octet string) cfa0:/ [66.6C.61.73.68.3A.2F
(hex)]
4: hh3cSysCFGFileLocation.1761476612 (octet string) cfa0:/ [66.6C.61.73.68.3A.2F
(hex)]
5: hh3cSysCFGFileLocation.1761476613 (octet string) cfa0:/ [63.66.61.30.3A.2F
(hex)]
6: hh3cSysCFGFileLocation.1761476614 (octet string) cfa0:/ [63.66.61.30.3A.2F
(hex)]
```

9 获取实体相关信息

9.1 获取实体描述信息

实体描述信息:

entPhysicalDescr

节点的OID值:

1. 3. 6. 1. 2. 1. 47. 1. 1. 1. 1. 2

获取实体描述信息如下:

可以参考MIB节点实体名称信息entPhysicalName, OID: 1. 3. 6. 1. 2. 1. 47. 1. 1. 1. 1. 7, 实体描述和实体名称信息很相近。

1: entPhysicalDescr.1 (octet string) H3C Series Router MSR30-20

[48. 33. 43. 20. 53. 65. 72. 69. 65. 73. 20. 52. 6F. 75. 74. 65. 72. 20. 4D. 53. 52. 33. 30. 2D. 32. 30 (hex)]

2: entPhysicalDescr.2 (octet string) Container level1

[43. 6F. 6E. 74. 61. 69. 6E. 65. 72. 20. 6C. 65. 76. 65. 6C. 31 (hex)]

3: entPhysicalDescr.3 (octet string) Module level1

[4D. 6F. 64. 75. 6C. 65. 20. 6C. 65. 76. 65. 6C. 31 (hex)]

4: entPhysicalDescr.4 (octet string) Container for RPU

[43. 6F. 6E. 74. 61. 69. 6E. 65. 72. 20. 66. 6F. 72. 20. 52. 50. 55 (hex)]

5: entPhysicalDescr.5 (octet string) Container for Module at slot #1

[43. 6F. 6E. 74. 61. 69. 6E. 65. 72. 20. 66. 6F. 72. 20. 4D. 6F. 64. 75. 6C. 65. 20. 61. 74. 20. 73. 6C. 6F. 74. 20. 23. 31 (hex)]

6: entPhysicalDescr.6 (octet string) Container for Module at slot #2

[43. 6F. 6E. 74. 61. 69. 6E. 65. 72. 20. 66. 6F. 72. 20. 4D. 6F. 64. 75. 6C. 65. 20. 61. 74. 20. 73. 6C. 6F. 74. 20. 23. 32 (hex)]

7: entPhysicalDescr.7 (octet string) Container for Module at slot #3

[43. 6F. 6E. 74. 61. 69. 6E. 65. 72. 20. 66. 6F. 72. 20. 4D. 6F. 64. 75. 6C. 65. 20. 61. 74. 20. 73. 6C. 6F. 74. 20. 23. 33 (hex)]

8: entPhysicalDescr.8 (octet string) Container for Module at slot #4

[43. 6F. 6E. 74. 61. 69. 6E. 65. 72. 20. 66. 6F. 72. 20. 4D. 6F. 64. 75. 6C. 65. 20. 61. 74. 20. 73. 6C. 6F. 74. 20. 23. 34 (hex)]

9: entPhysicalDescr.9 (octet string) Container for Module at slot #5

[43. 6F. 6E. 74. 61. 69. 6E. 65. 72. 20. 66. 6F. 72. 20. 4D. 6F. 64. 75. 6C. 65. 20. 61. 74. 20. 73. 6C. 6F. 74. 20. 23. 35 (hex)]

10: entPhysicalDescr.10 (octet string) Container for Module at slot #6
[43. 6F. 6E. 74. 61. 69. 6E. 65. 72. 20. 66. 6F. 72. 20. 4D. 6F. 64. 75. 6C. 65. 20. 61. 74. 20. 73. 6C. 6F. 74. 20. 23. 36 (hex)]

11: entPhysicalDescr.11 (octet string) Container for Module at slot #7
[43. 6F. 6E. 74. 61. 69. 6E. 65. 72. 20. 66. 6F. 72. 20. 4D. 6F. 64. 75. 6C. 65. 20. 61. 74. 20. 73. 6C. 6F. 74. 20. 23. 37 (hex)]

12: entPhysicalDescr.12 (octet string) Container for Module at slot #8
[43. 6F. 6E. 74. 61. 69. 6E. 65. 72. 20. 66. 6F. 72. 20. 4D. 6F. 64. 75. 6C. 65. 20. 61. 74. 20. 73. 6C. 6F. 74. 20. 23. 38 (hex)]

13: entPhysicalDescr.13 (octet string) Container for Module at slot #9
[43. 6F. 6E. 74. 61. 69. 6E. 65. 72. 20. 66. 6F. 72. 20. 4D. 6F. 64. 75. 6C. 65. 20. 61. 74. 20. 73. 6C. 6F. 74. 20. 23. 39 (hex)]

14: entPhysicalDescr.14 (octet string) Container for Module at slot #10
[43. 6F. 6E. 74. 61. 69. 6E. 65. 72. 20. 66. 6F. 72. 20. 4D. 6F. 64. 75. 6C. 65. 20. 61. 74. 20. 73. 6C. 6F. 74. 20. 23. 31. 30 (hex)]

15: entPhysicalDescr.15 (octet string) Container for Module at slot #11
[43. 6F. 6E. 74. 61. 69. 6E. 65. 72. 20. 66. 6F. 72. 20. 4D. 6F. 64. 75. 6C. 65. 20. 61. 74. 20. 73. 6C. 6F. 74. 20. 23. 31. 31 (hex)]

16: entPhysicalDescr.16 (octet string) Container for Module at slot #12
[43. 6F. 6E. 74. 61. 69. 6E. 65. 72. 20. 66. 6F. 72. 20. 4D. 6F. 64. 75. 6C. 65. 20. 61. 74. 20. 73. 6C. 6F. 74. 20. 23. 31. 32 (hex)]

17: entPhysicalDescr.17 (octet string) Container for Module at slot #13
[43. 6F. 6E. 74. 61. 69. 6E. 65. 72. 20. 66. 6F. 72. 20. 4D. 6F. 64. 75. 6C. 65. 20. 61. 74. 20. 73. 6C. 6F. 74. 20. 23. 31. 33 (hex)]

18: entPhysicalDescr.18 (octet string) Container for Module at slot #14
[43. 6F. 6E. 74. 61. 69. 6E. 65. 72. 20. 66. 6F. 72. 20. 4D. 6F. 64. 75. 6C. 65. 20. 61. 74. 20. 73. 6C. 6F. 74. 20. 23. 31. 34 (hex)]

19: entPhysicalDescr.19 (octet string) Container for Module at slot #15
[43. 6F. 6E. 74. 61. 69. 6E. 65. 72. 20. 66. 6F. 72. 20. 4D. 6F. 64. 75. 6C. 65. 20. 61. 74. 20. 73. 6C.

6F. 74. 20. 23. 31. 35 (hex)]

20: entPhysicalDescr.20 (octet string) Container for Power-Supply #0
[43. 6F. 6E. 74. 61. 69. 6E. 65. 72. 20. 66. 6F. 72. 20. 50. 6F. 77. 65. 72. 2D. 53. 75. 70. 70. 6C. 79. 20. 23. 30 (hex)]

21: entPhysicalDescr.21 (octet string) Container for RPS Power-Supply #1
[43. 6F. 6E. 74. 61. 69. 6E. 65. 72. 20. 66. 6F. 72. 20. 52. 50. 53. 20. 50. 6F. 77. 65. 72. 2D. 53. 75. 70. 70. 6C. 79. 20. 23. 31 (hex)]

22: entPhysicalDescr.22 (octet string) Container for Fan #1
[43. 6F. 6E. 74. 61. 69. 6E. 65. 72. 20. 66. 6F. 72. 20. 46. 61. 6E. 20. 23. 31 (hex)]

23: entPhysicalDescr.23 (octet string) Container for Sensor #1
[43. 6F. 6E. 74. 61. 69. 6E. 65. 72. 20. 66. 6F. 72. 20. 53. 65. 6E. 73. 6F. 72. 20. 23. 31 (hex)]

24: entPhysicalDescr.24 (octet string) Container for CF Card
[43. 6F. 6E. 74. 61. 69. 6E. 65. 72. 20. 66. 6F. 72. 20. 43. 46. 20. 43. 61. 72. 64 (hex)]

25: entPhysicalDescr.25 (octet string) Container for USB Disk
[43. 6F. 6E. 74. 61. 69. 6E. 65. 72. 20. 66. 6F. 72. 20. 55. 53. 42. 20. 44. 69. 73. 6B (hex)]

26: entPhysicalDescr.26 (octet string) Container for CPU
[43. 6F. 6E. 74. 61. 69. 6E. 65. 72. 20. 66. 6F. 72. 20. 43. 50. 55 (hex)]

27: entPhysicalDescr.27 (octet string) Container for Memory
[43. 6F. 6E. 74. 61. 69. 6E. 65. 72. 20. 66. 6F. 72. 20. 4D. 65. 6D. 6F. 72. 79 (hex)]

28: entPhysicalDescr.36 (octet string) MSR30-20 Router Processor Unit
[4D. 53. 52. 33. 30. 2D. 32. 30. 20. 52. 6F. 75. 74. 65. 72. 20. 50. 72. 6F. 63. 65. 73. 73. 6F. 72. 20. 55. 6E. 69. 74 (hex)]

29: entPhysicalDescr.38 (octet string) 9-Port 10M/100MBASE-TX Ethernet L2 Switch Interface SIC_Module
[39. 2D. 50. 6F. 72. 74. 20. 31. 30. 4D. 2F. 31. 30. 30. 4D. 42. 41. 53. 45. 2D. 54. 58. 20. 45. 74. 68. 65. 72. 6E. 65. 74. 20. 4C. 32. 20. 53. 77. 69. 74. 63. 68. 20. 49. 6E. 74. 65. 72. 66. 61. 63. 65. 20. 53. 49. 43. 5F. 4D. 6F. 64. 75. 6C. 65 (hex)]

30: entPhysicalDescr.39 (octet string) 1-Port E1/CE1/PRI Interface SIC-Module
[31. 2D. 50. 6F. 72. 74. 20. 45. 31. 2F. 43. 45. 31. 2F. 50. 52. 49. 20. 49. 6E. 74. 65. 72. 66. 61. 63.

65. 20. 53. 49. 43. 2D. 4D. 6F. 64. 75. 6C. 65 (hex)]

31: entPhysicalDescr.40 (octet string) 2-Port FXS Interface SIC-Module
[32. 2D. 50. 6F. 72. 74. 20. 46. 58. 53. 20. 49. 6E. 74. 65. 72. 66. 61. 63. 65. 20. 53. 49. 43. 2D. 4D.
6F. 64. 75. 6C. 65 (hex)]

32: entPhysicalDescr.41 (octet string) 2-Port Enhanced Sync/Async Serial Interface
MIM-Module
[32. 2D. 50. 6F. 72. 74. 20. 45. 6E. 68. 61. 6E. 63. 65. 64. 20. 53. 79. 6E. 63. 2F. 41. 73. 79. 6E. 63.
20. 53. 65. 72. 69. 61. 6C. 20. 49. 6E. 74. 65. 72. 66. 61. 63. 65. 20. 4D. 49. 4D. 2D. 4D. 6F. 64. 75. 6
C. 65 (hex)]

33: entPhysicalDescr.52 (octet string) Power Supply #0
[50. 6F. 77. 65. 72. 20. 53. 75. 70. 70. 6C. 79. 20. 23. 30 (hex)]

34: entPhysicalDescr.54 (octet string) System Fan #1
[53. 79. 73. 74. 65. 6D. 20. 46. 61. 6E. 20. 23. 31 (hex)]

35: entPhysicalDescr.55 (octet string) LM75AD Temperature Sensor
[4C. 4D. 37. 35. 41. 44. 20. 54. 65. 6D. 70. 65. 72. 61. 74. 75. 72. 65. 20. 53. 65. 6E. 73. 6F. 72
(hex)]

36: entPhysicalDescr.56 (octet string) Module for CF Card
[4D. 6F. 64. 75. 6C. 65. 20. 66. 6F. 72. 20. 43. 46. 20. 43. 61. 72. 64 (hex)]

37: entPhysicalDescr.57 (octet string) Module for USB Disk
[4D. 6F. 64. 75. 6C. 65. 20. 66. 6F. 72. 20. 55. 53. 42. 20. 44. 69. 73. 6B (hex)]

38: entPhysicalDescr.58 (octet string) FREESCALE MPC8349 533MHz
[46. 52. 45. 45. 53. 43. 41. 4C. 45. 20. 4D. 50. 43. 38. 33. 34. 39. 20. 35. 33. 33. 4D. 48. 7A (hex)]

39: entPhysicalDescr.59 (octet string) DDR SDRAM Memory
[44. 44. 52. 20. 53. 44. 52. 41. 4D. 20. 4D. 65. 6D. 6F. 72. 79 (hex)]

40: entPhysicalDescr.69 (octet string) AUX Port in RPU
[41. 55. 58. 20. 50. 6F. 72. 74. 20. 69. 6E. 20. 52. 50. 55 (hex)]

41: entPhysicalDescr.70 (octet string) 10M/100M/1000M Ethernet Port in RPU
[31. 30. 4D. 2F. 31. 30. 30. 4D. 2F. 31. 30. 30. 30. 4D. 20. 45. 74. 68. 65. 72. 6E. 65. 74. 20. 50. 6F.
72. 74. 20. 69. 6E. 20. 52. 50. 55 (hex)]

42: entPhysicalDescr.71 (octet string) 10M/100M/1000M Ethernet Port in RPU
[31. 30. 4D. 2F. 31. 30. 30. 4D. 2F. 31. 30. 30. 30. 4D. 20. 45. 74. 68. 65. 72. 6E. 65. 74. 20. 50. 6F. 72. 74. 20. 69. 6E. 20. 52. 50. 55 (hex)]

43: entPhysicalDescr.72 (octet string) Cellular Port in RPU
[43. 65. 6C. 6C. 75. 6C. 61. 72. 20. 50. 6F. 72. 74. 20. 69. 6E. 20. 52. 50. 55 (hex)]

44: entPhysicalDescr.196 (octet string) 10M/100MBASE-TX Ethernet L2 Switch Port
[31. 30. 4D. 2F. 31. 30. 30. 4D. 42. 41. 53. 45. 2D. 54. 58. 20. 45. 74. 68. 65. 72. 6E. 65. 74. 20. 4C. 32. 20. 53. 77. 69. 74. 63. 68. 20. 50. 6F. 72. 74 (hex)]

45: entPhysicalDescr.197 (octet string) 10M/100MBASE-TX Ethernet L2 Switch Port
[31. 30. 4D. 2F. 31. 30. 30. 4D. 42. 41. 53. 45. 2D. 54. 58. 20. 45. 74. 68. 65. 72. 6E. 65. 74. 20. 4C. 32. 20. 53. 77. 69. 74. 63. 68. 20. 50. 6F. 72. 74 (hex)]

46: entPhysicalDescr.198 (octet string) 10M/100MBASE-TX Ethernet L2 Switch Port
[31. 30. 4D. 2F. 31. 30. 30. 4D. 42. 41. 53. 45. 2D. 54. 58. 20. 45. 74. 68. 65. 72. 6E. 65. 74. 20. 4C. 32. 20. 53. 77. 69. 74. 63. 68. 20. 50. 6F. 72. 74 (hex)]

47: entPhysicalDescr.199 (octet string) 10M/100MBASE-TX Ethernet L2 Switch Port
[31. 30. 4D. 2F. 31. 30. 30. 4D. 42. 41. 53. 45. 2D. 54. 58. 20. 45. 74. 68. 65. 72. 6E. 65. 74. 20. 4C. 32. 20. 53. 77. 69. 74. 63. 68. 20. 50. 6F. 72. 74 (hex)]

48: entPhysicalDescr.200 (octet string) 10M/100MBASE-TX Ethernet L2 Switch Port
[31. 30. 4D. 2F. 31. 30. 30. 4D. 42. 41. 53. 45. 2D. 54. 58. 20. 45. 74. 68. 65. 72. 6E. 65. 74. 20. 4C. 32. 20. 53. 77. 69. 74. 63. 68. 20. 50. 6F. 72. 74 (hex)]

49: entPhysicalDescr.201 (octet string) 10M/100MBASE-TX Ethernet L2 Switch Port
[31. 30. 4D. 2F. 31. 30. 30. 4D. 42. 41. 53. 45. 2D. 54. 58. 20. 45. 74. 68. 65. 72. 6E. 65. 74. 20. 4C. 32. 20. 53. 77. 69. 74. 63. 68. 20. 50. 6F. 72. 74 (hex)]

50: entPhysicalDescr.202 (octet string) 10M/100MBASE-TX Ethernet L2 Switch Port
[31. 30. 4D. 2F. 31. 30. 30. 4D. 42. 41. 53. 45. 2D. 54. 58. 20. 45. 74. 68. 65. 72. 6E. 65. 74. 20. 4C. 32. 20. 53. 77. 69. 74. 63. 68. 20. 50. 6F. 72. 74 (hex)]

51: entPhysicalDescr.203 (octet string) 10M/100MBASE-TX Ethernet L2 Switch Port
[31. 30. 4D. 2F. 31. 30. 30. 4D. 42. 41. 53. 45. 2D. 54. 58. 20. 45. 74. 68. 65. 72. 6E. 65. 74. 20. 4C. 32. 20. 53. 77. 69. 74. 63. 68. 20. 50. 6F. 72. 74 (hex)]

```
52: entPhysicalDescr.204 (octet string) 10M/100MBASE-TX Ethernet L2 Switch Port
[31. 30. 4D. 2F. 31. 30. 30. 4D. 42. 41. 53. 45. 2D. 54. 58. 20. 45. 74. 68. 65. 72. 6E. 65. 74. 20. 4C.
32. 20. 53. 77. 69. 74. 63. 68. 20. 50. 6F. 72. 74 (hex)]

53: entPhysicalDescr.260 (octet string) E1/CE1/PRI Port
[45. 31. 2F. 43. 45. 31. 2F. 50. 52. 49. 20. 50. 6F. 72. 74 (hex)]

54: entPhysicalDescr.324 (octet string) FXS Port [46. 58. 53. 20. 50. 6F. 72. 74 (hex)]
55: entPhysicalDescr.325 (octet string) FXS Port [46. 58. 53. 20. 50. 6F. 72. 74 (hex)]
56: entPhysicalDescr.388 (octet string) Enhanced Sync/Async Serial Port
[45. 6E. 68. 61. 6E. 63. 65. 64. 20. 53. 79. 6E. 63. 2F. 41. 73. 79. 6E. 63. 20. 53. 65. 72. 69. 61. 6C.
20. 50. 6F. 72. 74 (hex)]

57: entPhysicalDescr.389 (octet string) Enhanced Sync/Async Serial Port
[45. 6E. 68. 61. 6E. 63. 65. 64. 20. 53. 79. 6E. 63. 2F. 41. 73. 79. 6E. 63. 20. 53. 65. 72. 69. 61. 6C.
20. 50. 6F. 72. 74 (hex)]

58: entPhysicalDescr.1092 (octet string) CF Card #1 [43. 46. 20. 43. 61. 72. 64. 20. 23. 31
(hex)]
```

9.2 获取实体名称信息

实体名称信息:

```
entPhysicalName
```

节点的OID值:

```
1. 3. 6. 1. 2. 1. 47. 1. 1. 1. 1. 7
```

获取实体名称信息:

可以参考MIB节点实体描述信息entPhysicalDescr, OID: 1. 3. 6. 1. 2. 1. 47. 1. 1. 1. 1. 2, 实体描述和实体名称信息很相近。

```
1: entPhysicalDescr.1 (octet string) H3C Series Router MSR30-20
```

```
[48. 33. 43. 20. 53. 65. 72. 69. 65. 73. 20. 52. 6F. 75. 74. 65. 72. 20. 4D. 53. 52. 33. 30. 2D. 32. 30
(hex)]
```

```
2: entPhysicalDescr.2 (octet string) Container level1
```

```
[43. 6F. 6E. 74. 61. 69. 6E. 65. 72. 20. 6C. 65. 76. 65. 6C. 31 (hex)]
```

3: entPhysicalDescr.3 (octet string) Module level1
[4D. 6F. 64. 75. 6C. 65. 20. 6C. 65. 76. 65. 6C. 31 (hex)]

4: entPhysicalDescr.4 (octet string) Container for RPU
[43. 6F. 6E. 74. 61. 69. 6E. 65. 72. 20. 66. 6F. 72. 20. 52. 50. 55 (hex)]

5: entPhysicalDescr.5 (octet string) Container for Module at slot #1
[43. 6F. 6E. 74. 61. 69. 6E. 65. 72. 20. 66. 6F. 72. 20. 4D. 6F. 64. 75. 6C. 65. 20. 61. 74. 20. 73. 6C. 6F. 74. 20. 23. 31 (hex)]

6: entPhysicalDescr.6 (octet string) Container for Module at slot #2
[43. 6F. 6E. 74. 61. 69. 6E. 65. 72. 20. 66. 6F. 72. 20. 4D. 6F. 64. 75. 6C. 65. 20. 61. 74. 20. 73. 6C. 6F. 74. 20. 23. 32 (hex)]

7: entPhysicalDescr.7 (octet string) Container for Module at slot #3
[43. 6F. 6E. 74. 61. 69. 6E. 65. 72. 20. 66. 6F. 72. 20. 4D. 6F. 64. 75. 6C. 65. 20. 61. 74. 20. 73. 6C. 6F. 74. 20. 23. 33 (hex)]

8: entPhysicalDescr.8 (octet string) Container for Module at slot #4
[43. 6F. 6E. 74. 61. 69. 6E. 65. 72. 20. 66. 6F. 72. 20. 4D. 6F. 64. 75. 6C. 65. 20. 61. 74. 20. 73. 6C. 6F. 74. 20. 23. 34 (hex)]

9: entPhysicalDescr.9 (octet string) Container for Module at slot #5
[43. 6F. 6E. 74. 61. 69. 6E. 65. 72. 20. 66. 6F. 72. 20. 4D. 6F. 64. 75. 6C. 65. 20. 61. 74. 20. 73. 6C. 6F. 74. 20. 23. 35 (hex)]

10: entPhysicalDescr.10 (octet string) Container for Module at slot #6
[43. 6F. 6E. 74. 61. 69. 6E. 65. 72. 20. 66. 6F. 72. 20. 4D. 6F. 64. 75. 6C. 65. 20. 61. 74. 20. 73. 6C. 6F. 74. 20. 23. 36 (hex)]

11: entPhysicalDescr.11 (octet string) Container for Module at slot #7
[43. 6F. 6E. 74. 61. 69. 6E. 65. 72. 20. 66. 6F. 72. 20. 4D. 6F. 64. 75. 6C. 65. 20. 61. 74. 20. 73. 6C. 6F. 74. 20. 23. 37 (hex)]

12: entPhysicalDescr.12 (octet string) Container for Module at slot #8
[43. 6F. 6E. 74. 61. 69. 6E. 65. 72. 20. 66. 6F. 72. 20. 4D. 6F. 64. 75. 6C. 65. 20. 61. 74. 20. 73. 6C. 6F. 74. 20. 23. 38 (hex)]

13: entPhysicalDescr.13 (octet string) Container for Module at slot #9

[43. 6F. 6E. 74. 61. 69. 6E. 65. 72. 20. 66. 6F. 72. 20. 4D. 6F. 64. 75. 6C. 65. 20. 61. 74. 20. 73. 6C. 6F. 74. 20. 23. 39 (hex)]

14: entPhysicalDescr.14 (octet string) Container for Module at slot #10

[43. 6F. 6E. 74. 61. 69. 6E. 65. 72. 20. 66. 6F. 72. 20. 4D. 6F. 64. 75. 6C. 65. 20. 61. 74. 20. 73. 6C. 6F. 74. 20. 23. 31. 30 (hex)]

15: entPhysicalDescr.15 (octet string) Container for Module at slot #11

[43. 6F. 6E. 74. 61. 69. 6E. 65. 72. 20. 66. 6F. 72. 20. 4D. 6F. 64. 75. 6C. 65. 20. 61. 74. 20. 73. 6C. 6F. 74. 20. 23. 31. 31 (hex)]

16: entPhysicalDescr.16 (octet string) Container for Module at slot #12

[43. 6F. 6E. 74. 61. 69. 6E. 65. 72. 20. 66. 6F. 72. 20. 4D. 6F. 64. 75. 6C. 65. 20. 61. 74. 20. 73. 6C. 6F. 74. 20. 23. 31. 32 (hex)]

17: entPhysicalDescr.17 (octet string) Container for Module at slot #13

[43. 6F. 6E. 74. 61. 69. 6E. 65. 72. 20. 66. 6F. 72. 20. 4D. 6F. 64. 75. 6C. 65. 20. 61. 74. 20. 73. 6C. 6F. 74. 20. 23. 31. 33 (hex)]

18: entPhysicalDescr.18 (octet string) Container for Module at slot #14

[43. 6F. 6E. 74. 61. 69. 6E. 65. 72. 20. 66. 6F. 72. 20. 4D. 6F. 64. 75. 6C. 65. 20. 61. 74. 20. 73. 6C. 6F. 74. 20. 23. 31. 34 (hex)]

19: entPhysicalDescr.19 (octet string) Container for Module at slot #15

[43. 6F. 6E. 74. 61. 69. 6E. 65. 72. 20. 66. 6F. 72. 20. 4D. 6F. 64. 75. 6C. 65. 20. 61. 74. 20. 73. 6C. 6F. 74. 20. 23. 31. 35 (hex)]

20: entPhysicalDescr.20 (octet string) Container for Power-Supply #0

[43. 6F. 6E. 74. 61. 69. 6E. 65. 72. 20. 66. 6F. 72. 20. 50. 6F. 77. 65. 72. 2D. 53. 75. 70. 70. 6C. 79. 20. 23. 30 (hex)]

21: entPhysicalDescr.21 (octet string) Container for RPS Power-Supply #1

[43. 6F. 6E. 74. 61. 69. 6E. 65. 72. 20. 66. 6F. 72. 20. 52. 50. 53. 20. 50. 6F. 77. 65. 72. 2D. 53. 75. 70. 70. 6C. 79. 20. 23. 31 (hex)]

22: entPhysicalDescr.22 (octet string) Container for Fan #1

[43. 6F. 6E. 74. 61. 69. 6E. 65. 72. 20. 66. 6F. 72. 20. 46. 61. 6E. 20. 23. 31 (hex)]

23: entPhysicalDescr.23 (octet string) Container for Sensor #1

[43. 6F. 6E. 74. 61. 69. 6E. 65. 72. 20. 66. 6F. 72. 20. 53. 65. 6E. 73. 6F. 72. 20. 23. 31 (hex)]
24: entPhysicalDescr.24 (octet string) Container for CF Card

[43. 6F. 6E. 74. 61. 69. 6E. 65. 72. 20. 66. 6F. 72. 20. 43. 46. 20. 43. 61. 72. 64 (hex)]
25: entPhysicalDescr.25 (octet string) Container for USB Disk

[43. 6F. 6E. 74. 61. 69. 6E. 65. 72. 20. 66. 6F. 72. 20. 55. 53. 42. 20. 44. 69. 73. 6B (hex)]
26: entPhysicalDescr.26 (octet string) Container for CPU

[43. 6F. 6E. 74. 61. 69. 6E. 65. 72. 20. 66. 6F. 72. 20. 43. 50. 55 (hex)]
27: entPhysicalDescr.27 (octet string) Container for Memory

[43. 6F. 6E. 74. 61. 69. 6E. 65. 72. 20. 66. 6F. 72. 20. 4D. 65. 6D. 6F. 72. 79 (hex)]
28: entPhysicalDescr.36 (octet string) MSR30-20 Router Processor Unit

[4D. 53. 52. 33. 30. 2D. 32. 30. 20. 52. 6F. 75. 74. 65. 72. 20. 50. 72. 6F. 63. 65. 73. 73. 6F. 72. 20. 55. 6E. 69. 74 (hex)]
29: entPhysicalDescr.38 (octet string) 9-Port 10M/100MBASE-TX Ethernet L2 Switch Interface SIC_Module

[39. 2D. 50. 6F. 72. 74. 20. 31. 30. 4D. 2F. 31. 30. 30. 4D. 42. 41. 53. 45. 2D. 54. 58. 20. 45. 74. 68. 65. 72. 6E. 65. 74. 20. 4C. 32. 20. 53. 77. 69. 74. 63. 68. 20. 49. 6E. 74. 65. 72. 66. 61. 63. 65. 20. 53. 49. 43. 5F. 4D. 6F. 64. 75. 6C. 65 (hex)]
30: entPhysicalDescr.39 (octet string) 1-Port E1/CE1/PRI Interface SIC-Module

[31. 2D. 50. 6F. 72. 74. 20. 45. 31. 2F. 43. 45. 31. 2F. 50. 52. 49. 20. 49. 6E. 74. 65. 72. 66. 61. 63. 65. 20. 53. 49. 43. 2D. 4D. 6F. 64. 75. 6C. 65 (hex)]
31: entPhysicalDescr.40 (octet string) 2-Port FXS Interface SIC-Module

[32. 2D. 50. 6F. 72. 74. 20. 46. 58. 53. 20. 49. 6E. 74. 65. 72. 66. 61. 63. 65. 20. 53. 49. 43. 2D. 4D. 6F. 64. 75. 6C. 65 (hex)]
32: entPhysicalDescr.41 (octet string) 2-Port Enhanced Sync/Async Serial Interface MIM-Module

[32. 2D. 50. 6F. 72. 74. 20. 45. 6E. 68. 61. 6E. 63. 65. 64. 20. 53. 79. 6E. 63. 2F. 41. 73. 79. 6E. 63. 20. 53. 65. 72. 69. 61. 6C. 20. 49. 6E. 74. 65. 72. 66. 61. 63. 65. 20. 4D. 49. 4D. 2D. 4D. 6F. 64. 75. 6C. 65 (hex)]
33: entPhysicalDescr.52 (octet string) Power Supply #0

[50. 6F. 77. 65. 72. 20. 53. 75. 70. 70. 6C. 79. 20. 23. 30 (hex)]

34: entPhysicalDescr.54 (octet string) System Fan #1

[53. 79. 73. 74. 65. 6D. 20. 46. 61. 6E. 20. 23. 31 (hex)]

35: entPhysicalDescr.55 (octet string) LM75AD Temperature Sensor

[4C. 4D. 37. 35. 41. 44. 20. 54. 65. 6D. 70. 65. 72. 61. 74. 75. 72. 65. 20. 53. 65. 6E. 73. 6F. 72 (hex)]

36: entPhysicalDescr.56 (octet string) Module for CF Card

[4D. 6F. 64. 75. 6C. 65. 20. 66. 6F. 72. 20. 43. 46. 20. 43. 61. 72. 64 (hex)]

37: entPhysicalDescr.57 (octet string) Module for USB Disk

[4D. 6F. 64. 75. 6C. 65. 20. 66. 6F. 72. 20. 55. 53. 42. 20. 44. 69. 73. 6B (hex)]

38: entPhysicalDescr.58 (octet string) FREESCALE MPC8349 533MHz

[46. 52. 45. 45. 53. 43. 41. 4C. 45. 20. 4D. 50. 43. 38. 33. 34. 39. 20. 35. 33. 33. 4D. 48. 7A (hex)]

39: entPhysicalDescr.59 (octet string) DDR SDRAM Memory

[44. 44. 52. 20. 53. 44. 52. 41. 4D. 20. 4D. 65. 6D. 6F. 72. 79 (hex)]

40: entPhysicalDescr.69 (octet string) AUX Port in RPU

[41. 55. 58. 20. 50. 6F. 72. 74. 20. 69. 6E. 20. 52. 50. 55 (hex)]

41: entPhysicalDescr.70 (octet string) 10M/100M/1000M Ethernet Port in RPU

[31. 30. 4D. 2F. 31. 30. 30. 4D. 2F. 31. 30. 30. 30. 4D. 20. 45. 74. 68. 65. 72. 6E. 65. 74. 20. 50. 6F. 72. 74. 20. 69. 6E. 20. 52. 50. 55 (hex)]

42: entPhysicalDescr.71 (octet string) 10M/100M/1000M Ethernet Port in RPU

[31. 30. 4D. 2F. 31. 30. 30. 4D. 2F. 31. 30. 30. 30. 4D. 20. 45. 74. 68. 65. 72. 6E. 65. 74. 20. 50. 6F. 72. 74. 20. 69. 6E. 20. 52. 50. 55 (hex)]

43: entPhysicalDescr.72 (octet string) Cellular Port in RPU

[43. 65. 6C. 6C. 75. 6C. 61. 72. 20. 50. 6F. 72. 74. 20. 69. 6E. 20. 52. 50. 55 (hex)]

44: entPhysicalDescr.196 (octet string) 10M/100MBASE-TX Ethernet L2 Switch Port

[31. 30. 4D. 2F. 31. 30. 30. 4D. 42. 41. 53. 45. 2D. 54. 58. 20. 45. 74. 68. 65. 72. 6E. 65. 74. 20. 4C. 32. 20. 53. 77. 69. 74. 63. 68. 20. 50. 6F. 72. 74 (hex)]

45: entPhysicalDescr.197 (octet string) 10M/100MBASE-TX Ethernet L2 Switch Port

[31. 30. 4D. 2F. 31. 30. 30. 4D. 42. 41. 53. 45. 2D. 54. 58. 20. 45. 74. 68. 65. 72. 6E. 65. 74. 20. 4C.

32. 20. 53. 77. 69. 74. 63. 68. 20. 50. 6F. 72. 74 (hex)]

46: entPhysicalDescr.198 (octet string) 10M/100MBASE-TX Ethernet L2 Switch Port
[31. 30. 4D. 2F. 31. 30. 30. 4D. 42. 41. 53. 45. 2D. 54. 58. 20. 45. 74. 68. 65. 72. 6E. 65. 74. 20. 4C.
32. 20. 53. 77. 69. 74. 63. 68. 20. 50. 6F. 72. 74 (hex)]

47: entPhysicalDescr.199 (octet string) 10M/100MBASE-TX Ethernet L2 Switch Port
[31. 30. 4D. 2F. 31. 30. 30. 4D. 42. 41. 53. 45. 2D. 54. 58. 20. 45. 74. 68. 65. 72. 6E. 65. 74. 20. 4C.
32. 20. 53. 77. 69. 74. 63. 68. 20. 50. 6F. 72. 74 (hex)]

48: entPhysicalDescr.200 (octet string) 10M/100MBASE-TX Ethernet L2 Switch Port
[31. 30. 4D. 2F. 31. 30. 30. 4D. 42. 41. 53. 45. 2D. 54. 58. 20. 45. 74. 68. 65. 72. 6E. 65. 74. 20. 4C.
32. 20. 53. 77. 69. 74. 63. 68. 20. 50. 6F. 72. 74 (hex)]

49: entPhysicalDescr.201 (octet string) 10M/100MBASE-TX Ethernet L2 Switch Port
[31. 30. 4D. 2F. 31. 30. 30. 4D. 42. 41. 53. 45. 2D. 54. 58. 20. 45. 74. 68. 65. 72. 6E. 65. 74. 20. 4C.
32. 20. 53. 77. 69. 74. 63. 68. 20. 50. 6F. 72. 74 (hex)]

50: entPhysicalDescr.202 (octet string) 10M/100MBASE-TX Ethernet L2 Switch Port
[31. 30. 4D. 2F. 31. 30. 30. 4D. 42. 41. 53. 45. 2D. 54. 58. 20. 45. 74. 68. 65. 72. 6E. 65. 74. 20. 4C.
32. 20. 53. 77. 69. 74. 63. 68. 20. 50. 6F. 72. 74 (hex)]

51: entPhysicalDescr.203 (octet string) 10M/100MBASE-TX Ethernet L2 Switch Port
[31. 30. 4D. 2F. 31. 30. 30. 4D. 42. 41. 53. 45. 2D. 54. 58. 20. 45. 74. 68. 65. 72. 6E. 65. 74. 20. 4C.
32. 20. 53. 77. 69. 74. 63. 68. 20. 50. 6F. 72. 74 (hex)]

52: entPhysicalDescr.204 (octet string) 10M/100MBASE-TX Ethernet L2 Switch Port
[31. 30. 4D. 2F. 31. 30. 30. 4D. 42. 41. 53. 45. 2D. 54. 58. 20. 45. 74. 68. 65. 72. 6E. 65. 74. 20. 4C.
32. 20. 53. 77. 69. 74. 63. 68. 20. 50. 6F. 72. 74 (hex)]

53: entPhysicalDescr.260 (octet string) E1/CE1/PRI Port
[45. 31. 2F. 43. 45. 31. 2F. 50. 52. 49. 20. 50. 6F. 72. 74 (hex)]

54: entPhysicalDescr.324 (octet string) FXS Port [46. 58. 53. 20. 50. 6F. 72. 74 (hex)]

55: entPhysicalDescr.325 (octet string) FXS Port [46. 58. 53. 20. 50. 6F. 72. 74 (hex)]

56: entPhysicalDescr.388 (octet string) Enhanced Sync/Async Serial Port
[45. 6E. 68. 61. 6E. 63. 65. 64. 20. 53. 79. 6E. 63. 2F. 41. 73. 79. 6E. 63. 20. 53. 65. 72. 69. 61. 6C.
20. 50. 6F. 72. 74 (hex)]

```
57: entPhysicalDescr.389 (octet string) Enhanced Sync/Async Serial Port
[45. 6E. 68. 61. 6E. 63. 65. 64. 20. 53. 79. 6E. 63. 2F. 41. 73. 79. 6E. 63. 20. 53. 65. 72. 69. 61. 6C.
20. 50. 6F. 72. 74 (hex)]
58: entPhysicalDescr.1092 (octet string) CF Card #1 [43. 46. 20. 43. 61. 72. 64. 20. 23. 31
(hex)]
```

9.3 获取实体硬件类型

实体硬件类型信息：

entPhysicalVendorType

节点的OID值：

1.3.6.1.2.1.47.1.1.1.1.3

可以参考MIB节点实体描述信息entPhysicalDescr，节点的OID值：

1.3.6.1.2.1.47.1.1.1.1.2，实体名称信息entPhysicalName，节点的OID值：

1.3.6.1.2.1.47.1.1.1.1.7。

获取实体硬件类型信息：

1: entPhysicalVendorType.1 (object identifier) hh3c-msr30-20

.....

28: entPhysicalVendorType.36 (object identifier) hh3cevtModuleRt-RPU

29: entPhysicalVendorType.38 (object identifier) hh3cevtModuleRT-DSIC-9FSW

30: entPhysicalVendorType.39 (object identifier) hh3cevtModuleRt-Sic-1e1

31: entPhysicalVendorType.40 (object identifier) hh3cevtModuleRt-sic-2vifxs

32: entPhysicalVendorType.41 (object identifier) hh3cevtModuleRt-Sae2

33: entPhysicalVendorType.52 (object identifier) hh3cevtPowerSupplyAC

34: entPhysicalVendorType.54 (object identifier) hh3cevtNonHotSwapFan

35: entPhysicalVendorType.55 (object identifier) hh3cevtSensorTemperature

36: entPhysicalVendorType.56 (object identifier) hh3cevtModuleRt-CF

37: entPhysicalVendorType.57 (object identifier) hh3cevtModule

38: entPhysicalVendorType.58 (object identifier) hh3cevtGeneralCPU

39: entPhysicalVendorType.59 (object identifier) hh3cevtOtherUnknownCard
40: entPhysicalVendorType.69 (object identifier) hh3cevtPortRt-Aux
41: entPhysicalVendorType.70 (object identifier) hh3cevtPortRt-Ge
42: entPhysicalVendorType.71 (object identifier) hh3cevtPortRt-Ge
43: entPhysicalVendorType.72 (object identifier) hh3cevtPortRt-CELLULAR
44: entPhysicalVendorType.196 (object identifier) hh3cevtPortRt-Ethernet
45: entPhysicalVendorType.197 (object identifier) hh3cevtPortRt-Ethernet
46: entPhysicalVendorType.198 (object identifier) hh3cevtPortRt-Ethernet
47: entPhysicalVendorType.199 (object identifier) hh3cevtPortRt-Ethernet
48: entPhysicalVendorType.200 (object identifier) hh3cevtPortRt-Ethernet
49: entPhysicalVendorType.201 (object identifier) hh3cevtPortRt-Ethernet
50: entPhysicalVendorType.202 (object identifier) hh3cevtPortRt-Ethernet
51: entPhysicalVendorType.203 (object identifier) hh3cevtPortRt-Ethernet
52: entPhysicalVendorType.204 (object identifier) hh3cevtPortRt-Ethernet
53: entPhysicalVendorType.260 (object identifier) hh3cevtPortRt-EI
54: entPhysicalVendorType.324 (object identifier) hh3cevtPortRt-Vi
55: entPhysicalVendorType.325 (object identifier) hh3cevtPortRt-Vi
56: entPhysicalVendorType.388 (object identifier) hh3cevtPortRt-Serial
57: entPhysicalVendorType.389 (object identifier) hh3cevtPortRt-Serial

9.4 获取实体软件版本

实体软件版本信息:

entPhysicalSoftwareRev

节点的OID值:

1.3.6.1.2.1.47.1.1.1.1.10

可以参考MIB节点实体描述信息entPhysicalDescr, 节点的OID值:

1.3.6.1.2.1.47.1.1.1.1.2, 实体名称信息entPhysicalName, 节点的OID值:

1.3.6.1.2.1.47.1.1.1.1.7。

获取实体软件版本信息:

```
1: entPhysicalSoftwareRev.1 (octet string) CMW520-R2312-SI
[43. 4D. 57. 35. 32. 30. 2D. 52. 32. 33. 31. 32. 2D. 53. 49 (hex)]
28: entPhysicalSoftwareRev.36 (octet string) 1.0 [20. 31. 2E. 30. 20 (hex)]
29: entPhysicalSoftwareRev.38 (octet string) 1.0 [20. 31. 2E. 30. 20 (hex)]
30: entPhysicalSoftwareRev.39 (octet string) 1.0 [20. 31. 2E. 30. 20 (hex)]
31: entPhysicalSoftwareRev.40 (octet string) 2.0 [20. 32. 2E. 30. 20 (hex)]
32: entPhysicalSoftwareRev.41 (octet string) 1.0 [20. 31. 2E. 30. 20 (hex)]
40: entPhysicalSoftwareRev.69 (octet string) 1.0 [20. 31. 2E. 30. 20 (hex)]
```

9.5 获取实体序列号

实体序列号:

entPhysicalSerialNum

节点OID值:

1. 3. 6. 1. 2. 1. 47. 1. 1. 1. 1. 11

获取entPhysicalSerialNum的值:

```
1: entPhysicalSerialNum.1 (octet string) 210235a19gb126000281
```

```
[32. 31. 30. 32. 33. 35. 61. 31. 39. 67. 62. 31. 32. 36. 30. 30. 30. 32. 38. 31 (hex)]
```

9.6 获取实体厂商

实体生产厂商:

entPhysicalMfgName

节点OID值:

1. 3. 6. 1. 2. 1. 47. 1. 1. 1. 1. 12

支持获取机框、电源、风扇、单板、光模块的生产厂商。

获取光模块厂商还有另外的 MIB 节点 hh3cTransceiverVendorName , OID :

1. 3. 6. 1. 4. 1. 25506. 2. 70. 1. 1. 1. 4。

可以参考MIB节点实体描述信息entPhysicalDescr, 节点的OID值:

1.3.6.1.2.1.47.1.1.1.1.2, 实体名称信息entPhysicalName, 节点的OID值:

1.3.6.1.2.1.47.1.1.1.1.7。

获取实体厂商:

1: entPhysicalMfgName.1 (octet string) H3C [48.33.43 (hex)]
30: entPhysicalMfgName.39 (octet string) H3C [48.33.43 (hex)]
31: entPhysicalMfgName.40 (octet string) H3C [48.33.43 (hex)]
33: entPhysicalMfgName.52 (octet string) H3C [48.33.43 (hex)]
34: entPhysicalMfgName.54 (octet string) H3C [48.33.43 (hex)]

参考entPhysicalDescr节点的值:

1: entPhysicalDescr.1 (octet string) H3C Series Router MSR30-20
[48.33.43.20.53.65.72.69.65.73.20.52.6F.75.74.65.72.20.4D.53.52.33.30.2D.32.30
(hex)]
30: entPhysicalDescr.39 (octet string) 1-Port E1/CE1/PRI Interface SIC-Module
[31.2D.50.6F.72.74.20.45.31.2F.43.45.31.2F.50.52.49.20.49.6E.74.65.72.66.61.63.
65.20.53.49.43.2D.4D.6F.64.75.6C.65 (hex)]
31: entPhysicalDescr.40 (octet string) 2-Port FXS Interface SIC-Module
[32.2D.50.6F.72.74.20.46.58.53.20.49.6E.74.65.72.66.61.63.65.20.53.49.43.2D.4D.
6F.64.75.6C.65 (hex)]
33: entPhysicalDescr.52 (octet string) Power Supply #0
[50.6F.77.65.72.20.53.75.70.70.6C.79.20.23.30 (hex)]
34: entPhysicalDescr.54 (octet string) System Fan #1
[53.79.73.74.65.6D.20.46.61.6E.20.23.31 (hex)]

参考entPhysicalName节点的值:

1: entPhysicalName.1 (octet string) MSR30-20 [4D.53.52.33.30.2D.32.30 (hex)]
30: entPhysicalName.39 (octet string) SIC-EPRI [53.49.43.2D.45.50.52.49 (hex)]
31: entPhysicalName.40 (octet string) SIC-2FXS [53.49.43.2D.32.46.58.53 (hex)]
33: entPhysicalName.52 (octet string) Power Supply
[50.6F.77.65.72.20.53.75.70.70.6C.79 (hex)]

34: entPhysicalName.54 (octet string) System Fan [53.79.73.74.65.6D.20.46.61.6E (hex)]

参考MIB节点实体描述信息entPhysicalDescr, 实体名称信息entPhysicalName, 比较节点索引对应关系。

根据索引1、30和31可知MSR3020、SIC-1EPRI及SIC-2的厂商为H3C;

9.7 获取实体生产日期

实体生产日期:

entPhysicalMfgDate

节点 OID 值:

1.3.6.1.2.1.47.1.1.1.1.17

支持获取机框、电源、风扇、单板、光模块的生产日期。

可以参考MIB节点实体描述信息entPhysicalDescr, 节点的OID值:

1.3.6.1.2.1.47.1.1.1.1.2, 实体名称信息entPhysicalName, 节点的OID值:

1.3.6.1.2.1.47.1.1.1.1.7。

获取实体生产日期:

1: entPhysicalMfgDate.1 (octet string) 2012-6-17,0:0:0.0,<00>0:0

[07.DC.06.11.00.00.00.00.00.00 (hex)]

参考entPhysicalDescr节点的值:

1: entPhysicalDescr.1 (octet string) H3C Series Router MSR30-20

[48.33.43.20.53.65.72.69.65.73.20.52.6F.75.74.65.72.20.4D.53.52.33.30.2D.32.30 (hex)]

参考entPhysicalName节点的值:

1: entPhysicalName.1 (octet string) MSR30-20 [4D.53.52.33.30.2D.32.30 (hex)]

参考MIB节点实体描述信息entPhysicalDescr, 实体名称信息entPhysicalName, 比较节点索引对应关系。

根据索引1可知MSR3020的生产日期为2012-6-17

9.8 获取实体型号

实体型号:

entPhysicalModelName

节点 OID 值:

1.3.6.1.2.1.47.1.1.1.1.13

获取实体型号:

可以参考MIB节点实体描述信息entPhysicalDescr, 节点的OID值:

1.3.6.1.2.1.47.1.1.1.1.2, 实体名称信息entPhysicalName, 节点的OID值:

1.3.6.1.2.1.47.1.1.1.1.7。

1: entPhysicalModelName.1 (octet string) MSR30-20 [4D.53.52.33.30.2D.32.30 (hex)]

28: entPhysicalModelName.36 (octet string) MSR30-20 RPU Board

[4D.53.52.33.30.2D.32.30.20.52.50.55.20.42.6F.61.72.64 (hex)]

29: entPhysicalModelName.38 (octet string) DSIC-9FSW [44.53.49.43.2D.39.46.53.57 (hex)]

30: entPhysicalModelName.39 (octet string) SIC-EPRI [53.49.43.2D.45.50.52.49 (hex)]

31: entPhysicalModelName.40 (octet string) SIC-2FXS [53.49.43.2D.32.46.58.53 (hex)]

32: entPhysicalModelName.41 (octet string) MIM-2SAE [4D.49.4D.2D.32.53.41.45 (hex)]

9.9 获取单板 CPU 利用率

通过实体MIB来获取CPU利用率

CPU利用率:

hh3cEntityExtCpuUsage

节点OID值:

1.3.6.1.4.1.25506.2.6.1.1.1.1.6

获取单板CPU利用率:

可以参考MIB节点实体描述信息entPhysicalDescr, 节点的OID值:

1.3.6.1.2.1.47.1.1.1.1.2, 实体名称信息entPhysicalName, 节点的OID值:

1.3.6.1.2.1.47.1.1.1.1.7。

1: hh3cEntityExtCpuUsage.1 (integer) 0

2: hh3cEntityExtCpuUsage.2 (integer) 0

3: hh3cEntityExtCpuUsage.3 (integer) 1

4: hh3cEntityExtCpuUsage.4 (integer) 0

MSR V5设备是从Module level1模块读取CPU利用率, 从实体名称信息中

(1.3.6.1.4.1.25506.2.3.1.5.2.1.2) 可以看到Module level1对应的索引值是3, 所以可以看到当前CPU利用率为1%

9.10 获取单板内存利用率

通过实体MIB来获取内存利用率

内存利用率:

hh3cEntityExtMemUsage

节点OID值:

1.3.6.1.4.1.25506.2.6.1.1.1.1.8

获取单板内存利用率:

可以参考MIB节点实体描述信息entPhysicalDescr, 节点的OID值:

1.3.6.1.2.1.47.1.1.1.1.2, 实体名称信息entPhysicalName, 节点的OID值:

1.3.6.1.2.1.47.1.1.1.1.7。

1: hh3cEntityExtMemUsage.1 (integer) 0

2: hh3cEntityExtMemUsage.2 (integer) 0

3: hh3cEntityExtMemUsage.3 (integer) 32

MSR V5设备是从Module level1模块读取内存利用率，从实体名称信息中

(1.3.6.1.4.1.25506.2.3.1.5.2.1.2) 可以看到Module level1对应的索引值是3，所以可以看到当前CPU利用率为32%

9.11 获取单板上各个传感器的温度信息

单板上各个传感器的温度信息：

hh3cEntityExtTemperature

节点OID值：

1.3.6.1.4.1.25506.2.6.1.1.1.1.12

获取单板上各个传感器的温度信息：

可以参考MIB节点实体描述信息entPhysicalDescr，节点的OID值：

1.3.6.1.2.1.47.1.1.1.1.2，实体名称信息entPhysicalName，节点的OID值：

1.3.6.1.2.1.47.1.1.1.1.7。

温度的详细信息可以参考命令行display environment。

1: hh3cEntityExtTemperature.1 (integer) 0

2: hh3cEntityExtTemperature.2 (integer) 0

3: hh3cEntityExtTemperature.3 (integer) 35

从上述可知，当前设备温度为35度

9.12 获取主用主控板的 CPU 和内存利用率

获取主用主控板的CPU和内存利用率可以不用实体MIB节点，对于MSR集中式设备来说，单板CPU/内存利用率和主控板CPU/内存利用率2个节点都能读到主控板的CPU利用率，详情请见9.9和9.10章节

CPU利用率的MIB节点：

hh3cLswSysCpuRatio

节点OID值为：

1.3.6.1.4.1.25506.8.35.18.1.3

内存利用率的MIB节点：

hh3cLswSysMemoryRatio

节点OID值:

1. 3. 6. 1. 4. 1. 25506. 8. 35. 18. 1. 1

获取主控板的CPU利用率

1: hh3cLswSysCpuRatio.0 (integer) 1

获取主控板的内存利用率

1: hh3cLswSysMemoryRatio.0 (gauge) 32

10 获取光模块信息

10.1 获取光模块硬件类型

光模块硬件类型节点:

hh3cTransceiverHardwareType

节点OID值:

1. 3. 6. 1. 4. 1. 25506. 2. 70. 1. 1. 1. 1

获取光模块硬件类型，即单模或多模:

1: hh3cTransceiverHardwareType.4 (OCTET STRING) MM [4D.4D (hex) Size = 2]

说明：节点的索引 4 表示该光模块所在端口索引，参考 MIB 节点 ifDescr，OID:

1. 3. 6. 1. 2. 1. 2. 2. 1. 2

4: ifDescr.4 (DisplayString) GigabitEthernet0/0/3

[47.69.67.61.62.69.74.45.74.68.65.72.6E.65.74.30.2F.30.2F.33 (hex)]

端口GigabitEthernet0/0/3上光模块为MM，即多模。

10.2 获取光模块类型

光模块类型节点:

hh3cTransceiverType

节点OID值:

1. 3. 6. 1. 4. 1. 25506. 2. 70. 1. 1. 1. 2

获取光模块类型:

2:hh3cTransceiverType.13 (OCTET STRING) OC3/STM_1_SR_SFP

[4F.43.33.2F.53.54.4D.5F.31.5F.53.52.5F.53.46.50 (hex) Size = 16]

说明：节点的索引 13 表示该光模块所在端口索引，参考 MIB 节点 ifDescr，OID：
1.3.6.1.2.1.2.2.1.2
9: ifDescr.13 (DisplayString) Cpos1/1/0 [43.70.6F.73.31.2F.31.2F.30 (hex)]
端口Cpos1/1/0上光模块为0C3/STM_1_SR_SFP。

10.3 获取光模块波长

光模块波长：
hh3cTransceiverWaveLength
节点OID值：
1.3.6.1.4.1.25506.2.70.1.1.1.3
获取光模块波长：
2: hh3cTransceiverWaveLength.13 (Integer32) 1310
说明：节点的索引 13 表示该光模块所在端口索引，参考 MIB 节点 ifDescr，OID：
1.3.6.1.2.1.2.2.1.2
9: ifDescr.13 (DisplayString) Cpos1/1/0 [43.70.6F.73.31.2F.31.2F.30 (hex)]
端口Cpos1/1/0上光模块为1310纳米。

10.4 获取光模块厂商

光模块厂商：
hh3cTransceiverVendorName
节点OID值：
1.3.6.1.4.1.25506.2.70.1.1.1.4
获取光模块厂商：
2: hh3cTransceiverVendorName.13 (OCTET STRING) H3C [48.33.43 (hex) Size = 3]
说明：节点的索引 13 表示该光模块所在端口索引，参考 MIB 节点 ifDescr，OID：
1.3.6.1.2.1.2.2.1.2
9: ifDescr.13 (DisplayString) Cpos1/1/0 [43.70.6F.73.31.2F.31.2F.30 (hex)]
端口Cpos1/1/0上光模块厂商为H3C。

10.5 获取光模块序列号

光模块序列号:

hh3cTransceiverSerialNumber

节点OID值:

1.3.6.1.4.1.25506.2.70.1.1.1.5

获取光模块序列号:

2: hh3cTransceiverSerialNumber.13 (OCTET STRING) 210231A320X101002075

[32.31.30.32.33.31.41.33.32.30.58.31.30.31.30.30.32.30.37.35 (hex) Size = 20]

说明: 节点的索引 13 表示该光模块所在端口索引, 参考 MIB 节点 ifDescr, OID:

1.3.6.1.2.1.2.2.1.2

9: ifDescr.13 (DisplayString) Cpos1/1/0 [43.70.6F.73.31.2F.31.2F.30 (hex)]

端口Cpos1/1/0上光模块序列号为210231A320X101002075。

10.6 获取光纤直径

光纤直径:

hh3cTransceiverFiberDiameterType

节点OID值:

1.3.6.1.4.1.25506.2.70.1.1.1.6

获取光纤直径:

2: hh3cTransceiverFiberDiameterType.13 (INTEGER) fiber50(2)

值有以下5种情况:

1: fiber9(1)

2: fiber50(2)

3: fiber625(3)

4: copper(4)

5: unknown(65535)

说明: 节点的索引 13 表示该光模块所在端口索引, 参考 MIB 节点 ifDescr, OID:

1.3.6.1.2.1.2.2.1.2

9: ifDescr.13 (DisplayString) Cpos1/1/0 [43.70.6F.73.31.2F.31.2F.30 (hex)]

端口Cpos1/1/0上光模块上光纤直径为50微米。

10.7 获取光模块传输距离

光模块传输距离：

hh3cTransceiverTransferDistance

节点OID值：

1.3.6.1.4.1.25506.2.70.1.1.1.7

获取光模块传输距离：

2: hh3cTransceiverTransferDistance.13 (Integer32) 2000

说明：节点的索引 13 表示该光模块所在端口索引，参考 MIB 节点 ifDescr，OID：

1.3.6.1.2.1.2.2.1.2

9: ifDescr.13 (DisplayString) Cpos1/1/0 [43.70.6F.73.31.2F.31.2F.30 (hex)]

端口Cpos1/1/0上光模块传输距离为2000米。

10.8 获取光模块诊断功能

光模块诊断功能：

hh3cTransceiverDiagnostic

节点OID值：

1.3.6.1.4.1.25506.2.70.1.1.1.8

获取光模块是否支持诊断功能，1 表示 true，即支持，2 表示 false，即不支持：

2: hh3cTransceiverDiagnostic.13 (TruthValue) true(1)

说明：节点的索引 13 表示该光模块所在端口索引，参考 MIB 节点 ifDescr，OID：

1.3.6.1.2.1.2.2.1.2

9: ifDescr.13 (DisplayString) Cpos1/1/0 [43.70.6F.73.31.2F.31.2F.30 (hex)]

端口Cpos1/1/0上光模块支持诊断功能。

10.9 获取光模块发光功率

光模块发光功率：

hh3cTransceiverCurTXPower

节点OID值:

1.3.6.1.4.1.25506.2.70.1.1.1.9

获取光模块发光功率:

2: hh3cTransceiverCurTXPower.13 (Integer32) -4000

说明: 节点的索引 13 表示该光模块所在端口索引, 参考 MIB 节点 ifDescr, OID:

1.3.6.1.2.1.2.2.1.2

9: ifDescr.13 (DisplayString) Cpos1/1/0 [43.70.6F.73.31.2F.31.2F.30 (hex)]

端口Cpos1/1/0上光模块发光功率为-40DBM。

10.10 获取光模块最大发光功率

光模块最大发光功率:

hh3cTransceiverMaxTXPower

节点OID值:

1.3.6.1.4.1.25506.2.70.1.1.1.10

获取光模块最大发光功率:

2: hh3cTransceiverMaxTXPower.13 (Integer32) -1400

说明: 节点的索引 13 表示该光模块所在端口索引, 参考 MIB 节点 ifDescr, OID:

1.3.6.1.2.1.2.2.1.2

9: ifDescr.13 (DisplayString) Cpos1/1/0 [43.70.6F.73.31.2F.31.2F.30 (hex)]

端口Cpos1/1/0上光模块最大发光功率为-14DBM。

10.11 获取光模块最小发光功率

光模块最小发光功率:

hh3cTransceiverMinTXPower

节点OID值:

1.3.6.1.4.1.25506.2.70.1.1.1.11

获取光模块最小发光功率:

2: hh3cTransceiverMinTXPower.13 (Integer32) -2000

说明：节点的索引 13 表示该光模块所在端口索引，参考 MIB 节点 ifDescr，OID：

1.3.6.1.2.1.2.2.1.2

9: ifDescr.13 (DisplayString) Cpos1/1/0 [43.70.6F.73.31.2F.31.2F.30 (hex)]

端口Cpos1/1/0上光模块最小发光功率为-20DBM。

10.12 获取光模块收光功率

光模块收光功率：

hh3cTransceiverCurRXPower

节点OID值：

1.3.6.1.4.1.25506.2.70.1.1.1.12

获取光模块收光功率：

2: hh3cTransceiverCurRXPower.13 (Integer32) -4000

说明：节点的索引 13 表示该光模块所在端口索引，参考 MIB 节点 ifDescr，OID：

1.3.6.1.2.1.2.2.1.2

9: ifDescr.13 (DisplayString) Cpos1/1/0 [43.70.6F.73.31.2F.31.2F.30 (hex)]

端口Cpos1/1/0上光模块收光功率为-3.75DBM。

10.13 获取光模块最大收光功率

光模块最大收光功率：

hh3cTransceiverMaxRXPower

节点OID值：

1.3.6.1.4.1.25506.2.70.1.1.1.13

获取光模块最大收光功率：

1: hh3cTransceiverMaxRXPower.144 (integer) 50

说明：节点的索引 13 表示该光模块所在端口索引，参考 MIB 节点 ifDescr，OID：

1.3.6.1.2.1.2.2.1.2

9: ifDescr.13 (DisplayString) Cpos1/1/0 [43.70.6F.73.31.2F.31.2F.30 (hex)]

端口Cpos1/1/0上光模块最大收光功率为0.5DBM。

10.14 获取光模块最小收光功率

光模块最小收光功率:

hh3cTransceiverMinRXPower

节点OID值:

1.3.6.1.4.1.25506.2.70.1.1.1.14

获取光模块最小收光功率:

1: hh3cTransceiverMinRXPower.144 (integer) -1030

说明: 节点的索引 13 表示该光模块所在端口索引, 参考 MIB 节点 ifDescr, OID:

1.3.6.1.2.1.2.2.1.2

9: ifDescr.13 (DisplayString) Cpos1/1/0 [43.70.6F.73.31.2F.31.2F.30 (hex)]

端口Cpos1/1/0上光模块最小收光功率为-10.3DBM。

10.15 获取光模块温度

光模块温度:

hh3cTransceiverTemperature

节点OID值:

1.3.6.1.4.1.25506.2.70.1.1.1.15

获取光模块温度:

1: hh3cTransceiverTemperature.144 (integer) 36

说明: 节点的索引 13 表示该光模块所在端口索引, 参考 MIB 节点 ifDescr, OID:

1.3.6.1.2.1.2.2.1.2

9: ifDescr.13 (DisplayString) Cpos1/1/0 [43.70.6F.73.31.2F.31.2F.30 (hex)]

端口Cpos1/1/0上光模块温度为36度。

10.16 获取光模块电压

光模块电压:

hh3cTransceiverVoltage

节点OID值:

1.3.6.1.4.1.25506.2.70.1.1.1.16

获取光模块电压:

1: hh3cTransceiverVoltage.144 (integer) 328

说明: 节点的索引 13 表示该光模块所在端口索引, 参考 MIB 节点 ifDescr, OID:

1.3.6.1.2.1.2.2.1.2

9: ifDescr.13 (DisplayString) Cpos1/1/0 [43.70.6F.73.31.2F.31.2F.30 (hex)]

端口Cpos1/1/0上光模块电压为3.28V。

10.17 获取光模块偏移电流

光模块偏移电流:

hh3cTransceiverBiasCurrent

节点OID值:

1.3.6.1.4.1.25506.2.70.1.1.1.17

获取光模块偏移电流:

1: hh3cTransceiverBiasCurrent.144 (integer) 4220

说明: 节点的索引 13 表示该光模块所在端口索引, 参考 MIB 节点 ifDescr, OID:

1.3.6.1.2.1.2.2.1.2

9: ifDescr.13 (DisplayString) Cpos1/1/0 [43.70.6F.73.31.2F.31.2F.30 (hex)]

端口Cpos1/1/0上光模块偏移电流为42.2mA。

11 获取电源和风扇状态

11.1 获取电源模块的状态

电源模块的状态节点:

hh3cDevMPowerStatus

节点OID值:

1.3.6.1.4.1.25506.8.35.9.1.2.1.2

节点值为1~4

1: active(1) ——表示电源模块状态正常

2: deactive(2) ——表示电源模块不正常

3: not-install(3) ——表示该电源模块未插入

4: unsupported (4) -- 表示不支持该电源模块

获取电源模块的状态信息:

1: hh3cDevMPowerStatus.0 (integer) active(1)

11.2 获取风扇的状态

风扇的状态节点:

hh3cDevMFanStatus

节点OID值:

1.3.6.1.4.1.25506.8.35.9.1.1.1.2

节点值为1~4

1: active(1) -- 表示风扇状态正常

2: deactive(2) -- 表示风扇不正常

3: not-install (3) -- 表示该风扇未插入

4: unsupported (4) -- 表示不支持该风扇

获取风扇的状态信息:

1: hh3cDevMFanStatus.1 (integer) active(1)