



第四章

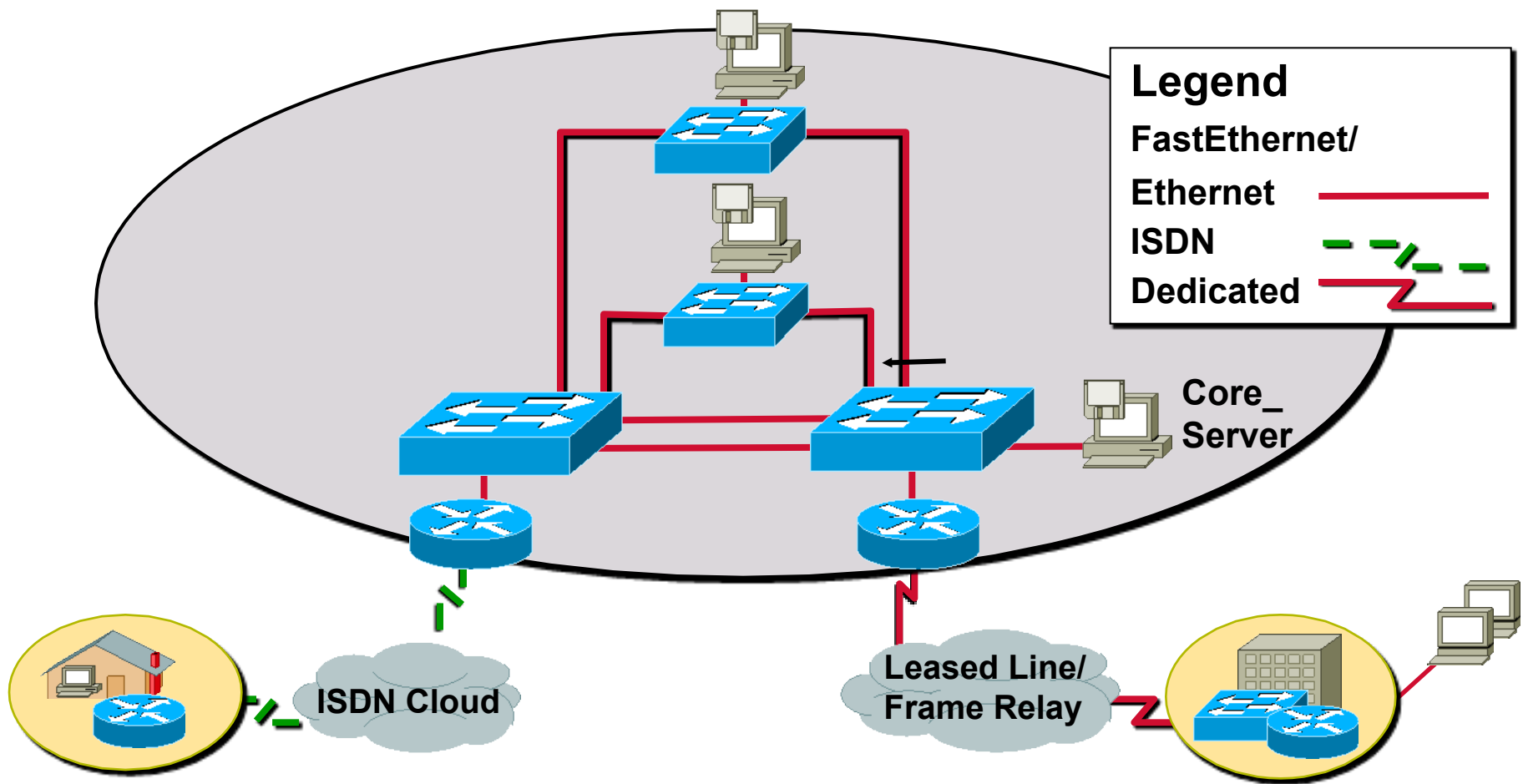
线缆测试及局域网、广域网布线



主要内容

介绍关于网络布线和线缆测试的知识。

网络连接图例



4.1 线缆测试

1、 TIA/EIA-568B标准
规定通过10项测试。

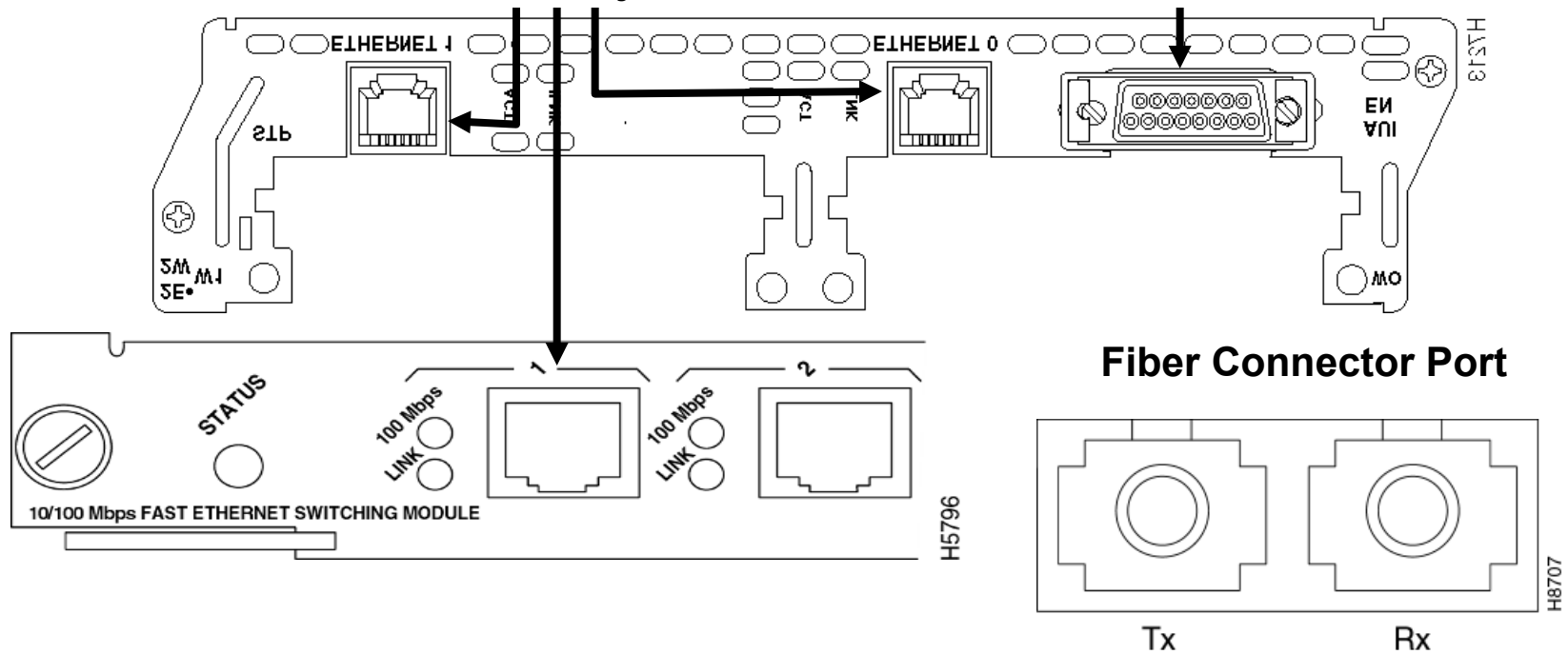
2、 测试工具

Fluke测试仪， 通断测试器

4.2 端口识别

**ISO 8877 (RJ-45)
connectors and jacks
are slightly larger than
RJ-11 phone
connectors and jacks**

**AUI connectors
are DB15**



4.2 端口识别

1、交换机常见接口：

RJ45 以太网接口，

10/100/1000BASE-TX

堆叠模块，

光纤模块，

1000BASE-SX， 1000BASE-LX/LH，

1000BASE-ZX

4.2 端口识别

2、路由器常见接口：

Console 端口

AUX 端口

高速同步串口

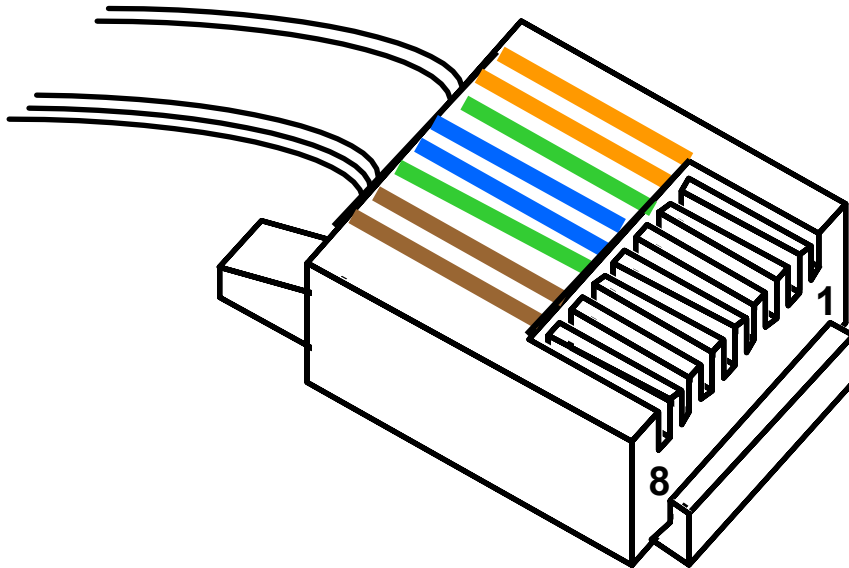
RJ45 以太或快速以太网接口

AUI 端口

ISDN 端口

4.3 局域网布线连接

1、UTP连接器



The RJ-45 Connector

Pin	Wire Pair T is Tip R is Ring
1	Pair 2 T2
2	Pair 2 R2
3	Pair 3 T3
4	Pair 1 R1
5	Pair 1 T1
6	Pair 3 R3
7	Pair 4 T4
8	Pair 4 R4

2、UTP 直连（正接）

Cable 10BaseT/ 100BaseT Straight-through



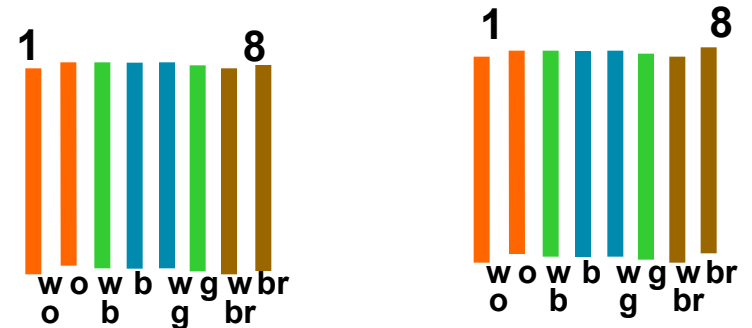
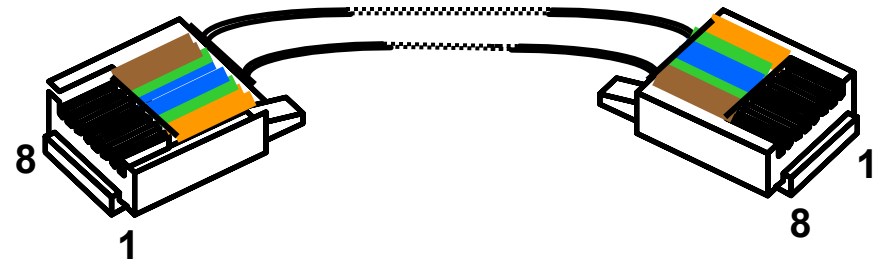
Hub/Switch



Server/Router

Pin Label		Pin Label	
1	RD+ ←	1	TD+
2	RD- ←	2	TD-
3	TD+ →	3	RD+
4	NC	4	NC
5	NC	5	NC
6	TD- →	6	RD-
7	NC	7	NC
8	NC	8	NC

Straight-through Cable



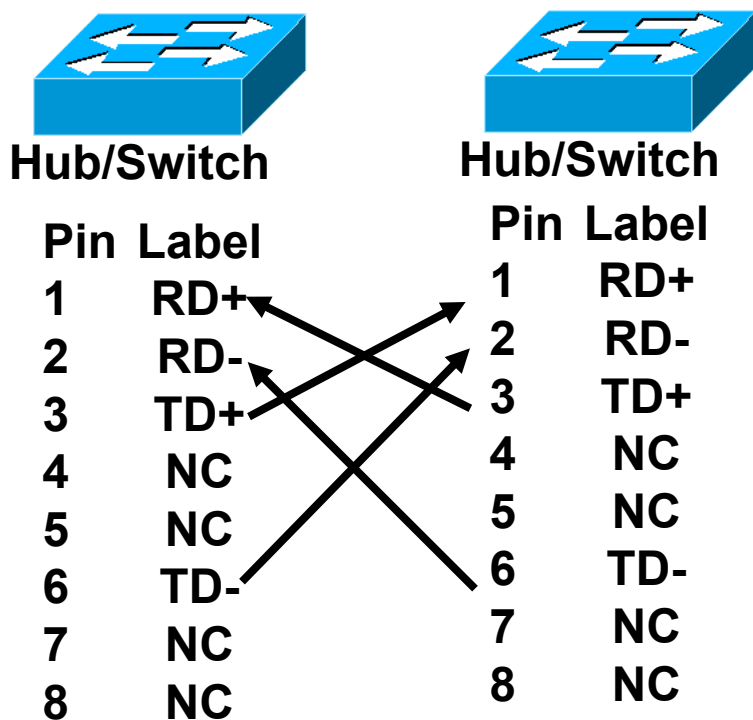
**Wires on cable ends
are in same order**

制作跳线注意

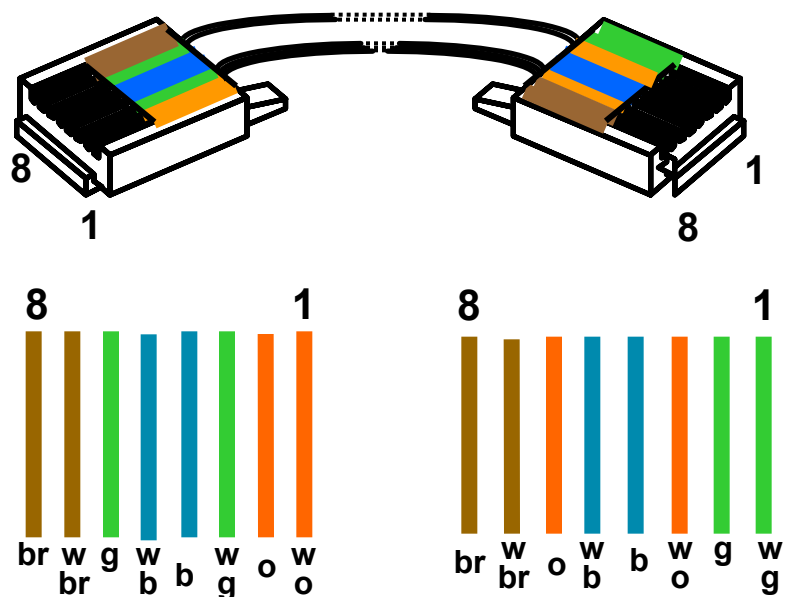
- 1、水晶头铜片朝上看线序
- 2、每根线要顶到头
- 3、线缆外皮要夹牢在水晶头内
- 4、卡线时要用力

3、UTP 跨接 (反接)

Cable 10BaseT/ 100BaseT Crossover

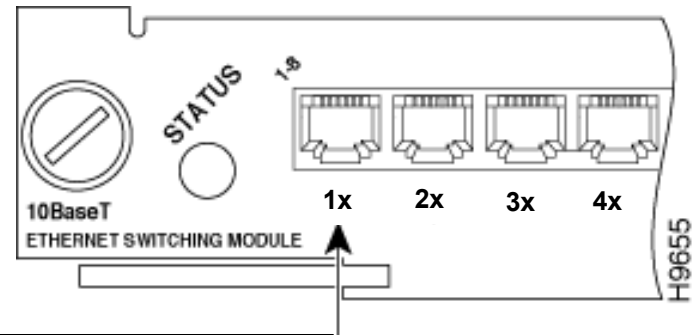
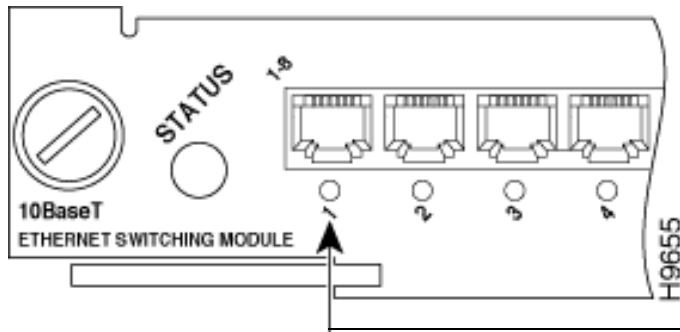


Crossover Cable

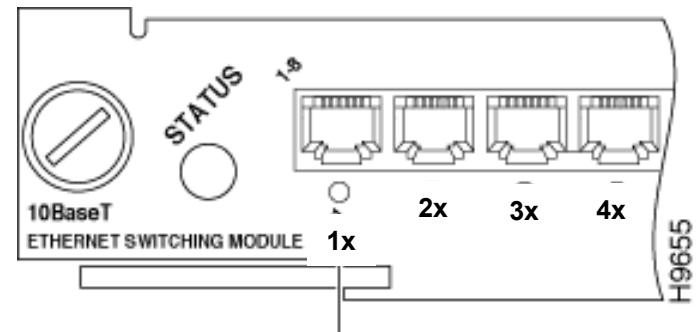
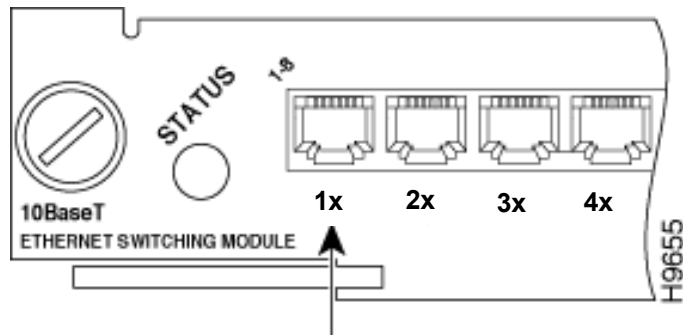


Some wires on cable ends are crossed

4、UTP 实现直连和跨接

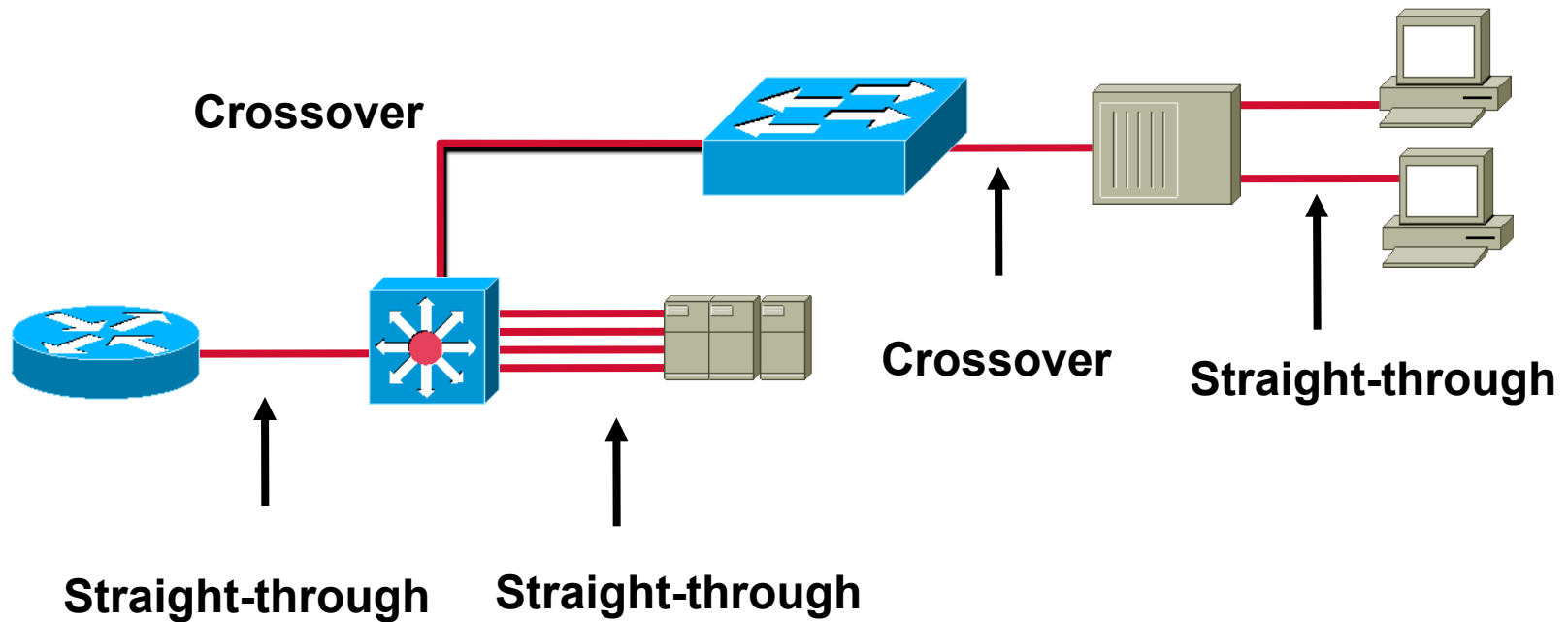


Use straight-through when only one port is designated with an X.



Use a crossover cable when BOTH ports are designated with an x or neither port is designated with an x.

UTP实现设备互联



4.4 工作站和效劳器

- 1、对等网络
- 2、客户/效劳器网络

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