|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Ethernet | | IP | | ICMP |
| Dmac | Smac | Sip | Dip |

PC1

Switch

PC2

1

1

2

2

Mac: aa:aa:aa:aa:aa:aa

IP: 1.1.1.1/24

Mac: cc:cc:cc:cc:cc:cc

IP: 1.1.1.100/24

Mac: cc:cc:cc:cc:cc:cc

IP: 2.2.2.100/24

Mac: bb:bb:bb:bb:bb:bb

IP: 2.2.2.2/24

>ping 2.2.2.2

|  |  |  |  |
| --- | --- | --- | --- |
| PC1 | Switch | Router | PC2 |
| ARP table:  1.1.1.100-cc:cc:cc:cc:cc:cc | MAC table:  Port 1 - aa:aa:aa:aa:aa:aa  Port 2 - cc:cc:cc:cc:cc:cc | ARP table:  1.1.1.1-aa:aa:aa:aa:aa:aa  2.2.2.2-bb:bb:bb:bb:bb:bb | ARP table:  2.2.2.100-cc:cc:cc:cc:cc:cc |
| RIB  0.0.0.0/0 via 1.1.1.100  | 1.1.0.10/32 via 1.1.1.100  | 1.1.0.0/24 via 1.1.1.100  | 1.0.0.0/8 via 1.1.1.100  etc |  | RIB  1.0.0.0/24 via Port 1  2.0.0.0/24 via Port 2 | RIB  0.0.0.0/0 via 2.2.2.100  | 2.2.0.10/32 via 2.2.2.100  | 2.2.0.0/24 via 2.2.2.100  | 2.0.0.0/8 via 2.2.2.100  etc |

1) PC1 → Switch

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Ethernet | | IP | | ICMP |
| Dmac-? | Smac-aa:aa:aa:aa:aa:aa | Sip-1.1.1.1 | Dip-2.2.2.2 |

2) Switch → Router

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Ethernet | | IP | | ICMP |
| Dmac-cc:cc:cc:cc:cc:cc | Smac-aa:aa:aa:aa:aa:aa | Sip-1.1.1.1 | Dip-2.2.2.2 |

3) Router → PC2

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Ethernet | | IP | | ICMP |
| Dmac-bb:bb:bb:bb:bb:bb | Smac-cc:cc:cc:cc:cc:cc | Sip-1.1.1.1 | Dip-2.2.2.2 |

4) PC2 → Router

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Ethernet | | IP | | ICMP |
| Dmac-? | Smac-bb:bb:bb:bb:bb:bb | Sip-2.2.2.2 | Dip-1.1.1.1 |

5) Router → Switch

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Ethernet | | IP | | ICMP |
| Dmac-aa:aa:aa:aa:aa:aa | Smac-cc:cc:cc:cc:cc:cc | Sip-2.2.2.2 | Dip-1.1.1.1 |

6) Switch → PC1

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Ethernet | | IP | | ICMP |
| Dmac-aa:aa:aa:aa:aa:aa | Smac-cc:cc:cc:cc:cc:cc | Sip-2.2.2.2 | Dip-1.1.1.1 |