

## 4-2-3 ARP 封包擷取 – Packet Tracer (一)

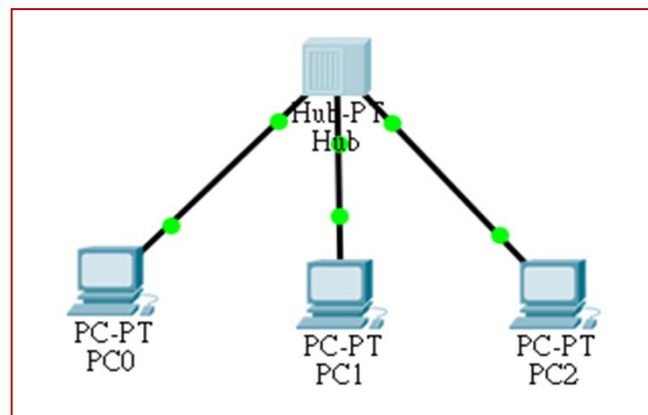


### ✦ 系統分析

- ◆ Ping 命令，產生 ARP 封包
- ◆ 清除 ARP Cache (`arp -a`、`arp -d` 命令)

### ✦ 網路規劃

| 網路區段                          | Gateway/DNS                  | 名稱  | IP 位址       | 連接埠口     |
|-------------------------------|------------------------------|-----|-------------|----------|
| 192.168.0.0/<br>255.255.255.0 | 192.168.0.254/<br>168.95.1.1 | PC0 | 192.168.0.1 | HUB(Fa0) |
|                               |                              | PC1 | 192.168.0.2 | HUB(Fa1) |
|                               |                              | PC2 | 192.168.0.3 | HUB(Fa2) |



## 4-2-3 ARP 封包擷取 – Packet Tracer (二)

✦ 擷取步驟：

- ◆ Packet Tracer 採用 Simulation 模式
- ◆ 再由 PC0 上 ping 發送給 PC2

The screenshot displays the Packet Tracer interface. On the left, a network topology is shown with a central Hub (Hub-P1) connected to three PCs (PC0, PC1, and PC2). The right side of the interface features the Simulation Panel, which includes an Event List table, a 'Reset Simulation' button, a 'Constant Delay' checkbox, and a 'Captured to:' field. The 'Play Controls' section contains buttons for 'Back', 'Auto Capture / Play', and 'Capture / Forward'. Below this, the 'Event List Filters - Visible Events' section is set to 'ARP'. The bottom status bar shows the time as 00:01:00.727 and the 'PLAY CONTROLS' section with buttons for 'Back', 'Auto Capture / Play', 'Capture / Forward', and 'Simulation'. Red boxes highlight the 'Auto Capture / Play' button, the 'Event List Filters - Visible Events' section, and the 'Simulation' button.

## 4-2-3 ARP 封包擷取 – Packet Tracer (三)

### ✦ ARP 協定分析

- ◆ ARP Request 封包標頭、
- ◆ ARP Reply 封包標頭

Simulation Panel

Event List

| Vis. | Time(sec) | Last Device | At Device | Type | Info |
|------|-----------|-------------|-----------|------|------|
|      | 0.001     | PC0         | Hub       | ARP  |      |
|      | 0.002     | Hub         | PC1       | ARP  |      |
|      | 0.002     | Hub         | PC2       | ARP  |      |
|      | 0.003     | PC1         | Hub       | ARP  |      |
|      | 0.004     | Hub         | PC0       | ARP  |      |
|      | 0.004     | Hub         | PC2       | ARP  |      |

ARP

|                            |           |                      |  |
|----------------------------|-----------|----------------------|--|
| HARDWARE TYPE:0x0001       |           | PROTOCOL TYPE:0x0800 |  |
| HLEN:0x06                  | PLEN:0x04 | OPCODE:0x0001        |  |
| SOURCE MAC :000B.BE1D.2DB9 |           |                      |  |
| SOURCE IP :192.168.0.1     |           |                      |  |
| TARGET MAC:0000.0000.0000  |           |                      |  |
| TARGET IP:192.168.0.2      |           |                      |  |