**深 圳 大 学 实 验 报 告**

**课程名称：­ 计算机网络**

**实验项目名称： Transport Layer Assignment**

**学院： 电子与信息工程学院**

**专业： 电子信息工程**

**指导教师： 毕宿志**

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**班级： 04**

**实验时间： 2024年12月24日**

**实验报告提交时间： 2024年12月28日**

**教务处制**

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| Aim of Experiment:   1. To understand the Ethernet frame format and the ARP request/response process. 2. Grasp the interaction between the network layer and the data link layer |
| Experiment Content:   1. Ethernet frame analyzing 2. Address Resolution Protocol |
| Experiment Process：   1. Ethernet frame analyzing    1. open file ethernet--ethereal-trace-1 in wireshark    2. answer questions in Page 4 of the document    3. try to Capture and analyze Ethernet frames by yourself, and compare with the provided frame 2. Address Resolution Protocol    1. open file ethernet--ethereal-trace-1 in wireshark    2. analyze ARP frames    3. answer questions 10,11,13 and 14 in the document    4. try to Capture and analyze ARP frames by yourself, and compare with the provided frame |
| Data Logging and Processing:   1. Ethernet frame analyzing    1. Load the file      * 1. The answer of those questions:      1. The 48-bit Ethernet address of my computer: AmbitMicrosy\_a9:3d:68 (00:03:df:a9:3d:68).      2. Destination MAC Address: 00:06:25:da:af:73. No, maybe a router.      3. Frame Type: 0x0800 ; IPv4.      4. Frame Type: 0x0800 ; IPv4.      5. Ethernet source address:gaia.cs.umass.edu (128.119.245.12)      6. Destination address: Your computer's address (192.168.1.105)      7. Frame Type: 0x0800 (IPv4)      8. Bytes to "O" in "OK": 54 bytes   2. Capture and analyze      1. Capture the packets      * + 1. Before establishing TCP connection, there will be an ARP query when MAC of destination is unknown as well as tutorial.  1. Address Resolution Protocol    1. The answer of those questions:       1. Source MAC address: a9:3d:68:xx:xx:xx       2. Destination MAC address: ff:ff:ff:ff:ff:ff       3. Ethernet Type: 0x0806       4. Upper Layer Protocol: ARP       5. ARP opcode field start: Byte 14       6. Opcode: 0x0002 (ARP reply)       7. Answer IP address: 192.168.1.1       8. Source MAC address: 00:06:25:da:af:73       9. Destination MAC address: a9:3d:68:xx:xx:xx    2. Capture and Compare |
| Experimental Results and Analysis:  Through this experiment, we understand the principle of the ARP and experience the process of ARP by analyzing ARP query and its response messages within Ethernet frames. ARP is used to map IP addresses to MAC addresses, when MAC of destination is unknown. |
| 指导教师批阅意见：  成绩评定：  指导教师签字：  年 月 日 |
| 备注： |

注：1、报告内的项目或内容设置，可根据实际情况加以调整和补充。

2、教师批改学生实验报告时间应在学生提交实验报告时间后10日内。