**Week 10 Tutorial Activity**

Use the tutorial lesson and the slides (15 & 16) to fill in the blanks (indicated by ?) by entering the missing information: starting address, ending address, type [private /public ] OR [special: loopback / APIPA / TEST-NET / multicast / public /reserved]

|  |  |  |
| --- | --- | --- |
| Start address | End address | Type of address |
| 0.0.0.0 |  | public |
| 10.0.0.0 | 10.255.255.255 | private |
|  |  |  |
| 127.0.0.0 | 127.255.255.255 | Loopback |
| .. |  |  |
| 169.254.0.0 | 169.254.255.255 | APIPA |
|  |  |  |
| 172.16.0.0 | 172.31.255.255 | private |
|  |  |  |
| 192.0.2.0 | 192.0.2.255 | TEST-NET |
|  |  |  |
| 192.168.0.0 | 192.168.255.255 | private |
|  | 223.255.255.255 | broadcast |
| 224.0.0.0 | 239.255.255.255 | multicast |
| 240.0.0.0 | 255.255.255.254 | Reserved for future use  (limited broadcast 255.255.255.255) |

**1. Using the completed table, classify the following addresses as public or private. (circle )**

|  |  |
| --- | --- |
| 10.100.11.103/16 | public / private |
| 172.30.1.100/28 | public / private |
| 192.31.7.11/24 | public / private |
| 209.165.201.30/27 | public / private |
| 192.168.255.253/24 | public / private |

**How to determine:** Locate the closest address in the table – does the address fit between the start and end addresses. Is it in the private range, or a public range? Circle as appropriate

**2. Using the completed table above identify whether the address is a valid host address.**

|  |  |  |  |
| --- | --- | --- | --- |
| First row shows example | In a Special range? | Valid host? | If a special type, write the type. If not, write binary conversion, then indicate network bits & host bits, then type (h,n,b)\* |
| 10.255.0.0 /8 | (1) N | (3) Y | (2) 00001010.11111111.00000000.00000000 - host |
| 172.16.128.48 /28 | Y | N |  |
| 209.165.202.159 /27 |  |  |  |
| 172.16.0.255 /16 |  |  |  |
| 224.10.1.11 /24 |  |  |  |
| 127.1.0.10 /24 |  |  |  |
| 172.16.128.0/16 |  |  |  |
| 241.19.10.100/24 |  |  |  |
| 169.254.0.200 /24 |  |  |  |

**How to determine:** Locate where in the table the address fits –

Does the address range fit within one of the special ranges? (enter Y or N in the special column)

1. If yes, then it can not be a valid host address, no further action required, add reason/special type
2. If no, convert to binary, identify network bits and host bits

Are all the host bits 0’s? 🡪 network address (n)\*

Are all the host bits 1’s? 🡪 broadcast address (b)

1. If no, then it is a valid host address (h)