# Op-246189

# Description:

## Customer wants to do broadcast UDP communication with all zero IP address such as 0.0.0.0 for example. It means able to communication with host part of IP address are zeros. An IP address is configured a network part and a host part. When IP address is 192.168.1.1 and netmask is 255.255.0.0 then customer wants to do broadcast communication to 192.168.0.0 and 0.0.0.0 as UDP/IP. The behavior works with VxWorks5.4.

# Target OS:

## VxWorks 7

## BSP: ARM: Cortex A9

## Architecture: Cyclone V

## Board: Cyclone V

## BSP: Cyclone V BSP for VxWorks7

## Endian: TBD. Either Big or Little depends on BSP and Hardware.

## Compiler: TBD

# Other Consideration:

## Need support multiple Network Interface e.g. eth0 and eth1.

# Impact:

## Loopback IPv4 address – No impact expected

## NAT – No impact

# Expected behaviors:

## IP Network stack shall support receiving packets with destination address as 0.0.0.0 and treat them as broadcast packets over local network. The packet can be delivered to an UDP application. Application in turn shall be able to respond to the source of the packet, if required.

## A UDP application shall be able to use 0.0.0.0 as destination address. IP network stack shall treat such packets as broadcast and send the packet to all nodes in all connected local networks. i.e. if there are two interfaces locally connecting to 2 subnets, the packet shall be broadcast to all nodes in each of the two subnets.

## TCP communication: NA.

## Examples:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | UDP application action | Configuration | | | Network stack Action |
| Interfaces | IP address | Netmask |
| Case1 | Send broadcast to 0.0.0.0 | Eth0 | 192.168.10.4 | 255.255.255.0 | Send broadcast packet with dst as 192.168.10.0 via eth0 |
| Eth1 | 192.168.2.6 | 255.255.0.0 | Send broadcast packet with dst as 192.168.0.0 via eth1 |
| Case 2 | Send broadcast to 192.168.10.0 | Eth0 | 192.168.10.4 | 255.255.255.0 | Send broadcast packet with dst as 192.168.10.0 via eth0 |
| Eth1 | 192.168.2.6 | 255.255.0.0 | No action |
| Case 3 | Recvfrom INADDR\_ANY (0.0.0.0) | Eth0 | 192.168.10.4 | 255.255.255.0 | Transfer packet received with dst as 0.0.0.0 or 192.168.10.0 to UDP application |
| Eth1 | 192.168.2.6 | 255.255.0.0 | Transfer packet received with dst as 0.0.0.0 or 192.168.0.0 to UDP application |
| Case 4 | Recvfrom 192.168.10.4 | Eth0 | 192.168.10.4 | 255.255.255.0 | Transfer packet received with dst as 0.0.0.0 or 192.168.10.0 to UDP application |
| Eth1 | 192.168.2.6 | 255.255.0.0 | No action |

# Assumption:

## BSP developed by customer.

## Network is conjured as IP v4 address only

# Questions

## Does BSP need to multiple IP address? How many IP address up to per a NIC?

## How many NIC card does this BSP support?

## When WRS do acceptance test, communication between same behavior equipment?