

# Mango220(Exynos4412) 이더넷 Iperf 테스트

<http://www.mangoboard.com/>

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## 1. 기본 iperf 테스트

### 1.1. 망고220 이 서버 일 때

<망고220 로그>

```
$ /data/data/com.magicandroidapps.iperf/bin/iperf -s -i 1&
[ ID] Interval      Transfer    Bandwidth
[  4] 0.0- 1.0 sec  2.54 MBytes 21.3 Mb/s
[  4] 1.0- 2.0 sec  3.25 MBytes 27.2 Mb/s
[  4] 2.0- 3.0 sec  3.30 MBytes 27.7 Mb/s
[  4] 3.0- 4.0 sec  3.27 MBytes 27.5 Mb/s
[  4] 4.0- 5.0 sec  3.21 MBytes 27.0 Mb/s
[  4] 5.0- 6.0 sec  3.28 MBytes 27.5 Mb/s
[  4] 6.0- 7.0 sec  3.28 MBytes 27.5 Mb/s
[  4] 7.0- 8.0 sec  3.29 MBytes 27.6 Mb/s
[  4] 8.0- 9.0 sec  3.31 MBytes 27.8 Mb/s
[  4] 9.0-10.0 sec  3.31 MBytes 27.8 Mb/s
[  4] 0.0-10.1 sec 32.2 MBytes 26.9 Mb/s
```

<HOST PC>

```
$ iperf -c 192.168.55.13
-----
Client connecting to 192.168.55.13, TCP port 5001
TCP window size: 23.5 KByte (default)
-----
[  3] local 192.168.55.8 port 59789 connected with 192.168.55.13 port 5001
[ ID] Interval      Transfer    Bandwidth
[  3] 0.0-10.1 sec 32.2 MBytes 26.9 Mb/s
```

## 1.2. HOST PC가 서버 일 때

<망고220>

```
/data/data/com.magicandroidapps.ipperf/bin/ipperf -c 192.168.55.8
```

```
-----  
Client connecting to 192.168.55.8, TCP port 5001
```

```
TCP window size: 16.0 KByte (default)  
-----
```

```
[ 3] local 192.168.55.13 port 35105 connected with 192.168.55.8 port 5001
```

```
[ ID] Interval      Transfer    Bandwidth
```

```
[ 3]  0.0-10.0 sec  35.6 MBytes 29.8 Mb/s
```

<HOSTPC>

```
$ iperf -s -i 1
```

```
-----  
Server listening on TCP port 5001
```

```
TCP window size: 85.3 KByte (default)  
-----
```

```
[ 4] local 192.168.55.8 port 5001 connected with 192.168.55.13 port 35105
```

```
[ ID] Interval      Transfer    Bandwidth
```

```
[ 4]  0.0- 1.0 sec  3.20 MBytes 26.9 Mb/s
```

```
[ 4]  1.0- 2.0 sec  3.53 MBytes 29.6 Mb/s
```

```
[ 4]  2.0- 3.0 sec  3.60 MBytes 30.2 Mb/s
```

```
[ 4]  3.0- 4.0 sec  3.54 MBytes 29.7 Mb/s
```

```
[ 4]  4.0- 5.0 sec  3.61 MBytes 30.3 Mb/s
```

```
[ 4]  5.0- 6.0 sec  3.60 MBytes 30.2 Mb/s
```

```
[ 4]  6.0- 7.0 sec  3.60 MBytes 30.2 Mb/s
```

```
[ 4]  7.0- 8.0 sec  3.60 MBytes 30.2 Mb/s
```

```
[ 4]  8.0- 9.0 sec  3.61 MBytes 30.3 Mb/s
```

```
[ 4]  9.0-10.0 sec  3.63 MBytes 30.5 Mb/s
```

```
[ 4]  0.0-10.0 sec  35.6 MBytes 29.8 Mb/s
```

## 2. 이더넷 속도 관련 kernel 소스 수정

**\$ vi arch/arm/mach-exynos/mach-mango220.c**

```
static void __init smdk4x12_smsc911x_init(void)
... 생략...
__raw_writel((0x0 << S5P_SROM_BCX_PMC_SHIFT) |
             (0x0 << S5P_SROM_BCX_TACP_SHIFT) |
             (0x1 << S5P_SROM_BCX_TCAH_SHIFT) |
             (0x0 << S5P_SROM_BCX_TCOH_SHIFT) |
             (0x2 << S5P_SROM_BCX_TACC_SHIFT) |
             (0x0 << S5P_SROM_BCX_TCOS_SHIFT) |
             (0x0 << S5P_SROM_BCX_TACS_SHIFT), S5P_SROM_BC1);
```

**\$vi drivers/net/smsc911x.c**

```
static inline void reg_write(u32 addr, u32 val)
{
    *(volatile u16*)addr = (u16)val;
    *(volatile u16*)(addr + 2) = (u16)(val >> 16);
}
static inline u32 reg_read(u32 addr)
{
    volatile unsigned short __force *addr_16 = (unsigned short *)addr;
    //printk("addr_16 = 0x%x, addr = 0x%x \n",*addr_16,addr); //by crazyboy 20140220 by
treego;
    return ((readw(addr) & 0xFFFF) |
           ((readw(addr + 2) & 0xFFFF) << 16));
}
```

```
#if 1
static inline void
smsc911x_tx_writefifo(struct smsc911x_data *pdata, unsigned int *buf,
                     unsigned int wordcount)
{
    unsigned long flags;
    int val;
    spin_lock_irqsave(&pdata->dev_lock, flags);
    //ifdef CRZ_SPEED_UP//crazyboys
    #if 1
        while (wordcount--)
```

```

    {
        val = *buf++;
//      printk("write == reg=0x%x buf = 0x%x val = 0x%x \n",pdata->iaddr +
TX_DATA_FIFO,*buf,(u16)val);
        *(volatile u16*)(pdata->iaddr + TX_DATA_FIFO) = (u16)val;
        *(volatile u16*)(pdata->iaddr + TX_DATA_FIFO + 2) = (u16)(val >> 16);
    }

#else
//MANGO_DBG("== wordcount=%d\n",wordcount);
while (wordcount--)
    __smc911x_reg_write(pdata, TX_DATA_FIFO, *buf++);
goto out;
#endif
    spin_unlock_irqrestore(&pdata->dev_lock, flags);
}

```

```

#if 1
static inline void
smc911x_rx_readfifo(struct smc911x_data *pdata, unsigned int *buf,
    unsigned int wordcount)
{
    unsigned long flags;
    unsigned int test_val;
    unsigned short *sp = (unsigned short *)buf;
    volatile u16 *addr_16 = (u16 *) (pdata->iaddr);
    spin_lock_irqsave(&pdata->dev_lock, flags);
//#ifdef CRZ_SPEED_UP//crazyboys
//      printk("CCRRZZZZZZ-  pdata->iaddr=0x%x  addr_16 = 0x%x\n",pdata->iaddr +
TX_DATA_FIFO,addr_16);
//      printk("CCRRZZZZZZ-  pdata->iaddr=0x%x  addr_16 = 0x%x\n",pdata->iaddr,*addr_16);
    while (wordcount--)
    {
        #if 0 //crazyboys test Remove it
        *buf++ = reg_read(0xf1000000);
        *buf++ = reg_read(0xf1000000);
        while(1);
        #endif
//      printk("write == reg=0x%x buf = 0x%x \n",pdata->iaddr + RX_DATA_FIFO,*buf);

```

```
    //printf("read == wordcount=%d\n",wordcount);
    *buf++=reg_read(pdata->iaddr);
//  *buf++=_smc911x_reg_read(pdata,RX_DATA_FIFO);
//  *buf++ = ((*addr_16 & 0x0000ffff) | (*(addr_16 + 1) << 16));
//  *buf++ = reg_read(0xfeed20000);
    // *sp++=(*(volatile u16*)(0xf1000000));
    // *sp++=*addr_16;
//  udelay(1);
// *sp++=(*(volatile u16*)(0xf1000002));
// *sp++=(addr_16+1);
//  udelay(5);
}
spin_unlock_irqrestore(&pdata->dev_lock, flags);
}
```

### 3. 소스 수정 후 iperf 테스트

#### 3.1. 망고220 이 서버 일 때

<망고220 로그>

```
# /data/data/com.magicandroidapps.iperf/bin/iperf -s -i 1
-----
Server listening on TCP port 5001
TCP window size: 85.3 KByte (default)
-----
[ 4] local 192.168.55.13 port 5001 connected with 192.168.55.8 port 50215
[ ID] Interval      Transfer    Bandwidth
[ 4] 0.0- 1.0 sec  4.65 MBytes 39.0 Mb/s
[ 4] 1.0- 2.0 sec  4.49 MBytes 37.6 Mb/s
[ 4] 2.0- 3.0 sec  4.51 MBytes 37.8 Mb/s
[ 4] 3.0- 4.0 sec  4.62 MBytes 38.7 Mb/s
[ 4] 4.0- 5.0 sec  4.54 MBytes 38.1 Mb/s
[ 4] 5.0- 6.0 sec  4.56 MBytes 38.2 Mb/s
[ 4] 6.0- 7.0 sec  4.64 MBytes 38.9 Mb/s
[ 4] 7.0- 8.0 sec  4.63 MBytes 38.8 Mb/s
[ 4] 8.0- 9.0 sec  4.82 MBytes 40.4 Mb/s
[ 4] 9.0-10.0 sec  4.59 MBytes 38.5 Mb/s
[ 4] 0.0-10.0 sec 46.2 MBytes 38.6 Mb/s
```

<HOST PC>

```
$ iperf -c 192.168.55.13
-----
Client connecting to 192.168.55.13, TCP port 5001
TCP window size: 23.5 KByte (default)
-----
[ 3] local 192.168.55.8 port 50215 connected with 192.168.55.13 port 5001
[ ID] Interval      Transfer    Bandwidth
[ 3] 0.0-10.0 sec 46.2 MBytes 38.6 Mb/s
```



### 3.2. HOST PC가 서버 일 때

<망고220>

```
/data/data/com.magicandroidapps.ipperf/bin/ipperf -c 192.168.55.8
```

```
-----  
Client connecting to 192.168.55.8, TCP port 5001
```

```
TCP window size: 16.0 KByte (default)  
-----
```

```
[ 3] local 192.168.55.13 port 55880 connected with 192.168.55.8 port 5001
```

```
[ ID] Interval      Transfer    Bandwidth  
[ 3]  0.0-10.0 sec  77.0 MBytes 64.5 Mb/s
```

<HOSTPC>

```
$ iperf -s -i 1
```

```
-----  
Server listening on TCP port 5001
```

```
TCP window size: 85.3 KByte (default)  
-----
```

```
[ 4] local 192.168.55.8 port 5001 connected with 192.168.55.13 port 55880
```

```
[ ID] Interval      Transfer    Bandwidth  
[ 4]  0.0- 1.0 sec  6.90 MBytes 57.9 Mb/s  
[ 4]  1.0- 2.0 sec  7.50 MBytes 62.9 Mb/s  
[ 4]  2.0- 3.0 sec  7.50 MBytes 62.9 Mb/s  
[ 4]  3.0- 4.0 sec  7.51 MBytes 63.0 Mb/s  
[ 4]  4.0- 5.0 sec  7.49 MBytes 62.8 Mb/s  
[ 4]  5.0- 6.0 sec  7.52 MBytes 63.1 Mb/s  
[ 4]  6.0- 7.0 sec  8.03 MBytes 67.4 Mb/s  
[ 4]  7.0- 8.0 sec  8.11 MBytes 68.1 Mb/s  
[ 4]  8.0- 9.0 sec  8.16 MBytes 68.5 Mb/s  
[ 4]  9.0-10.0 sec  8.16 MBytes 68.5 Mb/s  
[ 4]  0.0-10.0 sec  77.0 MBytes 64.5 Mb/s
```