

VoIP DSP Release Notes

Model Name: Gateway

Release Date: 2015-04-07

Hardware Compatibility: RT63368/MT7511/MT7510/MT7525

System Compatibility: Linux Multi-thread, Kernel Version: 2.6.36.0

VoIP Version Number:

VDSP Version: VDSP V 2.0.14.x (Apr 7 2015 16:24:46)

PCM Version: PCM V2.4 (Feb 28 2015 17:27:38)

SLIC Version: Zarlink2.22.0/Silab7.0.2

Adam Version: 0.1.8(Nov 27 2014 18:14:32)

Version base:

VDSP Version: VDSP V 2.0.13.x (Nov 19 2014 14:09:09)

PCM Version: PCM V2.2 (Dec 20 2013 17:01:17)

SLIC Version: Zarlink2.22.0/Silab7.0.2

Adam Version: 0.1.8(Nov 27 2014 18:14:32)

DSP Feature List

Module	Feature	Note

Update Voip SDK Guide

There is two directories in VoIP SDK:voip and voip-2.6.36

Replace the Directory “apps/private/voip” with Directory “voip” in VoIP SDK

Replace the Directory “modules/private/voip_2.6.36” with Directory “voip_2.6.36” in VoIP SDK

SLIC Selection and Configuration

SLIC Selection setting is configured in /etc/init.d/rcS

For Zarlink SLIC(for example: load le89156 slic):

```
insmod slic3.ko
```

```
insmod fxs3.ko slic1="le89156"
```

For SiliconLab SLIC(now only support Si32260):

```
insmod slic3_silicon.ko
```

```
insmod fxs3_silicon.ko slic1="si32260" slic2="si32260"
```

Default setting

```
cd /tmp
```

```
insmod sys_mod.ko
```

```
insmod pcm.ko
```

```
insmod lec.ko
```

```
insmod slic3.ko
```

```
insmod fxs3.ko slic1="le89156" slic2="le89156_2"
```

```
insmod ksocket.ko
```

```
insmod ortp.ko
```

```
insmod acodec_x.ko
```

```
insmod foip.ko
```

```
insmod ovdsp.ko
```

```
insmod pcmDump.ko
```

```
cd /dev
```

```
mknod vdsp c 245 0
```

```
mknod slic c 251 0
```

```
taskset -p 0x8 `pidof ORTP_TASK`
```

```
taskset -p 0x8 `pidof fxs_task`
```

```
taskset -p 0x8 `pidof DSPProc`
```

```
taskset -p 0x8 `pidof DspUITask`
```

```
taskset -p 0x8 `pidof DspDITask`
```

```
echo 8 > /proc/irq/12/smp_affinity
```

```
echo 4 > /proc/irq/23/smp_affinity
```

```
echo 4 > /proc/irq/25/smp_affinity
```

Task and interrupt setting of user space, kernel and VoIP for CPU binding

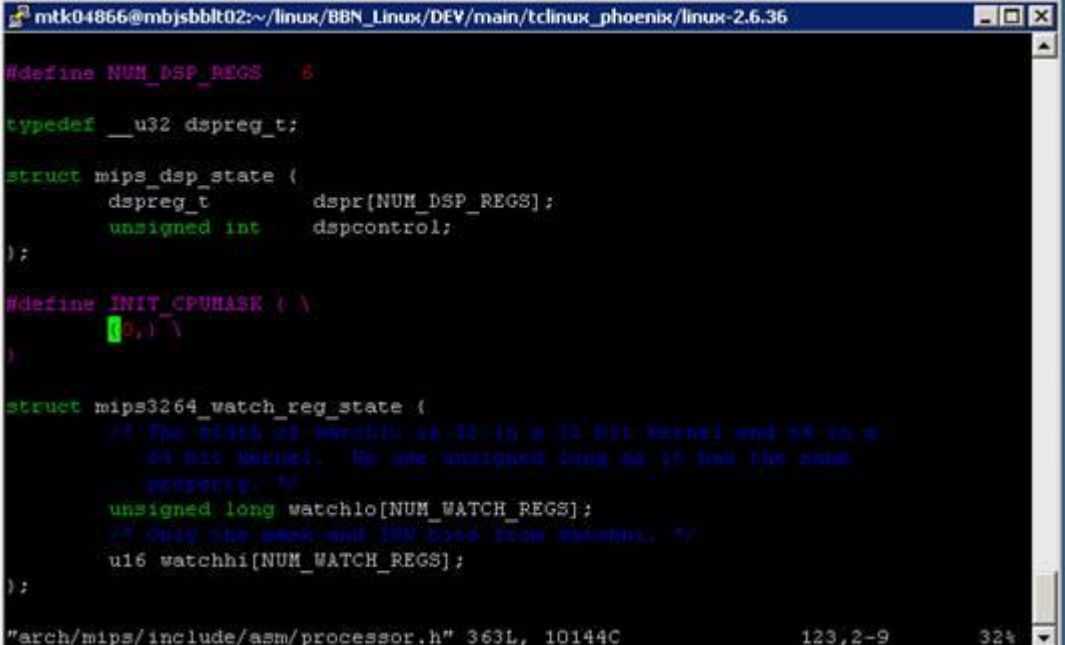
- 1、User space task should be bound to CPU1.

file: tclinux_phoenix\apps\public\busybox-1.00\init.c

```
01124:      /*20100921_serena_modify*/
01125:      /* to_cpuset(bb_xgetularg_bnd(aff, 16, 1, ULONG_MAX),* &new_mask); */
01126:      printf("busybox init and set aff\n");
01127:      unsigned i = 0;
01128:      //only use TC1 to application. shnwind 20110318.
01129:      unsigned long aff = 0x2;
01130:      cpu_set_t new_mask;
01131:      CPU_ZERO(&new_mask);
01132:      while (i < CPU_SETSIZE && aff >= (1<<i)) {
01133:          if ((1<<i) & aff)
01134:              CPU_SET(i, &new_mask);
01135:          ++i;
01136:      }
01137:      sched_setaffinity(1, sizeof (new_mask), &new_mask);
01138:      /*20100921_end_serena_modify*/
```

- 2、Kernel task should be bound to CPU0,CPU1,CPU2.

file: linux-2.6.36/arch/mips/include/asm/processor.h ,
INIT_CPUMASK set 0 to 7 (mean as bound to cpu0/cpu1/cpu2)



```
#define NUM_DSP_REGS 8

typedef __u32 dspreg_t;

struct mips_dsp_state {
    dspreg_t    dspr[NUM_DSP_REGS];
    unsigned int dspcontrol;
};

#define INIT_CPUMASK { \
    0, 1, 2 \
}

struct mips3264_watch_reg_state {
    /* The width of watchlo is 32 bit and 32 bit watchhi and 32 bit watchlo. We use unsigned long as it has the same property. */
    unsigned long watchlo[NUM_WATCH_REGS];
    /* Only the even and odd bits from watchlo. */
    u16 watchhi[NUM_WATCH_REGS];
};

"arch/mips/include/asm/processor.h" 363L, 10144C          123,2-9          324
```

- 3、CPU3 is only assigned to use for VoIP, other interrupt & user-space task can't be bound to CPU3 except PCM and timer interrupt. For

example, qdma interrupt should not be bound to CPU3, and it is recommended to be bound to CPU0, CPU1, CPU2.

Bug fixed

Item	Issue Description	Solution	Note
1	Can not detect fax event again after switching back to voice from fax	Enable fax detection after switching back to voice	
2	Modem performance test fails	Bypass lec module if ec is disabled	
3	Fax pass rate on abacus is low	Bypass lec module when switch in to fax mode	
4	Can not switch back to voice after t38 fax	Report fax disconnect event after detecting t38 PIP signal	

Enhancement

Item	Feature Description	Detail Information	Note
1			
2			
3			
4			
5			
6			
7			
8			
9			