

?:Alang

??????19381

????

<http://www.dd-wrt.com/phpBB2/viewtopic.php?t=43787>

????

- Vendor?ASUS WL-520GU
- CPU?BCM5354 240 MHz
- RAM?16MB SDR 16bit
- FLASH?4MB
- USB?2.0 x1
- Official Firmware: 3.0.0.8
- ??? USB Flash Drive 4GB ??



[ASUS ????](#)

[???-ASUS WL???????](#)

[??](#)

????

?????DD-WRT V24-sp2 (10/10/09) mini-usb-ftp

IP PBX: Asterisk v1.4 and v1.6

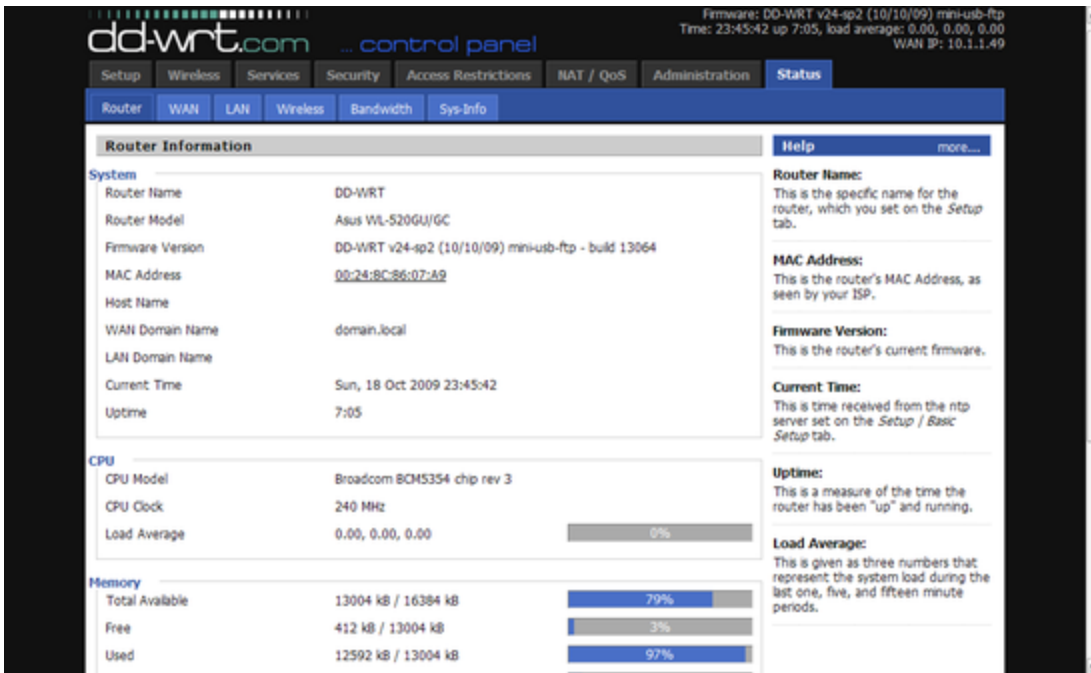
GUI Asterisk-GUI 2.0 (svn-44045)

?? DD-WRT

>?????

???? www.dd-wrt.com ? Firmware

?????Path: Downloads > stable > dd-wrt.v24 SP1 > Consumer > Asus > WL520GU > **dd-wrt.v24_mini_asus.trx**



?????

- [ASUS WL-520GU Successful flash!](#)
- [DD-WRT with USB on the WL-520GU](#)
- [Asus WL-520GU](#)

>DD-WRT ????

1. ????? Web ???? > ??????????
2. Services > Secure Shell > SSHd <Enable>
3. Administration > JFFS2 Support <Enable>, Clean JFFS2 <Disable>

>? DD-WRT ?? USB drive

1. DD-WRT stable ?????? USB????????? USB drive?????????

????????? USB ??????

?????downloads > others > eko > BrainSlayer-V24-preSP2 > 10-10-09-r13064 (?????) > broadcom > **dd-wrt.v24_usb_generic.bin**

?????????????????Administration > Firmware Upgrade > ??? dd-wrt.v24_usb_generic.bin > Upgrade
???

????????????????????????????????

2. ?????????????? USB ?????
- ?????? > Services > USB >

Core USB Support <Enable>
USB 2.0 Support <Enable>

USB Storage Support <Enable>
 ext2/ext3 File System Support <Enable>

????????

3. ??? USB drive

?? DD-WRT ?????????? fdisk????????? Linux ??? USB drive ????????????? Linux ?????????? Ubuntu, Knoppix ? Linux Live-CD ???

USB drive(4GB) ?????

1. ??? /dev/sd1 - ?? ext3, ??? /opt, 2048MB
2. ??? /dev/sd2 - ?? SWAP,?, , 128 MB
3. ??? /dev/sd3 - ?? ext3, ??? /jffs/usb-disk, 512MB
4. ??? /dev/sd4 - ?? ext3, ??? /mnt, ?????

????????

```
#>mke2fs -j -m 1 -L Optware /dev/sd1
#>mke2fs -j -m 1 -L Shared /dev/sd3
#>mke2fs -j -m 1 -L Data /dev/sd4
#>mkswap /dev/sd2
```

????????????? USB drive ????????????? ASUS ?????? USB port?????????????

4. ?? DD-WRT ??? USB drive

????????? USB Support ??????(2 ??)?? USB drive ?????????????????????????????????

????????????? USB drive??????? SSH?????????

```
#>dmesg
```

...

...

```
ip_nat_pptp version 1.5 loaded
hub.c: new USB device 00:03.1-1, assigned address 3
  Vendor: Ut165   Model: USB2FlashStorage Rev: 0.00
  Type: Direct-Access          ANSI SCSI revision: 02
Attached scsi removable disk sda at scsi0, channel 0, id 0, lun 0
SCSI device sda: 7897088 512-byte hdwr sectors (4043 MB)
sda: Write Protect is off
/dev/scsi/host0/bus0/target0/lun0: p1 p2 p3 p4
USB device connected to the SCSI subsystem
WARNING: USB Mass Storage data integrity not assured
USB Mass Storage device found at 3
ip_nat_pptp version 1.5 unloaded
ip_conntrack_pptp version 1.9 unloaded
ip_conntrack_pptp version 1.9 loaded
ip_nat_pptp version 1.5 loaded
```

???????? USB drive ?????

???? DD-WRT ? USB drive ????

```
root@DD-WRT:~# ls -l /dev/scsi/host0/bus0/target0/lun0
brw----- 1 root  root  8, 0 Jan 1 1970 disc
brw----- 1 root  root  8, 1 Jan 1 1970 part1
brw----- 1 root  root  8, 2 Jan 1 1970 part2
brw----- 1 root  root  8, 3 Jan 1 1970 part3
brw----- 1 root  root  8, 4 Jan 1 1970 part4
```

??part 1-4 ??? USB drive ? 4 ????

???? USB drive ??? 1,3,4???? SWAP ??????????????????????

```
# mkdir /jffs/usb-disk
# mount /dev/scsi/host0/bus0/target0/lun0/part1 /opt
# mount /dev/scsi/host0/bus0/target0/lun0/part3 /jffs/usb-disk
# mount /dev/scsi/host0/bus0/target0/lun0/part4 /mnt/
# mount
rootfs on / type rootfs (rw)
/dev/root on / type squashfs (ro)
none on /dev type devfs (rw)
proc on /proc type proc (rw)
ramfs on /tmp type ramfs (rw)
devpts on /proc/bus/usb type usbfs (rw)
/dev/mtdblock/4 on /jffs type jffs2 (rw)
/dev/scsi/host0/bus0/target0/lun0/part1 on /opt type ext3 (rw)
/dev/scsi/host0/bus0/target0/lun0/part3 on /jffs/usb-disk type ext3 (rw)
/dev/scsi/host0/bus0/target0/lun0/part4 on /mnt type ext3 (rw)
```

????????????????????

?????? > Administration > Commands??????????????

```
sleep 10 && mount /dev/scsi/host0/bus0/target0/lun0/part1 /opt
sleep 10 && mount /dev/scsi/host0/bus0/target0/lun0/part3 /jffs/usb-disk
sleep 10 && mount /dev/scsi/host0/bus0/target0/lun0/part4 /mnt
```

? **Save Startup** ?????????????????? SSH ??? mount ?????????? USB drive ?????

```
# mount
rootfs on / type rootfs (rw)
/dev/root on / type squashfs (ro)
none on /dev type devfs (rw)
proc on /proc type proc (rw)
ramfs on /tmp type ramfs (rw)
devpts on /proc/bus/usb type usbfs (rw)
/dev/mtdblock/4 on /jffs type jffs2 (rw)
```

```

/dev/scsi/host0/bus0/target0/lun0/part1 on /opt type ext3 (rw)
/dev/scsi/host0/bus0/target0/lun0/part3 on /jffs/usb-disk type ext3 (rw)
/dev/scsi/host0/bus0/target0/lun0/part4 on /mnt type ext3 (rw)

```

```

login as: root
DD-WRT v24-sp2 mini (c) 2009 NewMedia-NET GmbH
Release: 10/10/09 (SVN revision: 13064)
root@192.168.1.1's password: *****

=====

  DD-WRT v24-sp2
  http://www.dd-wrt.com

=====

BusyBox v1.13.4 (2009-10-10 04:36:28 CEST) built-in shell (ash)
Enter 'help' for a list of built-in commands.

root@DD-WRT:~# █

```

>?? Optware ? DD-WRT

????????????????????

?? Optware ??????? <http://www.dd-wrt.com/wiki/index.php/Optware>

1. ?? ipkg ???????

#> ipkg update

Downloading <http://downloads.openwrt.org/whiterussian/packages/Packages> ...

Connecting to downloads.openwrt.org (78.24.191.177:80)

Packages 100% |*****| 143k 00:00:00 ETA

Done.

Updated list of available packages in /jffs/usr/lib/ipkg/lists/whiterussian

Downloading <http://downloads.openwrt.org/whiterussian/packages/non-free/Packages> ...

Connecting to downloads.openwrt.org (78.24.191.177:80)

Packages 100% |*****| 568 --:--:-- ETA

Done.

Updated list of available packages in /jffs/usr/lib/ipkg/lists/non-free

Downloading <http://downloads.openwrt.org/backports/rc5/Packages> ...

Connecting to downloads.openwrt.org (78.24.191.177:80)

Packages 100% |*****| 98390 00:00:00 ETA

Done.

Updated list of available packages in /jffs/usr/lib/ipkg/lists/backports

2. ?? optware

```
# cd /tmp
# wget http://www.3iii.dk/linux/optware/optware-install-ddwrt.sh -O - | tr -d '\r' > /tmp/
optware-install.sh
# sh optware-install.sh
Checking system config ...
Using 10.1.1.254 as default gateway.
Using the following nameserver(s):
nameserver 192.168.1.1
Installing package uclibc-opt_0.9.28-13_mipsel.ipk ...
    Some newer versions of DD-WRT does not show download progress bar,
    so just be patient - or check STATUS -> BANDWIDTH tab for download
    activity in your routers Web-GUI, and then still wait a minute or two.
Connecting to ipkg.nslu2-linux.org (140.211.169.169:80)
uclibc-opt_0.9.28-13 100% |*****| 832k 00:00:00
ETA
Updating /opt/etc/ld.so.cache
Installing package ipkg-opt_0.99.163-10_mipsel.ipk ...
...
```

```
????????? /opt ??????????????
```

```
3. ?? busybox
```

```
# /opt/bin/ipkg-opt install busybox-base
# /opt/bin/ipkg-opt install busybox
# /opt/bin/ipkg-opt install busybox-links
```

```
>?? SWAP ??
```

```
?? SWAP ??????????????????????????????????????
```

```
# /opt/bin/busybox mkswap /dev/scsi/host0/bus0/target0/lun0/part2
```

```
?? SWAP ??????? free ??
```

```
# /opt/bin/busybox swapon /dev/scsi/host0/bus0/target0/lun0/part2
# free
```

	total	used	free	shared	buffers
Mem:	13004	12560	444	0	3548
Swap:	127864	0	127864		
Total:	140868	12560	128308		

```
?? DD-WRT ?????????? SWAP???
```

```
?????? > Administration > Commands > Startup ??????????????
```

```
sleep 10 && /opt/bin/busybox swapon /dev/scsi/host0/bus0/target0/lun0/part2
```

```
? Save Startup ?????????????????? SSH ??????? free ?????????? SWAP?
```

Notes: ??? DD-WRT ??? - ?? Asterisk????????????????

?????

[USB Storage - DD-WRT](#)
[Partition the Disk](#)

Install Asterisk

?? Asterisk ??? 1.4

```
# /opt/bin/ipkg-opt --tmp-dir /tmp install asterisk14
```

?? ulaw ???

```
# /opt/bin/ipkg-opt --tmp-dir /tmp install asterisk14-moh-freeplay-ulaw
```

```
# /opt/bin/ipkg-opt --tmp-dir /tmp install asterisk14-core-sounds-en-ulaw
```

```
# /opt/bin/ipkg-opt --tmp-dir /tmp install asterisk14-extra-sounds-en-ulaw
```

???

```
??? asterisk14-extra-sounds-en-ulaw ??????????(?12.8MB)??????? /tmp ??????????????????????
/tmp ?????????????????????????????????????????????????????????????????????????????????????
USB drive ?????? /jffs/usb-disk/tmp?
```

```
# mkdir /jffs/usb-disk/tmp
```

```
# /opt/bin/ipkg-opt --tmp-dir /jffs/usb-disk/tmp install asterisk14-extra-sounds-en-ulaw
```

?????

?????? Asterisk 1.6????????????????????

```
// ?????? Asterisk-GUI???????
```

```
# /opt/bin/ipkg-opt remove asterisk-gui
```

```
// ?????? Asterisk 1.4?????????
```

```
# /opt/etc/init.d/S50asterisk stop
```

```
# /opt/bin/ipkg-opt remove -recursive asterisk14-extra-sounds-en-ulaw
```

```
# /opt/bin/ipkg-opt remove -recursive asterisk14-core-sounds-en-ulaw
```

```
# /opt/bin/ipkg-opt remove -recursive asterisk14-moh-freeplay-ulaw
```

```
# /opt/bin/ipkg-opt remove -recursive asterisk14
```

```
# cd /opt/etc
```

```
# rm -rf asterisk
```

```
# cd /opt/var/lib
```

```
# rm -rf asterisk
```

```
# cd /opt/var/log
```

```
# rm -rf asterisk
```

```
# cd ~
```

```
# /opt/bin/ipkg-opt install asterisk16
```

```
# /opt/bin/ipkg-opt install asterisk-addons
```


>????/? Asterisk

?? Asterisk ???
 ?????????????? modules.conf ???????

vi /opt/etc/asterisk/modules.conf

```
;
; Asterisk configuration file
;
; Module Loader configuration file By Leif Madsen of www.leifmadsen.com
; Descriptions and some modules added by Bill Weidman
```

```
[modules]
autoload=no
```

```
; Resources —
;load => res_adsi.so ; ADSI Resource
;load => res_agi.so ; Asterisk Gateway Interface (AGI)
;load => res_config_mysql.so ; MySQL Configuration
;load => res_config_odbcc.so ; ODBC Configuration
;load => res_crypto.so ; Cryptographic Digital Signatures
load => res_features.so ; Call Parking Resource
;load => res_indications.so ; Indications Configuration
;load => res_monitor.so ; Call Monitoring Resource
load => res_musiconhold.so ; Music On Hold Resource
;load => res_odbcc.so ; ODBC Resource
```

```
; PBX —
;load => pbx_ael.so ; Asterisk Extension Language Compiler - Requires ?
load => pbx_config.so ; Text Extension Configuration Requires N/A
;load => pbx_dundi.so ; Do a DUNDi lookup of a phone number. - Requires res_crypto.so
;load => pbx_functions.so ; Builtin dialplan functions - Requires N/A
;load => pbx_loopback.so ; Loopback Dialplan Switch - Requires N/A
;load => pbx_realtime.so ; Realtime Dialplan Switch - Requires N/A
;load => pbx_spool.so ; Outgoing Spool Support Requires - N/A
```

```
; Functions —
load => func_callerid.so ; Gets or sets Caller*ID data on the channel. - Requires ?
;load => func_enum.s ; ENUMLOOKUP and TXTCIDNAME functions - Requires ?
;load => func_uri.so ; URI encode/decode functions - Requires ?
load => func_logic.so ; Logical dialplan functions
```

```
; Database Call Detail Records —
;load => cdr_addon_mysql.so ; MySQL CDR Backend - Requires ?
;load => cdr_csv.so ; Comma Separated Values CDR Backend - Requires N/A
```

```

;load => cdr_custom.so ; Customizable Comma Separated Values CDR Backend - Requires N/A
;load => cdr_manager.so ; Asterisk Call Manager CDR Backend - Requires N/A
;load => cdr_odbc.so ; ODBC CDR Backend - Requires N/A
;load => cdr_pgsqll.so ; PostgreSQL CDR Backend - Requires N/A
;load => cdr_sqlite.so ; SQLite CDR Backend - Requires N/A

; Channels —
;load => chan_agent.so ; Agent Proxy Channel - Requires res_features.so, res_monitor.so,
res_musiconhold.so
;load => chan_features.so ; Provides summary information on feature channels- Requires N/A
;load => chan_iax2.so ; Inter Asterisk eXchange (Ver 2) - Requires res_crypto.so, res_features.so
;load => chan_local.so ; Show status of local channels- Requires N/A
;load => chan_mgcp.so ; Media Gateway Control Protocol (MGCP) - Requires res_features.so
;load => chan_modem.so ; Generic Voice Modem Driver - Requires N/A
;load => chan_modem_aopen.so ; A/Open (Rockwell Chipset) ITU-2 VoiceMod- Requires chan_modem.so
;load => chan_modem_bestdata.so ; BestData (Conexant V.90 Chipset) VoiceModem - Requires
chan_modem.so
;load => chan_modem_i4l.so ; ISDN4Linux Emulated Modem Driver - Requires chan_modem.so
;load => chan_oss.so ; OSS Console Channel Driver - Requires N/A
;load => chan_phone.so ; Linux Telephony API Support - Requires N/A
;load => chan_sip.so ; Session Initiation Protocol (SIP) - Requires res_features.so
;load => chan_skinny.so ; Skinny Client Control Protocol (Skinny) - Requires res_features.so
;load => chan_zap.so ; Zapata Telephony w/PRI - Requires ?

; Codecs —
;load => codec_adpcm.so ; Adaptive Differential PCM Coder/Decoder - Requires N/A
;load => codec_alaw.so ; A-law Coder/Decoder - Requires N/A
;load => codec_a_mu.so ; A-law and Mulaw direct Coder/Decoder - Requires N/A
;load => codec_g723.so ; G.723 Codect Translator - Requires N/A
;load => codec_g726.so ; ITU G.726-32kbps G726 Transcoder - Requires N/A
;load => codec_g729.so ; G729/PCM16 (signed linear) Codec Translator - Requires N/A
;load => codec_gsm.so ; GSM/PCM16 (signed linear) Codec Translat - Requires N/A
;load => codec_ilbc.so ; iLBC/PCM16 (signed linear) Codec Translat - Requires N/A
;load => codec_lpc10.so ; LPC10 2.4kbps (signed linear) Voice Codec Translat - Requires N/A
;load => codec_speex.so ; Speex/PCM16 (signed linear) Codec Translat - Requires N/A
;load => codec_ulaw.so ; Mu-law Coder/Decoder - Requires N/A

; Formats —
;load => format_au.so ; Sun Microsystems AU format (signed linear) - Requires N/A
;load => format_g723.so ; Raw G.723 data - Requires N/A
;load => format_g726.so ; Raw G.726 (16/24/32/40kbps) data - Requires N/A
;load => format_g729.so ; Raw G729 data - Requires N/A
;load => format_gsm.so ; Raw GSM data - Requires N/A
;load => format_h263.so ; Raw h263 data - Requires N/A
;load => format_ilbc.so ; Raw iLBC data - Requires N/A
;load => format_jpeg.so ; JPEG (Joint Picture Experts Group) Image - Requires N/A
;load => format_mp3.so ; MP3 - Requires N/A
;load => format_pcm_alaw.so ; Raw aLaw 8khz PCM Audio support - Requires N/A
;load => format_pcm.so ; Raw uLaw 8khz Audio support (PCM) - Requires N/A
;load => format_sln.so ; Raw Signed Linear Audio support (SLN) - Requires N/A

```

```

;load => format_vox.so ; Dialogic VOX (ADPCM) File Format - Requires N/A
;load => format_wav_gsm.so ; Microsoft WAV format (Proprietary GSM) - Requires N/A
load => format_wav.so ; Microsoft WAV format (8000hz Signed Linear) - Requires N/A

; Applications —
;load => app_addon_sql_mysql.so ; Do several mySQLy things - Requires ?
;load => app_adsiprog.so ; Asterisk ADSI Programming Application - Requires res_adi.so
;load => app_alarmreceiver.so ; Alarm Receiver for Asterisk - Requires N/A
;load => app_authenticate.so ; Authentication Application - Requires N/A
;load => app_cdr.so ; Tell Asterisk to not maintain a CDR for the current call - Requires N/A
;load => app_chanisavail.so ; Check if channel is available - Requires N/A
;load => app_chanspy.so ; Listen to the audio of an active channel - Requires N/A
;load => app_controlplayback.so ; Play a file with fast forward and rewind - Requires N/A
;load => app_curl.so ; ? - Requires N/A
;load => app_cut.so ; The application Cut is deprecated. - Requires N/A
;load => app_db.so ; Database access functions for Asterisk - Requires N/A
load => app_dial.so ; Dialing Application - Requires res_features.so, res_musiconhold.so
;load => app_dictate.so ; Virtual Dictation Machine - Requires N/A
;load => app_directed_pickup.so ; Directed Call Pickup Application - Requires ?
;load => app_directory.so ; Provide directory of voicemail extensions - Requires N/A
;load => app_disa.so ; Allows someone from outside an "internal" system dialtone - Requires N/A
;load => app_dumpchan.so ; Dump Info About The Calling Channel - Requires N/A
load => app_echo.so ; Echo audio read from channel back to the channel - Requires N/A
;load => app_enumlookup.so ; EnumLookup is deprecated. Use ENUMLOOKUP() function - Requires N/A
;load => app_eval.so ; Reevaluates strings - Requires N/A
;load => app_exec.so ; Allows an arbitrary application to be invoked even when not hardcoded into the
dialplan. - Requires N/A
;load => app_externalivr.so ; External IVR Interface Application - Requires ?
;load => app_festival.so ; Simple Festival Interface - Requires N/A
;load => app_flash.so ; Flashes a Zap Trunk - Requires ?
;load => app_forkcdr.so ; Fork The CDR into 2 separate entities. - Requires N/A
;load => app_getcpeid.so ; Obtains and displays ADSI CPE ID and other info in order to properly setup
zapata.conf for on-hook operations.
;load => app_groupcount.so ; Deprecated, please use the function GroupCount - Requires N/A
;load => app_hasnewvoicemail.so ; Indicator whether a voice mailbox has messages in a given folder. -
Requires N/A
;load => app_ices.so ; Encode and Stream via icecast and ices - Requires N/A
;load => app_image.so ; Sends an image on a channel. - Requires N/A
;load => app_intercom.so ; Obsolete - does not load
;load => app_lookupblacklist.so ; Look up Caller*ID name/number from blacklist database - Requires N/A
;load => app_lookupcidname.so ; Look up CallerID Name from local database - Requires N/A
load => app_macro.so ; Macro Handling Application - Requires N/A
;load => app_math.so ; Basic Math Functions - Requires N/A
;load => app_md5.so ; MD5 checksum applications - Requires N/A
;load => app_meetme.so ; MeetMe conference bridge - Requires ?
;load => app_milliwatt.so ; Generate a Constant 1000Hz tone at 0dbm (mu-law) - Requires N/A
load => app_mixmonitor.so ; Records the audio on the current channel to the specified file. - Requires ?
;load => app_mp3.so ; Play an MP3 file or stream - Requires N/A
;load => app_nbscat.so ; Play an NBS local stream - Requires N/A
;load => app_page.so ; Places outbound calls and dumps them into a conference bridge, muted - Requires ?

```

```

;load => app_parkandannounce.so ; Call Parking and Announce Application - Requires res_features.so
load => app_playback.so ; Sound File Playback Application - Requires N/A
;load => app_privacy.so ; Require phone number to be entered, if no CallerID sent - Requires N/A
;load => app_queue.so ; Queue handling applications - Requires res_features.so, res_monitor.so,
res_musiconhold.so
;load => app_random.so ; Conditionally branches, based upon a probability - Requires N/A
;load => app_read.so ; Reads a #-terminated string of digits - Requires N/A
;load => app_readfile.so ; Stores output of file into a variable - Requires N/A
;load => app_realtime.so ; Use RealTime config handler to read data into channel variables. - Requires N/A
;load => app_record.so ; Record to a file - Requires N/A
;load => app_rxfax.so ; Receive a FAX to a file - Requires ?
;load => app_saycountpl.so ; Polish counting grammar - Requires ?
;load => app_sayunixtime.so ; Says a specified time in a custom format - Requires N/A
;load => app_senddtmf.so ; Sends arbitrary DTMF digits - Requires N/A
;load => app_sendtext.so ; Sends text to current channel (callee). - Requires N/A
load => app_setcallerid.so ; Set Caller*ID on a call to a new value. - Requires N/A
;load => app_setcdruserfield.so ; Append to the CDR user field - Requires N/A
;load => app_setcidname.so ; SetCIDName deprecated in favor of the function CALLERID(name) - Requires
N/A
;load => app_setcidnum.so ; SetCIDNum deprecated in favor of the function CALLERID(number) - Requires
N/A
;load => app_setrdnis.so ; SetRDNIS deprecated in favor of the function CALLERID(rdnis) - Requires N/A
;load => app_settransfercapability.so ; Set ISDN Transfer Capability - Requires N/A
;load => app_sms.so ; SMS/PSTN handler - Requires N/A
;load => app_softhangup.so ; Hangs up the requested channel - Requires N/A
;load => app_stack.so ; Stack routines - Requires ?
;load => app_striplsd.so ; Deprecated - Requires N/A
;load => app_substring.so ; Deprecated - Requires N/A
;load => app_system.so ; Execute a system command - Requires N/A
;load => app_talkdetect.so ; Playback with Talk Detection - Requires N/A
;load => app_test.so ; Interface Test Application - Requires N/A
;load => app_transfer.so ; Transfer caller to remote extension - Requires N/A
;load => app_txfax.so ; Trivial FAX Transmit Application - Requires ?
;load => app_txtcidname.so ; The TXTCIDName deprecated in favor of the TXTCIDNAME dialplan function -
Requires N/A
;load => app_url.so ; Send URL Applications - Requires N/A
;load => app_userevent.so ; Send an arbitrary event to the manager interface - Requires N/A
;load => app_verbose.so ; Send arbitrary text to verbose output - Requires N/A
;load => app_voicemail.so ; Comedian Mail (Voicemail System) - Requires res_adi.so
;load => app_waitforring.so ; Waits until first ring after specified time - Requires N/A
;load => app_waitforsilence.so ; Waits for silence of specified time - Requires N/A
;load => app_while.so ; While Loops and Conditional Execution - Requires N/A
;load => app_zapateller.so ; Block Telemarketers with Special Information Tone - Requires N/A
;load => app_zapbargе.so ; Barges in on a specified zap channel - Requires ?
;load => app_zapras.so ; Executes a RAS server using pppd on the given channel - Requires ?
;load => app_zapscan.so ; Scan Zap channels to monitor calls - Requires ?

```

```
[global]
```

```
chan_modem.so=yes
```



```

start)
if [ -f /opt/var/lib/asterisk/astdb ]; then
    cp /opt/var/lib/asterisk/astdb /opt/var/lib/asterisk/astdata
fi

if [ ! -f /var/lib/asterisk/astdb ]; then
    mkdir -p /var/lib/asterisk/
    if [ -f /opt/var/lib/asterisk/astdata ]; then
        cp /opt/var/lib/asterisk/astdata /var/lib/asterisk/astdb
    else
        touch /var/lib/asterisk/astdb
    fi
fi

if [ -f /opt/var/lib/asterisk/astdb ]; then
    rm /opt/var/lib/asterisk/astdb
    ln -s /var/lib/asterisk/astdb /opt/var/lib/asterisk/astdb
fi

/opt/sbin/asterisk -q

if [ -f /var/lib/asterisk/astdb ]; then
    chmod 755 /var/lib/
    chmod 755 /var/lib/asterisk/
fi
;;

stop)
if [ -n "$(pidof asterisk)" ]; then
    /opt/sbin/asterisk -r -x 'stop now'
fi

if [ -f /var/lib/asterisk/astdb ]; then
    cp /var/lib/asterisk/astdb /opt/var/lib/asterisk/astdata
fi
;;

*)
echo "usage: $0 (start|stop)"
exit 1
esac

exit 0

# chmod 755 /opt/etc/init.d/S50asterisk
# vi /opt/etc/optware.startup

#!/bin/sh
#

```

```
(
export PATH=/opt/bin:/opt/sbin:$PATH

# Insert whatever it takes to mount the USB drive here
#
# Start all init scripts in /opt/etc/init.d
# executing them in numerical order.
#
for i in /opt/etc/init.d/S??* ; do
  # Ignore dangling symlinks (if any).
  [ ! -f "$i" ] && continue

  case "$i" in
    *.sh)
      # Source shell script for speed.
      (
        trap - INT QUIT TSTP
        set start
        . $i
      )
      ;;
    *)
      # No sh extension, so fork subprocess.
      $i start
      ;;
  esac
done

) > /tmp/optware_startup.log 2>&1

#chmod 755 /opt/etc/optware.startup

?? DD-WRT ????????? Asterisk???
????? > Administration > Commands > Startup ??????????????

/opt/etc/config/optware.startup

?? Asterisk ??????
# cp /opt/etc/init.d/S50asterisk /opt/etc/init.d/K50asterisk
# vi /opt/etc/config/optware.shutdown

#!/bin/sh

#
# Insert whatever it takes to mount the USB drive here
#

# Start all init scripts in /opt/etc/init.d
```

```
# executing them in numerical order.
#
for i in /opt/etc/init.d/K??* ; do
  # Ignore dangling symlinks (if any).
  [ ! -f "$i" ] && continue

  case "$i" in
    *.sh)
      # Source shell script for speed.
      (
        trap - INT QUIT TSTP
        set stop
        . $i
      )
      ;;
    *)
      # No sh extension, so fork subprocess.
      $i stop
      ;;
  esac
done
```

```
#chmod 755 /opt/etc/optware.shutdown
```

```
?? DD-WRT ?????????????? Asterisk???
?????? > Administration > Commands ????????????
```

```
/opt/etc/config/optware.shutdown
```

```
? Save Shutdown ??????????
```

```
>????
```

```
# vi /opt/etc/asterisk/sip.conf
```

```
[general]
context=default          ; Default context for incoming calls
;allowguest=no           ; Allow or reject guest calls (default is yes)
allowoverlap=no          ; Disable overlap dialing support. (Default is yes)
;allowtransfer=no        ; Disable all transfers (unless enabled in peers or users)
                          ; Default is enabled
;realm=mydomain.tld      ; Realm for digest authentication
                          ; defaults to "asterisk". If you set a system name in
                          ; asterisk.conf, it defaults to that system name
                          ; Realms MUST be globally unique according to RFC 3261
                          ; Set this to your host name or domain name
bindport=5060             ; UDP Port to bind to (SIP standard port is 5060)
                          ; bindport is the local UDP port that Asterisk will listen on
bindaddr=0.0.0.0          ; IP address to bind to (0.0.0.0 binds to all)
srvlookup=yes             ; Enable DNS SRV lookups on outbound calls
```



```

; Note: Asterisk only uses the first host
; in SRV records
; Disabling DNS SRV lookups disables the
; ability to place SIP calls based on domain
; names to some other SIP users on the Internet

```

```
#include "/opt/etc/asterisk/sip_custom.conf"
```

```
;pedantic=yes           ; Enable checking of tags in headers,
```

```
# vi /opt/etc/asterisk/sip_custom.conf
```

```
; SIP accounts
```

```

[1000]
type=friend
context=internal
callerid="Softphone" <1000>
qualify=yes
secret=1111
nat=yes
canreinvite=no
dtmfmode=rfc2833
host=dynamic
call-limit=2
disallow=all
allow=alaw

```

```

[1001]
type=friend
context=internal
callerid="Home" <1001>
qualify=yes
secret=1111
nat=yes
canreinvite=no
dtmfmode=rfc2833
host=dynamic
call-limit=2
disallow=all
allow=alaw

```

```
# vi /opt/etc/asterisk/extensions.conf
```

```

;priorityjumping=yes
;
; User context is where entries from users.conf are registered. The
; default value is 'default'
;

```

```
;userscontext=default
;
; You can include other config files, use the #include command
; (without the '!'). Note that this is different from the "include" command
; that includes contexts within other contexts. The #include command works
; in all asterisk configuration files.
```

```
##include "filename.conf"
#include "/opt/etc/asterisk/extensions_custom.conf"
```

```
; The "Globals" category contains global variables that can be referenced
; in the dialplan with the GLOBAL dialplan function:
; ${GLOBAL(VARIABLE)}
; ${${GLOBAL(VARIABLE)}} or ${text${GLOBAL(VARIABLE)}} or any hybrid
; Unix/Linux environmental variables can be reached with the ENV dialplan
; function: ${ENV(VARIABLE)}
```

```
;
[globals]
```

```
# vi /opt/etc/asterisk/extensions_custom.conf
```

```
[globals]
```

```
;;; apps context
```

```
[apps]
exten => 444,1,Answer()
exten => 444,n,Wait(1)
exten => 444,n,Echo
```

```
;;; incoming calls context
```

```
[incoming]
;exten => 3221234567,1,Dial(SIP/1001,30)
;exten => 3221234567,n,Dial(SIP/1002,30)
;exten => 3221234567,n,Dial(SIP/1000,30)
```

```
;;; outgoing calls context
```

```
; local calls only
```

```
[local]
include => apps
```

```
exten => _1XXX,1,Dial(SIP/${EXTEN})
exten => _1XXX,n,NoOp(===== DIAL STATUS --> ${DIALSTATUS} =====)
exten => _1XXX,n,Hangup()
```

```
; national (Belgium, code 32) calls only
```

```
[national]
```

```
include => local
include => apps
```

```
;exten => _0N.,1,Dial(SIP/0032${EXTEN:1}@itsp_ipness)
;exten => _0N.,n,NoOp(===== DIAL STATUS --> ${DIALSTATUS} =====)
;exten => _0N.,n,Hangup()
```

```
; international calls
[international]
;include => national
;include => local
;include => apps
```

```
;exten => _00.,1,Dial(SIP/${EXTEN}@itsp_ipness)
;exten => _00.,n,NoOp(===== DIAL STATUS --> ${DIALSTATUS} =====)
;exten => _00.,n,Hangup()
```

????? Asterisk ??

```
# /opt/etc/init.d/S50asterisk stop
# /opt/etc/init.d/S50asterisk start
```

?????

[Install Asterisk on an Asus WL-520GU router](#)

[Googlevoice + Asterisk pbx \(PiAF\) + Free DID from SipGate = Free incoming/outgoing USA VOIP service](#)

[Slimming Asterisk for the NSLU2 under Debian](#)

>? LAN ???????

?? SJphone ???? 1000?? 444 Echo Test -> OK

?? PAP2 ???? 1001???? 1000 -> OK

????? Channels ??????????????????

DD-WRT ??????

System

Router Name: DD-WRT
 Router Model: Asus WL-520GU/GC
 Firmware Version: DD-WRT v24-sp2 (10/10/09) mini-usb-ftp - build 13064
 MAC Address: 00:24:8C:86:07:A9
 Host Name:
 WAN Domain Name: domain.local
 LAN Domain Name:
 Current Time: Sun, 18 Oct 2009 23:55:08
 Uptime: 7:14

Router Name:
 This is the specific name for the router, which you set on the *Setup* tab.

MAC Address:
 This is the router's MAC Address, as seen by your ISP.

Firmware Version:
 This is the router's current firmware.

Current Time:
 This is time received from the ntp server set on the *Setup / Basic Setup* tab.

Uptime:
 This is a measure of the time the router has been "up" and running.

Load Average:
 This is given as three numbers that represent the system load during the last one, five, and fifteen minute periods.

CPU

CPU Model: Broadcom BCM5354 chip rev 3
 CPU Clock: 240 MHz
 Load Average: 0.25, 0.13, 0.03 (14% bar)

Memory

Total Available: 13004 kB / 16384 kB (79% bar)
 Free: 860 kB / 13004 kB (7% bar)
 Used: 12144 kB / 13004 kB (93% bar)
 Buffers: 804 kB / 12144 kB (7% bar)
 Cached: 4152 kB / 12144 kB (34% bar)
 Active: 1960 kB / 12144 kB (16% bar)
 Inactive: 3492 kB / 12144 kB (29% bar)

Space Usage
 43% 60 kB / 103 kB

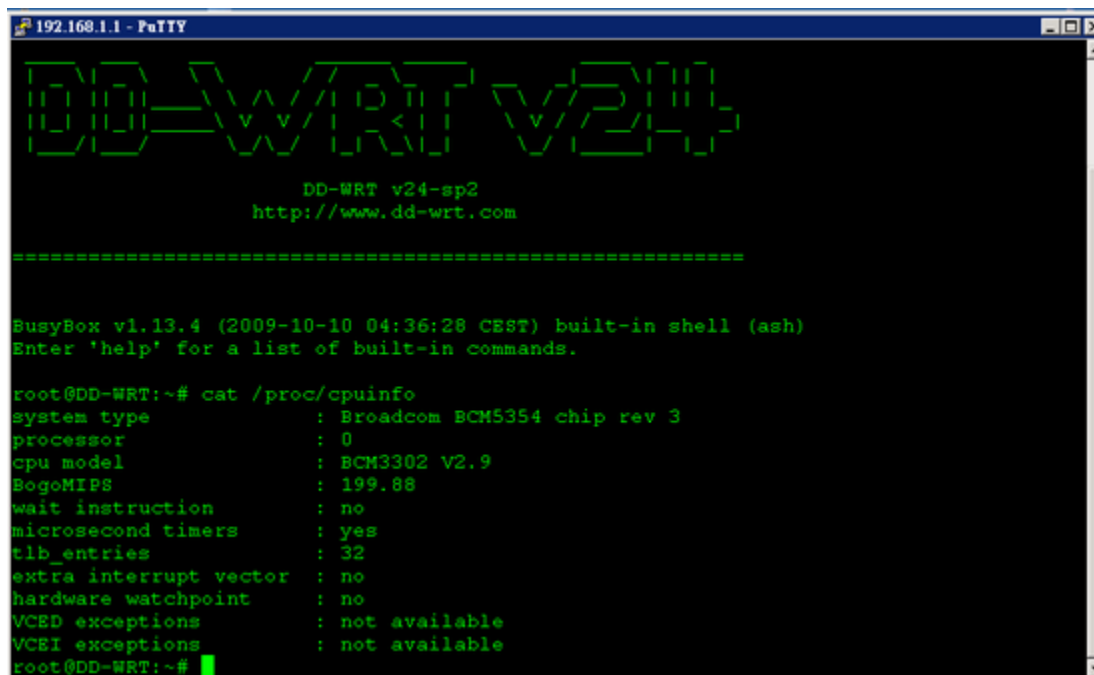
?? top ??? CPU ??

```
Mem: 12456K used, 548K free, 0K shrd, 868K buff, 4788K cached
CPU:  3.1% usr  6.4% sys  0.0% nic 90.4% idle  0.0% io  0.0% irq  0.0% sirq
Load average: 0.08 0.07 0.01 2/63 8420
  PID  PPID  USER  STAT  VSZ %MEM %CPU COMMAND
  234   1 root   S     2248 17.2  4.2 httpd -p 80
 8229  8149 root   R     1104  8.4  1.7 top
 8137  238 root   S     1612 12.3  0.7 dropbear -b /tmp/loginprompt -r /tmp/root/.s
  793   792 root   S    20916160.3  0.1 /opt/sbin/asterisk -q
  111   1 root   S     1472 11.2  0.1 resetbutton
  792   1 root   S    20916160.3  0.0 /opt/sbin/asterisk -q
  814   793 root   S    20916160.3  0.0 /opt/sbin/asterisk -q
 8371  793 root   S    20916160.3  0.0 /opt/sbin/asterisk -q
  796   793 root   S    20916160.3  0.0 /opt/sbin/asterisk -q
  798   793 root   S    20916160.3  0.0 /opt/sbin/asterisk -q
  797   793 root   S    20916160.3  0.0 /opt/sbin/asterisk -q
 7841  793 root   S    20916160.3  0.0 /opt/sbin/asterisk -q
  824   793 root   S    20916160.3  0.0 /opt/sbin/asterisk -q
  854   793 root   S    20916160.3  0.0 /opt/sbin/asterisk -q
  823   793 root   S    20916160.3  0.0 /opt/sbin/asterisk -q
  812   793 root   S    20916160.3  0.0 /opt/sbin/asterisk -q
  813   793 root   S    20916160.3  0.0 /opt/sbin/asterisk -q
  822   793 root   S    20916160.3  0.0 /opt/sbin/asterisk -q
  811   793 root   S    20916160.3  0.0 /opt/sbin/asterisk -q
  817   793 root   S    20916160.3  0.0 /opt/sbin/asterisk -q
  820   793 root   S    20916160.3  0.0 /opt/sbin/asterisk -q
  821   793 root   S    20916160.3  0.0 /opt/sbin/asterisk -q
```

?? free ??????????

```
root@DD-WRT:~#  
root@DD-WRT:~#  
root@DD-WRT:~# free  
      total        used         free       shared    buffers  
Mem:    13004         12196           808           0         804  
Swap:   127864         2500       125364  
Total:  140868         14696       126172  
root@DD-WRT:~# █
```

CPU ??



The screenshot shows a terminal window titled "192.168.1.1 - PuTTY". The terminal displays the DD-WRT v24 boot screen with a large logo and the text "DD-WRT v24-sp2" and "http://www.dd-wrt.com". Below this, it shows the BusyBox v1.13.4 built-in shell (ash) prompt. The user has entered the command "cat /proc/cpuinfo", and the output shows the following CPU information:

```
root@DD-WRT:~# cat /proc/cpuinfo  
system type      : Broadcom BCM5354 chip rev 3  
processor        : 0  
cpu model        : BCM3302 V2.9  
BogoMIPS         : 199.88  
wait instruction : no  
microsecond timers : yes  
tlb_entries      : 32  
extra interrupt vector : no  
hardware watchpoint : no  
VCED exceptions  : not available  
VCEI exceptions  : not available  
root@DD-WRT:~# █
```

Memory ??

```

192.168.1.1 - PuTTY
root@DD-WRT:~# cat /proc/meminfo
              total:        used:        free:    shared: buffers:    cached:
Mem:   13316096 12795904   520192         0   1114112   5828608
Swap: 130932736 3334144 127598592
MemTotal:        13004 kB
MemFree:          508 kB
MemShared:         0 kB
Buffers:         1088 kB
Cached:          3868 kB
SwapCached:      1824 kB
Active:           4920 kB
Inactive:        1876 kB
HighTotal:         0 kB
HighFree:          0 kB
LowTotal:         13004 kB
LowFree:           508 kB
SwapTotal:        127864 kB
SwapFree:         124608 kB
root@DD-WRT:~#

```

>? WAN ???????

???????????? Internet ???DD-WRT???????????????? Asterisk ???
 ???????

?????? > Administration > Commands ??????

```

iptables -I INPUT 1 -p udp --dport 5060 -j ACCEPT
iptables -I INPUT 1 -p udp --dport 10000:20000 -j ACCEPT
iptables -I INPUT 1 -p udp --dport 4569 -j ACCEPT

```

????????????????(????????????IP)?

```

iptables -I INPUT 1 -p udp --dport 5060 -s outbound_ip_of_outside_extension -j ACCEPT
iptables -I INPUT 1 -p udp --dport 10000:20000 -s outbound_ip_of_outside_extension -j ACCEPT
iptables -I INPUT 1 -p udp --dport 4569 -s outbound_ip_of_outside_extension -j ACCEPT

```

? **Save Firewall** ??????????

???

1. ???? port ?????? Asterisk ? rtp.conf ??????
2. ???
3. outbound_ip_of_outside_extension ?????????? IP ??????

?????

DD-WRT ??????????

????? > Administration > Commands

Startup (?????)

```
sleep 10 && mount /dev/scsi/host0/bus0/target0/lun0/part1 /opt
sleep 10 && mount /dev/scsi/host0/bus0/target0/lun0/part3 /jffs/usb-disk
sleep 10 && mount /dev/scsi/host0/bus0/target0/lun0/part4 /mnt
sleep 10 && /opt/bin/busybox swapon /dev/scsi/host0/bus0/target0/lun0/part2
/opt/etc/config/optware.startup
```

Shutdown (????)

```
/opt/etc/config/optware.shutdown
```

Firewall (?????)

```
iptables -I INPUT 1 -p udp --dport 5060 -j ACCEPT
iptables -I INPUT 1 -p udp --dport 10000:20000 -j ACCEPT
iptables -I INPUT 1 -p udp --dport 4569 -j ACCEPT
```

?? Profile (??)

```
#> vi /opt/etc/profile
```

```
#
export PATH=/opt/bin:/opt/sbin:/bin:/sbin:/usr/bin:/usr/sbin
export PS1='\u@\h:\w\$ '
```

```
[ -x /opt/bin/less ] || alias less=more
[ -x /opt/bin/vim ] || alias vim=vi
```

```
arp() { cat /proc/net/arp; }
ldd() { LD_TRACE_LOADED_OBJECTS=1 $*; }
```

```
reboot() {
  echo "$(nvram get rc_shutdown)" > /tmp/.rc_shutdown
  if [ -f /tmp/.rc_shutdown ]; then
    chmod +x /tmp/.rc_shutdown
    /tmp/.rc_shutdown
  fi
  /opt/sbin/asterisk -rx "stop now" > /dev/null 2>&1 <--- ?????????????? Asterisk, ???
  /sbin/reboot
}
```

```
#> vi /opt/etc/config/optware.startup
```

???????

```
#!/bin/sh
#
(
export PATH=/opt/bin:/opt/sbin:$PATH
```

```
[ -e /opt/etc/profile ] && mount -o bind /opt/etc/profile /etc/profile
```

```
# Insert whatever it takes to mount the USB drive here
```

```
#
```

```
# Start all init scripts in /opt/etc/init.d
```

```
# executing them in numerical order.
```

```
#
```

```
for i in /opt/etc/init.d/S??* ; do
```

```
  # Ignore dangling symlinks (if any).
```

```
  [ ! -f "$i" ] && continue
```

```
  case "$i" in
```

```
    *.sh)
```

```
      # Source shell script for speed.
```

```
      (
```

```
        trap - INT QUIT TSTP
```

```
        set start
```

```
        . $i
```

```
      )
```

```
      ;;
```

```
    *)
```

```
      # No sh extension, so fork subprocess.
```

```
      $i start
```

```
      ;;
```

```
  esac
```

```
done
```

```
) > /tmp/optware_startup.log 2>&1
```

????

1. [?? IP PBX-ASUS WL-500GU ???-Tomato](#)
2. [?? IP PBX-ASUS WL-500GU ??????](#)