Release note for firmware 05_60

Introduction

This is the release note for the DKTCOMEGA CPE 797xx firmware. Special precaution must be taken into account when performing the upgrade, please refer to the instruction guide available on www.dktcomega.com -> support -> firmware

Please contact jb@dktcomega.com for questions or concerns.

Changes in firmware

2020-02-03
DKT_F2_Firmware_v05_60

- Upgrade obsolete applications and libraries:
  - Security improved
- BUG: Restarting DHCPv6 Relay agent failed.
- BUG: Enabling CATV during tr069 factory reset may cause reboor instead

Application upgrade:

- Dropbear upgraded (2019.78)
- openssl upgraded (1.1.1d)
- wget upgraded (1.20)
- net-snmp upgraded (5.8)
  - zlib: 1.2.11

Security changes:

- Fix permissions from default to root in filesystem
- Fix root password now in shadow file
- Rename credentials for login, please consult DKT for new SSH credentials
- Password on debug console enabled by default for all variants
- Password enabled for telnet login

2019-12-13
DKT_F2_Firmware_v05_60a

- Upgrade obsolete applications and libraries:
  - Security improved
  - First BETA RELEASE of new software for Forsete 2

All variants:

- Dropbear upgraded (2019.78)
- openssl upgraded (1.1.1d)
- wget upgraded (1.20)
- net-snmp upgraded (5.8)
- mini-httpd upgraded (1.29)

Fix permissions from default to root in filesystem
Fix root password now in shadow file
Rename Administrator to admin
Password on debug console enabled by default for all variants
Password enabled for telnet login

2019-12-02
DKT_F2_Firmware_v05_40
Bugfix: Do not enable CATV in firmware (init.d/S90_ script):
1) Breaks SNMP state for users disabling CATV in config.sh
2) May trigger reboot on some devices

2019-10-24
DKT_F2_Firmware_v05_39
Bugfix: fix for high CPU load, when using igmp

2019-10-24
DKT_F2_Firmware_v05_38
Customization for specific customer.

2019-10-02
DKT_F2_Firmware_v05_37:
Bugfix: Minor upgrade of igmp program
Feature: Customization firmware adjusted with customer requirements, not subject to standard firmware release.

2019-09-03
DKT_F2_Firmware_v05_36:
Feature: TR069 variant with sshd enabled, no telnet as well as no login on debug console
Feature: Default config is switch enable lan if no config file from DHCP
Feature: Support for HTTPS via DHCP option 43

2019-09-03
DKT_F2_Firmware_v05_35:
Bugfix: Disable EEE by default all variants, no default EEE on LAN ports
Bugfix: Remove sync usage from scripts. sync not in root file system, workaround: Modify dkt_catv_power to save u-boot env before enabling CATV power. CATV power then enabled by boot loader if reboot is triggered.

Feature: TR069 device data model objects added, Device Info added ProductClass
Feature: TR069 device data model objects added, Device.IP added for wan interface – IP address and subnet

Customer specific variant, not applicable to standard firmware, please contact DKT if this is requested:

Feature: Console port, login is required
Feature: Telnet disabled per default
Feature: SSH enabled per default
Feature: If no configuration is received, switch –enable-lan activates traffic pass through from LAN to WAN.

2019-06-04
DKT_F2_Firmware_v05_34:
BUGFIX: Uboot sends invalid formatted DHCP RELEASE message
BUGFIX: If config file is doing VLAN setup for management, DHCP client must be able handle this - no xid reuse etc.
Feature: DEMO WEB server variant based upon dkt_linux, please ask DKT for this
Feature: DEMO WEB server variant based upon dkt_tr069, please ask DKT for this

All variants:
Ensure WAN interface goes up and down properly at udhcpc start/stop
Added support of trapping CTRL-C, align timeout as in version 1.24
Cleanup kernel code for trap handling

2019-01-23
DKT_F2_Firmware_v05_33:

All variants:
Small improvements to overall performance

2018-12-05
Bugfix: Do not remove/change vlan until after DHCP RELEASE when updating
Bugfix: IGMP v2.0: Disable learning MAC address when sending from WAN
Bugfix: IGMP v2.0: Off by one error for del_mca / add_mca functions
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2018-05-09
Bugfix: Fixed status message from IGMP, was reversed causing SNMP to report wrong state for Running/Stopped
Bugfix: igmp added 20 bytes too much for outgoing packets.
Bugfix: dkt_oam init script did not stop process properly
Bugfix: igmp stepped to version 1.9
Wrong MAC address used for destination MAC in IGMPv2 leave messages.
Bugfix: Customer specific variant, factory default ACS url fixed

Feature: Added utils for learned MAC addresses

All variants:
- igmp status was reversed for running/stopped. Now proper state is reported.

- dkt_learned_mac.sh
- Utility tool displaying learned MAC addresses as list (default) or string (option -s)
- dkt_learned_mac_vlan.sh
- Utility tool displaying learned MAC addresses with VLAN ID, port number and the age om MAC address

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2018-01-09
DKT_F2_Firmware_v05_30:
Bugfix: SNMP MIB to port mapping for enable LAN

Feature: TR069 full system update, new tfw file added

u-boot:
Improvement:
- Check and change link speed at bootp timeout, not during DORA sequence. Now applies initial 1G setting first, if 1G is not available, then bootp times out and new link speed will be probed then.

All variants:
Bugfix:
- Use /bin not /sbin in scripts - propably a non-issue as the usage was releated to unlikely situations.
- SNMP: Fix MIB to port handling for set operation in f2LANxPortEnable

TR069 all variants:
Feature:
- Enable full system update through TR069 / ACS server. Full system is boot loader, kernel and rootfs (firmware)

2017-08-15
DKT_F2_Firmware_v05_29:

Bugfix:

- ntp servers: now correctly ignores cases where more than one ntp server is given in dhcp option.

New feature:

- IPv6 DHCP Relay Agent: Works as ordinary DHCP Relay Agent, RFC RFC3315 and as Lightweight DHCPv6 Relay Agent (LDRA), RFC 6221. The IPv6 Relay Agent was copied from tag fw_05_2X_IPv6 and application branch relayd_v6.

u-boot:

- Added initialization needed explicit for new chip revision. Please note that boot loader rev. 29 (or later) should be used with firmware image rev. 29 (or later)

All variants:

- NTP service is not supported on this platform. The NTP server option is ignorred correctly now.
- IPv6 DHCP Relay Agent, default disabled.

2017-08-15
DKT_F2_Firmware_v05_28: Internal release, used for in house production only.

2017-05-17
DKT_F2_Firmware_v05_27:
Clean Up Release. Align bootloader(u-boot) version to Firmware Release version. As of this release, future release note now contains two new entries:

- UBOOT in the TOP guiding to the last release containing changes in uboot.
- u-boot as part of every release containing details of any changes or simply "no changes" in case of none.

Buildenv:
Align u-boot internal version to Firmware Release version.

u-boot:
autoconf.h version now becomes Firmware Version
Effect: DHCP Option43 from uboot now has same version as the Firmware Release.

2017-05-03
DKT_F2_Firmware_v05_26

All variants:
- snmpd supports custom snmpd.conf file. If cust_snmpd_conf=1 then `/mnt/flash/saved_configuration/snmpd.conf` is used if the file exists.
- DyingGasp fixes.
Use real MAC as src address, was hard coded as DKT_01234. Enable packet to be sent at power out regardless of OAM state by using `# echo 1 > /proc/dkt_config/debug_dying_gasp_oam`

2017-04-25
DKT_F2_Firmware_v05_25

- U-boot: Do not include option50 in DHCP Release Message, as per the RFC

2017-04-24
DKT_F2_Firmware_v05_24

Buildenv:

- Error in git patch 739 when doing git restore, no error in build

All variants:
- Upgraded telnet part of busybox to 1.16: fix missing prompt at reboot
- Fix usage message in /etc/init.d/telnetd

2017-01-24
DKT_F2_Firmware_v05_23

All variants:
- Support for dumping vlans in (diag_rtl) conf tool
- SNMP support of reporting vlans from above changes in conf tool
- New entry added to dkt_f2.mib
- Add support for custom rules in igmpd.
  To enable use (fw_)setenv igmpd_custom_rules 1.
  Define and remove rules must be implemented in scripts called
  from /etc/init.d/igmpd
  /mnt/flash/saved_configuration/igmpd_start
  /mnt/flash/saved_configuration/igmpd_stop

2016-12-19
DKT_F2_Firmware_v05_22

All variants:
- Bugfix in udhcp startup script, now handles dhcp_unicast=y and dhcp_unicast=Y properly
- Added support of custom forwarding and filtering rules for LAN to WAN
  Enabled by setting dhcprelayd_ext_rules and dhcprelayd_filtering in flash - (fw_)setenv

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2016-11-16
DKT_F2_Firmware_v05_21

All variants:
- CATV monitoring for setting up LEDS now runs every 4 second rather than every 1 second. If signal level is detected too low additional check is done 2 seconds later to verify signal level remains low before changing LED state.
- Added validation of GPIO 10 for SC/UPC or SC/APC pigtail. To be used for detecting item 74742 or 74743 (special customer variant)

TR069 all variants:
- Added support for downloading and executing Vendor Configuration File.
- PeriodicInform fixed properly from 05_20

- CATV status reporting changed. Runs every 6 second, if signal level too low detected, new check is done 1 second later to verify signal level remains low before changing state in TR069 database.
- Optimized shut down process before upgrading through ACS

2016-10-17
DKT_F2_Firmware_v05_20
General:
- Added support for unicast of DHCP discover in u-boot and linux. Enable by using (fw_)setenv dhcp_unicast 1 and reboot
- u-boot stepped version from 0514 to 0515
- SNMP supports reading serial number.
- Clean up in learned MAC address code for SNMP

2016-06-22
DKT_F2_Firmware_v05_19

All variants:
- When DyingGasp isr is executed CATV is turned off and system is forced to reboot to avoid interrupt storm in the case where power is not lost as expected. ISR storm causes very high CPU load making ONT very unresponsive.

2016-06-21
DKT_F2_Firmware_v0518

All variants:

TR069.
- Data base optimization
- Stop monitor and added sleep to ensure all changes written to flash before database is replaced with default database. Then start monitor again for new changes to apply.

DKT variants:
- Bugfix for SNMP MTU reporting. Learned MAC Addresses.
- Added Learned MAC Addresses support to SNMP. Limited functionality! Learned MAC adresses are requested pr LAN port [0 - 3] The chosen support of LAN ports only is a software limitation.

All variants:
- Enable changing password for Administrator by adding shadow files

TDC variant:
- Factory reset change idg_url to https from http

2016-05-11

TDC variant:
- If link partner can't autonegotiate link speed, RFC mandates 100Mbit HD even if device can do 100Mbit FD. If link target uses 100Mbit FD, change link state to 100MBit FD. Detection is done by traffic detection being FD.
- Changed to original patch for S35, removed hardcoded mode for DKT
  lan port 1.
  Lan port will start as 100MBit HD and autodetect 100MBit FD mode used by link partner. (linux patch number 721)

DKT_F2_Firmware_v05_16
- Internal release

DKT_F2_Firmware_v05_15
- Add support for management VLAN
If U-boot environment variable vlan is defined, then this value is used for management VLAN ID for the Linux firmware.
The switch engine is configured for this VID, so all frames automatically is tagged. This should be taken in account when defining other VLANs and transparency mode.
Overruling:
If the file /mnt/flash/saved_configuration/config_vlan.sh is defined then that file is executed instead of defining the management VLAN.
This should be taken in account when defining other VLANs. Also note that the U-boot vlan variable defines U-boot's VLAN configuration.

DKT_F2_Firmware_v05_14

Default configuration:
- Disable VLAN transparency mode (again) and forwarding of broadcast and multicast
This feature had some unwanted side effects when creating VLAN table.

DKT_F2_Firmware_v05_13

Default configuration:
- Enable VLAN transparency mode and forwarding of broadcast and multicast packages in VLAN.
These features can be switched off in the user's configuration file.

DKT_F2_Firmware_v05_12

telnetd

- Fixed support for username/password login in telnet. The login executable was not included in the file system. This is fixed in this version.
To enable telnet login, put this in the configuration file:

```
telnetd -l /bin/login
```

NOTE:
The above will have not have the usual line, which starts a command shell without login prompt:

```
telnetd -l /bin/sh
```

DKT_F2_Firmware_v05_11

telnetd
- Added support for username/password login in telnet.
- Do not allow root login.

SNMP
- Added support for SNMPv3 with authorization and data encryption.
- Fixed default configuration file to match current version of Net-SNMP.

DKT_F2_Firmware_v05_10
- DHCP client: Fixed XID in DHCP release packet.
The XID was a random number.

- Fixed DHCP relaying. VLAN tagging is applied by LAN port when relaying the packets.
- Fixed IGMP snooping. VLAN tagging is applied by LAN port when relaying the packets.

DKT_F2_Firmware_v05_08
- OpenSSL is upgraded to version 1.0.1p
- wget is upgraded to version 1.11 with support for https.
- CATV power-on is now not initialized by the Linux driver, so that if the bootloader has powered-off the CATV module, then it does not get powered-on by the Linux driver.

DHCP relay agent:
- Added option '`-i`' which makes the DHCP relaying agent only add the option 82 field, leaving the BOOTP header untouched.
- Command line arguments can be passed through `/etc/init.d/dhcprelayd`
Ex:

```
/etc/init.d/dhcprelayd start -i --t1 "From port 1" --t2 "LAN port 2"
```

- Fixed handling of the CPU port's DHCP packets (they were blocked).

DHCP client:
- Fixed startup of the link-local address assigning process (zcip).

2015-10-09

DKT_F2_Firmware_v05_07

- Improved lan-follow-wan timing. If no DHCP server was accessible on WAN at the time WAN link went up, then LAN power on would be delayed until DHCP finished or timed out, and that could take a long time. Now LAN power up happens before DHCP negotiation on WAN port after WAN link up.
- DHCP option 125: If VLAN is configured, then also setup the same VLAN for U-boot. And if VLAN is set to 0, then remove VLAN from U-boot also.
- Increased number of possible telnet sessions from 2 to 16.

2015-09-03

DKT_F2_Firmware_v05_06

- Fixed RMON issues, counters not working

2015-07-13

DKT_F2_Firmware_v05_05

- OAM support: Enabled loopback option
- OAM support is enabled in startup process.

Automatic startup can be disabled by defining the variable NO_OAM to 1
in /var/config/daemons_dont_start

Example: `echo "NO_SNMPD=1" >> /var/config/daemons_dont_start`

- SNMP daemon now has two new MIBs dkt.15 (DKT-F2-MIB) and dkt.16 (DKT-F2-RMON-MIB) The MIB descriptions are found in DKT's MIB release 09.
- SNMP MIBs are now stored in flash here:

```
/usr/share/defaults/snmp/*.mib
```

- Boot script does not start IGMP snooper per default any more.
- IGMP snooper shuts down nicely and restores the switch state as before the IGMP snooper was started. The L2 table is cleared for entries.
- Output from startup scripts are redirected to the file

```
/tmp/startup_log.txt
```

so it also can be viewed from remote login.

- Fix: Broadcast packets from CPU was also sent to LAN ports.
- Added optional LAN-follow-WAN feature. If no WAN link, then LAN ports are disabled.

The feature is enabled by running `enable_lan_follow_wan`

```
Syntax:  enable_lan_follow_wan [ <port> ]
     ports defines which ports to enable. All other LAN ports will be
     disabled. Ports is a comma separated list of ports to enable. Port range
     is 0..3. Default is all ports are enabled. Example: 1,2    Enables LAN1
     and LAN2. LAN0 and LAN3 are disabled. The command uses the files
     lan_follow_wan, lan0_disable, lan1_disable, lan2_disable, lan3_disable
     in the directory /etc/dkt_config/
```

- CATV red LED can be disabled by creating this file in the configuration script:
/etc/dkt_config/disable_catv_red_led
- Add dhcprelay support: `dhcprelayd --t<port> <opt82 circuit ID text>[:<opt82 remote ID text>]`

Defines the content of DHCP agent circuit ID field for the port
Example:

```
--t1 "port1" --t2 "port2" --t3 "port3" --t4 "port4"
```

- Add support for DHCP option 125 for setting VLAN before issuing the first DHCP Discover request. The data field (see RFC 3925) is formatted as TLV. Type 1 is used for VLAN VID, ASCII number. For example VID=50 (here shown as hexadecimal numbers):

```
01 02 35 30
```

DKT's enterprise number is 27304 (6aa8 in hexadecimal number). The entire option 125 field could then be like (VID=50):

```
7d 09  00 00 6a a8  04  01 02 35 30
```

The first time the option 125 is seen, a VLAN configuration file is written to flash and the system is rebooted. The following startup will use the configuration file before network is set up. If VID=0, then the configuration file is removed, and VLAN is NOT setup.

2015-20-03
DKT_F2_Firmware_v05_04
- Fix problem when booting without link on the fiber interface. U-boot kept on trying to get link before booting Linux. Now we set net retry to 5, so after 5 failed attempts to get link, we start Linux anyway.
- Create the file /etc/dkt_config/managed - if the board is managed
- Create the file /etc/dkt_config/catv_present - if the board has CATV
- Added the first version of OAM support.
  - Passive mode
  - Dying gasp support
  - Not loopback, not variable requests, not unidirectional, no link events

  Start/stop commands:
  /etc/init.d/dkt_oam start
  /etc/init.d/dkt_oam stop
- Added IGMP snooper
- Added first version of SNMP daemon with VERY limited support
  Only mibs GENERAL .1.3.6.1.4.1.27304.10 and CATV .1.3.6.1.4.1.27304.11 are implemented
- In case of kernel panic, reboot the system.
- LAN LEDs behavior changed:
  Former behavior:
  Amber LED lights in all modes. Green LED lights in 1G and 100Mb.
  Changed to:
  Amber LED lights in 1G and 10Mb. Green LED lights in 1G and 100Mb.

2014-09-12

DKT_F2_Firmware_v05_02

Initial revision for public release
