

# LinkStation/TeraStation/ 玄箱 /ARM/TS-XL

<https://mizupc8.bio.mie-u.ac.jp:443/pukiwiki/index.php?LinkStation/TeraStation/%E7%8E%84%E7%AE%B1/ARM/TS-XL>

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## TS-XL/R5 <sup>†</sup>

TeraStation corporate products. It employs a high-speed CPU to improve transfer speed and handle high loads. According to [Buffalo's product page](#) , "New hardware with a completely redesigned network design. Transfer speed from one PC is about twice as fast as conventional products, and transfer speed from multiple PCs is about 3 times faster. Ideal for use in businesses where multiple PCs access at the same time. "

## Specifications <sup>†</sup>

- Type Fan: TS-XL / R5
- CPU: Marvell MV78100 A0 800MHz
- Memory: 512MB (Hynix HY5PS12821CFP-S5 DDR2 800 64Mx8 x 8)
- NAND: 512MB (ST Micro NAND04GW3B2DN6 4Gbit)
- Interface outside
  - RJ-45(1000BASE-T/100BASE-TX/10BASE-T Marvell 88E1118-NNC1) x2
  - USB TypeA x2
  - Serial(D-SUB MALE 9PIN) x2
- Inside the interface
  - SerialATA x4 (Marvell 88SX7042 (4 Port SATA PCI-Express x4) for Hot Swap for drive bay)
- software
  - U-Boot 1.1.4 (Jun 4 2009 - 11:11:38) Marvell version: 3.3.5
  - Linux version 2.6.22.18

## Substrate <sup>†</sup>

 Substrate whole	 Board number (MVTSQ-BA)
 Marvell 88SX7042 (4 Port SATA PCI-Express x4)]	 Marvell 88E1118 (Gigabit Ethernet PHY)
 NAND ST Micro NAND04GW3B2DN6 4Gbit	 Hynix HY5PS12821CFP-S5 DDR2 800 64Mx8
 Micro Controller (NEC D78F0513A)	 RTC RICOH 372A

## GPL source code <sup>†</sup>

- [Firmware version 1.00 or later](#)
  - [Firmware version 1.06 or later](#)
- Shared with TS-WXL / R1, TS-WXL / 1D, TS-RXL / R5.
- [Firmware version 1.20 or later](#)

- [Firmware version 1.20 of tsxl](#), and shared with TS-IXL, TS-RIXL, TS-XEL series.

## Serial console<sup>†</sup>

The connector on the back of the front cover is for a serial console. 115200bps, 8bit, 1 stop bit, no parity, no flow control

U-Boot does not accept serial input and cannot stop booting halfway, so a login prompt is displayed but login is not possible. [As described in Daily Research: HS-DHTGL Serial Console](#), you can log in by entering the following URL in a browser.

```
http://TS-XL IP address/cgi-bin/task.cgi?task=console&param=on&uuu=admin&ppp=admin password
```

This setting was effective after the restart.

From task.cgi

```
/usr/local/sbin/microapl -a serialmode_console
```

Is only called, so you can issue this command directly if you can remotely log in as root as described below. By the way, the opcode of serialmode\_console is 0x0F (no parameter).

```
# /usr/local/sbin/miconapl -d 3 -l -a serialmode_console
>SetDeviceName
>Initialize:/dev/ttyS1
>AdvisoryLock (1)
>argCmd: argc=1 argv[0]=serialmode_console argv[1]=(null)
>argCmd: opcode:0x0f, opesize:0, write:1, read:0
>ComSetSomeCommand: opcode:0x0f, command_name:serialmode_console
>SendCmd: cmd=0x00 ope=0x0f len=0
>CreatePacket
>CalcChecksum:len=2 checksum=0x0f
----- (SendCmd) only = 3 -----
000: 00 () 0f () f1 ()
header:0x00 0x0f: cmd=00 len=00 ope=0f
--
>Output (len=3)
----- (Output) len=3 -----
000: 00 () 0f () f1 ()
>Output write result:3
>RecvPacket
----- (Input) len=4 -----
000: 01() 0f() 00() f0()
>Input:len=4
----- (RecvPacket) only = 4 -----
000: 01() 0f() 00() f0()
header:0x01 0x0f: cmd=00 len=01 ope=0f
--
>RecvPacket: len = 4
>AnalyzeRecvPacket:Compare Command 0x00 vs 0x00
>AnalyzeRecvPacket:Compare Opcode 0x0f vs 0x0f
>AnalyzeRecvPacket:Compare Packet Length 0 vs 1
>CalcChecksum:len=4 checksum=0x00
State: WRITE CMD
Resp: 0
>AdvisoryLock (0)
```

## Remote access & root password erase<sup>†</sup>

You can use acp\_commander, but TS-XL requires you to specify the password for the user admin.

(Reference: [Open Stock Firmware-NAS-Central Buffalo-The Linkstation Wiki-Getting Console \(Telnet\) Access with acp\\_commander](#) Linkstation Quad with Firmware> = 1.10)

```
java -jar acp_commander.jar -pw "admin password" -t IP address of TS-XL -ip IP address of TS-XL -o
```

Executing the above command will restart the network related daemons all at once, as you can see from the log

Executing the above command will restart the network related daemons all at once, as you can see from the log below.

```
-sh-3.2$ --- FIXED_IP
ip=192.168.aa.bb
mask=255.255.255.0
/etc/init.d/networking.sh : Clear /etc/dhcp/dhclientd-eth0.pid eth0
/etc/init.d/networking.sh : Clear /etc/dhcp/dhclientd-eth1.pid eth1
/etc/init.d/networking.sh : Clear /etc/dhcp/dhclientd-bond0.pid bond0
/etc/init.d/networking.sh : Read dhcp file
/etc/init.d/networking.sh : configure :
create network files.. (eth0)
IP=[192.168.aa.bb], netmask=[255.255.255.0], dgw=[], dns1=[], dns2=[]
create network files.. (eth1)
IP=[dhcp], netmask=[], dgw=[]
Deconfiguration network interface: lo eth0 eth1
eth0: stopped
eth1: stopped
/etc/init.d/networking.sh : configure :
create network files.. (eth0)
IP=[192.168.aa.bb], netmask=[255.255.255.0], dgw=[], dns1=[], dns2=[]
create network files.. (eth1)
IP=[dhcp], netmask=[], dgw=[]
killall: dhclient: no process killed
/etc/init.d/networking.sh: line 87: /etc/init.d/networking.sh : Delete /etc/dhcp/dhclientd-.pid: No such file or directory
Configuration network interface: lo eth0 eth1
/ sbin / ifconfig eth0 person 1500 multicast
/sbin/ifconfig eth1 mtu 1500 multicast
requesting DHCP tout=30[s]
networking.sh: dhcp requesting...
DontDownIface
alwaysFork
eth1: started
sendto: count 6 sync 1
sendto: count 5 sync 1
sendto: count 4 sync 1
sendto: count 3 sync 1
sendto: count 2 sync 1
sendto: count 1 sync 1
sendto: count 0 sync 1
sendto: count 6 sync 1
sendto: count 5 sync 1
sendto: count 4 sync 1
sendto: count 3 sync 1
sendto: count 2 sync 1
sendto: count 1 sync 1
sendto: count 0 sync 1
dhcpInit call AutoipBound
setAutoIP eth1 called
MAC address = 00:1d:73:xx:xx:xx
file name /etc/dhcp/autoip-eth1.info
/sbin/ifconfig eth1 169.254.243.135 netmask 255.255.0.0 up
Arp result 0
** eth1 : networking.sh dhcp fin. [#1fe6ea5a]
/sbin/ifconfig eth0 192.168.aa.bb netmask 255.255.255.0
eth0: link down
eth0: started
KERNELMON (lanact 0 full eth0)
route: SIOCDELRT: No such process
Configuration resolv.conf
Checking network address for each network device
add default if
configure files from Buffalo parameters.
Shutting down SMB services:
Shutting down NMB services:

Cleanup msdfs symbolic links... [Success]

Shutting down WINBIND services:
killall: winbindd: no process killed

Shutting down PAMSMDB services:
killall: pamsmbd: no process killed

configure samba
load_info ItemValue = off
LoadConfFileString:key=[ad_dns] not found in /etc/melco/info.
LoadConfFileString:key=[info_visible] not found in /etc/melco/info.
```

```

LoadConfFileOnOff:key=[info_visible] not found in /etc/melco/info.
LoadConfFileString:key=[msdfs_link1_unc1] not found in /etc/melco/msdfs.
LoadConfFileString:key=[msdfs_link2_unc1] not found in /etc/melco/msdfs.

LoadConfFileString:key=[msdfs_link3_unc1] not found in /etc/melco/msdfs.
LoadConfFileString:key=[msdfs_link4_unc1] not found in /etc/melco/msdfs.
LoadConfFileString:key=[mseth0: link updfs_link5_unc1] , full duplexnot found in /et, speed 1 Gbps/melco/msdfs.

LoadConfFileString:key=[msdfs_link6_unc1] not found in /etc/melco/msdfs.
LoadConfFileString:key=[msdfs_link7_unc1] not found in /etc/melco/msdfs.
LoadConfFileString:key=[msdfs_link8_unc1] not found in /etc/melco/msdfs.
LoadConfFileString:key=[msdfs_link9_name] not found in /etc/melco/msdfs.
file:/etc/samba/smb.conf
>IconvCodeCharset CodePage=0,charset=CP932
buf=array2=off

buf = disk1 = array1

buf = disk2 = array1

buf=disk3=array1

buf = disk4 = array1

buf = array1 = raid5

GetSpoolDirectory> returning devicename [/mnt/array1]
file:/etc/pam_smb.conf
Setting up msdfs symbolic links... [Failed ]
Starting SMB services:
missing line: mirroring: /etc/ondemandsync.conf
KERNElMOn (lanact 1000 full eth0)
Starting NMB services:
missing line: mirroring: /etc/ondemandsync.conf
Stop servcies: atalkd afpd
Can't unregister TS-XL:Workstation@*
Can't unregister TS-XL:netatalk@*
killall: papd: no process killed
Starting AppleTalk services: configure atalkd atalk_name=TS-XL
load_info ItemValue = off
LoadConfFileString:key=[ad_dns] not found in /etc/melco/info.
LoadConfFileOnOff:key=[info_visible] not found in /etc/melco/info.
file:/etc/atalk/AppleVolumes.default
file:/etc/pam.d/netatalk
file:/etc/atalk/afpd.conf
file:/etc/atalk/atalkd.conf
missing line: mirroring: /etc/ondemandsync.conf

```

## U-Boot <sup>†</sup>

U-Boot is used as the boot loader in LinkStation / TeraStation / Kurobox using ARM CPU.  
[Go](#) to [U-Boot](#) page.

## Debian <sup>†</sup>

- [Kolios » Blog Archive » Howto install a debian \(from scratch\) on a Buffalo Terastation Duo](#)

## Link <sup>†</sup>

- [Category:TeraStationV3 - NAS-Central Buffalo - The Linkstation Wiki](#)
- [http://code.zqwoo.jp/sns\\_comm/show/125387](http://code.zqwoo.jp/sns_comm/show/125387)  
 Oh! ! Unexpectedly, Ubuntu 9.04 for the ARM version of TeraStation has been released.
- [Bonta's memorandum: TS-WXL](#)

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