# AdvLinuxTU User Manual V1.1.2



**Enabling an Intelligent Planet** 

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# **1. About This Manual**

Thank you for choosing Advantech. This manual is for AdvLinuxTU and can be copied and distributed in any medium.

AdvLinuxTU is based on Xbuntu 18.04.x, its kernel is 4.15.

# 2. AdvLinuxTU Overview

AdvLinuxTU is an embedded Linux system designed for Advantech embedded devices, and it is especially optimized for TPC/UNO/PPC/ITA series.

### 2.1. Hardware Support List

AdvLinuxTU can be installed on all Advantech devices theoretically, but only the following device is tested.

> TPC Series TPC-B200-J12AE **TPC-B500-633AE** TPC-5152T-633AE TPC-5212W-633AE TPC-2181WP-533AE TPC-2211W-J12AE **TPC-2151T-J12AE** TPC-312-R83xA TPC-312-R85xA TPC-312-R87xA TPC-315-R83xA TPC-315-R85xA TPC-315-R87xA TPC-317-R83xA TPC-317-R85xA TPC-317-R87xA TPC-324W-P83xA TPC-324W-P85xA TPC-324W-P87xA

UNO Series UNO-247



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**UNO-420** UNO-1372G-J0x1AE UNO-2271G-E(0)xxxE UNO-2272G-JxAE UNO-2372G-E0xxAE UNO-2372G-J0xxAE UNO-2372G-J1xxAE UNO-2473G-ExAE UNO-2473G-JxAE UNO-2484G-6xxxAE UNO-2484G-7xxxAE UNO-2483G-4xxAE UNO-137-E1 UNO-410-E1 UNO-430-E1 WISE-5580

### 2.2. Kernel Version

Kernel version: 4.15

### 2.3. Software version:

Xorg: 1.19.6 Qt: 5.9.5 glibc: 2.27 gcc: 7.3.0

### 2.4. User and Password

There are three users in AdvLinuxTU by default. The user and default password is as follows: root:111111 advantech:111111 sysuser: 1111111

### 2.5. Main Features

AdvLinuxTU has many important features coming for industrial customers. Here we list some of them and give a brief introduction. We will explain them in detail in later



sections.

Provide Embedded QT runtime environment The user can run embedded QT application.

> Auto login

The installation offers an auto login option; if the user chooses it, the user will be able to auto login to AdvLinuxTU after the installation.

USB installation support The user can burn the AdvLinuxTU ISO to a USB disk, and then the user can install AdvLinuxTU to Advantech device from the USB disk.

#### ➢ Hardware auto detection

When installing AdvLinuxTU, the installation will detect the hardware automatically and install all drivers it needs. Therefore, once the installation is completed, no more drivers will be needed unless the user adds some other devices such as Advantech data collecting card to the embedded device.

#### Online Installation and Update

You can use apt-get command to install and update software, extending AdvLinuxTU functions.



### 2.6. AdvLinuxTU Screenshot

Picture 2-6-1 Default Desktop



# **3. Installation Guide**

In this chapter, we will introduce the installation step by step.

# **3.1. System Requirements**

Recommended requirements: Storage size: 32 G or more Memory size: 2 G or more

# **3.2. Prepare for Installation**

We suggest that the user makes a copy of data in storage medium in order to prevent data lost in case of improper operation during installation.

AdvLinuxTU supports installing from USB disk.

Prepare:

- ✓ AdvLinxTU ISO
- ✓ USB Disk (storage size is more than 2G)
- ✓ Rufus utility

## 3.3. Install from USB disk

We use Rufus tool to Burn AdvLinuxTU ISO file to USB disk, Rufus is a utility that helps format and create bootable USB flash drives, Rufus is open source and is 100% Free Software (GPL v3), You can download from https://rufus.ie/

#### System Requirements for Rufus:

Windows 7 or later, 32 or 64 bit doesn't matter. Once downloaded, the application is ready to use.



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🖋 Rufus 3.4.1430		—		×
Drive Properties —				
Device				
AdvLinuxTU (G:) [4GB]				$\sim$
Boot selection				
AdvLinuxTU_x64_2.0.1.iso	$\sim$	$\oslash$	SELEC	CT
Partition scheme	Target sy	stem		
MBR ~	BIOS or	UEFI		$\sim$
➤ Show advanced drive properties				
Format Options				
File system	Cluster si	70		
FAT32	4096 by	ze tes (Def	ault)	~
• Chow advanced format options	4050 by		uurty	
Show advanced format options				
Status				
Copying ISO	files			
© (i) ≩ <b>⊡</b>	STAR	T	CANC	EL
G:\advantech\images\advlinux-2.0.img (	1.7 GB)		00	0:00:32

Picture 3-3-1 Select the AdvLinuxTU ISO File and start to burn

Burn the ISO as follows:

- a) Insert USB disk to windows PC
- b) Start Rufus tool
- c) Select AdvLinuxTU ISO
- d) Click START to start burn

### 3.4. Raid mode & Installation Steps

UNO-2483G,UNO-2484G,UNO-3283G,TPC-B500 support raid mode.

### 3.4.1. Setting RAID Mode

Enter the BIOS interface, set the hard disk mode to RAID mode.



## **3.4.2.** Create RAID Volume

Enter "ctr + i" will show the RAID interface, choose "Create RAID Volume" and press enter.

	Copyright (C) Intel Corporat	tion. All rights reserved.
	1. Create RAID Volume 2. Delete RAID Volume 3. Reset Disks to Non-RAID	4. Recovery Volume Options 5. Acceleration Options 6. Exit
RA I D None	Volumes: defined.	
Physi ID 0 1	ical Devices: Device Model Serial # SQF-S25M8-64G-S8 0761080803435873 SQF-S25M8-64G-S8 0753120801514442	Size Type/Status(Vol ID) 59.6GB Non-RAID Disk 59.6GB Non-RAID Disk

Enter "Shift + y" to Create Raid Volume. At present, RAID1 is mainly supported. The specific steps are as follows



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Copyright (C) Intel Corporation. All rights reserved.
Nane: Volune1 RAID Level: RAID1(Mirror) Disks: Select Disks Strip Size: N/A Capacity: 59.6 GB Sync: N/A
MARNING: ALL DATA ON SELECTED DISKS WILL BE LOST.           Are you sure you want to create this volume? (Y/N):
Press ENTER to create the specified volume.

Don't modify the defalt "Volume1", otherwise AdvlinuxTU will install failed. You can see Volume1 show up.

	Copyright (	C) Intel Corporat	ion. Al	l rights reserved.	
RAID ID 0	1. Create RAI 2. Delete RAI 3. Reset Disk Volumes: Name Volume1	E HAIN D Volume D Volume is to Non-RAID E DISK/VOLUME Level RAID1(Mirror)	HENU ] 4. 5. 6. INFORMAT Strip N∕A	Recovery Volume Opti Acceleration Options Exit ION ] Size Status 59.6GB Normal	ons Bootable Yes
Phys ID 0 1	ical Devices: Device Model SQF-S25M8-64G-S8 SQF-S25M8-64G-S8	Serial # 0761080803435873 0753120801514442		Size Type/Status 59.6GB Member Disk 59.6GB Member Disk	(Vol ID) (0) (0)
	[↑↓]-Select	[ESC]-Exit		[ENTER]-Select Men	ıu

Enter "Shift + y" to exit.



### **3.5. Boot Mode & Installation Steps**

AdvLinuxTU supports two boot modes: Legacy and UEFI.

### **3.5.1. Legacy Boot Mode Installation Steps**

### 3.5.1.1. BIOS Configuration

Step1: CSM configuration



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Advanced	.1ty – Copyright (C) 2020 Americ	can Megatrends, Inc.
Compatibility Support Module (	Configuration	Enable/Disable CSM Support.
CSM Support		
CSM16 Module Version	07.76	
GateA20 Active Option ROM Messages	[Upon Request] [Force BIOS]	
Boot option filter	[Legacy only]	
Option ROM execution		
Network Storage Video Other PCI devices	[Do not launch] [Legacy] [Legacy] [Legacy]	++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values

### Step2: USB configuration

Advanced		negationus, Inc.
USB Configuration		Enables Legacy USB support
USB Module Version	10	AUTO option disables legacy support if no USB devices are
USB Devices:		keen USB devices available
1 Drive, 1 Keyboard, 1 Hub		only for EFI applications.
Legacy USB Support		
XHCI Hand-off	[Enabled]	
EHCI Hand-off	[Enabled]	
USB Mass Storage Driver Support	[Enabled]	
USB hardware delays and time-outs:		
USB transfer time-out	[20 sec]	++: Select Screen
Device reset time-out	[20 sec]	T4: Select Item
Device power-up delay	[Auto]	Enter: Select
		+/-: Change Opt.
Mass Storage Devices:		F1: General Help
KingstonDataTraveler 3.0PMAP	[Auto]	F2: Previous Values
Kingstonbatan averer erer sin		F3: Optimized Defaults

Step3: Boot Option #1 selection



AdvLinuxTU Manual

Aptio Setup Utility – Copyright (C) 2020 American Megatrends, Inc. Main Advanced Chipset Security <mark>Boot</mark> Save & Exit				
Boot Configuration Setup Prompt Timeout Bootup NumLock State	1 [0n]	Sets the system boot order		
Quiet Boot	[Enabled]			
Boot Option Priorities Boot Option #1 Hard Drive BBS Priorities				
		++: Select Screen f1: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit		

### 3.5.1.2. System Mode Selection (Gui/Console)

If you want to boot into the graphical interface, select the first one.



If you want to boot into the character interface, select the second one.



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### 3.5.1.3. OS Installation

If the device has multiple disks (two disks have been tested at most), picture a and picture b will be show to select disk for installation. But it will auto install except in this case.

Select disk for installation, enter "Install Now".

AD\ANTEC	H		A
ext drive: //dev/sda - 59.60 ATA-SQF 5255 CHO S			
/dev/xdb - 59.6G ATA-SQF-S2SM8-64G-Si	c	the second s	
eratire disk will be used:			
	/dev/sda 59.6G		
te: hen the device has multiple disks, this step will show for you want to skip this step and install the iso on /dev/sds	you to select the target installation disk. silently, you can modify \advantech\conf\autoinstall.aml is	the U-disk you burned, enter /dev/sda in the device field.	
			Install New Reboot

Picture a



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Enter "Yes", it will start the installation.



Picture b



Picture c



slYour AdvLinuxTU installatio tove the installation media,uni	on is complete! til the AdvLinuxTU boo	ots!	
ogether, We Go Far an	d Grow Big		
		Helligent Foctory	WISE-PaaS Alline Broopital Broopital CTRS 4.0 is see CTRS 4.0
		Heligent Factory	Hospital wise Pas Hospital wise Pas STRY 4.0 M1.589 DT.SENSE Ender Ender Internet Formation Internet Formation

Picture d

### 3.5.1.4. Change Boot Option #1

Enter Reboot and go into BIOS, change device hard disk as Boot Option #1.

Aptio Setup Utility Main Advanced Chipset Security	– Copyright (C) 2020 Americar   <mark>Boot</mark> Save & Exit	Megatrends, Inc.
Boot Configuration Setup Prompt Timeout Bootup NumLock State	1 [On]	Sets the system boot order
Quiet Boot	[Enabled]	
Boot Option Priorities Boot Option #1		
Hard Drive BBS Priorities		
		++: Select Screen fl: Select Item Enter: Select +/-: Change Opt.



## **3.5.2. UEFI Boot Mode Installation Steps**

### 3.5.2.1. BIOS Configuration

Step1: CSM configuration

Aptio Setup Util Advanced	ity – Copyright (C) 2020 Amer	ican Megatrends, Inc.
Compatibility Support Module C	onfiguration	Determines OpROM execution
CSM Support	[Enabled]	policy for devices other than Network, Storage, or Video
CSM16 Module Version	07.76	
GateA20 Active Option ROM Messages	[Upon Request] [Force BIOS]	
Boot option filter	[UEFI only]	
Option ROM execution		
Network Storage Video Other PCI devices	[Do not launch] [UEFI] [UEFI]	++: Select Screen f1: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit

#### Step2: USB configuration

Aptio Setup Utility - Advanced	Copyright (C) 2020 American	n Megatrends, Inc.
USB Configuration		Enables Legacy USB support.
USB Module Version	10	support if no USB devices are connected, DISABLE option will
USB Devices:		keep USB devices available
1 Drive, 1 Keyboard, 1 Hub		only for EFI applications.
Legacy USB Support		
XHCI Hand-off	[Enabled]	
EHCI Hand-off	[Enabled]	
USB Mass Storage Driver Support	[Enabled]	
USB hardware delays and time-outs:		
USB transfer time-out	[20 sec]	++: Select Screen
Device reset time-out	[20 sec]	TJ: Select Item
Device power-up delay	[Auto]	Enter: Select
		+/-: Change Upt.
Mass Storage Devices:		F1: General Help
KingstonDataTraveler 3.0PMAP	[Auto]	F3: Optimized Defaults



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Step3: Boot Option #1 selection

Aptio Setup Utili Main Advanced Chipset Secur	t <b>y – Copyright (C) 2020 America</b> r ity <mark>Boot</mark> Save & Exit	n Megatrends, Inc.
Boot Configuration Setup Prompt Timeout Bootup NumLock State	1 [0n]	Sets the system boot order
Quiet Boot	[Enabled]	
Boot Option Priorities Boot Option #1 Boot Option #2	[UEFI: KingstonDataT] [UEFI: Built-in EFI]	
		++: Select Screen fl: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values

## 3.5.2.2. System Mode Selection (Gui/Console)

If you want to boot into the graphical interface, select the first one.



If you want to boot into the character interface, select the second one.



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### 3.5.2.3. OS Installation

If the device has multiple disks (two disks have been tested at most), picture a and picture b will be show to select disk for installation. But it will auto install except in this case.

Select disk for installation, enter "Install Now".



Picture a



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Enter "Yes", it will start the installation.



Picture b



Installing the Advantech Embedded Linux, Please Wait...

38%

Picture c







### 3.5.2.4. Change Boot Option #1

Enter Reboot and go into BIOS, You can see there are two UEFI Boot hard disk. Ubuntu (P0: KINGSTON SA400S37240G) and UEFI OS (P0: KINGSTON SA400S37240G).

You can choose both of them.

Main Advanced Chipse	et Sécurity <mark>Boot</mark> Save & Exit	Megatrends, Inc.
Boot Configuration Setup Prompt Timeout Bootup NumLock State Quiet Boot	1 [On] [Enabled]	Sets the system boot order
Boot Option Priorities Boot Option #1 Boot Option #2 Boot Option #3 Boot Option #4	UEFI OS (PO: KINGST] Boot Option #1 UEFI: Built-in EFI Shell UEFI: KingstonDataTraveler 3.0PMAP, Part ubuntu (PO: KINGSTON SA400S37240G) UEFI OS (PO: KINGSTON SA400S37240G) Disabled	Screen Item ect e Opt.



# 4. How to disable auto login

# 4.1. Desktop mode

Change autologin-user to false in the /etc/lightdm/lightdm.conf field.

The default autologin-user field is advantech.

$\sim$			Terminal		tech@adv	antech-mach		
File	Edit	View	Terminal	Tabs	Help			
advan [sudo	<b>tech@a</b> ] pass	dvante word f	<b>ch-machine</b> or advante	e:~\$ su	do gedit	/etc/lighto	dm∕lightdm	.conf
Ope	n 🕶	+			<b>lightdn</b> /etc/lig	htdm	Save	\$
[Sea	t:*]							
auto	logir	n-gue	s <mark>t=false</mark>					
auto	logir	n-use	r≢advant	ech				
auto	logir	n-use	r-timeou	t=0	-			

Change it to autologin-user=false and save it. After rebooting, it will not automatically log in, You need to enter the password manually.

$\nabla$			Terminal	- advan	itech@adv	antech-ma	achine: ~	
File	Edit	View	Terminal	Tabs	Help			
advan [sudo	tech@a ] pass	advante sword f	ch-machine or advante	e:~\$ su ch:	ıdo gedit	/etc/lig	htdm/lighto	dm.conf
Ope	n 🕶	+			<b>lightdn</b> /etc/lig	n <b>.conf</b> htdm	Save	•
[Sea	t:*]							
auto	logi	n-gue	st <u>=fals</u> e	<u> </u>				
auto	logi	n-use	r=false					
auto	logi	n-use	r-timeou	it=0				

# 4.2. Console mode

Need to modify /lib/systemd/system/getty@.service

Comment the line [ExecStart=-/sbin/agetty -a advantech --noclear %I \$TERM]

Then add [ExecStart=-/sbin/agetty -o '-p -- \\u' --noclear %I \$TERM]



After rebooting, it will not automatically log in, You need to enter the password manually.



# 5. Advantech device driver

AdvLinuxTU supports Advantech products, and the related drivers, the related drivers will be installed in /usr/src/advantech and auto loaded during the booting process. Here are some examples or demos in /usr/src/advantech/driver name/example/.

# 6. EAPI(Embedded API) Solution

AdvLinuxTU supports EAPI soulution. if you want to know the detail, please read *Embedded API (EAPI) Developer Guide V1.4*.

# 7. AdvLinuxTU X-Windows Introduction

## 7.1.X-Windows overview

The Advantech Linux's Desktop-system is based on Xorg and XFCE.

> Xorg

It is a cost-free standard X server software with high configurability. All graphic cards on the market have certain configuration for Xorg.

For further details, please refer to http://www.x.org/

► Xfce4

Xfce is a lightweight desktop environment.

Official website: http://www.xfce.org/

For further details, please refer to http://docs.xfce.org/

# 7.2. X-windows tools

AdvLinuxTU provides many tools based on X-Windows. Here we mainly introduce some important tools that the user may use frequently.

# 7.2.1. X Terminal

It is a terminal tool for X environment.



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Picture 6-2-1 X Terminal

### 7.2.2. Thunar

It provides folder management functions similar to windows.

<b>.</b>	Fi	le System	- File Man	ager			-	- + ×
File Edit View Go He	lp							
🗧 🔶 🛧 🚔 🖾 /								Ċ
DEVICES								
File System								
💿 AdvLinuxTU 🔺	bin	boot	cdrom	dev	etc	home	lib	
5.2 GB Volume								
PLACES							×	
🟠 advantech	lib32	lib64	media	mnt	opt	proc	root	
📰 Desktop								
👸 Trash								
🕒 Downloads	run	sbin	snap	srv	sys	tmp	usr	
NETWORK								
🛜 Browse Network	var							
	22 items, l	Free space	: 14.6 GB					⊿



Thunar is a fast and easy-to-use file manager for XFCE desktop environment. Official site: http://thunar.xfce.org/



## 7.2.3. Browser

#### Firefox browser:

<ul> <li>Advantech - industrial computer , embedded computer, ind</li> </ul>	ustrial automation, industrial motherboard, network secu	rity appliance, digital video surveillance, panel PC, industrial IO Mozi – 🔸 🗙
Advantech - industrial comput ×     Advantech - industrial	comput × +	
$\leftarrow$ $\rightarrow$ X <b><math>\textcircled{a}</math></b> (i) <b><math>\textcircled{a}</math></b> https://www.ad	vantech.com	···· 🖂 🏠 💷 🗉
ADIANTECH Enabling an Intelligent Planet		Q₊ Register MyAdvantech Q Search
Products Solutions Services Partners	Support Corporate Contact eSto	re WISE-PaaS Marketplace
Solu	tions Tailored to You	ur Industry
Embedded Modules & Design-in Services iHealthcare	Energy & Environment	iFactory
Industrial Equipment Manufacturing	Intelligent Transportation Systems	IoT Edge Intelligence Software Solutions
iRetail	Video Solutions	
Performing a TLS handshake to d10lpsik1i8c69.cloudfront.net	lvantech is Your IoT	Partner

Picture 6-2-3 Lightweight picture-viewer Ristretto

## 7.3. X-Windows Configuration

AdvLinuxTU provides many helpful tools, most of which can be opened from the XFCE setting manager, for user configuration. In the following sections, we will introduce some of them which are helpful for the user to configure the system.



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😰 🛛 📗 (File System - File Mana	ger] 📰 Settings							<b>†</b> ↓ ♠ ● +0) 291月,14:25
*				Settings				+ x
Settings Customize your deskto	P							<u>ا م</u>
Personal								
About Me	Appearance	Desktop	Language Support	Menu Editor	Notifications	Orage preferences	• Denel	
Preferred Applications	Window Manager	Window Manager Tweaks	Workspaces	Xfce Panel Switch	S Xfce Terminal			
Hardware								
Additional Drivers	Bluetooth Adapters	Bluetooth Manager	Display	Keyboard	Mouse and Touchpad	Network Connections	Power Manager	
Printers	Removable Drives and Media							
System								
Accessibility	LightDM GTK+ Greeter settings	MIME Type Editor	Network	Session and Startup	Software Updater	Software & Updates	Time and Date	
Users and Groups								
Other Onboard Settings	Settings Editor							
Help								Close X Close

Picture 6-3-1 XFCE setting manager

### 7.3.1. Resolution configuration

Select the Display item from list to change the Xorg resolution. For multiple displays, device resolution is based on minimum screen resolution.





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Picture 6-3-2 Resolution Setting

### 7.3.2. IP configuration

AdvLinuxTU gets IP according to DHCP default. If you want to get IP by static, you can use "Network Connections". To set static IP, you must restart the service of NetworkManager. Please reboot the machine.

~	Network Connections	- + ×
Name		Last Used 👻
▼ Ethernet		
Wired connection 1		2 minutes ago
enp2s0		11 days ago
enp1s0		never
+ - 🌣		

Picture 6-3-3 Network Connections

-	Editing enp2s0	+ ×
Connection name: enp2s0		
General Ethernet	802.1X Security DCB Proxy IPv4 Settings IPv6	Settings
Device:	enp2s0	•
Cloned MAC address:		•
MTU:	automatic	+ bytes
Wake on LAN:	Default     Phy     Unicast     Multicast       Ignore     Broadcast     Arp     Magic	
Wake on LAN password:		
Link negotiation:	Ignore	-
Speed:	100 Mb/s	-
Duplex:	Full	-
	Cancel	• Save

Picture 6-3-4 Network IP Setting



## 7.3.3. Sound card configuration

	Volum	e Control	- +
Playback	Recording	Output Devices	Input Devices
ES1371/ES1	373 / Creative La	bs CT2518 (Audio PCI 6	4V/1 🕬 📔 💽
Port: Analog O	Dutput		-
			71% (-9.00dB)
Silence Base		100% (0dB)	
Advanced			

Picture 6-3-5 Sound Settings

To install the text mode, please run

#### #alsamixer

The Sound configuration tools will be shown as below:



Picture 6-9 Audio Setting



# 8. Introduction of console mode tools

## 8.1. Date and time configuration

Use the date command to modify the date Usage: #date [OPTION]... [+FORMAT] #date [-u|--utc|--universal] [MMDDhhmm[[CC]YY][.ss]] For example: Fri Oct 18 09:11:05 CST 2013 #date 101809112013.05

### 8.2. Ftp service

The File Transfer Protocol (FTP) is a standard network protocol used to transfer computer files between a client and a server on a computer network. Note: You may stop firewall to allow the user to login to your machine.

### 8.3. SSH service

OpenSSH is the premier connectivity tool for remote login with the SSH protocol. It encrypts all traffic to eliminate eavesdropping, connection hijacking, and other attacks. In addition, OpenSSH provides a large suite of secure tunneling capabilities, several authentication methods, and sophisticated configuration options.

## 8.4. Qt Runtime and Development Environment

### 8.4.1. Qt runtime environment

AdvLinuxTU provide QT-5.9.5 library/

### 8.4.2. Qt Development environment

Suggest using Qt Creator to develop Qt application. User can install the Qt Creator online.



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✓ QtCreator – + ×						
File Edit Build Debug Analyze Tools Window Help						
Welcome Edit Design W Projects Reip	Projects Examples Tutorials New to Qt? Learn how to develop your own applications and explore Qt Creator. Get Started Now	+ New Project Sessions Recent Project      Sessions Recent Project      default      About Qt Creator				
	L Qt Account					
-	Online Community Blogs					
	Vser Guide					
~	■ P. Type to locate (Ctrl+K)	1 Issues 2 Search Results 3 Application Output 4 Compile Output 5 Debugger Console 8 Test Results 🗢	• •			

Picture 5-3-2 Qt Creator



# 9. System backup and restore

## 9.1. How to backup

Step1: Boot, when the GRUB menu appears, choose "AdvLinuxTU Recovery Mode".

AdvLinuxTU: main system

AdvLinuxTU Recovery Mode: mini system



**Step2:** Open the terminal, enter advbackup.sh and run it.

There is no need to do anything during running the script. After it finishes running, the system will automatically restart and advlinux-2.0.img will be copied to the /media/recovery/ directory on the main system.

### 9.2. How to restore

Step1: Boot, when the GRUB menu appears, Choose "AdvLinuxTU".
 AdvLinuxTU: main system
 AdvLinuxTU Recovery Mode: mini system



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Step2: Open the terminal, enter into /media/recovery

Since you have backuped the system, you'll notice that advlinux-2.0.img is available in this directory.

Enter "mv advupdate.txt.example advupdate.txt", reboot, it will restore automatically.



# 10. WISE-PaaS/AppHub

### **10.1. What is WISE-PaaS/AppHub**

AppHub is a web browser-based, easy-to-use and powerful enterprise-level remote management software. It can effectively accelerate the application deployment on industrial edge device and the operation and maintenance efficiency of system. In addition, it can monitor the operating status of device software and hardware in real time, and timely troubleshoot and resolve various software and hardware abnormalities, greatly reducing operation and maintenance costs. Here, we only briefly introduce it, if you have any questions, feel free to contact us!

The agent of AppHub has been built in AdvLinuxTU already. But it does not start automatically.

If you want to use it, refer 9.3, it is easy.

Function	Description
Device status overview	<ul> <li>Overview dashboard</li> <li>Device group dashboard</li> <li>Real-time monitor (CPU, memory, storage, battery, App, peripheral, etc.)</li> <li>Mobile applications are provided for real-time notifications</li> </ul>
Device management	<ul> <li>Device online status</li> <li>Rename devices</li> <li>Group management</li> <li>Device real-time status, reboot, power off</li> </ul>
Update the application	<ul> <li>Support inno setup/Wix Toolset installation and zip for Windows</li> <li>Support deb, tar.gz and zip packages for Linux</li> <li>Support docker container application for Windows the Linux</li> <li>Support Android apk for Android</li> <li>Single and batch update</li> </ul>
File deployment	• Remote push and deployment of any file

### 10.2. Features



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OS update	<ul> <li>OS update for single device</li> <li>OS update in batch for multi devices</li> <li>History record</li> </ul>
Docker monitoring management	<ul> <li>docker image management</li> <li>docker container management</li> <li>docker container monitoring</li> <li>Support docker-compose and docker swarm</li> </ul>
Remote control	<ul> <li>Remote power off</li> <li>Remote restart</li> <li>Volume setting</li> <li>Brightness setting</li> </ul>
Remote Desktop	<ul><li>Based on browser</li><li>Network penetration to access intranet devices</li></ul>
Application security (Android only now)	Application whitelist
Kiosk application setting (Android only now)	<ul> <li>Set the application to start automatically when boot</li> <li>Set the application to run in full screen</li> <li>Hide status bar and navigation bar</li> </ul>
Work order	<ul> <li>Multi tasks in one-click deployment</li> <li>Support multi task batch deployment</li> <li>The task can be edited and saved as a work order</li> </ul>
Private software repo	<ul> <li>Application upload and version management</li> <li>System update package upload and management</li> <li>Other file upload and management</li> </ul>
Server UI customization by self service	<ul><li>Adjust menu functions as required</li><li>Hide unwanted menu functions</li><li>Change Logo picture</li></ul>

### 10.3. How to use

To use AppHub, there are only three steps to do:

- 1) Server runtime environment setup
- 2) Device environment setup
- 3) Device enroll to server

You can download the relevant software and document of AppHub from:

#### • Google drive

https://drive.google.com/drive/folders/1ijrMNZEtBwX1auGMGfCRlcl2l9r0etTV?usp=s haring



● Baidu cloud disk(百度云盘)

https://pan.baidu.com/s/1kuqlMkCbecQVIyGYrXUtyg Access code(提取码): xian

### **10.3.1.** Server runtime environment setup

From the use scenarios described above, we can see that the AppHub server supports multiple platforms. At present, the verified platforms are as follows:

- 1) On-premise server
- 2) Advantech WISE-PaaS cloud platform (including public cloud and private cloud)
- 3) Alibaba cloud ECS VM
- 4) Microsoft Azure cloud VM

For on-premise server, we provide an ISO installation image, which can be burned to the U disk, and then install to the server through the U disk.

For other platform you want to setup AppHub server, we also provide the corresponding methods and steps, please refer to section 2.1 of AppHub manual.

### **10.3.2.** Device environment setup

We have built AppHub agent in AdvLinuxTU already, you can use it just do as follows:

**Step1:** start the agent service, run "systemctl start EI-Device.service" in terminal. **Step2:** Brower open "http://deviceIP:9010" to config server information,

Device IP is the IP address of the device. If you can see a web page similar to the following, it means that the agent has been started successfully.





### **10.3.3.** Device Enroll to server

We provide 2 ways for Linux to enroll, just one of them can enroll to server success.

- Way 1:
- Click "Input Server Information", and paste the connection information
- Way 2:

Enroll by scanning the QR code. Android application EI-LINK that needs to be installed on the Android phone for scanning QR code. For specific usage, please refer to section 2.3 of AppHub manual.

Finish the up 2 steps, now you can control this device by AppHub. The more information please refer the manual of AppHub:

https://docs.wise-paas.advantech.com/en/Guides\_and\_API\_References/ApplicationServices/16118269 36336928113