User Manuel for Virtual Machine

SpaceChain OS

SPC002011 V1.00 Date: 2018/05/05

User Manual

Category	Contents
Key words	SpaceChain OS VM sntp ntp
Abstract	Import SpaceChain OS VM in a RealEvo Simulator environment and add NTP capability

Revision history

Vision	Date	Raison
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1 Scope

This document is applicable for engineers who deploy and debug SpaceChain OS functions. Engineers should have basic network knowledge and general operating system capabilities.

2 Preparation for infrastructure

1: Win7 computer with the RealEvo-Simulator virtual machine installed; can be connected to the external network.

2: sntp project, including sntp and SylixOS Base.

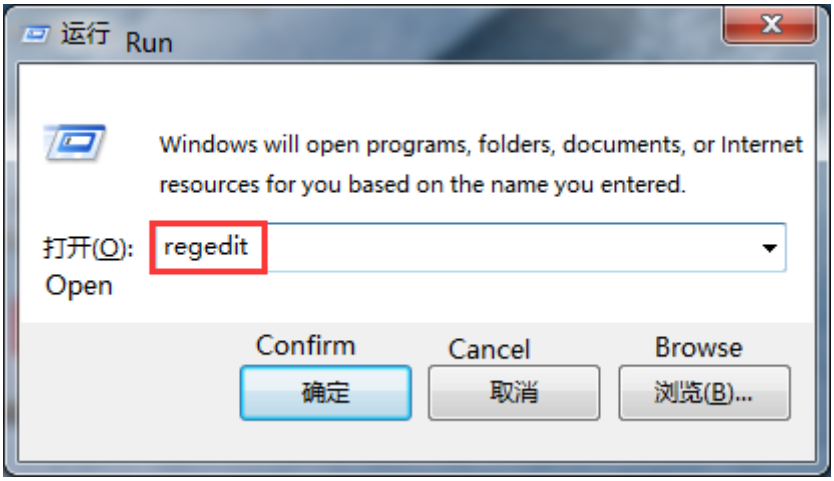
3: qtum project, including libboost, libdb, libevent, qtum, and SylixOS Base.

4: SpaceChain OS VM files, i.e. bspqemu.elf, new-zynq.vm, and new-zynq_sd.img.

3 Configure ntp server in Win7 environment

3.1 Start registry editor

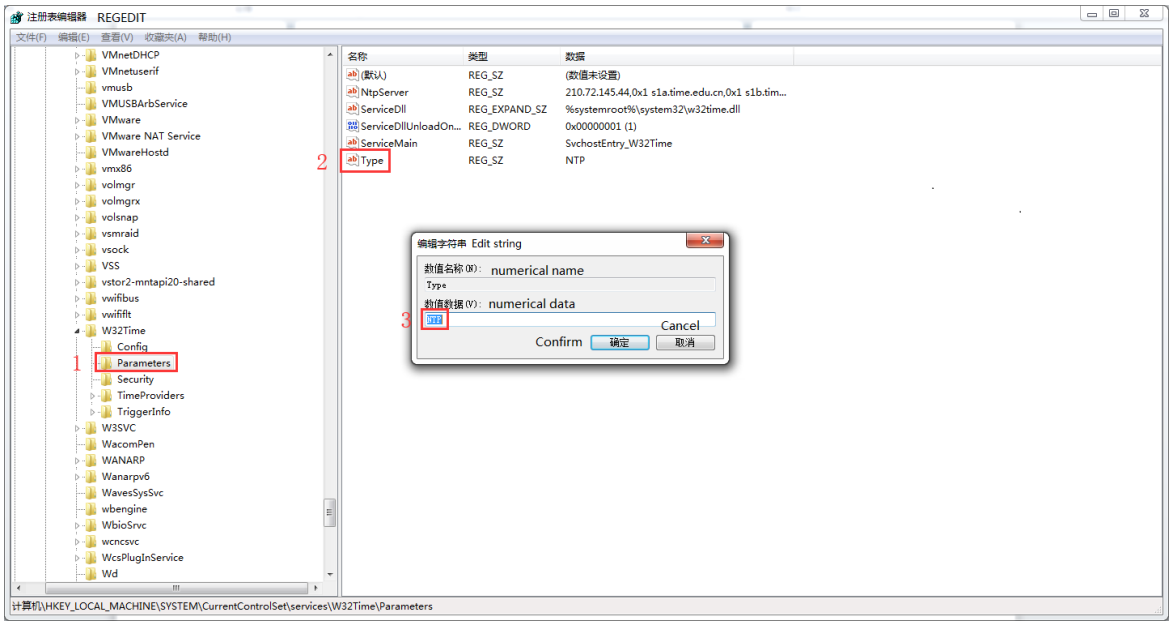
Open the “Run window” via the keyboard “win + R”, enter “regedit” and click OK as follows:



3.2 Set “Type”

Locate the following registry subkey, double-click the “Type” option, set the value to “NTP”, and click OK.

Y_LOCAL_MACHINE/SYSTEM/CurrentControlSet/Services/W32Time/Parameters/Type

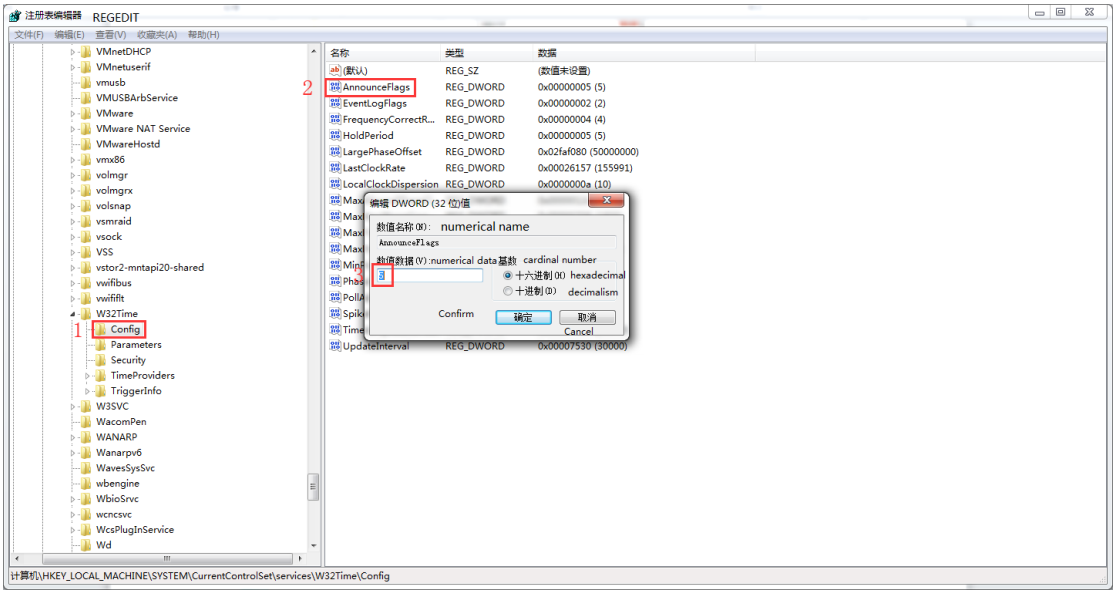


3.3 Set “AnnounceFlags”

Locate the following registry subkey, double-click the “AnnounceFlags” option, set the value to “5”, and click OK.

HKEY_LOCAL_MACHINE/SYSTEM/CurrentControlSet/Services/W32Time/Config/A

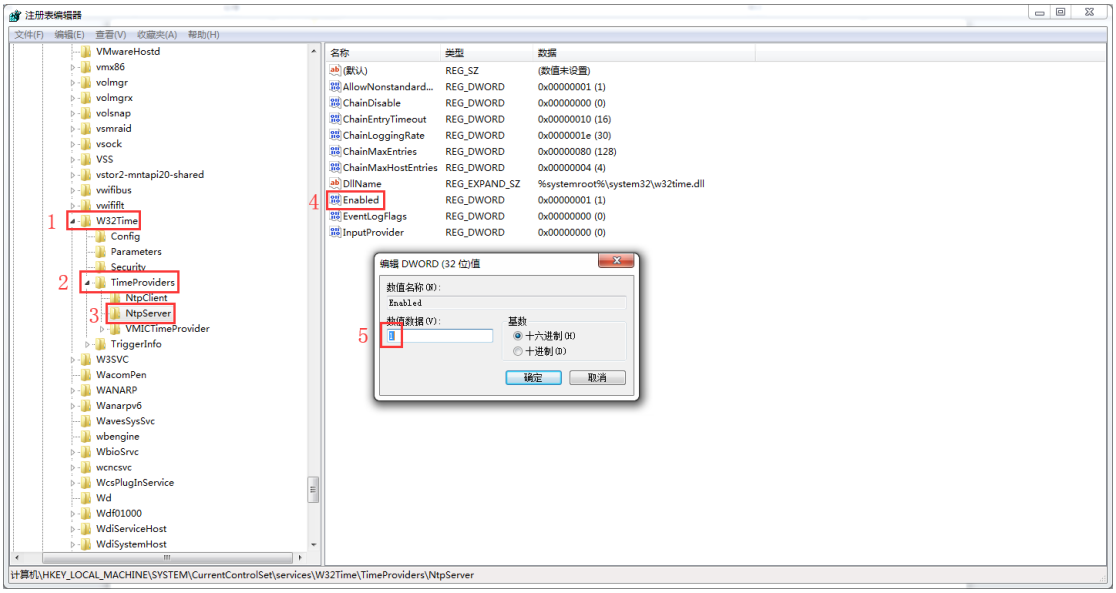
nnounceFlags



3.4 Enable “NTPServer”

Locate the following registry subkey, double-click the “Enable” option, set the value to “1”, and click OK, as follows:

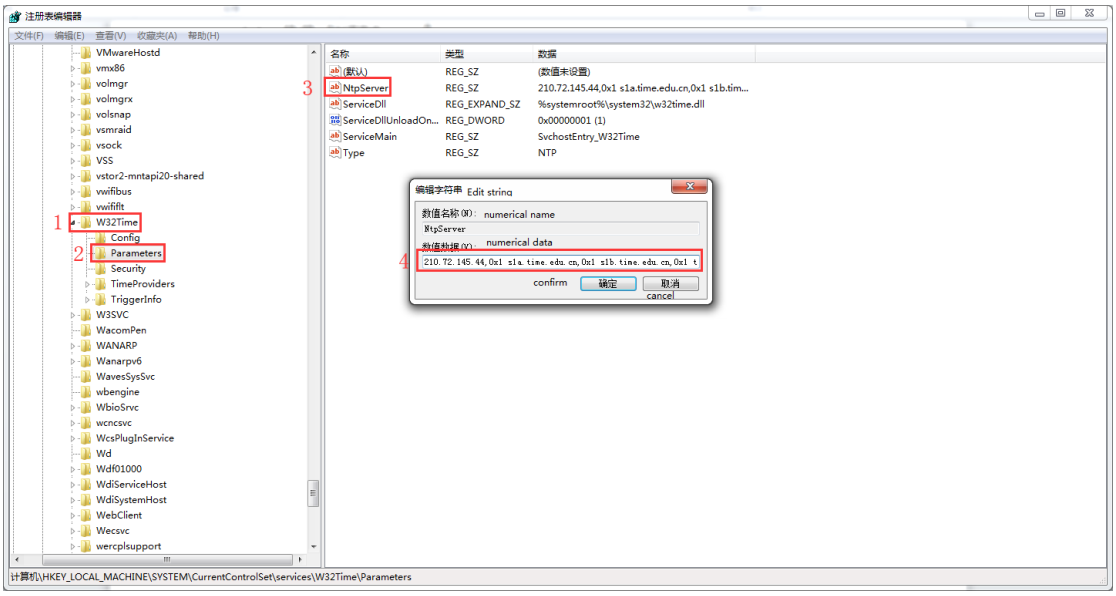
HKEY_LOCAL_MACHINE/SYSTEM/CurrentControlSet/Services/W32Time/TimeProviders/NtpServer/Enable



3.5 Specify the time source

Locate the following registry subkey, double-click the “NtpServer” option, set the value to “210.72.145.44,0x1 s1a.time.edu.cn, 0x1 s1b.time.edu.cn, 0x1 time.windows.com, 0x9”, and click OK as follows:

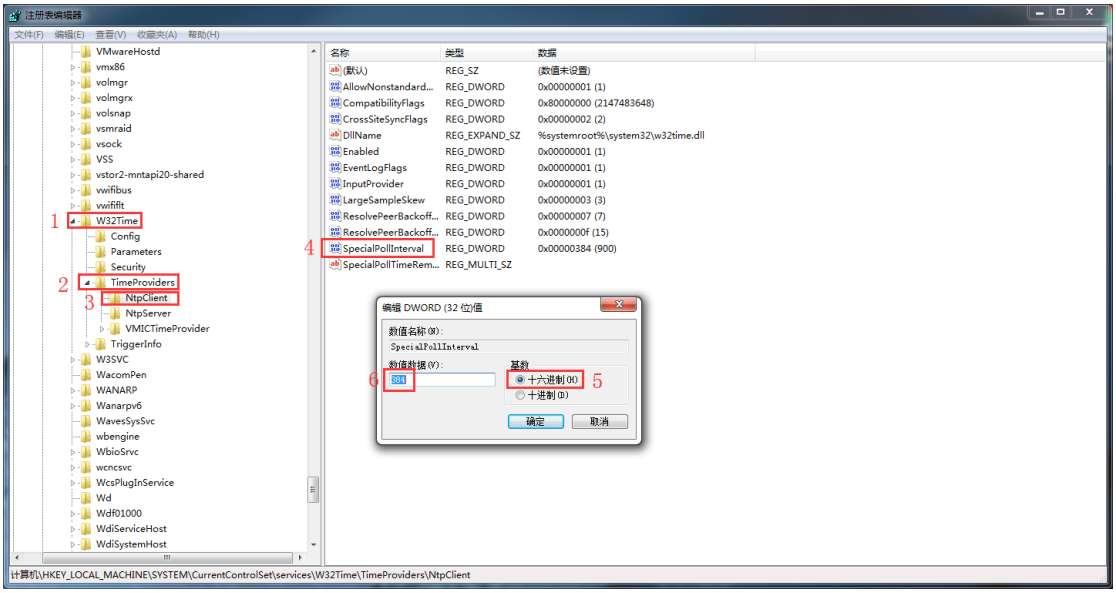
HKEY_LOCAL_MACHINE/SYSTEM/CurrentControlSet/Services/W32Time/Parameters/NtpServer



3.6 Set the polling interval

Locate the following registry subkey, double-click the “NtpServer” option, set the value to 384, and click OK as follows:

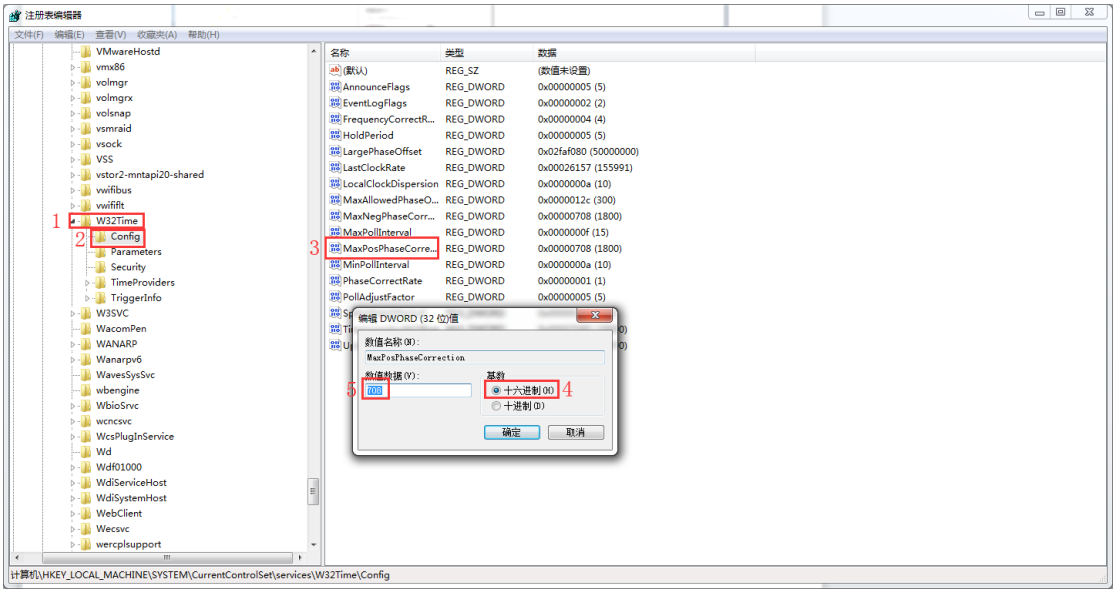
HKEY_LOCAL_MACHINE/SYSTEM/CurrentControlSet/Services/W32Time/TimeProviders/NtpClient/SpecialPollInterval



3.7 Configure time calibration setting

Locate the following registry subkey, double-click the “NtpServer” option, set the value to “708”, and click OK, as follows:

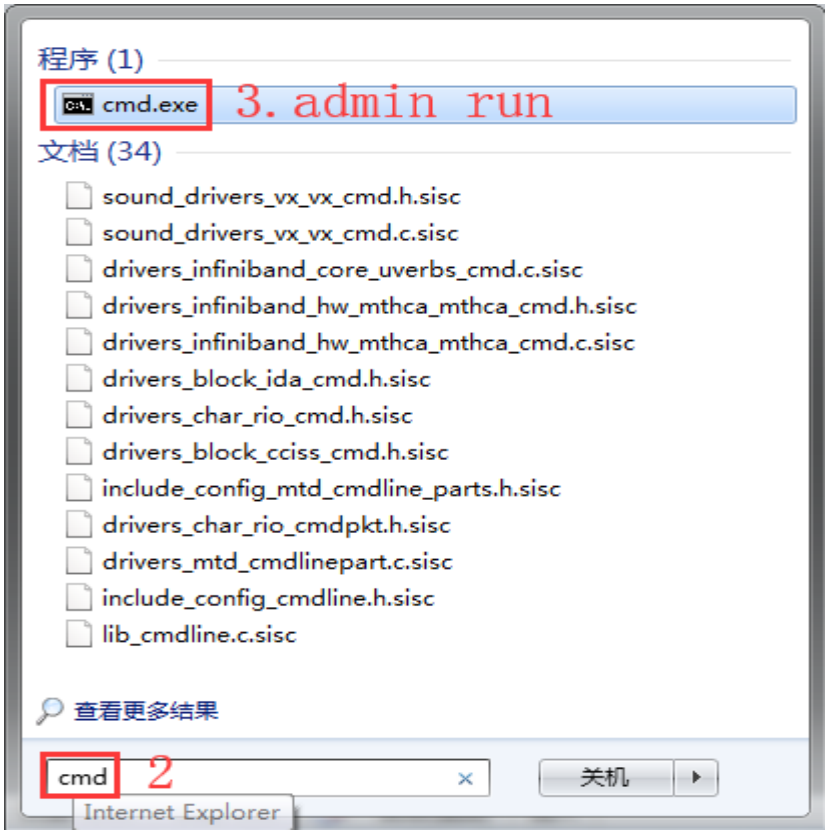
HKEY_LOCAL_MACHINE/SYSTEM/CurrentControlSet/Services/W32Time/Config/MaxPosPhaseCorrection

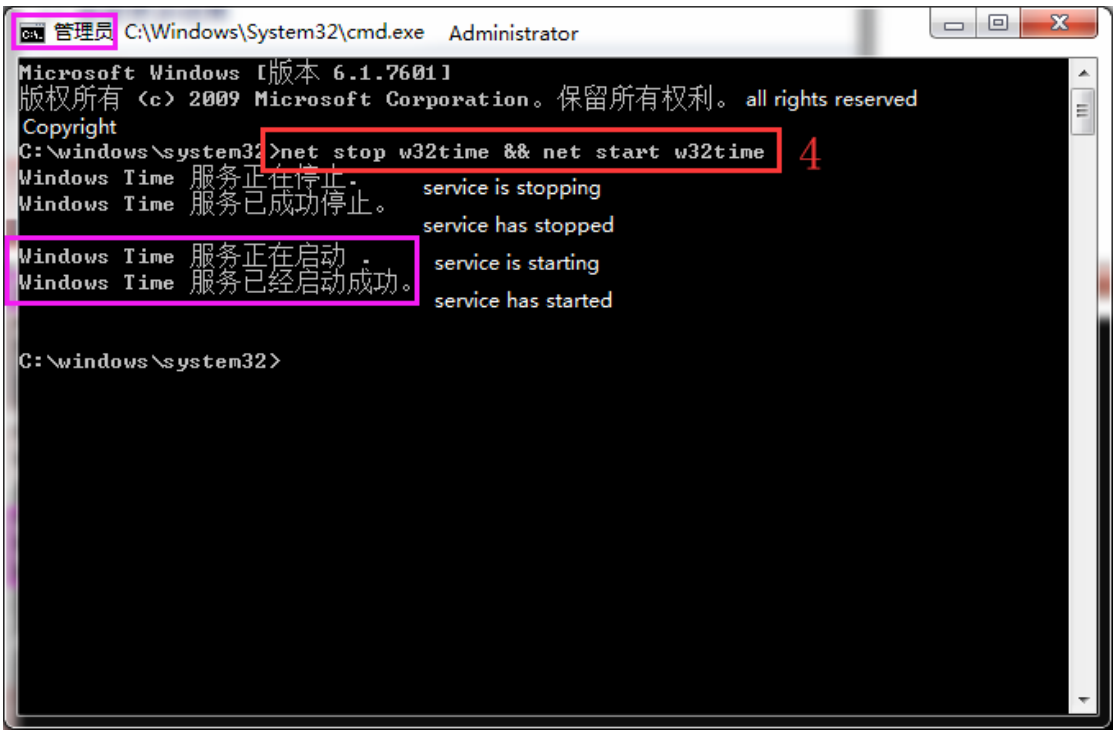


3.8 Exit the registry editor

3.9 Restart Windows time service

Open “cmd” as “Administrator” and enter the “net stop w32time && net start w32time” command, then press Enter, as follows:

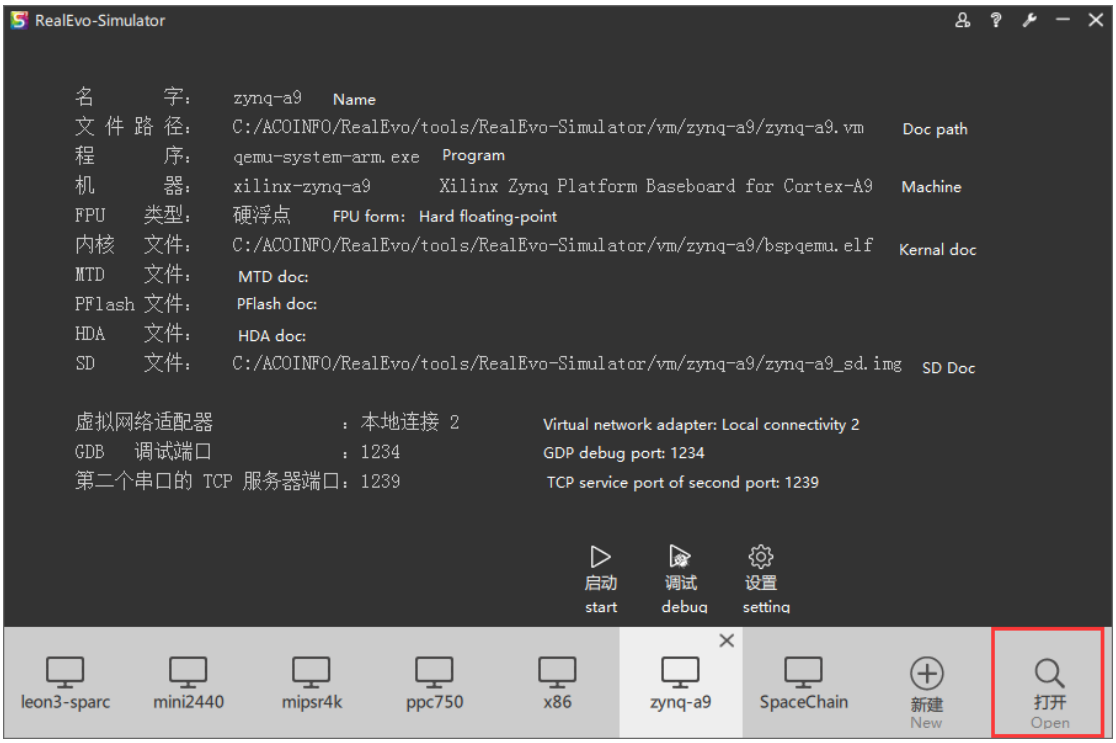



管理员 C:\Windows\System32\cmd.exe Administrator
Microsoft Windows [版本 6.1.7601]
版权所有 (c) 2009 Microsoft Corporation。保留所有权利。 all rights reserved
Copyright
C:\windows\system32>net stop w32time && net start w32time
4
Windows Time 服务正在停止.
Windows Time 服务已成功停止。
service is stopping
service has stopped
Windows Time 服务正在启动 .
Windows Time 服务已经启动成功。
service is starting
service has started
C:\windows\system32>

4 Import SpaceChain OS VM into RealEvo-Simulator

4.1 Start and Import virtual machine files

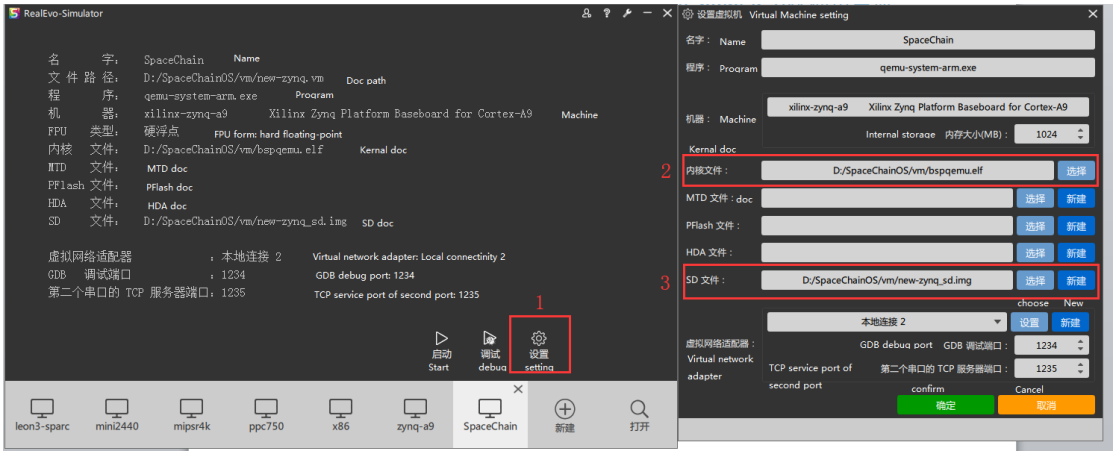
Start RealEvo-Simulator, and locate the “Open” option in the lower right corner, as follows:



Click “Open” to select the SpaceChain OS VM file as follows:

4.2 Set kernel files and SD files

Click “Setting”, select “Kernel file” and “SD file” respectively as the specified files of SpaceChain OS VM, as follows:

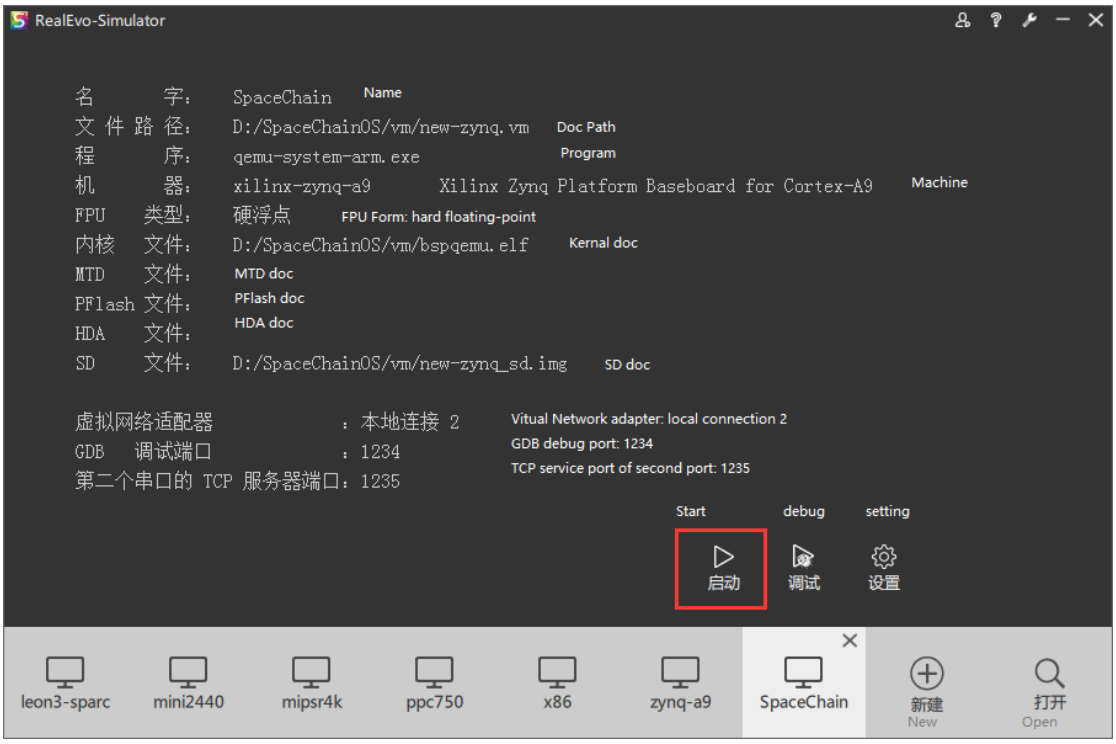


4.3 Configure virtual network interface card of virtual machine

Create a new virtual network card and set the IP address in the “192.168.7.X” network segment as follows:

4.4 Start virtual machine

Click the “Start” button on the main interface of the virtual machine to start it, as follows:



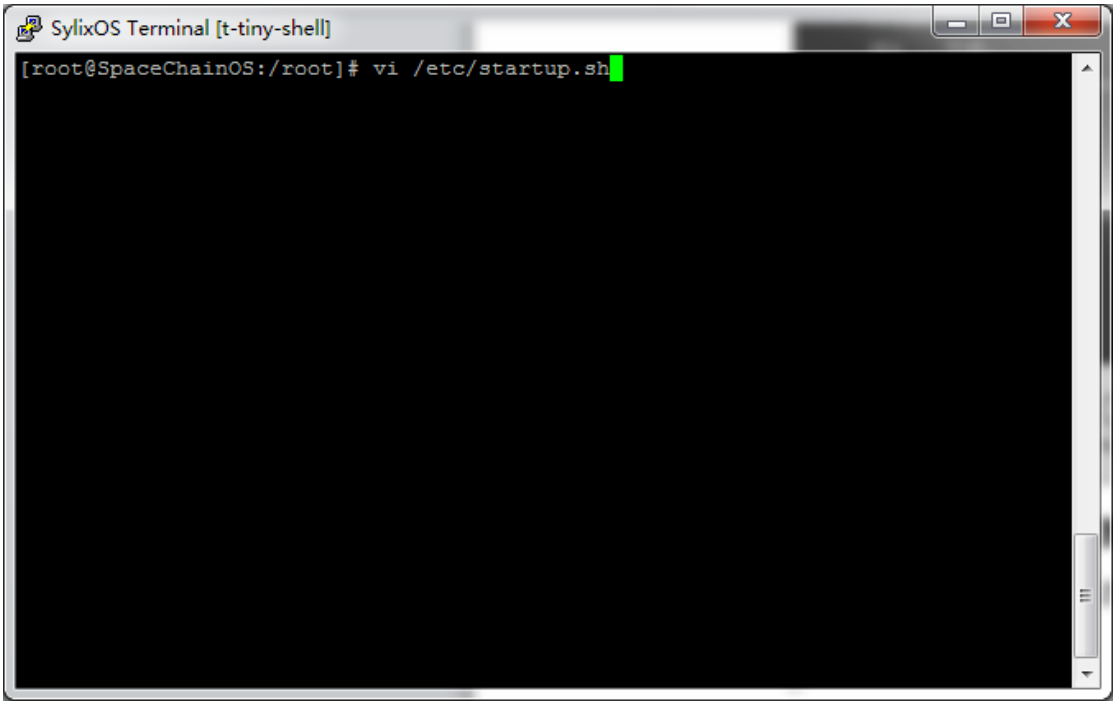
4.5 Add startup configuration file of virtual machine

1: Add the startup configuration file “startup.sh” in the “/etc/” directory of the virtual machine. The content is as follows (the red part is required to set as its own IP address):

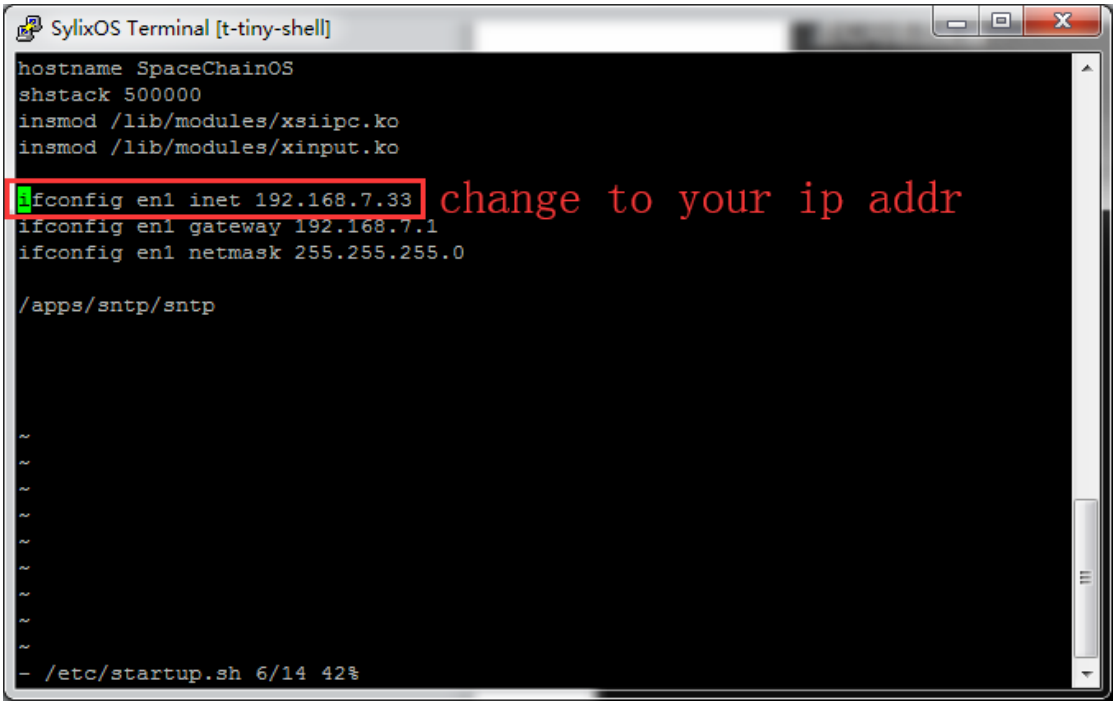
Note: vi Enter edit mode command: i

vi Exit the edit mode: Esc

vi Save and exit command (it is required to execute this command after exiting the edit mode): Shift + : + w q + Enter

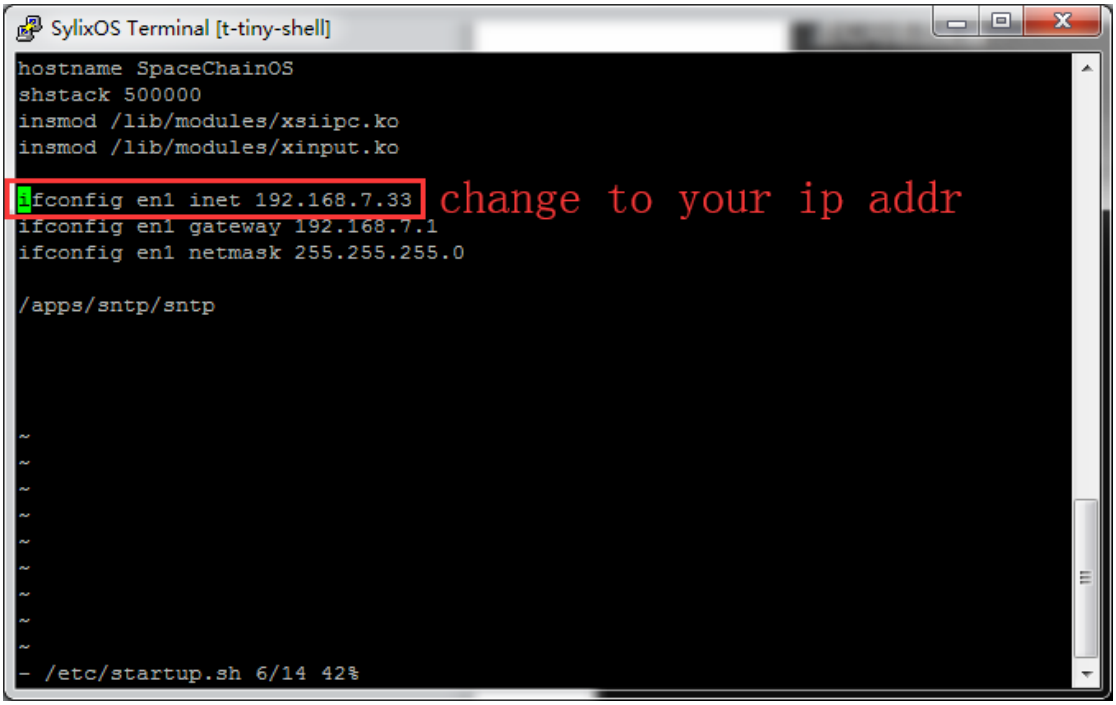


2: Enter the edit mode and modify the content:



3: Exit the edit mode, and save and exit the vi editor

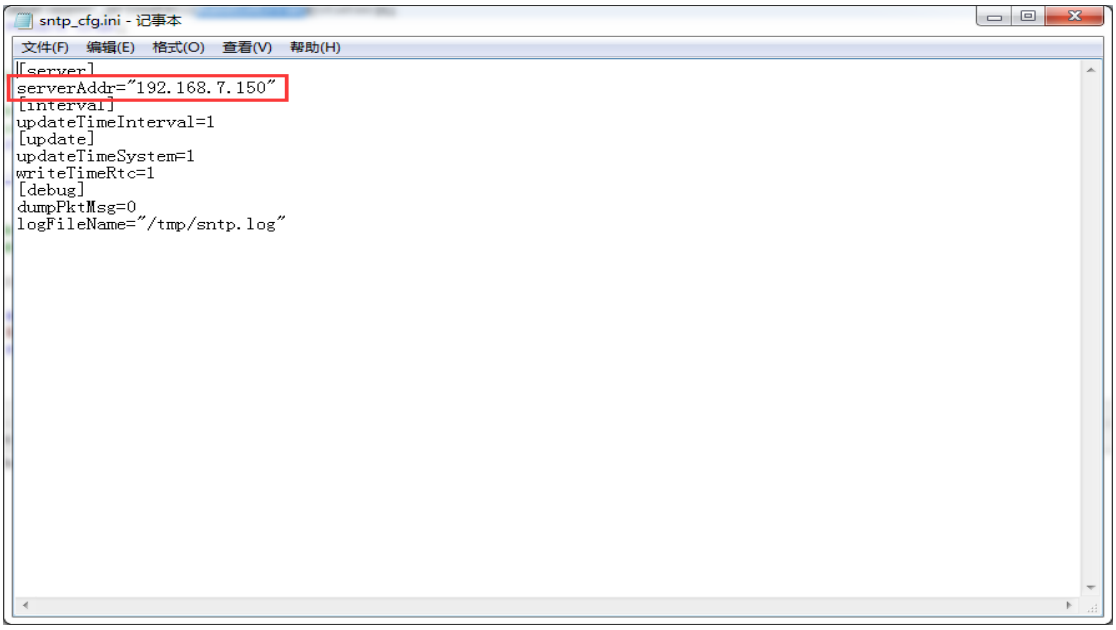
4.6 Restart the virtual machine



5 Deploy qtum project and sntp client to virtual machine

Please refer to “RealEvo-IDE User Manual” for this section.

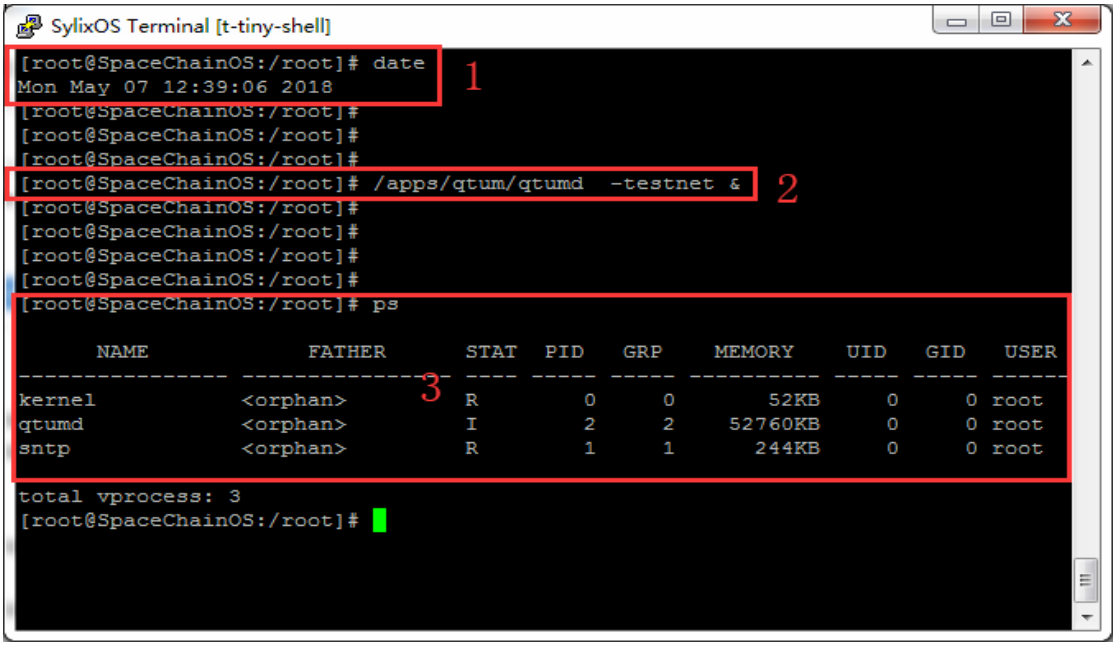
Note: Before deploying the sntp client, it is necessary to modify the ntp server address field in the configuration file (this address is the ntp server address and it is required that the virtual machine can ping this address) as follows:



6 Start the qtum service

It is required to check whether the time has been synchronized (step 1), and then start the qtum service (step 2) to see if the qtum service has been successfully started (step 3).

Note: If you want to print qtum log information to the shell terminal in real time, simply change the command of step 2 to “/apps/qtum/qtumd -testnet -printtoconsole &”.


SylixOS Terminal [t-tiny-shell]
[root@SpaceChainOS:/root]# date
Mon May 07 12:39:06 2018
1
[root@SpaceChainOS:/root]#
[root@SpaceChainOS:/root]#
[root@SpaceChainOS:/root]#
[root@SpaceChainOS:/root]# /apps/qtum/qtumd -testnet &
2
[root@SpaceChainOS:/root]#
[root@SpaceChainOS:/root]#
[root@SpaceChainOS:/root]#
[root@SpaceChainOS:/root]#
[root@SpaceChainOS:/root]# ps
NAME FATHER STAT PID GRP MEMORY UID GID USER
kernel <orphan> R 0 0 52KB 0 0 root
qtumd <orphan> I 2 2 52760KB 0 0 root
sntp <orphan> R 1 1 244KB 0 0 root
3
total vprocess: 3
[root@SpaceChainOS:/root]#