Install nChronos Server

Please note that the server to be installed with nChronos Server has at least two disks (physical or logical), one for installing nChronos Server software and the other for storing nChronos data.

System Requirements

The basic system requirements for nChronos Server are listed as below:

- OS: Linux CentOS 7.1/7.4/7.8
- CPU: 4-core, 1.8GHz
- RAM: 16 GB
- Hard disk: at least two disks (physical or logical)
- Network interface: at least 2 network ports

Depending on network traffic and analysis performance required, the requirements may be substantially higher.

Factors that contribute to superior performance include high speed CPU, RAM, and high performance disk storage subsystem, and enough hard disk space is required to store network packets and data that you want to have.

It is recommended to prepare two hard disks, one of at least 60GB for installing the operating system and nChronos Server, and the other of at least 200GB for storing nChronos data.

It is also recommended to <u>do RAID</u> on the hard disks to protect data.

Install Operating system

Install CentOS

Download CentOS 7 ISO file and install it.

Install csxfs

Input the installation file "csxfs-1.0.4-91.x86_64.rpm" to /root path and do following command:

rpm -ivh csxfs-1.0.4-91.x86_64.rpm

Disk partition and amount

- Check disk status: lsblk
- sdb partition: parted /dev/sdb mklabel gpt mkpart

 ext4
 0%
 100%

toggle 1 lvm

- 3. Check the partition information:
 - р
- 4. Quit:

q

- 5. LVM logical volume creation:
 - 1) fdisk -I #Get the disk name
 - 2) pvcreate /dev/sdb1
 - 3) vgcreate vg1/dev/sdb1
 - 4) lvcreate -l 100%FREE -n lv1 vg1
 - 5) mkfs.csxfs /dev/vg1/lv1
- 6. Mount lv1 to the /data directory:
 - Edit fstab file : vi /etc/fstab Add following content: /dev/vg1/lv1 /data csxfs defaults,nofail,noatime 0.0
 - 2) mkdir /data
 - 3) mount -a
 - 4) df -h # Confirm that lv1 has been mounted to the /data directory
 - 5) df -T #View the mounted file format is csxfs

Configure network interface

After installing the operating system, modify the IP address for management port. You can refer to *How to Configure Network Interfaces* for nChronos Server for details.

Configure firewall

Follow steps below to configure firewall:

- Disable firewalld systemctl mask firewalld.service #mask firewalld systemctl stop firewalld.service #stop firewalld systemctl disable firewalld.service #disable start-up firewalld
- 2. Install and enable iptables with following commands:

yum install iptables-services -y	#install iptables
systemctl enable iptables.service	#enable iptables

3. Modify the iptables file by vi /etc/sysconfig/iptables as below:

*filter
:INPUT ACCEPT [0:0]
:FORWARD ACCEPT [0:0]
:OUTPUT ACCEPT [0:0]
-A INPUT -m state --state RELATED,ESTABLISHED -j ACCEPT
-A INPUT -p icmp -j ACCEPT
-A INPUT -i lo -j ACCEPT
-A INPUT -p tcp -m state --state NEW -m tcp --dport 22 -j ACCEPT

-A INPUT -p tcp -m state --state NEW -m tcp --dport 443 -j ACCEPT -A INPUT -p tcp -m state --state NEW -m tcp --dport 3000 -j ACCEPT -A INPUT -p tcp -m state --state NEW -m tcp --dport 8080 -j ACCEPT -A INPUT -j REJECT --reject-with icmp-host-prohibited -A FORWARD -j REJECT --reject-with icmp-host-prohibited COMMIT

4. Restart firewall.

systemctl restart iptables

Modify time

If the system time is correct, please ignore this step. If the system time is incorrect, please follow steps below to modify the time.

1. Select time zone

timedatectl set-local-rtc 1 timedatectl set-timezone Asia/Shanghai

2. Set time

date -s "2017-07-11 10:25:25"

#here input local time

3. Set RTC (hardware clock)

hwclock --systohc

#Synchronize hardware clock

#choose the correct time zone

After above steps, do "timedatectl" to check if the time is OK.

[root@localh	nost ~]	# ti	imedatectl
Local	time:	Tue	2017-07-11
Universal	time:	Tue	2017-07-11
RTC	time:	Tue	2017-07-11
Time	zone:	Asia	/Shanghai

Install nChronos Server software

Download the Server software installation package. Before downloading, check the operating system version and if the CPU supports avx2 instructions.

Operating System	Package for CentOS 6	Package for CentOS 7
Centos6.6 (avx2 unsupported)	\checkmark	
Centos6.6 (avx2 supported)	\checkmark	
Centos7.x (avx2 unsupported)	\checkmark	
Centos7.x (avx2 supported)	\checkmark	\checkmark

Use the command: *grep -i "avx2" /proc/cpuinfo* to check if CPU supports avx2. If the return result prints information including avx2, it means the CPU supports avx2; if nothing returned, it means the CPU doesn't support avx2. Like the image below:

[root@localh	ost ~]# grep -i "avx2" /proc/cpuinfo	avx2 supported
flags	: fpu vme de pse tac mar pae mce cx8	apic sep mtrr pge mca cmov pat pse36
clflush dts :	mmx fxsr sse sse2 ss svscall nx pdpe1gb r	dtacp 1m constant tac arch perfmon pe
bs bts nopl : cx16 pcid s	xtopology tsc_reliable nonstop_tsc aperfm se4_1 sse4_2 x2apic movbe popcnt tsc_dead	perf eagerfpu pni pclmulqdq ssse3 fma line_timer aes xsave avx f16c rdrand
ust bmil hle	ani_im aom 3dhowpreietch ida arat epb xsa avx2 smep bmi2 invpcid rtm rdseed adx sm	veopt pln pts dtherm fsgsbase tsc_adj ap
flags	: fpu vme de pse tsc mar pae mce cx3	apic sep mtrr pge mca cmov pat pse36
clilush dts :	mmx fxsr sse sse2 ss syscall nx pdpeigb r	dtscp lm constant_tsc arch_perfmon pe
bs bts nopl :	<pre>xtopology tsc_reliable nonstop_tsc aperfm and 1 apped 2 appris appris</pre>	perf eagerfpu pni pclmulqdq ssse3 fma
CX10 DC10 3	see_1 ssee_2 x2apic movbe popcht tsc_dead	line_timer aes xsave avx ficc furand
ust bmil hle	anr_im abm Jonowprefetch ida arat epb xsa avm2 smep bmi2 invocid rtm rdseed adx sm	weopt pin pts dtherm isgsbase tsc_adj
flags	: fou vme de pse tac mar pae mce cx8	apic sep mtrr pge mca cmov pat pse36
clflush dta	mmx fxar ase sae2 as avacall nx popelob r	dtsco 1m constant tsc arch perimon pe
bs bts nopl cx16 pcid s	<pre>xtopology tsc_reliable nonstop_tsc aperfm se4_1 sse4_2 x2apic movbe popcnt tsc_dead</pre>	perf eagerfpu pni pclmulqdq ssse3 fma lline_timer aes xsave avx fl6c rdrand
nypervisor 1	aury amen bmi2 invocid rtm rdseed adx sm	iap
flagg	· fou whe de pse tac mar pae mce cx8	apic sep mtrr pge mca cmov pat pse36
alfluch dta	fyar ase see? as syscall nx pdpeldb I	dtscp 1m constant tsc arch perimon pe
be bee nonl	stopology tac reliable ponstop tac aperin	merf eagerfpu pni polmulgdg ssse3 fma
De ble nopi	and 1 ared 2 w2anic movbe popent tac dead	line timer aes xsave avx f16c rdrand
CX10 pciu a	she im she Schowpreferch ids aret epb XSS	veopt pln pts dtherm fsgsbase tsc adj
nypervisor 1	and in dom Sundwprereton ris rdseed adx si	der
ust cmil nie	aviz smep bill invoid fom fabers and	
A MARCO PROVIDENT		
[root@colaso [root@colaso	oft -]# grep -i "avx2" /proc/cpuinfo ft -]#	avx2 not supported

Please note it's best to manually input the command to prevent incorrect symbol recognition.

Follow steps below to install nChronos Server software.

 Download the Server software installation package, which includes four files: csrass_xxx.rpm, dependency.tar.gz, setup_csrass.sh, and unsetup_csrass.sh. SSH connect to the server, and copy the installation package to the server.

• <u>1</u> 192.168.160.142	× +		
[root@colasoft ~]# total 155156	ແ		
-rw 1 root	root 2502 (Oct 26 19:17	anaconda-ks.cfg
-rw-rr l root	root 5500464 N	Nov 20 13:18	csrasmd
-rw-rr 1 root	root 151661876 [Dec 5 10:37	csrass-std-5.5.1.10573_7_x86_64.rpm
-rw-rr 1 root	root 1696439 N	Nov 28 20:17	dependency.tar.gz
-rw-rr 1 root	root 7305 D	Dec 6 09:17	setup_csrass.sh
-rw-rr 1 root	root 992 D	Dec 6 09:17	unsetup_csrass.sh
[root@colasoft ~]#			

2. Modify the privilege with the command: *chmod +x setup_csrass.sh*

• <u>1</u> 192.168.160.142 × +	
[root@colasoft ~]# chmod +x set	up_csrass.sh
total 155156	
-rw 1 root root 25	02 Oct 26 19:17 anaconda-ks.cfg
-rw-rr 1 root root 55004	64 Nov 20 13:18 csrasmd
-rw-rr 1 root root 1516618	76 Dec 5 10:37 csrass-std-5.5.1.10573_7_x86_64.rpm
-rw-rr 1 root root 16964	39 Nov 28 20:17 dependency tar gz
-rwxr-xr-x 1 root root 73	05 Dec 6 09:17 setup_csrass.sh
-rw-rr 1 root root 9	92 Dec 6 09:17 unsetup csrass.sh
[root@colasoft ~]#	

3. Do the command: ./setup_csrass.sh and then follow the wizard to complete the installation.

```
[root@colasoft ~]# chmod +x setup_csrass.sh
[root@colasoft ~]# ./setup_csrass.sh
Change mode to Manual!
0 ./csrass-std- .rpm
Input number to select package:0
Choose rpm package is ./csrass-std-5.6.0.12004_7_x86_64.rpm!
0 Chinese
1 English
Input number to select language 1 Choose language
Set language to English!
denpendency/
denpendency/libXrender.so.1
denpendency/libxcb.so.1
denpendency/libX11.so.6
denpendency/libgstvideo-0.10.so.0
denpendency/libgstinterfaces-0.10.so.0
denpendency/libgstapp-0.10.so.0
denpendency/libXau.so.6
denpendency/libgstpbutils-0.10.so.0
denpendency/libfontconfig.so.1
denpendency/libXext.so.6
denpendency/libxext.so.0
denpendency/libpng12.so.0
denpendency/libjpeg.so.62
denpendency/libgstbase-0.10.so.0
denpendency/libgstreamer-0.10.so.0
Preparing...
                                                   Note: This output shows SysV services only and does not include native
        systemd services. SysV configuration data might be overridden by native
        systemd configuration.
        If you want to list systemd services use 'systemctl list-unit-files'.
To see services enabled on particular target use
         'systemctl list-dependencies [target]'.
Note: This output shows SysV services only and does not include native 
systemd services. SysV configuration data might be overridden by native
        systemd configuration.
        If you want to list systemd services use 'systemctl list-unit-files'.
To see services enabled on particular target use
         'systemctl list-dependencies [target]'.
Updating / installing...
    1:csrass-5.6.0-12004
                                                   cpucount is 2, usr default config, please re-select in the web browser!
Starting csrasm (via systemctl):
Install csrass complete!
[root@colasoft ~]#
```

The default username for logging in nChronos Server is *admin* and the password is *D&^4Vs*.

After the installation, please log in Web Portal to activate it.

After the activation, please configure storage settings, interface settings, and link settings, etc.

When configuring the storage space, the Config Space is usually less than the Available Space by 100GB. The 100GB is reserved.

To configure a storage area, the recommended space ratio of statistics : packets : transaction log : alarm log is 0.2 : 0.7 : 0.05 : 0.05.

Activate nChronos Server

Follow steps below to activate nChronos Server:

https://102.108.120.05

1. Launch a browser, in the address bar input https://xxx.xxx.xxx (xxx.xxx.xxx stands for the IP address of the management interface of the nChronos server) and then press ENTER.

Colasoft nChronos
Username:
Password:
Log In
Copyright (c) 2011 - 2020 Colasoft All rights reserved.

2. On nChronos Server login portal, input the user name *admin* and the password *D&^4Vs!(*, and then press ENTER. It shows the activation page as the screenshot below:

Product acti	vation is a way to prevent piratic edition, a manner to
protect our cus	stomers' rights. One license can only be activated on one
server (or PC)	
Activation is	anonymous when you activate the product online.
Product's se	rial number and machine code are needed, when you
activate the pr	oduct through mail or fax.
While activa	ting, system will generate a unique Hardware identification
code. Hardwa	re identification code does not contain any private and
machine infor	nation. It is only used to activate products. After activating
the product, yo	ou do not need to reactivate it even you reinstall the
product, but yo	ou will need to reactivate the product if you reinstall your
operating syst	em

3. Click **Next** and input the Serial Number, and then choose an activation method.

Product Activation		
Please enter the correc	t license information.	
Serial number:		
Activate online (reco Activate with license	mmended) file	
Previous	Next	Cancel

Activate online

To activate nChronos Server online, just enters the Serial Number and then click Next to complete the activation. This method is very quick and easy, and the activation process will only take a few seconds.

Activate with license file

When you don't have Internet access or failed to activate online, you can choose this method to activate nChronos.

The license file can be obtained by two ways: via Colasoft Webpage and via Colasoft Support.

Product Activation			
1: Click here to automation	cally get license file		
2: Copy the below inform	ation and send email to	support@colasoft.com to	get license file
Serial number:	04520-21520-401	61-03711-20201	
Machine code:	42541-23973-428	21-02201-20308-40601-12	150
Version:	5.4.1.8595		
Click the button Browse t	o import license file:		
			Browse
Previous	Next	Cancel	

Via Colasoft Webpage

Follow steps below to obtain license file via Colasoft Webpage:

1. On the activation interface, click the link in Option 1, and then Colasoft Activation Webpage pops up:

anne-sam tagangangangan	And and the second
Machina Code:	R10811143400007775347800010008110000710008
License File:	

- 2. Click Save as Bin to save the license file.
- 3. On the activation interface, import the license file, and then click Next.

Via Colasoft Support

To obtain license file via Colasoft Support, send Serial Number, Machine code, and Product Version information to support@colasoft.com. Colasoft Support will reply with a license file as soon as possible.

Have troubles upon activating nChronos Server

Follow steps below to check:

- 1. Make sure the SN you are using is the nChronos server SN, not nChronos console SN.
- 2. If you are using the right SN, please check if you can connect to Colasoft license server by using command: ping secure.colasoft.com
- 3. If there is no response when you ping to secure.colasoft.com, please make sure that your server is connecting to the network and please make sure your DNS is working fine as well.
- 4. If you can get response from the ping, but still not able to active the nChronos Server, please contact our support team by emailing your SN, machine code, and version number to: support@colasoft.com.

Do RAID

Follow steps below to do RAID:

1. Power on the server, and press corresponding shortcut key according to the model of RAID card to go to the RAID card configuration interface.

Taking PERC H710P for example, press CTRL+R to go to the RAID card configuration interface.

2. Press F2, choose Clear Config to delete the default configuration information.

	1919
PERC H710P Adapter BIOS Configur Mgmt PD Mgmt Ctrl Mgmt Properties Uirtual Disk Ma PERC H710P Adapter (Bus 0x02, Deu 0x00)	ation Utility 4.00-0
 No Configuration Present ! Inconfigured Physical Disks 00:01:00: Ready: 278.87 GB 	Create New UD
00:01:01: Ready: 278.87 GB 00:01:02: Ready: 278.87 GB 00:01:03: Ready: 278.87 GB	Foreign Config
	Manage Preserved Cac Security Key Managem
	Create CacheCade Vir

3. Choose Create New VD, choose RAID-5, select all physical disks, use Tab key to switch, set VD Size of VD1 as recommended 100 G and VD Name as system, and then choose OK.

Mgmt PD Mgmt Ctrl	Mgmt Pr Uirt	OS Configuration Utility 4.00-0014 operties ual Disk Management
AID Level : RAID	-5	Basic Settings VD Size:836.62 GB00GB
D per Span :NZA		VD Name system
- Physical Disks -		-L] Advanced Settings
Disk ID Size (×100:01:00 278.87 (×100:01:01 278.87	GB 00 GB 01	Strip Element Size: 64KB
(X) 90:01:02 278.87 (X) 90:01:03 278.87	GB 02 GB 03	Read Policy : Adaptive R CANCEL
		Write Policy: Write Back
ecure UD:		[] Force WB with no battery [] Initialize [] Configure HotSpare

- 4. Add VD2 on Disk Group, no need to choose physical disk again here, choose RAID-5 for RAID Level, choose the rest storage space, set VD Name as data, choose Advanced Settings, set Strip Size as 1 MB, and choose OK.
- 5. Initialize the two partitions, select the partition, press F2, select Fast Init.
- 6. Restart the server after finishing the settings.