Juniper SRX 防火墙配置教程 1.5

前言：

作者有幸接触到 Juniper SRX 系列的防火墙，但没有接受过 Juniper 的培训，也不知道在哪里有培训，只好自己在网上查找相关配置资料，不过想找一份比较全面的资料实在是太难了。大概查了一个多月的资料吧，现在也算是稍微弄懂了一点儿 SRX 系列的防火墙的配置。为了方便初学者的学习，故作此手册；如有不当之处，还请指正。

作者：李茂福　2020 年 1 月 22 日

说明：

（1）蓝色的字为配置命令，绿色的字为对命令的解析，有些地方命令比较密集的就不用蓝色标出了

（2）输入命令时要先弄清楚该命令是在哪个模式下输入的，看命令前的 shell 提示符

目录：

无目录，本文档发布时为 pdf 格式，可以查看书签，点击书签跳到相应的页面。

0. 搭建实验环境

目前还没有可以直接安装运行的 Juniper 模拟器，官方有 vSRX 镜像，可以下载并用 VirtualBox 虚拟机打开，就可用来练习。不过下载官方的镜像要注册一个帐号，比较麻烦，我目前也没有注册成功过。所以在网上找了一份其他大神做好的.ova 镜像，读者可自行在网上下载，也可联系我，Email：sysyear@163.com

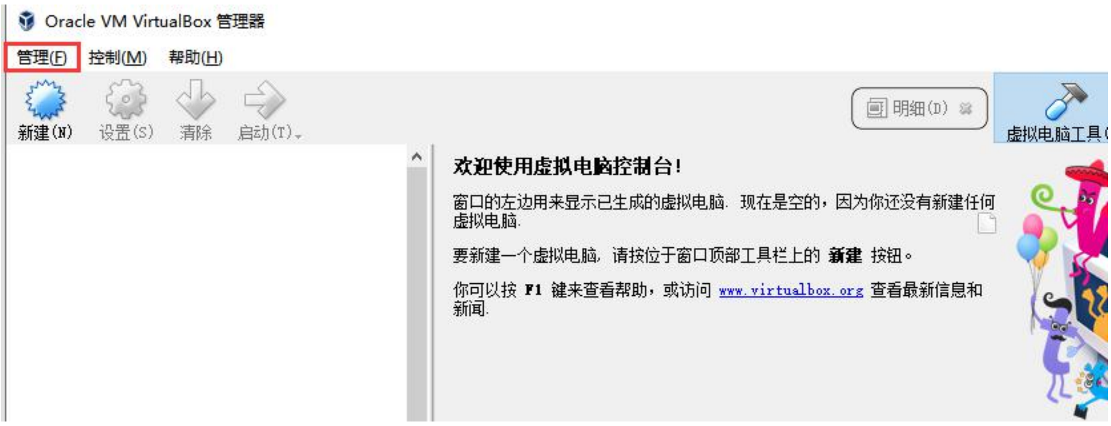
准备事项

①下载 vSRX 的.ova 文件（本教程使用的是 junos-vsrx-12.1X44-D10.4-domestic.ova）到电脑的某个目录下，如 D:\Juniper\

此电脑 › 新加卷 (D:) › Juniper

名称	修改日期	类型	大小
junos-vsrx-12.1X44-D10.4-domestic.ova	2014/7/24 19:20	360压缩	217,487 KB

②安装并运行 Virtual Box 虚拟机软件



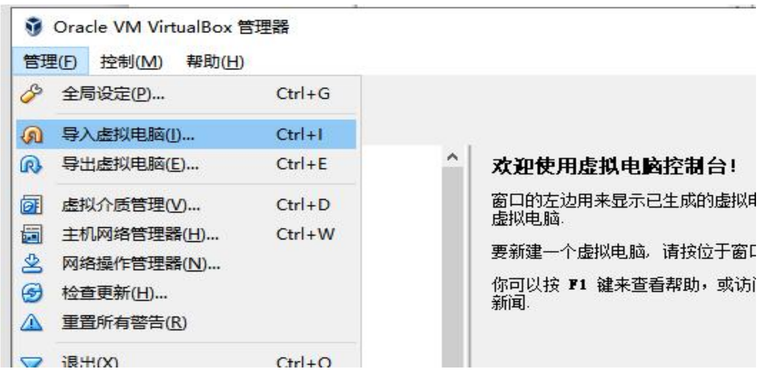
欢迎使用虚拟电脑控制台!

窗口的左边用来显示已生成的虚拟电脑. 现在是空的，因为你还没有新建任何虚拟电脑.

要新建一个虚拟电脑，请按位于窗口顶部工具栏上的 **新建** 按钮。

你可以按 **F1** 键来查看帮助，或访问 www.virtualbox.org 查看最新信息和新闻.

点击主界面左上角的“管理”，“导入虚拟电脑”


Oracle VM VirtualBox 管理器
管理(F)
控制(M)
帮助(H)
全局设定(P)... Ctrl+G
导入虚拟电脑(I)... Ctrl+I
导出虚拟电脑(E)... Ctrl+E
虚拟介质管理(V)... Ctrl+D
主机网络管理器(H)... Ctrl+W
网络操作管理器(N)...
检查更新(H)...
重置所有警告(R)
退出(X) Ctrl+Q

欢迎使用虚拟电脑控制台!

窗口的左边用来显示已生成的虚拟电

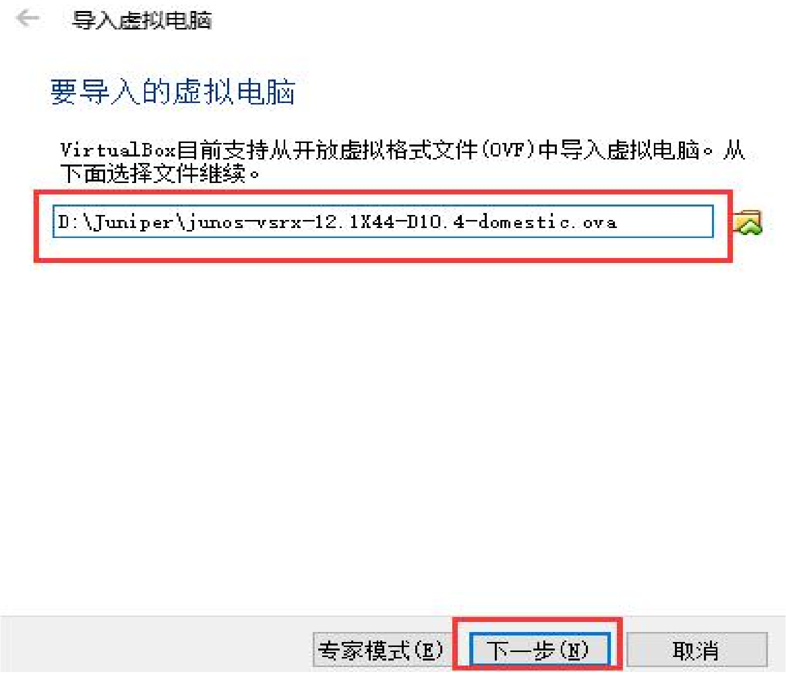
虚拟电脑.

要新建一个虚拟电脑，请按位于窗口

你可以按 **F1** 键来查看帮助，或访问

新闻.

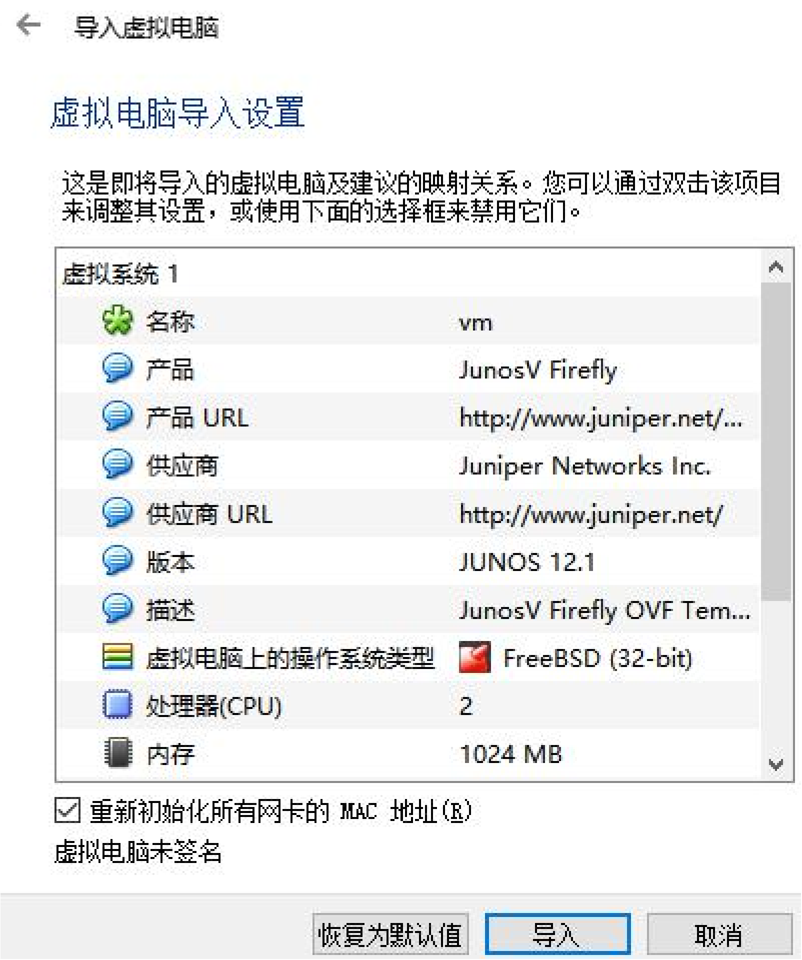
在“导入虚拟电脑”对话框中，选择之前下载的.ova 文件，如下图：



要导入的虚拟电脑

VirtualBox目前支持从开放虚拟格式文件(OVF)中导入虚拟电脑。从下面选择文件继续。

D:\Juniper\junos-vsrx-12.1X44-D10.4-domestic.ova



虚拟电脑导入设置

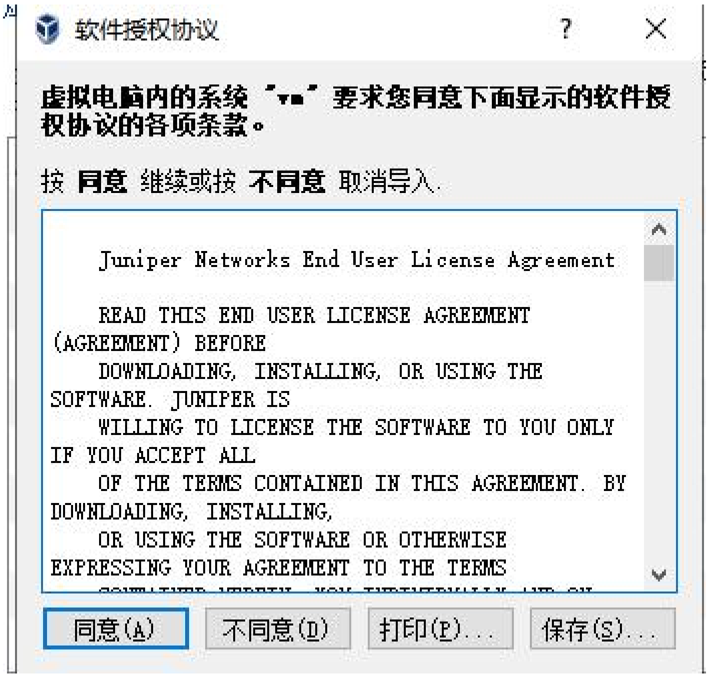
这是即将导入的虚拟电脑及建议的映射关系。您可以通过双击该项目来调整其设置，或使用下面的选择框来禁用它们。

虚拟系统 1	
名称	vm
产品	JunosV Firefly
产品 URL	http://www.juniper.net/...
供应商	Juniper Networks Inc.
供应商 URL	http://www.juniper.net/
版本	JUNOS 12.1
描述	JunosV Firefly OVF Tem...
虚拟电脑上的操作系统类型	FreeBSD (32-bit)
处理器(CPU)	2
内存	1024 MB

☑ 重新初始化所有网卡的 MAC 地址(R)

虚拟电脑未签名

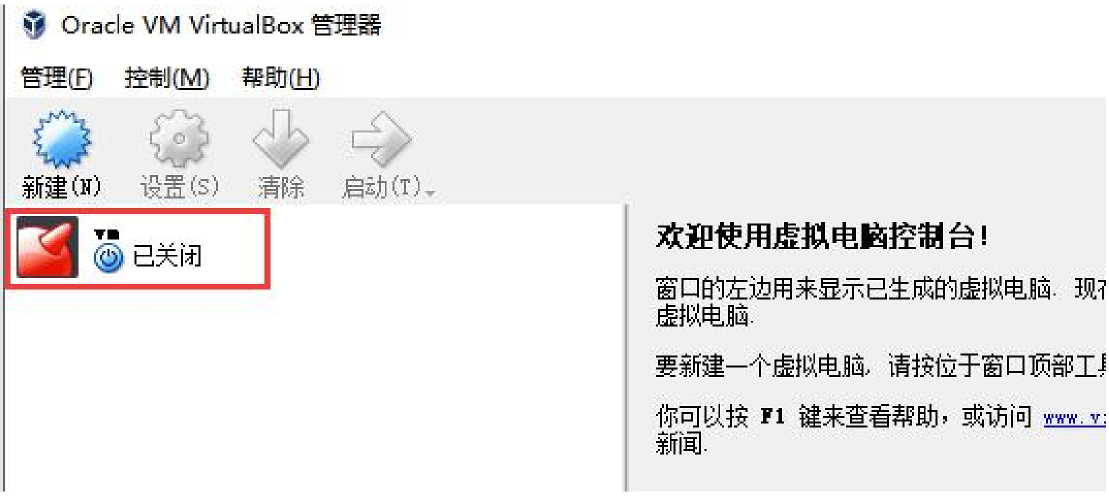
看到了虚拟机的基本配置，点击“导入”，出现下图的软件授权协议，点击“同意”即可



虚拟电脑内的系统 “vm” 要求您同意下面显示的软件授权协议的各项条款。

按 **同意** 继续或按 **不同意** 取消导入.

```
    Juniper Networks End User License Agreement

    READ THIS END USER LICENSE AGREEMENT
(AGREEMENT) BEFORE
    DOWNLOADING, INSTALLING, OR USING THE
SOFTWARE. JUNIPER IS
    WILLING TO LICENSE THE SOFTWARE TO YOU ONLY
IF YOU ACCEPT ALL
    OF THE TERMS CONTAINED IN THIS AGREEMENT. BY
DOWNLOADING, INSTALLING,
    OR USING THE SOFTWARE OR OTHERWISE
EXPRESSING YOUR AGREEMENT TO THE TERMS
```



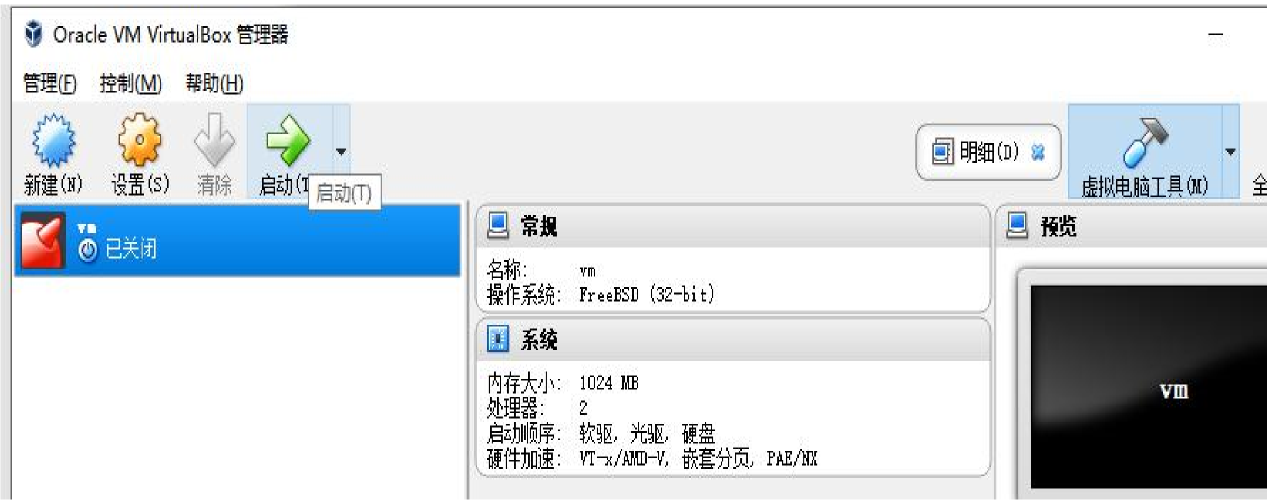
欢迎使用虚拟电脑控制台！

窗口的左边用来显示已生成的虚拟电脑. 现在
虚拟电脑.

要新建一个虚拟电脑，请按位于窗口顶部工具

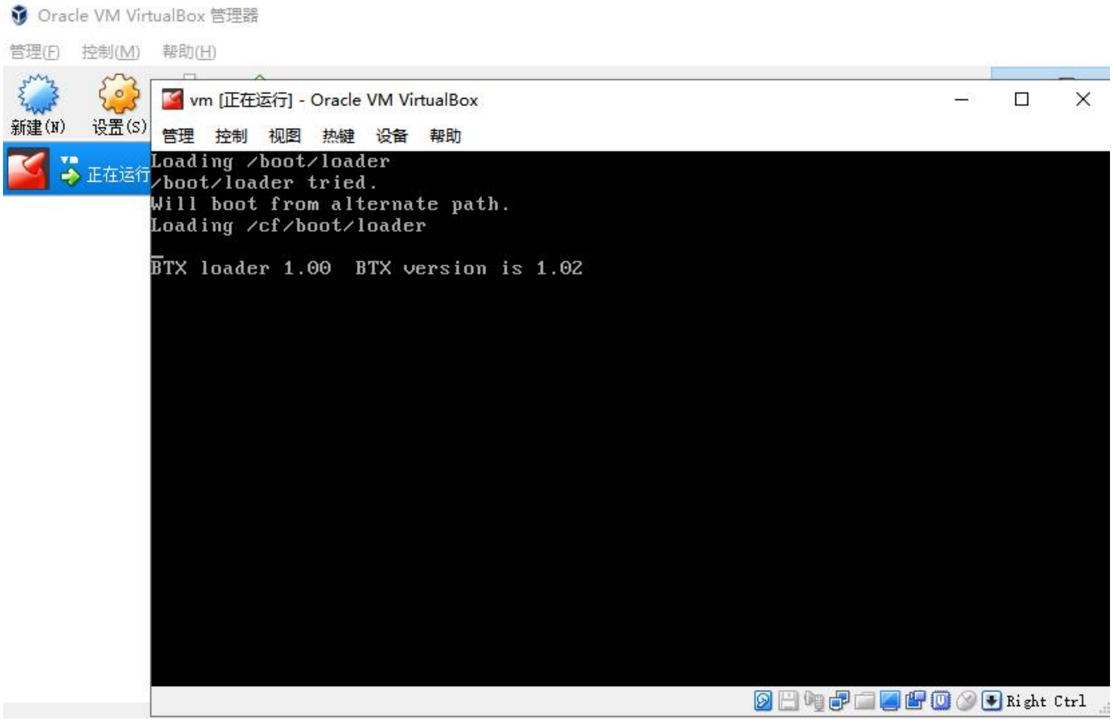
你可以按 F1 键来查看帮助，或访问 www.v
新闻.

这时虚拟机已添加到 VirtualBox 里，接下来开启此虚拟机，点击“启动”按钮



名称: vm
操作系统: FreeBSD (32-bit)

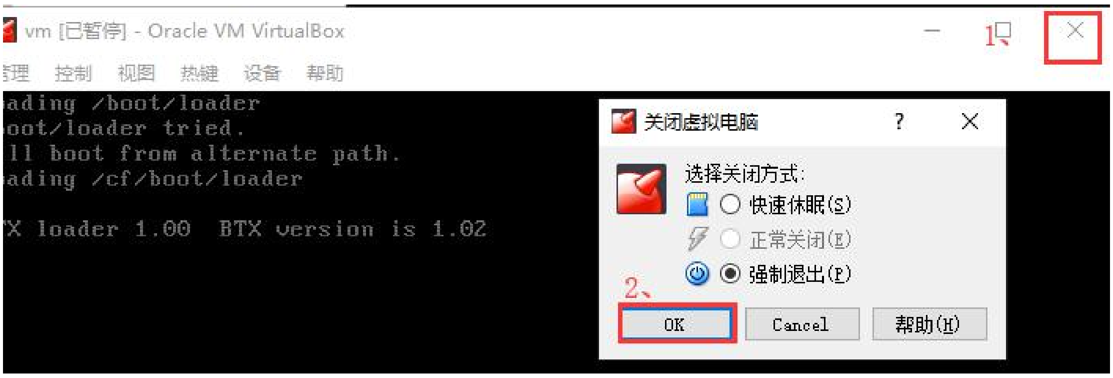
内存大小: 1024 MB
处理器: 2
启动顺序: 软驱, 光驱, 硬盘
硬件加速: VT-x/AMD-V, 嵌套分页, PAE/NX



```
Loading /boot/loader
/boot/loader tried.
Will boot from alternate path.
Loading /cf/boot/loader
-
BTX loader 1.00  BTX version is 1.02
```

出现上图的界面就说明系统正在启动，需要的时间比较长，大概等待几分钟，，，，

然后不知等了几分钟，还是这个界面，肯定是出现了某些问题。
原来是没有连接此虚拟机的**串口**，网络设备一般都是通过串口输出字符信息的。
所以，先关机，



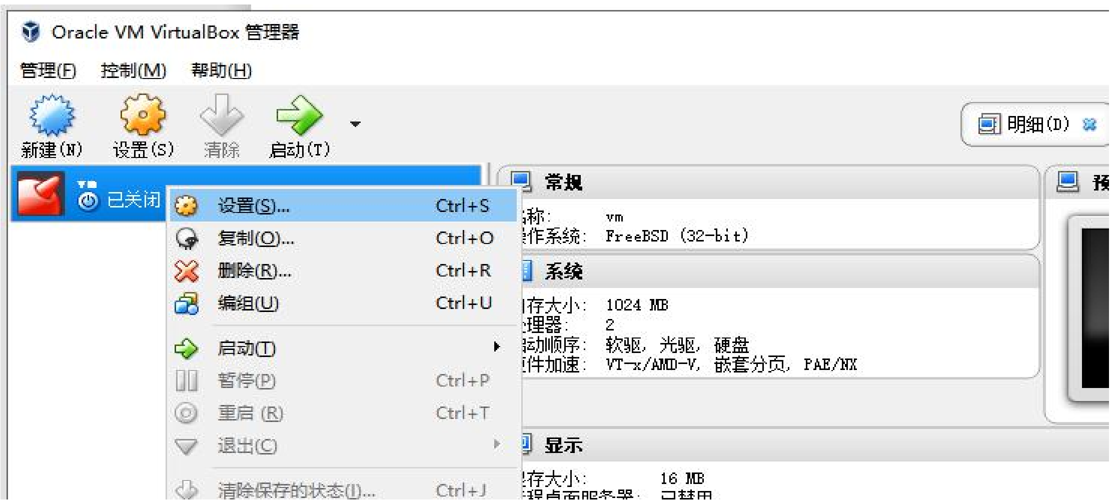
vm [已暂停] - Oracle VM VirtualBox
1、
理 控制 视图 热键 设备 帮助

```
ading /boot/loader
oot/loader tried.
ll boot from alternate path.
ading /cf/boot/loader

X loader 1.00  BTX version is 1.02
```

关闭虚拟电脑

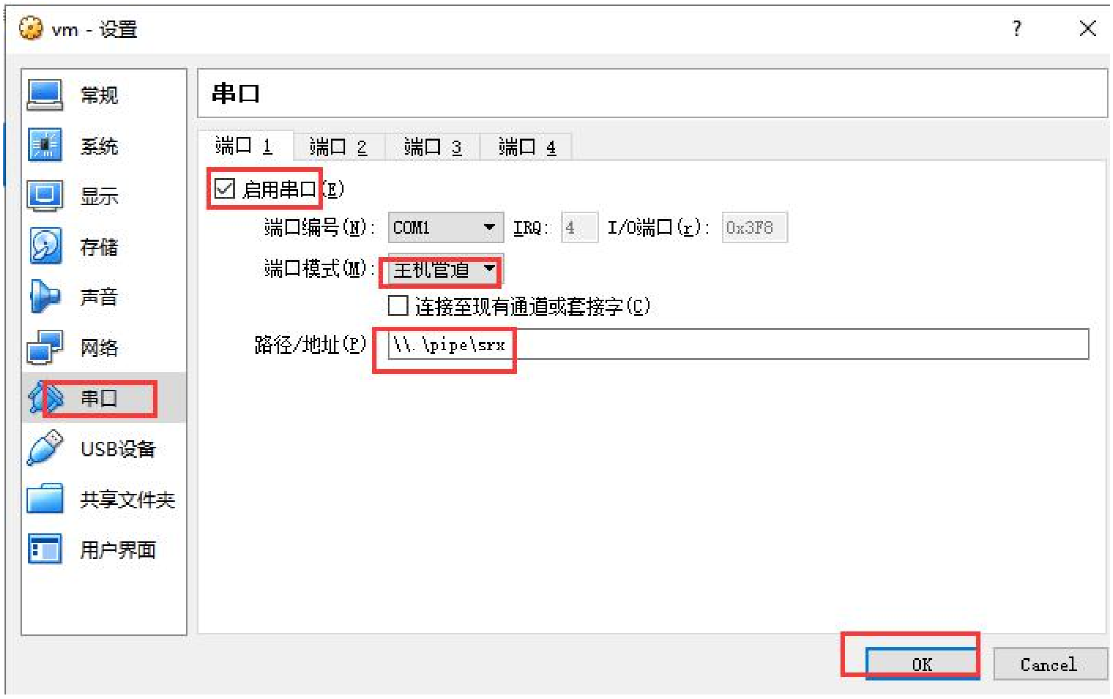
选择关闭方式：
○ 快速休眠(S)
○ 正常关闭(E)
● 强制退出(P)

再设置此虚拟机



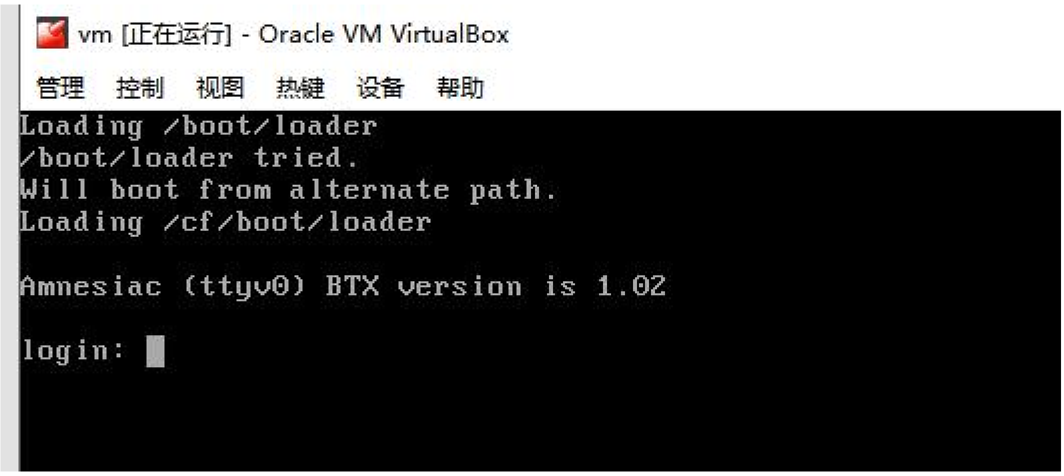
称： vm
作系统： FreeBSD (32-bit)
存大小： 1024 MB
理器： 2
动顺序： 软驱, 光驱, 硬盘
件加速： VT-x/AMD-V, 嵌套分页, PAE/NX
存大小： 16 MB

添加串口，设置如下：（记住主机管道的地址，以\\.\pipe\开头，后面的名称自己取一个）



☑ 启用串口(E)
端口编号(N)： COM1 IRQ： 4 I/O端口(r)： 0x3F8
端口模式(M)： 主机管道
□ 连接至现有通道或套接字(C)
路径/地址(P)： \\.\pipe\srx

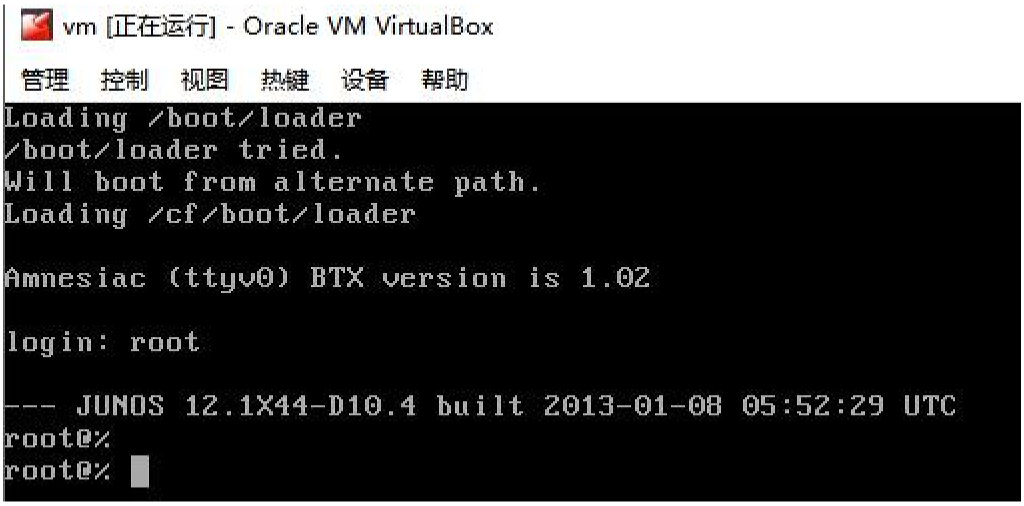
再开机，等待 1 分半就出现登录界面了


vm [正在运行] - Oracle VM VirtualBox
管理 控制 视图 热键 设备 帮助

```
Loading /boot/loader
/boot/loader tried.
Will boot from alternate path.
Loading /cf/boot/loader

Amnesiac (ttyv0) BTX version is 1.02

login: 
```

1. 初次登录（console 登录）

以 root 用户登录，初始密码为空，进入系统 cli 后，再进入配置模式，设置 root 密码


vm [正在运行] - Oracle VM VirtualBox
管理 控制 视图 热键 设备 帮助

```
Loading /boot/loader
/boot/loader tried.
Will boot from alternate path.
Loading /cf/boot/loader

Amnesiac (ttyv0) BTX version is 1.02

login: root

--- JUNOS 12.1X44-D10.4 built 2013-01-08 05:52:29 UTC
root@%
root@% 
```

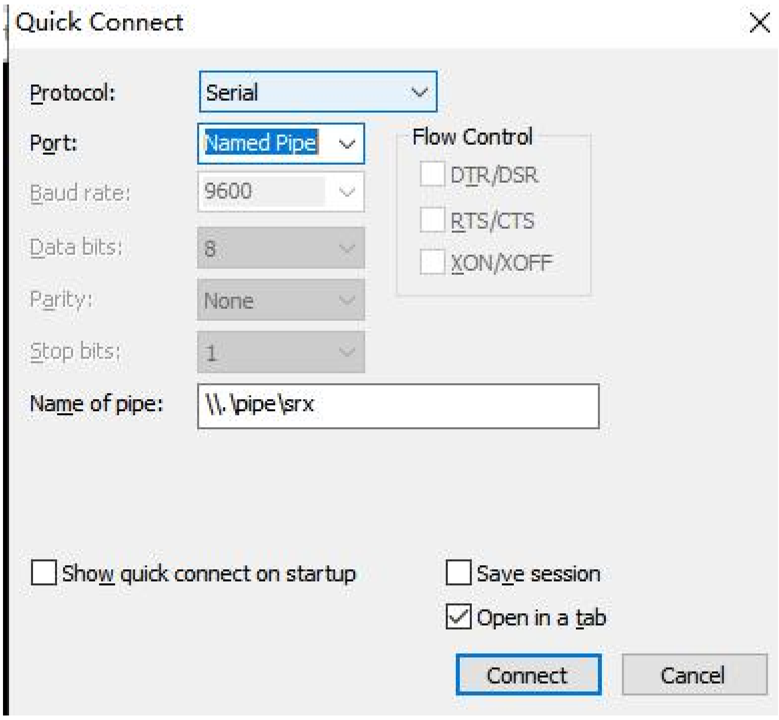
```
root@%                //最开始进入的是系统底层的命令行，和 unix 系统差不多
root@% cli            //输入 cli 后，回车，进入的才是防火墙的维护与配置界面
root>                 //提示符为“ >”时，表示进入的是防火墙的一般模式
root> configure       //在一般模式下输入 configure，进入配置模式
root#                 //提示符为“ #”时，表示进入的是防火墙的配置模式
root# set system root-authentication plain-text-password
New password:
Retype new password:
```

```
root# commit
commit complete

root# commit        //需要两次提交才生效，如果只提交一次，默认过 2 分钟会回滚配置
commit complete
root#
```

2. 使用 SecureCRT 连接虚拟机的串口

在使用虚拟机的过程中，我们发现，VirtualBox 自带的 console 界面不好切换鼠标，也不方便复制粘贴，所以希望使用 SecureCRT 终端仿真软件连接虚拟机的**串口**，这样也更接近真实的环境，（真实的设备调试也是通过 SecureCRT 之类的终端仿真软件去连接串口的）

打开 SecureCRT，点击快速连接，协议选择 Serial，端口为命名管道（Named Pipe），版本在 7.0 以上的才有。管道名为之前为虚拟机添加的串口里的管道名，以\\.\pipe\开头的，本例中为\\.\pipe\srx



Quick Connect

Protocol: Serial

Port: Named Pipe

Baud rate: 9600

Data bits: 8

Parity: None

Stop bits: 1

Name of pipe: \\.\pipe\srx

Flow Control

□ DTR/DSR

□ RTS/CTS

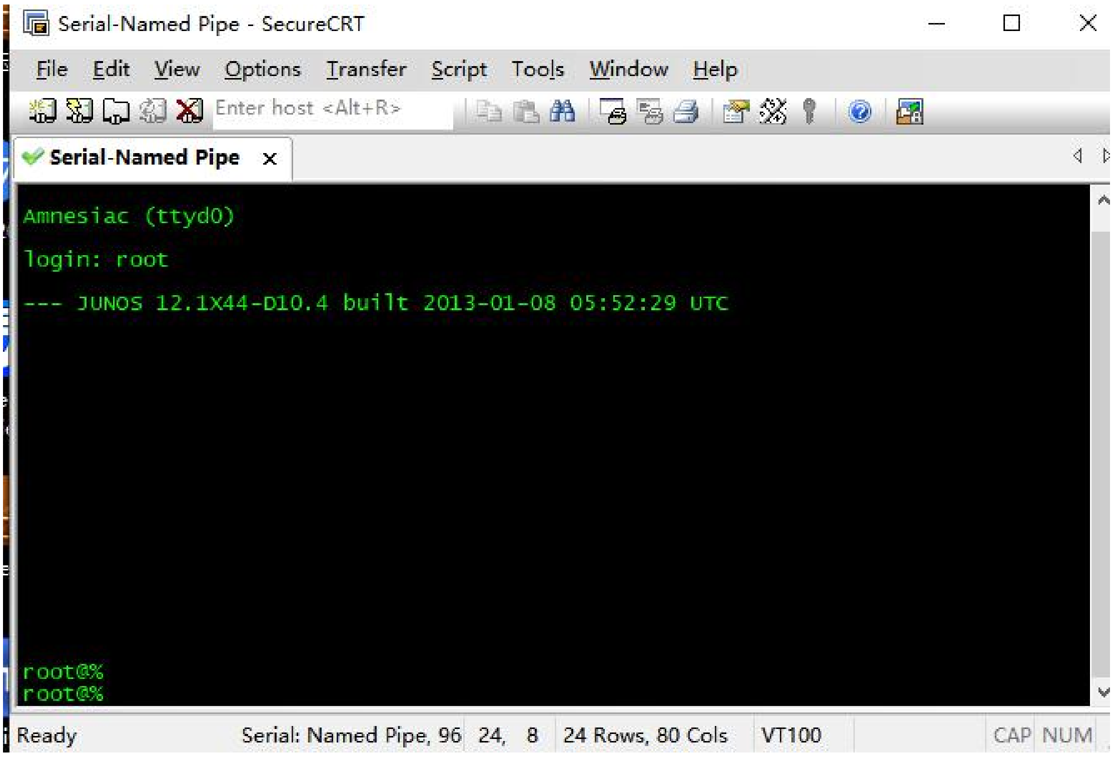
□ XON/XOFF

□ Show quick connect on startup

□ Save session

☑ Open in a tab

点击“连接”，就可以了



```
Amnesiac (ttyd0)
login: root
--- JUNOS 12.1X44-D10.4 built 2013-01-08 05:52:29 UTC




root@%
root@%
```

3. 设置系统基本信息（主机名，时区，时间，DNS）

```
root# set system host-name SRX550    //主机名

[edit]
root@SRX550#
root@SRX550# set system time-zone Asia/Shanghai    //时区

root@SRX550# run set date 201909201019.00     //手动配置时间
Fri Sep 20 10:19:00 CST 2019

root@Test-SRX# run set date ntp 10.1.1.22    //或者用 ntp
root@Test-SRX# run set date ntp key xxx
root@Test-SRX# run set date ntp source-address 192.168.1.254
```

查看时间：

```
root@SRX550> show system uptime
Current time: 2019-09-20 12:45:35 CST
System booted: 2019-09-20 10:07:36 CST (02:37:59 ago)
```

```
Protocols started: 2019-09-20 10:07:50 CST (02:37:45 ago)
Last configured: 2019-09-20 11:57:28 CST (00:48:07 ago) by root
12:45PM  up 2:38, 1 user, load averages: 0.00, 0.00, 0.00

root@SRX550#
root@SRX550# set system name-server 114.114.114.114   //设置 DNS，可以设置多条


root@SRX550# commit
commit complete

[edit]
root@SRX550# commit       //记得要两次提交
commit complete
```

4. 创建用户

```
root@SRX550# set system login user coflee class super-user authentication
            plain-text-password
New password:                   //输入密码时是不回显的，只管输入
Retype new password:        //创建的用户只有加入 super-user 组才有配置设备的权限

[edit]
```

查看登录系统的用户

```
root@SRX550> show system users
 2:59PM  up 4:52, 1 user, load averages: 0.00, 0.00, 0.00
USER     TTY      FROM                              LOGIN@  IDLE WHAT
root     v0       -                                Mon02AM     - cli
```

5.设置console输出的宽度和行数

```
root@SRX550> show cli        //查看cli参数
CLI complete-on-space set to on
CLI idle-timeout disabled
CLI restart-on-upgrade set to on
CLI screen-length set to 24
CLI screen-width set to 80      //默认一行只显示80个字符，超出80个字时会折叠
CLI terminal is ’vt100’
CLI is operating in enhanced mode
CLI timestamp disabled
CLI working directory is ’/cf/root’

root@SRX550> set cli screen-width 130       //设置cli界面的屏宽为130个字符
Screen width set to 130
```

6.接口加入安全域

```
root@SRX550# set security zones security-zone trust interfaces ge-0/0/0.0

[edit]

root@SRX550# set security zones security-zone untrust interfaces ge-0/0/1.0

[edit]
```

查看安全域绑定的接口

```
root@SRX550> show security zones

Security zone: trust
  Send reset for non-SYN session TCP packets: On
  Policy configurable: Yes
  Interfaces bound: 1
  Interfaces:
    ge-0/0/0.0

Security zone: untrust
  Send reset for non-SYN session TCP packets: Off
  Policy configurable: Yes
  Screen: untrust-screen
  Interfaces bound: 1
  Interfaces:
    ge-0/0/1.0

Security zone: junos-host
  Send reset for non-SYN session TCP packets: Off
  Policy configurable: Yes
  Interfaces bound: 0
  Interfaces:
```

7.接口配置 IP

```
root@SRX550# set interfaces ge-0/0/0 unit 0 family inet address 192.168.1.254/24
[edit]
root@SRX550# set interfaces ge-0/0/1.0 family inet address 200.1.1.2/24

[edit]
```

查看接口 IP 及 link 状态

```
root@SRX550> show interfaces terse
Interface               Admin Link Proto    Local                 Remote
ge-0/0/0                up    up
ge-0/0/0.0              up    up   inet     192.168.1.254/24
lt-0/0/0                up    up
mt-0/0/0                up    up
sp-0/0/0                up    up
sp-0/0/0.0              up    up   inet
sp-0/0/0.16383          up    up   inet     10.0.0.1            --> 10.0.0.16
                                            10.0.0.6            --> 0/0
                                            128.0.0.1           --> 128.0.1.16
                                            128.0.0.6           --> 0/0
ge-0/0/1                up    up
ge-0/0/1.0              up    up   inet     200.1.1.2/24
dsc                     up    up
```

8.配置缺省/静态路由

```
root@SRX550# set routing-options static route 0.0.0.0/0 next-hop 200.1.1.22

root@SRX550> show route

inet.0: 5 destinations, 5 routes (5 active, 0 holddown, 0 hidden)
+ = Active Route, - = Last Active, * = Both

0.0.0.0/0          *[Static/5] 00:00:04
                    > to 200.1.1.22 via ge-0/0/1.0
192.168.1.0/24     *[Direct/0] 00:41:27
                    > via ge-0/0/0.0
192.168.1.254/32   *[Local/0] 00:41:27
                      Local via ge-0/0/0.0
200.1.1.0/24       *[Direct/0] 00:41:27
                    > via ge-0/0/1.0
200.1.1.2/32       *[Local/0] 00:41:27
                      Local via ge-0/0/1.0
```

9.删除某条配置

```
root@SRX550# delete interfaces ge-0/0/0.0 family inet address 192.168.0.200/24
root@SRX550# delete security zones security-zone trust interfaces ge-0/0/1.0
```

如何该条配置不存在会有提示：

```
warning: statement not found
```

//设置时使用 set，删除某条设置时使用 delete，后边的都一样

10.开启远程登录服务

```
root@SRX550# set system services telnet

[edit]
```

```
root@SRX550# set system services ssh

[edit]
root@SRX550# set system services web-management https


root@SRX550# set system services ssh root-login ?      //按下？问号也是有提示的
Possible completions:
  allow                Allow root access via ssh
  deny                 Do not allow root access via ssh
  deny-password        Allow for non-password-based authentication methods only
[edit]
root@SRX550# set system services ssh root-login deny    //禁止 root 用户登录
root@SRX550# set system services telnet connection-limit 5     //限制连接数

root@SRX550# set system services web-management https system-generated-certificate
root@SRX550# set system services web-management https interface ge-0/0/0.0
            //指定允许登录 web 的接口
root@SRX550# set system services web-management https interface ge-0/0/0.0 port
            8899            //指定登录 web 的端口号
root@SRX550# set system services web-management session idle-timeout ?
Possible completions:
  <idle-timeout>       Default timeout of web-management sessions (minutes)
[edit]
root@SRX550# set system services web-management session idle-timeout 20   //登录
空闲超时，单位：分钟，web 无操作 20 分钟即断开连接
```

开启远程登录服务后，要放行该服务的流量，即允许该服务流量进入防火墙的管理端口

11.放行服务

```
root@SRX550# set security zones security-zone trust interfaces ge-0/0/1.0
host-inbound-traffic system-services all    //放行所有入站流量
root@SRX550# set security zones security-zone untrust interfaces ge-0/0/2.0
host-inbound-traffic system-services ping       //只放行具体的某种报文
root@SRX550# set security zones security-zone untrust interfaces ge-0/0/2.0
host-inbound-traffic system-services telnet
root@SRX550# set security zones security-zone untrust interfaces ge-0/0/2.0
host-inbound-traffic system-services ssh
root@SRX550# set security zones security-zone untrust interfaces ge-0/0/2.0
host-inbound-traffic system-services https
```

12.放行安全域之间的流量 策略

```
root@SRX550# set security policies from-zone trust to-zone untrust policy
            trust_to_untrust match source-address any destination-address any
root@SRX550# set security policies from-zone trust to-zone untrust policy
            trust_to_untrust then permit

from-zone untrust to-zone trust {   //系统有一条从 untrust 到 trust 的默认策略是 deny
            policy default-deny {
                match {
                    source-address any;
                    destination-address any;
                    application any;
                }
                then {
                    deny;
                }
            }
        }
policies {  //系统默认
        from-zone trust to-zone trust {
            policy default-permit {
                match {
                    source-address any;
                    destination-address any;
                    application any;
                }
                then {
                    permit;
                }
            }
        }
        from-zone trust to-zone untrust {  //系统默认
            policy default-permit {
                match {
                    source-address any;
                    destination-address any;
                    application any;
                }
                then {
                    permit;
                }
            }
        }
```

13.删除默认的 deny 策略

```
root@SRX550# delete security policies from-zone untrust to-zone trust policy
            default-deny
```

```
security polices  from-zone untrust to-zone trust {
            policy default-deny {
                match {
                    source-address any;
                    destination-address any;
                    application any;
                }
                then {
                    deny;
                }
            }
```

再添加其他的 deny，放到最后

14.源 NAT

```
root@SRX550# set security nat source rule-set toInternet from zone trust
root@SRX550# set security nat source rule-set toInternet to zone untrust
root@SRX550# set security nat source rule-set toInternet rule r1 match
            source-address 0.0.0.0/0 destination-address 0.0.0.0/0
root@SRX550# set security nat source rule-set toInternet rule r1 then source-nat
            interface
```

当一个接口上有多个 IP 时，要做 arp 代理

```
root@SRX550# set security nat proxy-arp interface ge-0/0/1.0 address 200.1.1.3 to
            200.1.1.9
```

15. 目的 NAT ，端口映射

```
root@SRX550# set security nat destination pool towebser address 192.168.1.10 port
            80          //内网 IP 及端口号
root@SRX550# set security nat destination rule-set r_towebser from zone untrust
root@SRX550# set security nat destination rule-set r_towebser rule r1 match
            source-address 0.0.0.0/0  //匹配外网的源 ip
root@SRX550# set security nat destination rule-set r_towebser rule r1 match
            destination-address 200.1.1.2/32    //用于端口映射的外网口 IP
root@SRX550# set security nat destination rule-set r_towebser rule r1 match
            destination-port 2333       //外网端口号
root@SRX550# set security nat destination rule-set r_towebser rule r1 then
            destination-nat pool towebser
```

放行该端口 的策略

```
root@SRX550# set applications application tcp_80 protocol tcp destination-port
            80          //内网端口号，因为外部报文进来时已经做了端口转换了
root@SRX550# set security zones security-zone trust address-book address
            ab_192.168.1.10 192.168.1.10/32     //内网的 IP
root@SRX550# set security policies from-zone untrust to-zone trust policy
            p_towebser match source-address any
root@SRX550# set security policies from-zone untrust to-zone trust policy
            p_towebser match destination-address ab_192.168.1.10
root@SRX550# set security policies from-zone untrust to-zone trust policy
            p_towebser match application tcp_80
root@SRX550# set security policies from-zone untrust to-zone trust policy
            p_towebser then permit [application-services utm-policy default-av]
```

16. 配置回滚设置

```
root@SRX550# set system max-configurations-on-flash 5     //设置系统保存配置的
                                                     //副本数（用以回滚的配置）
root@SRX550# set system max-configurations-rollbacks 5
root@SRX550# commit confirmed 2  //设置回滚的时间，2 分钟后若无第二次提交则回滚
commit confirmed will be automatically rolled back in 2 minutes unless confirmed
commit complete
```

```
# commit confirmed will be rolled back in 2 minutes
[edit]
root@SRX550#


root@SRX550# commit check    //提交配置前先检查一下配置的语法
configuration check succeeds

[edit]
root@SRX550#


root@SRX550# rollback ?
Possible completions:
  <[Enter]>            Execute this command
  0                    2019-09-20 11:53:30 CST by root via cli
  1                    2019-09-20 11:53:28 CST by root via cli
  2                    2019-09-20 11:53:12 CST by root via cli commit confirmed,
rollback in 2mins
  3                    2019-09-20 11:47:17 CST by root via cli
  4                    2019-09-20 11:47:16 CST by root via cli
  5                    2019-09-20 11:19:06 CST by root via cli
  6                    2019-09-20 11:19:05 CST by root via cli
  7                    2019-09-20 11:10:58 CST by root via cli
  8                    2019-09-20 11:10:57 CST by root via cli
root@SRX550# rollback 1        //回滚到系统保留的 1 号配置
load complete

[edit]
```

17.重启 web 服务

```
root@SRX550> restart web-management
Web management gatekeeper process started, pid 3833
```

如果 http/https 无法登录或无响应，可以重启该服务

18.基本维护查看命令

```
root@SRX550> show system users        //查看系统目前登录的用户
12:01PM  up 1:54, 1 user, load averages: 0.00, 0.00, 0.00
USER     TTY      FROM                              LOGIN@  IDLE WHAT
root     d0       -                                Mon02AM     - cli

root@SRX550> show system software        //查看系统软件版本
Information for junos:
Comment:
JUNOS Software Release [12.1X44-D10.4]


root@SRX550> show system uptime         //查看当前时间及开机时间
Current time: 2019-09-20 12:01:41 CST
System booted: 2019-09-20 10:07:36 CST (01:54:05 ago)
Protocols started: 2019-09-20 10:07:50 CST (01:53:51 ago)
Last configured: 2019-09-20 11:57:28 CST (00:04:13 ago) by root
12:01PM  up 1:54, 1 user, load averages: 0.00, 0.00, 0.00


root@SRX550> show chassis environment
Class Item                           Status     Measurement
Temp  Routing Engine                 Testing
      Routing Engine CPU             Absent
Power Power Supply 0                 OK

root@SRX550> show chassis hardware
Hardware inventory:
Item             Version  Part number  Serial number     Description
Chassis                                49d35a19e417      JUNOSV-FIREFLY
Midplane
System IO
Routing Engine                                           JUNOSV-FIREFLY RE
FPC 0                                                    Virtual FPC
  PIC 0                                                  Virtual GE
Power Supply 0

root@SRX550> show chassis firmware
Part                     Type       Version
FPC                      O/S        Version 12.1X44-D10.4 by builder on 2013-01
FWDD                     O/S        Version 12.1X44-D10.4 by builder on 2013-01

root@SRX550> show chassis routing-engine
```

```
Routing Engine status:
    Total memory              1024 MB Max   532 MB used ( 52 percent)
      Control plane memory     594 MB Max   315 MB used ( 53 percent)
      Data plane memory        430 MB Max   215 MB used ( 50 percent)
    CPU utilization:
      User                       0 percent
      Background                 0 percent
      Kernel                     0 percent
      Interrupt                  0 percent
      Idle                     100 percent
    Model                          JUNOSV-FIREFLY RE
    Start time                     2019-09-23 02:42:43 CST
    Uptime                         1 hour, 56 minutes, 42 seconds
    Last reboot reason             Router rebooted after a normal shutdown.
    Load averages:                 1 minute   5 minute  15 minute
                                       0.00       0.00       0.00
```

```
>show route             //查看路由表
>show arp               //查看 arp 表
>show interface terse       //查看端口状态及 IP
>show log
```

```
root@SRX550> show log messages
Sep 20 09:13:26   eventd[936]: SYSTEM_ABNORMAL_SHUTDOWN: System abnormally shut down
Sep 20 09:13:26   eventd[936]: SYSTEM_OPERATIONAL: System is operational
Sep 20 09:13:26   /kernel: Copyright (c) 1996-2013, Juniper Networks, Inc.
Sep 20 09:13:26   /kernel: All rights reserved.
Sep 20 09:13:26   /kernel: Copyright (c) 1992-2006 The FreeBSD Project.
Sep 20 09:13:26   /kernel: Copyright (c) 1979, 1980, 1983, 1986, 1988, 1989, 1991, 1992, 1993, 1994
Sep 20 09:13:26   /kernel:      The Regents of the University of California. All rights reserved.
```

19. 查看防火墙会话数

```
root@SRX550> show security flow session summary
Unicast-sessions: 2
Multicast-sessions: 0
Failed-sessions: 0
Sessions-in-use: 2
  Valid sessions: 2
  Pending sessions: 0
  Invalidated sessions: 0
  Sessions in other states: 0
Maximum-sessions: 131072
```

查找指定端口会话数

```
root@SRX550> show security flow session destination-port 22
```

清除指定会话

```
root@SRX550> clear security flow session session-identifier 44321(ID)
```

//当该端口的服务被占满时，比如系统只允许 5 个 ssh 会话，结果管理人员登录后没有退出，占满了这 5 个会话数，就不能再用 ssh 登录了，这时可以用 telnet 登录，或者用 console 登录，再使用上面的命令清除无用的 ssh 会话

20. pppoe 拨号设置

```
root@SRX550# set interfaces ge-0/0/0 unit 0 encapsulation ppp-over-ether
                                                            //要拨号的接口
root@SRX550# set interfaces pp0 unit 0 pppoe-options underlying-interface ge0/0/0
            auto-reconnect 100 idle-timeout 100 client
root@SRX550# set interfaces pp0 unit 0 family inet mtu 1492
root@SRX550# set interfaces pp0 unit 0 family inet negotiate-address
root@SRX550# set interfaces pp0 unit 0 ppp-options pap default-password  123456xx
            local-name cofxx local-password 123456xx passive
```

或者

```
root@SRX550# set interfaces pp0 unit 0 ppp-options chap default-chap-secret
            123456xx local-name cofxx passive
root@SRX550# set routing-options static route 0.0.0.0/0 next-hop pp0.0
```

查看 pppoe

```
>show pppoe interface
>show pppoe version
>show pppoe statistics
```

21.Dynamic VPN 设置

A：配置 vpn 接入认证模板，接入地址池设置

```
root@SRX550# set access profile dvpn_acc_profile client coflee firewall-user
            password 123456xx
root@SRX550# set access profile dvpn_acc_profile address-assignment pool
            dvpn_addr_pool
root@SRX550# set access address-assignment pool dvpn_addr_pool family inet network
            192.168.200.0/24
root@SRX550# set access address-assignment pool dvpn_addr_pool family inet
            xauth-attributes primary-dns 114.114.114.114
root@SRX550# set access firewall-authentication web-authentication
            default-profile dvpn_acc_profile
```

B：配置 ike proposal

```
root@SRX550# set security ike proposal ike_pro authentication-method
            pre-shared-keys
root@SRX550# set security ike proposal ike_pro dh-group group2
root@SRX550# set security ike proposal ike_pro authentication-algorithm sha1
root@SRX550# set security ike proposal ike_pro encryption-algorithm aes-128-cbc
root@SRX550# set security ike proposal ike_pro lifetime-seconds 36000
                                                                          //180 至 86400
```

C：配置第一阶段的 ike

```
root@SRX550# set security ike policy ike_policy mode aggressive
root@SRX550# set security ike policy ike_policy proposal-set ike_pro
                        //proposal-set 可自定义，也可用系统预设的,如 standard
root@SRX550# set security ike policy ike_policy pre-shared-key ascii-text pre123455
root@SRX550# set security ike gateway ike_gateway ike-policy ike_policy
root@SRX550# set security ike gateway ike_gateway dynamic hostname srx550
root@SRX550# set security ike gateway ike_gateway dynamic connections-limit 10
root@SRX550# set security ike gateway ike_gateway dynamic ike-user-type
            group-ike-id
```

```
root@SRX550# set security ike gateway ike_gateway external-interface ge-0/0/1
root@SRX550# set security ike gateway ike_gateway xauth access-profile
             dvpn_acc_profile
```

D：配置 ipsec proposal

```
root@SRX550# set security ipsec proposal ipsec_pro protocol esp
root@SRX550# set security ipsec proposal ipsec_pro authentication-algorithm
             hmac-sha1-96
root@SRX550# set security ipsec proposal ipsec_pro encryption-algorithm 3des-cbc
root@SRX550# set security ipsec proposal ipsec_pro lifetime-seconds 36000
                                                           //180~86400
root@SRX550# set security ipsec proposal ipsec_pro lifetime-kilobytes 500000
                                                //(64..4294967294 kilobytes)
```

E：配置第二阶段的 ipsec 及 vpn

```
root@SRX550# set security ipsec policy ipsec_policy proposal-set ipsec_pro
                          //proposal-set 可自定义，也可用系统预设的,如 standard
root@SRX550# set security ipsec vpn dyn_vpn ike gateway ike_gateway
root@SRX550# set security ipsec vpn dyn_vpn ike ipsec-policy ipsec_policy
```

F：配置 dvpn

```
root@SRX550# set security dynamic-vpn access-profile dvpn_acc_profile
root@SRX550# set security dynamic-vpn clients c_group1 remote-protected-resources
             192.168.1.0/24
root@SRX550# set security dynamic-vpn clients c_group1 remote-exceptions 0.0.0.0/0
                                                        //其余的不走 vpn
root@SRX550# set security dynamic-vpn clients c_group1 ipsec-vpn dyn_vpn
root@SRX550# set security dynamic-vpn clients c_group1 user coflee
```

G：放行流量 策略

```
root@SRX550# set security policies from-zone untrust to-zone trust policy to_vpn
             match source-address any
root@SRX550# set security policies from-zone untrust to-zone trust policy to_vpn
             match destination-address any
root@SRX550# set security policies from-zone untrust to-zone trust policy to_vpn
             match application any
root@SRX550# set security policies from-zone untrust to-zone trust policy to_vpn
             then permit tunnel ipsec-vpn dyn_vpn
root@SRX550# set security zones security-zone untrust interfaces ge0/0/1
             host-inbound-traffic system-services ike
```

查看 vpn

```
root@SRX550> show security dynamic-vpn users
root@SRX550> show security ike security-associations
```

```
root@SRX550> show security ipsec security-associations
  Total active tunnels: 0
```

22.IPsec VPN（站到站）

使用默认的安全隧道接口st0，类似于gre over ipsec，基于路由的ipsec vpn

A：设置隧道接口，创建保护流

```
root@SRX550# set interfaces st0 unit 0 family inet address 10.1.1.1/24
root@SRX550# set security zones security-zone untrust interfaces st0.0
root@SRX550# set routing-options static route 192.168.200.0/24 next-hop st0.0
```

B：配置ike

```
root@SRX550# set security ike policy ike_policy mode main
root@SRX550# set security ike policy ike_policy proposal-set standard
root@SRX550# set security ike policy ike_policy pre-shared-key ascii-text 123456xx

root@SRX550# set security ike policy ike_policy pre-shared-key ascii-text 123456xx
root@SRX550# set security ike gateway gw1 ike-policy ike_policy
root@SRX550# set security ike gateway gw1 external-interface ge-0/0/0.0
```

C：配置ipsec

```
root@SRX550# set security ipsec policy ipsec_policy proposal-set standard
root@SRX550# set security ipsec vpn vpn_1 bind-interface st0.0
root@SRX550# set security ipsec vpn vpn_1 ike gateway gw1
root@SRX550# set security ipsec vpn vpn_1 ike ipsec-policy ipsec_policy
root@SRX550# set security ipsec vpn vpn_1 establish-tunnels immediately
```

D：放行vpn流量

```
root@SRX550# set security policies from-zone untrust to-zone trust policy to_vpn
            match source-address 192.168.100.0/24   //对端的内网ip
root@SRX550# set security policies from-zone untrust to-zone trust policy to_vpn
            match destination-address any
root@SRX550# set security policies from-zone untrust to-zone trust policy to_vpn
            match application any
root@SRX550# set security policies from-zone untrust to-zone trust policy to_vpn
            then permit
root@SRX550#  set  security  zones  security-zone  untrust  interfaces  ge-0/0/0.0
            host-inbound-traffic system-services ike
```

23.策略路由，也叫 FBF（Filter-Based Forwarding）

A：创建路由实例

```
root@Test-SRX# set routing-instances ri_1 instance-type forwarding
root@Test-SRX# set routing-instances ri_1 routing-options static route 0.0.0.0/0
            next-hop pp0.0
```

B：设置防火墙过滤

```
root@Test-SRX# set firewall filter to_dx term 1 from source-address 192.168.20.0/24
root@Test-SRX# set firewall filter to_dx term 1 then routing-instance ri_1
root@Test-SRX# set interfaces ge-0/0/0 unit 0 family inet filter input to_dx
                                                     //应用到内网口上
```

24.SNMP

```
root@SRX550# set snmp location "zhongguo"
root@SRX550# set snmp contact "xxx@x.com"
root@SRX550# set snmp community pub123456 authorization read-write
root@SRX550# set snmp community pub123456 clients 10.1.1.0/24
root@SRX550# set snmp trap-group tra123456 version v2
root@SRX550# set snmp trap-group tra123456 categories authentication
root@SRX550# set snmp trap-group tra123456 categories link
root@SRX550# set snmp trap-group tra123456 categories remote-operations
root@SRX550# set snmp trap-group tra123456 categories routing
root@SRX550# set snmp trap-group tra123456 categories configuration
root@SRX550# set snmp trap-group tra123456 targets 10.1.1.22

root@SRX550# set security zones security-zone trust interfaces ge-0/0/0.0
            host-inbound-traffic system-services snmp
```

25.查看配置

```
root@SRX550> show configuration     //查看已保存的配置
## Last commit: 2019-09-20 14:50:58 CST by root
version 12.1X44.4;
system {
    host-name SRX550;
    ... ...

root@SRX550# show
## Last changed: 2019-09-20 14:50:58 CST
version 12.1X44.4;
system {
    host-name SRX550;
    ... ...

root@SRX550# run show configuration         //查看正在运行的配置
## Last commit: 2019-09-20 14:50:58 CST by root
version 12.1X44.4;
system {
    host-name SRX550;
    ... ...
```

26. 保存系统配置、以配置文件恢复

```
root@SRX550# save conf.cfg    //保存的文件名为 conf.cfg，可以随便命名
Wrote 330 lines of configuration to ’conf.cfg’

root@SRX550> file list      //查看当前登录用户的家目前下的文件

/cf/root/:
.cshrc
.history
.login
.profile
conf.cfg
xxx.cfg

root@SRX550> file copy conf.cfg ftp://user:passwd@10.1.1.1/filename.cfg
//复制文件至 ftp 服务器上，格式为 ftp://ftp 用户:密码@服务器 ip/目标文件名
```

以配置文件恢复现在运行的设置

```
root@SRX550# load override conf.cfg
load complete

root@SRX550# load override ftp://user:passwd@10.1.1.1/filename.cfg
```

```
root@SRX550# commit
commit complete

[edit]
root@SRX550# commit        //记得要两次提交
commit complete
```

27.恢复出厂设置

```
root@SRX550# load factory-default
warning: activating factory configuration
```

//恢复出厂后，要设置 root 用户密码，再两次提交，保存配置

28.设备停机、重启

```
root@Test-SRX> request system halt      //重启为 request system reboot
Halt the system ? [yes,no] (no) yes

syncing disks... All buffers synced.
Uptime: 5h15m47s
Normal shutdown (no dump device defined)

The operating system has halted.
Please press any key to reboot.     //在停机状态下若按下任意一个键,系统都会重启
```

29.CLI 界面升级系统

```
root@Test-SRX> file copy ftp://user:passwd@10.1.1.1/junos-xxx.tgz junos2.tgz
root@Test-SRX> request system software add junos2.tgz no-validate reboot
```

30.boot 模式下升级系统

重启或开机时出现如下行时按下空格

```
Hit [Enter] to boot immediately, or space bar for command prompt.

Type ’?’ for a list of commands, ’help’ for more detailed help.
OK              //boot 模式下的提示符为 OK
OK
OK ?            //输入问号可以查看支持的命令
Available commands:
  reboot           reboot the system
  heap             show heap usage
  bcachestat       get disk block cache stats
  boot             boot a file or loaded kernel
  autoboot         boot automatically after a delay
  help             detailed help
  ?                list commands
  show             show variable(s)
  set              set a variable
  unset            unset a variable
  echo             echo arguments
  read             read input from the terminal
  more             show contents of a file
  nextboot         set next boot device
  install          install JUNOS
  include          read commands from a file
  ls               list files
  load             load a kernel or module
  unload           unload all modules
  lsmod            list loaded modules
  pnpscan          scan for PnP devices
  recover          initiate recovery process from compact flash
  boot-conf        load kernel and modules, then autoboot
  read-conf        read a configuration file
  enable-module    enable loading of a module
  disable-module   disable loading of a module
  toggle-module    toggle loading of a module
  show-module      show module load data

OK
OK  show        //输入 show 查看全局环境设置
LINES=24
autoboot_delay=2
boot.status=0xa0002
```

```
boot_serial=YES
bootfile=/kernel;/kernel.old
comconsole_speed=9600
console=comconsole
currdev=disk1s1a:
......

//设置 ip 和 tftp 服务器 ip
OK set ipaddr=10.1.1.1
OK set serverip=10.1.1.2
OK set netmask=255.255.255.0
OK install tftp://10.1.1.2/junos-xxx.tgz      //安装系统，以 eth0 为管理接口
```

31.恢复密码，原配置不变（进入 boot 模式）

```
OK boot -s      //进入单用户模式
.......
Enter full pathname of shell or ’recovery’ for root password recovery or RETURN for
/bin/sh: recovery
.......
Starting CLI ...
root@Test-SRX> configure
root@Test-SRX# delete system root-authentication
root@Test-SRX# set system root-authentication plain-text-password
New password:
Retype new password:

[edit]
root@Test-SRX# commit
commit complete

[edit]
root@Test-SRX# commit
commit complete

root@Test-SRX# save config2.cfg     //记得备份配置
Wrote 330 lines of configuration to ’config2.cfg’

[edit]
root@Test-SRX#
```

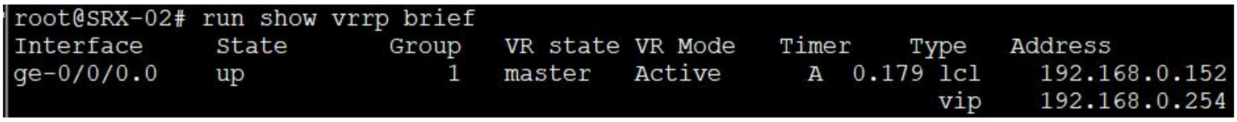
```
root@Test-SRX> request system reboot        //要重启系统，进入正常的模式
Reboot the system ? [yes,no] (no) yes

Shutdown NOW!
[pid 1374]
```

32. VRRP

```
root@SRX-02# set interfaces ge-0/0/0.0 family inet address 192.168.0.152/24
vrrp-group 1 virtual-address 192.168.0.254      //vrrp 组为 1,虚拟网关为~0.254
root@SRX-02#  set  interfaces  ge-0/0/0.0  family  inet  address  192.168.0.152/24
vrrp-group 1 priority 120   //优先级为 120,默认为 100,越大越优先
root@SRX-02#  set  interfaces  ge-0/0/0.0  family  inet  address  192.168.0.152/24
vrrp-group 1 accept-data        //允许虚拟网关接收 icmp 报文等数据
root@SRX-02#  set  interfaces  ge-0/0/0.0  family  inet  address  192.168.0.152/24
vrrp-group 1 preempt        //抢占模式，no-preempt 为 非抢占
root@SRX-02#  set  interfaces  ge-0/0/0.0  family  inet  address  192.168.0.152/24
vrrp-group 1 advertise-interval 2       //秒，报文通告周期，默认为 1 秒
root@SRX-02#  set  interfaces  ge-0/0/0.0  family  inet  address  192.168.0.152/24
vrrp-group 1 advertisements-threshold 3     //达到 3 次收不到对端的报文就认为对
端已经不在线了
root@SRX-02#  set  interfaces  ge-0/0/0.0  family  inet  address  192.168.0.152/24
vrrp-group 1 authentication-type md5        //备份组成员之间的验证方式为 md5
root@SRX-02#  set  interfaces  ge-0/0/0.0  family  inet  address  192.168.0.152/24
vrrp-group 1 authentication-key 123456xx        //验证密码
root@SRX-02#  set  interfaces  ge-0/0/0.0  family  inet  address  192.168.0.152/24
vrrp-group 1 track interface ge-0/0/1.0 priority-cost 30    //track
```

***放行 vrrp 入站流量**

```
root@SRX-02#  set  security  zones  security-zone  untrust  interfaces  ge-0/0/0.0
host-inbound-traffic protocols vrrp
root@SRX-02#  set  security  zones  security-zone  untrust  interfaces  ge-0/0/0.0
host-inbound-traffic system-services ping
root@SRX-02# commit         //提交配置，使配置生效
commit complete
root@SRX-02# commit
commit complete
root@SRX-02# run show vrrp brief        //查看 vrrp 基本情况
```



```
root@SRX-02# run show vrrp brief
Interface     State       Group   VR state VR Mode    Timer    Type   Address
ge-0/0/0.0    up              1   master   Active       A  0.179 lcl    192.168.0.152
                                                                  vip    192.168.0.254
```

```
root@SRX-02# run show vrrp track        //查看 track 监控状况
```

33. DHCP

```
root@SRX-02# set system services dhcp pool 10.2.2.0/24 address-range
            low 10.2.2.100      //地址池 10.2.2.0/24,起始地址 10.2.2.100
root@SRX-02# set system services dhcp pool 10.2.2.0/24 address-range
            high 10.2.2.200     //结束地址 10.2.2.200
root@SRX-02# set system services dhcp pool 10.2.2.0/24 maximum-lease-time 42000
                                                    //最大租期 42000 秒
root@SRX-02# set system services dhcp pool 10.2.2.0/24 default-lease-time 36000
        //默认分配的租期 36000 秒，不能大于最大租期
root@SRX-02# set system services dhcp pool 10.2.2.0/24 name-server 8.8.8.8
                //分配给客户端的 DNS 服务器 IP，可以分配多个，一条命令设置一个
root@SRX-02# set system services dhcp pool 10.2.2.0/24 router 10.2.2.254
                                                        //默认网关
root@SRX-02# set security zones security-zone trust interfaces ge-0/0/1.0
host-inbound-traffic system-services dhcp       //放行 dhcp 入站流量
```

```
root@SRX-02# run show system services dhcp binding      //查看 IP 分配情况
IP address        Hardware address    Type      Lease expires at
10.2.2.100        00:50:56:c0:00:01   dynamic   2020-01-22 12:53:41 UTC
```

34. 其他

设置登录前提示语

```
root@SRX550# set system login message "Warning, Unauthorized access are forbidden!"
```

设置 console 线拨出时自动退出 console 会话

```
root@SRX550# set system ports console log-out-on-disconnect
```

35.配置命令层次

第一层:	第二层	说明
system	host-name	设置主机名
	time-zone	设置时区
	root-authentication	设置 root 密码
	name-server	设置 dns
	login	设置登录用户
	services	设置登录服务
	syslog	日志
	max-configurations-on-flash	最大回滚数
	max-configuration-rollbacks	最大回滚数
	processes	
	ntp	NTP
interfaces		设置接口的 ip
snmp		
routing-options	static	路由条目
routing-instances		路由实例，可用于策略路由
policy-options	prefix-list	防火墙过滤时的匹配前缀
security	ike	proposal,policy,gateway
	ipsec	
	utm	
	dynamic-vpn	
	flow	
	screen	
	nat	
	policies	安全域之间的放行策略
	zones	安全域的接口和地址簿
firewall	family inet	可 filter 过滤前缀地址
	filter	可做策略路由
access	profile	可定义登录 dvpn 的用户
	address-assignment	可定义分配给 dvpn 的地址
	firewall-authentication	
applications	application	定义端口号
	application-set	定义端口组

10000.系统启动过程：

```
Rebooting...
cpu_reset: Stopping other CPUs
Consoles: serial port
BIOS drive A: is disk0
BIOS drive C: is disk1
BIOS 639kB/1047488kB available memory

FreeBSD/i386 bootstrap loader, Revision 1.2
(builder@briath.juniper.net, Tue Jan  8 04:04:34 UTC 2013)
Loading /boot/defaults/loader.conf
/kernel text=0x894aa0 data=0x4d050+0x100b2c syms=[0x4+0x92cf0+0x4+0xd1487]
/boot/modules/libmbpool.ko text=0xd9c data=0x100
/boot/modules/if_em_vjx.ko text=0xb794 data=0x5ec+0x204 /



Hit [Enter] to boot immediately, or space bar for command prompt.
Booting [/kernel]...
platform_early_bootinit: Early Boot Initialization
GDB: debug ports: sio
GDB: current port: sio
KDB: debugger backends: ddb gdb
KDB: current backend: ddb
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All rights reserved.
Copyright (c) 1992-2006 The FreeBSD Project.
Copyright (c) 1979, 1980, 1983, 1986, 1988, 1989, 1991, 1992, 1993, 1994
        The Regents of the University of California. All rights reserved.
JUNOS 12.1X44-D10.4 #0: 2013-01-08 05:52:29 UTC

builder@briath.juniper.net:/volume/build/junos/12.1/service/12.1X44-D10.4/obj-i386/junos/bsd/kernels/VSRX/kernel
Timecounter "i8254" frequency 1193182 Hz quality 0
CPU: Intel(R) Core(TM) i5-8400 CPU @ 2.80GHz (2808.01-MHz 686-class CPU)
  Origin = "GenuineIntel"  Id = 0x906ea  Stepping = 10

Features=0x1783fbff<FPU,VME,DE,PSE,TSC,MSR,PAE,MCE,CX8,APIC,SEP,MTRR,PGE,MCA,CMOV,PAT,PSE36,MMX,FXSR,SSE,SSE2,HTT>

Features2=0x56da2203<SSE3,<b1>,SSSE3,CX16,<b17>,SSE4.1,SSE4.2,MOVBE,POPCNT,<b25>,XSAVE,<b28>,<b30>>
  AMD Features=0x8100000<NX,RDTSCP>
  AMD Features2=0x121<LAHF,ABM,Prefetch>
  Cores per package: 2
real memory  = 1073676288 (1023 MB)
avail memory = 587489280 (560 MB)
MPTable: <VBOXCPU  VirtualBox  >
FreeBSD/SMP: Multiprocessor System Detected: 2 CPUs
 cpu0 (BSP): APIC ID:  0
 cpu1 (AP): APIC ID:  1
pnpbios: Bad PnP BIOS data checksum
ioapic0: Assuming intbase of 0
ioapic0 <Version 2.0> irqs 0-23 on motherboard
netisr_init: !debug_mpsafenet, forcing maxthreads from 2 to 1
Initializing VSRX platform properties ..
cpu0 on motherboard
cpu1 on motherboard
pcib0: <Host to PCI bridge> pcibus 0 on motherboard
pir0: <PCI Interrupt Routing Table: 30 Entries> on motherboard
pci0: <PCI bus> on pcib0
isab0: <PCI-ISA bridge> at device 1.0 on pci0
isa0: <ISA bus> on isab0
atapci0: <Intel PIIX4 UDMA33 controller> port
0x1f0-0x1f7,0x3f6,0x170-0x177,0x376,0xd000-0xd00f at device 1.1 on pci0
ata0: <ATA channel 0> on atapci0
ata1: <ATA channel 1> on atapci0
pci0: <display, VGA> at device 2.0 (no driver attached)
pci0: <base peripheral> at device 4.0 (no driver attached)
pci0: <multimedia, audio> at device 5.0 (no driver attached)
piix0: PIIX I/O space not mapped
smb0: <Intel 82371AB SMB controller> irq 9 at device 7.0 on pci0
em0: <Intel(R) PRO/1000 Network Connection - VJX stub Version - 3.2.18> port
0xd240-0xd247 mem 0xf0420000-0xf043ffff irq 11 at device 8.0 on pci0
em1: <Intel(R) PRO/1000 Network Connection - VJX stub Version - 3.2.18> port
0xd248-0xd24f mem 0xf0440000-0xf045ffff irq 11 at device 17.0 on pci0
orm0: <ISA Option ROM> at iomem 0xc0000-0xc7fff on isa0
atkbdc0: <Keyboard controller (i8042)> at port 0x60,0x64 on isa0
atkbd0: <AT Keyboard> irq 1 on atkbdc0
kbd0 at atkbd0
psm0: <PS/2 Mouse> irq 12 on atkbdc0
psm0: model IntelliMouse Explorer, device ID 4
vga0: <Generic ISA VGA> at port 0x3c0-0x3df iomem 0xa0000-0xbffff on isa0
sc0: <System console> at flags 0x100 on isa0
sc0: VGA <16 virtual consoles, flags=0x100>
sio0 at port 0x3f8-0x3ff irq 4 flags 0x90 on isa0
sio0: type 16550A, console
sio1: configured irq 5 not in bitmap of probed irqs 0
```

```
sio1: port may not be enabled
sio2: configured irq 3 not in bitmap of probed irqs 0
sio2: port may not be enabled
sio3: configured irq 7 not in bitmap of probed irqs 0
sio3: port may not be enabled
Initializing product: 131 ..
###PCB Group initialized for udppcbgroup
###PCB Group initialized for tcppcbgroup
ad0: Device does not support APM
ad0: 2048MB <VBOX HARDDISK 1.0> at ata0-master UDMA33
SMP: AP CPU #1 Launched!
Trying to mount root from ufs:/dev/ad0s1a
Attaching /cf/packages/junos via /dev/mdctl...
Mounted junos package on /dev/md0...

Automatic reboot in progress...
** /dev/ad0s1a
FILE SYSTEM CLEAN; SKIPPING CHECKS
clean, 710018 free (18 frags, 177500 blocks, 0.0% fragmentation)
** /dev/ad0s1e
FILE SYSTEM CLEAN; SKIPPING CHECKS
clean, 102774 free (2 frags, 25693 blocks, 0.0% fragmentation)
Verified junos signed by PackageProduction_12_1_0
Verified jboot signed by PackageProduction_12_1_0
Verified junos-vsrx-12.1X44-D10.4-domestic signed by PackageProduction_12_1_0
Loading configuration ...
mgd: commit complete
Setting initial options: .
Starting optional daemons: .
Doing initial network setup:.
Initial interface configuration:
additional daemons: eventd.
Additional routing options:kern.module_path: /boot//kernel;/boot/modules ->
/boot/modules;/modules/peertype;/modules/ifpfe_drv;/modules/ifpfe_media;/module
s/platform;/modules;
kld netpfe media: ifpfem_bri ifpfem_ds0 ifpfem_ds1e1 ifpfem_ds3e3kld netpfe drv:
ifpfed_atm ifpfed_controller ifpfed_dialer ifpfed_ds0 ifpfed_ds1e1 ifpfed_ds3e3
ifpfed_eia530 ifpfed_eth ifpfed_irb ifpfed_isdn ifpfed_ism ifpfed_lt
ifpfed_ml_cmnK ifpfed_ml_haL ifpfed_modemD ifpfed_modem.ko: depends on ucom - not
available
kldload: can't load /modules/ifpfe_drv/ifpfed_modem.ko: No such file or directory
 ifpfed_ppeer ifpfed_pppoe ifpfed_st ifpfed_svcs ifpfed_vp ifpfed_vtkld platform:
fileassoc if_em_vjx ifpfem_xdsl ixp j_ifpfekld peertype: peertype_fwdd
peertype_pfpc peertype_slavere ipsec kld resrsv.
```

```
Doing additional network setup:.
Starting final network daemons:.
setting ldconfig path: /usr/lib /opt/lib
ldconfig: warning: /opt/lib: No such file or directory
starting standard daemons: cron.
Initial rc.i386 initialization:.

 Lock Manager
RDM Embedded 7 [04-Aug-2006] http://www.birdstep.com
Copyright (c) 1992-2006 Birdstep Technology, Inc.  All Rights Reserved.

Unix Domain sockets Lock manager
Lock manager 'lockmgr' started successfully.
Error: Profile database dictionary file missing.
Profile database initialized
Local package initialization:.
starting local daemons:.
kern.securelevel: -1 -> 1
The inital provisioning tool works for VMware only.
Fri Sep 20 15:28:23 CST 2019

Test-SRX (ttyd0)

login:
```