

# **Introduction to SOI Asia Workshop**

## **Document**

# SOI Asia workshop

## Virtual Machine Access

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### 1. Overview: Virtualization in SOI Asia workshop

In SOI Asia's global-e-workshop, virtualization is a technology used to simulate lab environment for hands-on practice. Virtualization in SOI Asia workshop is shown in figure 1, VMhost is running service to create a virtual lab environment which consists of a number of virtual machines (VM) and their network interconnection. A workshop participant will configure one of these VMs to conduct lab assignment and to learn SOI Asia's network and server configuration. To access a VM, participant will remotely connect to VMhost from a VM Console in local SOI Asia network. This document will guide participant to use VM Console to access VM.

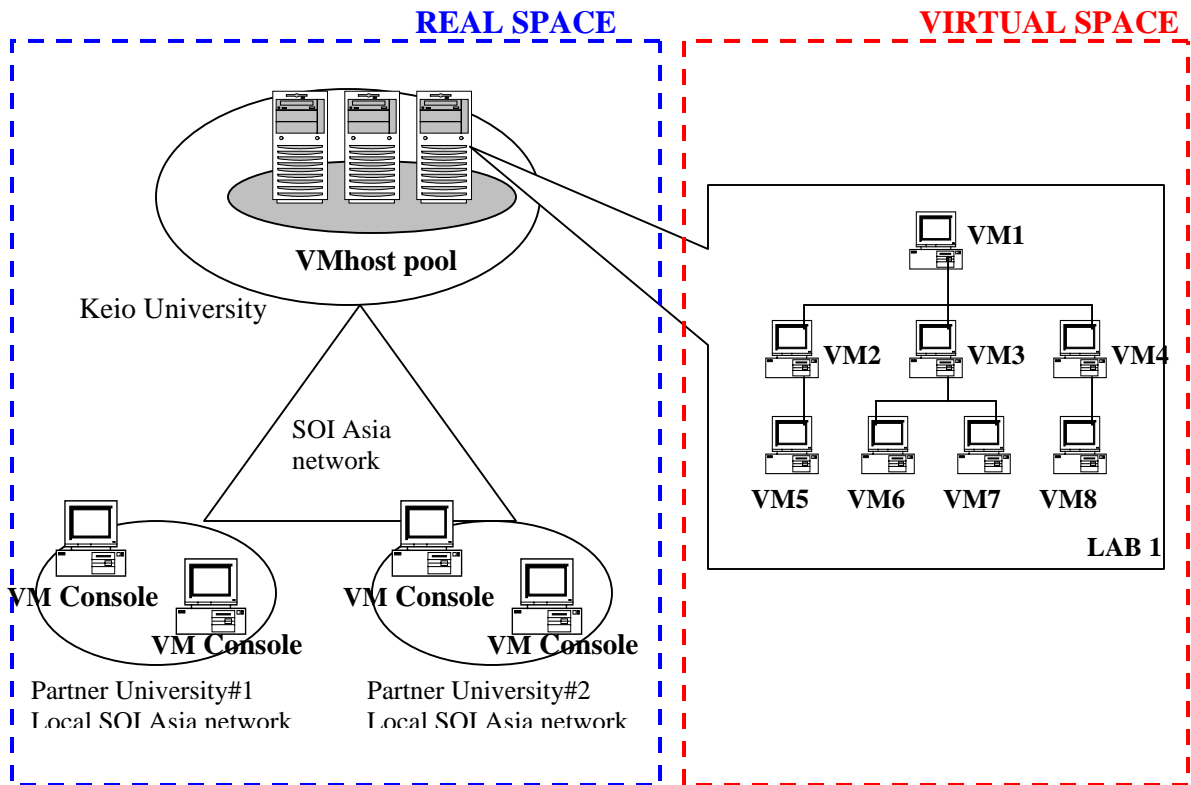


Figure 1. Virtualization in SOI Asia workshop

## 2. Virtual Machine Access

To access a lab VM, participant has to connect to VMhost first, then connect to a lab VM. Please refer to “Information for lab exercise” document to get the following information in table ready. Please be noted that the “VM connect script” will slightly differ for different dates, please be careful to use the one assigned for the date you connect.

Item	Lab VM information	Example
VMhost IP		2001:d30:101:9999::1
VMhost username		test4
VMhost password		test4
VM Connect script		./connect server 4

### 2.1 PuTTY configuration

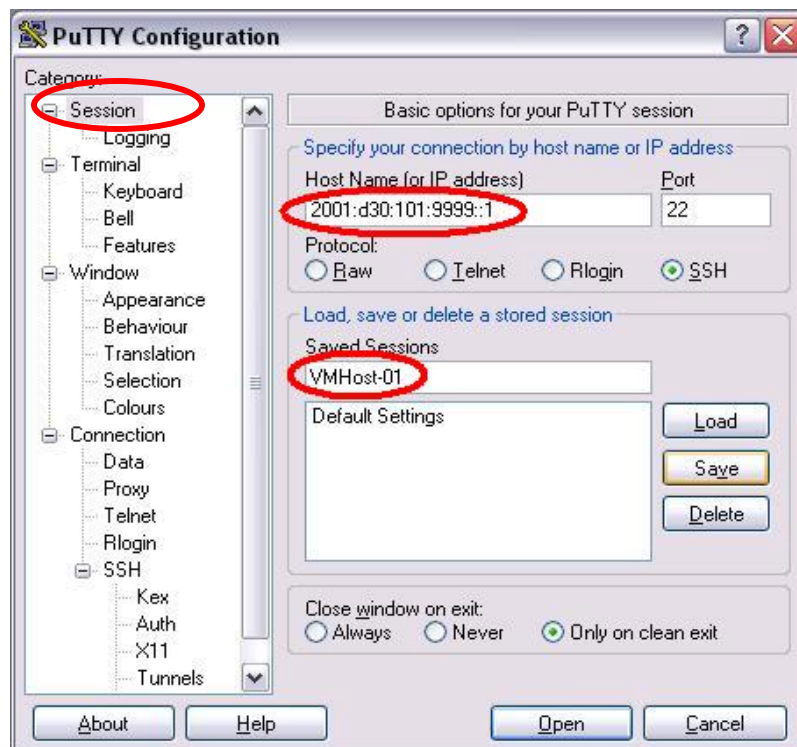
(Note: This configuration will be done only once, the next time participant will connect to VM, please start from section 2.2)

(STEP 1) Start PuTTY program

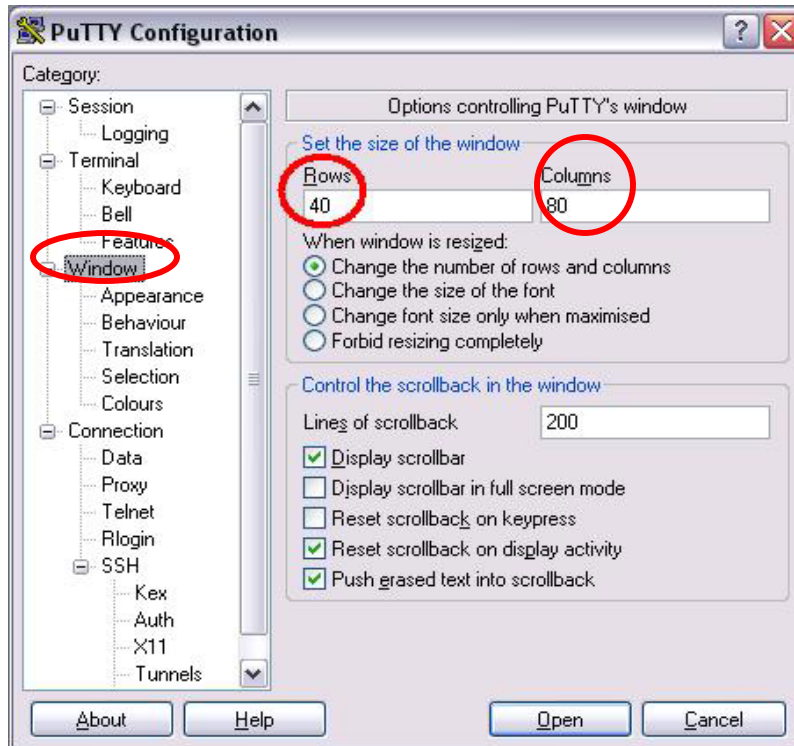
- Local TA has installed PuTTY program on your PC already. Please ask local TA to show where the program is and start the program.

(STEP 2) PuTTY setting

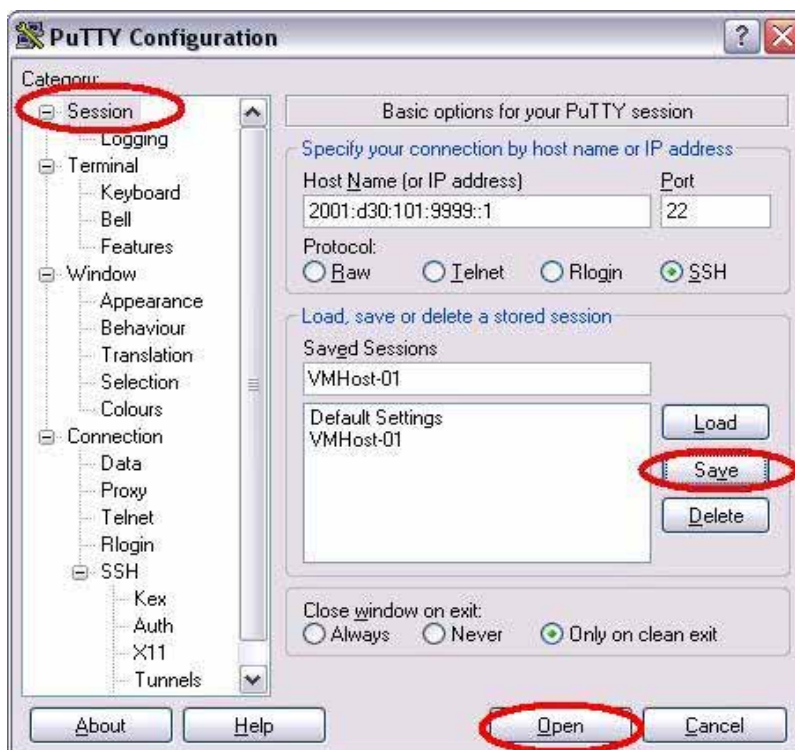
- Select “session” on left pane. Put your VMhost IP into “Host Name” box and put type “VMHost” to “Saved sessions” box in the right pane. Please do not copy IP data from the picture below, use your own information in “Information for lab exercise” document.



- Select “Window” on the left pane and put number “40” in “Rows” box and put number “80” in “Columns” box.



- Select “Session” in left pane and click “Save” button, you will see “VMHost” added into the list below the “Default setting”. Then, close PuTTY program.

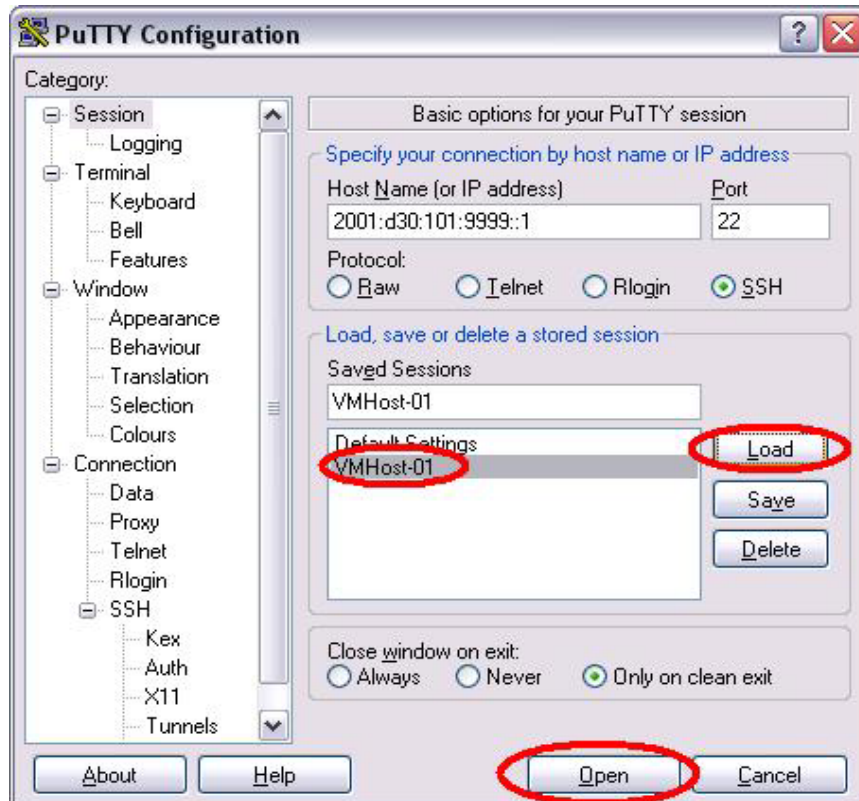


## 2.2 Connect to VM


### (STEP 1) VMhost connection

This step is to remotely connect to a VMhost with PuTTY.

- Open “PuTTY” program.
- In “Saved sessions” list, select “VMHost”, click “Load” and click “Open” button. If there is a security alert, answer “Yes”.



- At login prompt, enter VMhost username and VMhost password. You will get VMhost command prompt. ( See login information from “Information for lab exercise doc.”). Do not copy information from the picture below, it is just an example.

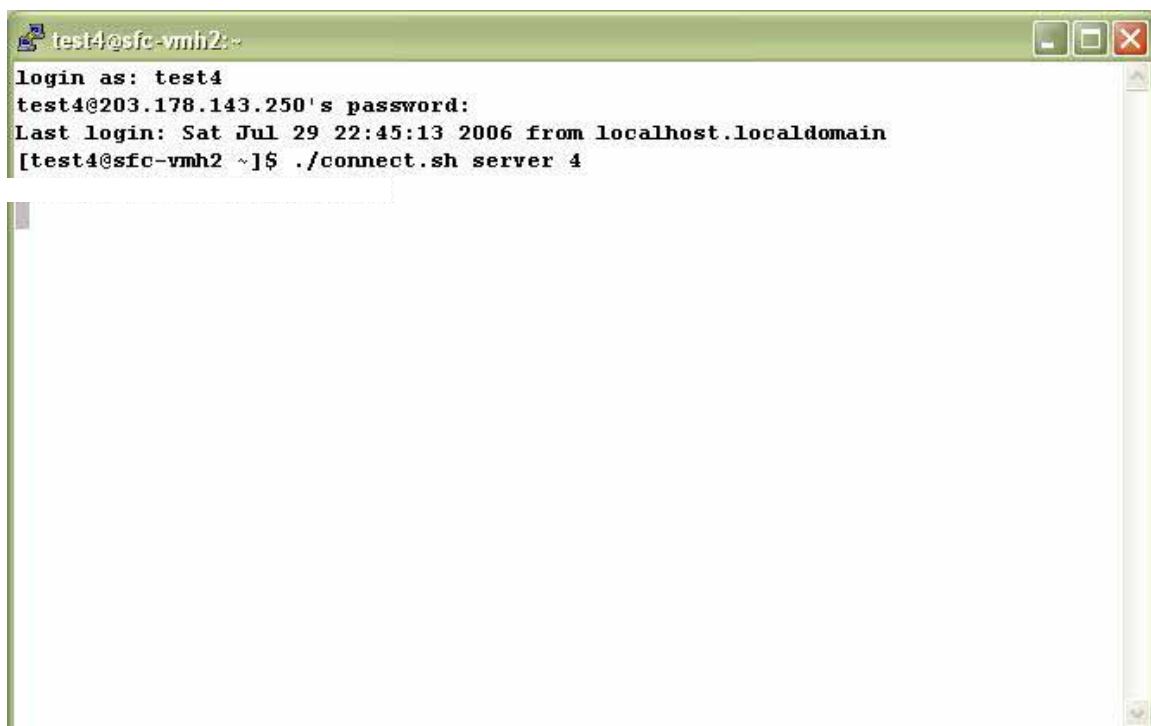


```
test4@sfc-vmh2: ~  
login as: test4  
test4@203.178.143.250's password:  
Last login: Sat Jul 29 22:45:13 2006 from localhost.localdomain  
[test4@sfc-vmh2 ~]$
```

#### (STEP 2) VM connection

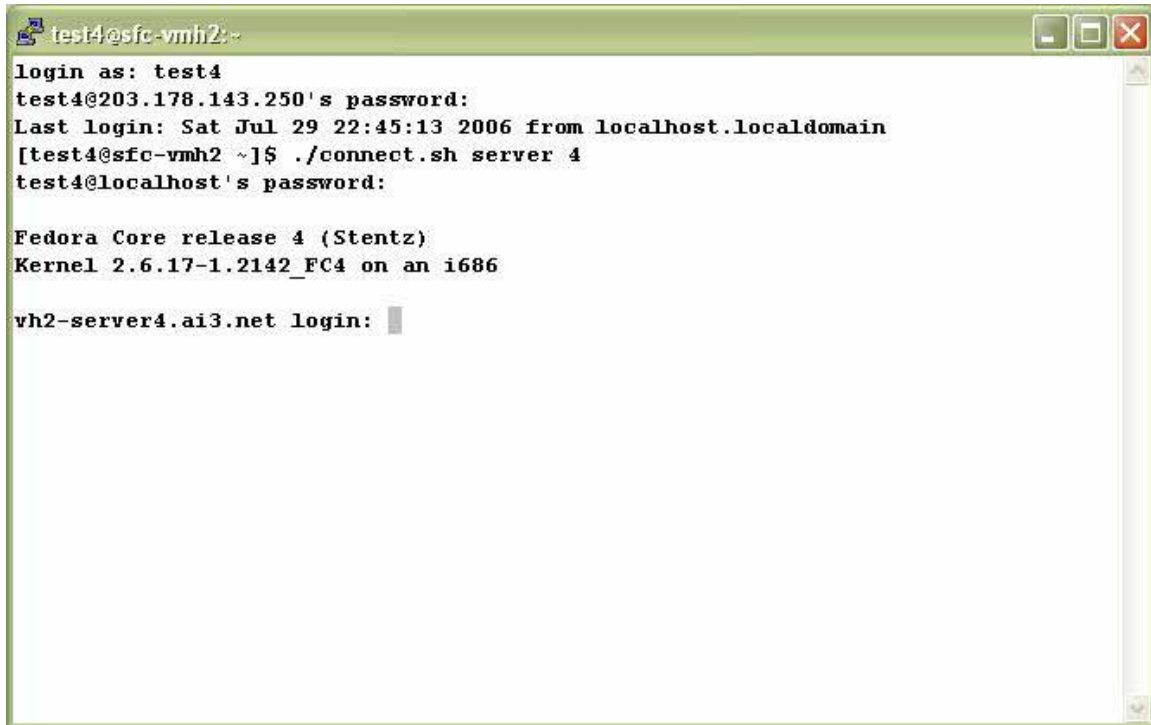
This step is to connect to a lab VM from VMhost.

- At command prompt, input VM Connect Script. ( See your VM Connect Script from “Information for lab exercise doc.”). Do not copy command from the picture below, it is just an example.



```
test4@sfc-vmh2: ~  
login as: test4  
test4@203.178.143.250's password:  
Last login: Sat Jul 29 22:45:13 2006 from localhost.localdomain  
[test4@sfc-vmh2 ~]$ ./connect.sh server 4
```

- Hit “enter” key again. It will return login prompt of your VM, enter the following username/password.  
Username: root  
Password : soisoi

A terminal window titled "test4@sfc-vmh2:~" with standard window controls. The terminal output shows a login sequence for user 'test4' from IP 203.178.143.250. The user enters a password and is prompted for the password of 'server 4'. The terminal then displays system information for Fedora Core release 4 (Stentz) on an i686 architecture. Finally, it shows a login prompt for 'vh2-server4.ai3.net' with a cursor.

```
test4@sfc-vmh2:~  
login as: test4  
test4@203.178.143.250's password:  
Last login: Sat Jul 29 22:45:13 2006 from localhost.localdomain  
[test4@sfc-vmh2 ~]$ ./connect.sh server 4  
test4@localhost's password:  
  
Fedora Core release 4 (Stentz)  
Kernel 2.6.17-1.2142_FC4 on an i686  
  
vh2-server4.ai3.net login: █
```

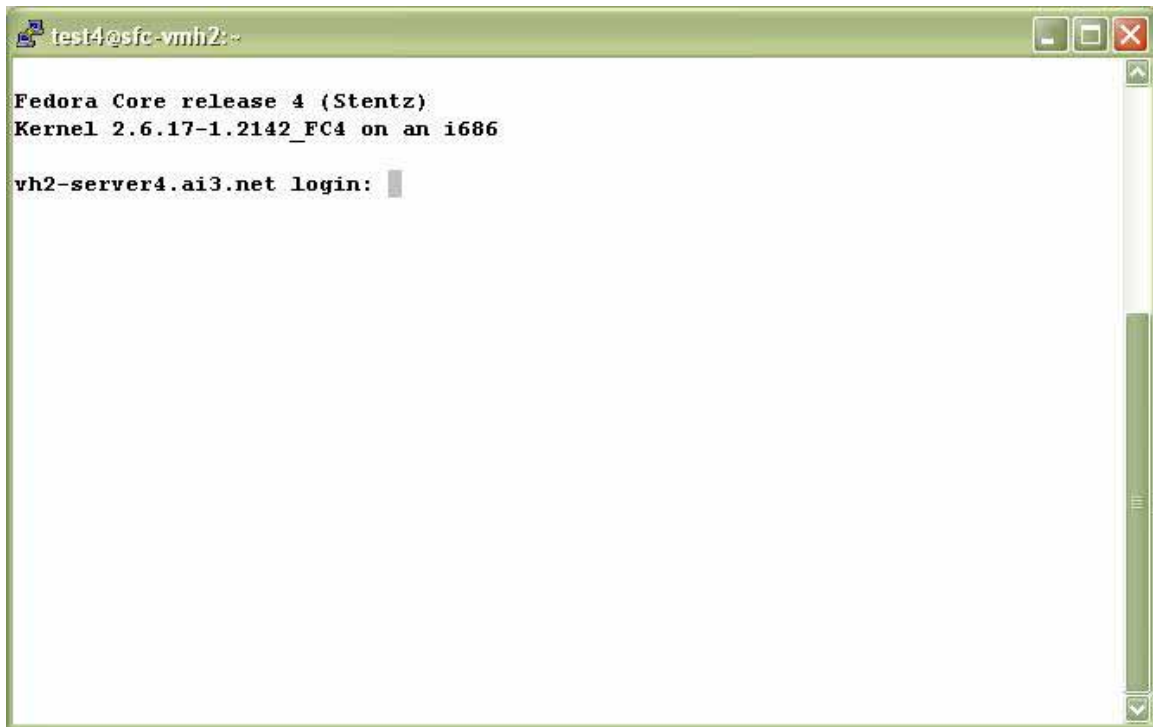
- You will get connected to a lab VM and get its command prompt.

```
test4@sfc-vmh2:~  
login as: test4  
test4@203.178.143.250's password:  
Last login: Sat Jul 29 22:45:13 2006 from localhost.localdomain  
[test4@sfc-vmh2 ~]$ ./connect.sh server 4  
test4@localhost's password:  
  
Fedora Core release 4 (Stentz)  
Kernel 2.6.17-1.2142_FC4 on an i686  
  
vh2-server4.ai3.net login: root  
Password:  
Last login: Sat Jul 29 22:46:14 on ttyS0  
[root@vh2-server4 ~]#
```

- After get connected, perform lab assignment as explained by teacher
- After finish lab exercise, exit from VM by command “exit”

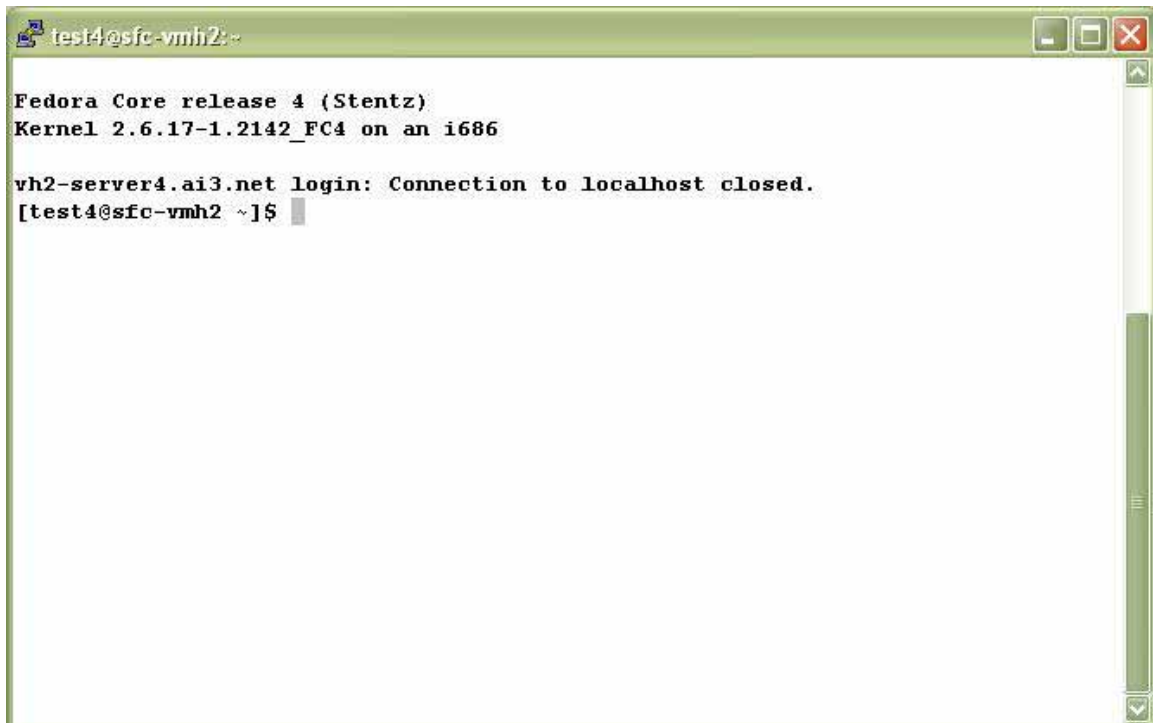
```
test4@sfc-vmh2:~  
login as: test4  
test4@203.178.143.250's password:  
Last login: Sat Jul 29 22:45:13 2006 from localhost.localdomain  
[test4@sfc-vmh2 ~]$ ./connect.sh server 4  
test4@localhost's password:  
  
Fedora Core release 4 (Stentz)  
Kernel 2.6.17-1.2142_FC4 on an i686  
  
vh2-server4.ai3.net login: root  
Password:  
Last login: Sat Jul 29 22:46:14 on ttyS0  
[root@vh2-server4 ~]# exit
```

- You will get login prompt



```
test4@sfc-vmh2:~  
Fedora Core release 4 (Stentz)  
Kernel 2.6.17-1.2142_FC4 on an i686  
vh2-server4.ai3.net login: █
```

- Type `~.` to exit the login prompt, you will be at the prompt of VMhost as shown in the figure.



```
test4@sfc-vmh2:~  
Fedora Core release 4 (Stentz)  
Kernel 2.6.17-1.2142_FC4 on an i686  
vh2-server4.ai3.net login: Connection to localhost closed.  
[test4@sfc-vmh2 ~]$ █
```

## SOI Asia workshop 2006

Patcharee Basu ( Yoo)  
Achmad Basuki (Abazh)  
August 22, 2006

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## Outline

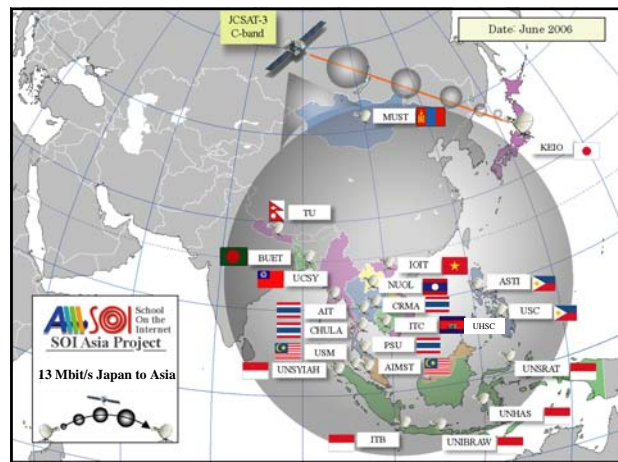
- SOI Asia project brief
- SOI Asia Workshop
- VM access practice
- Quiz

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## SOI Asia

- School On the Internet Asia
- Since August 2001
- Focusing on educational sharing in Asia
  - Easy collaboration because of small time-differences (0 ~ 4hr)
  - High demand on the international cooperation in higher education.
  - High demand on the internet deployment
  - High value of educational sharing among multi-lateral and multi-culture countries.

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## Organization

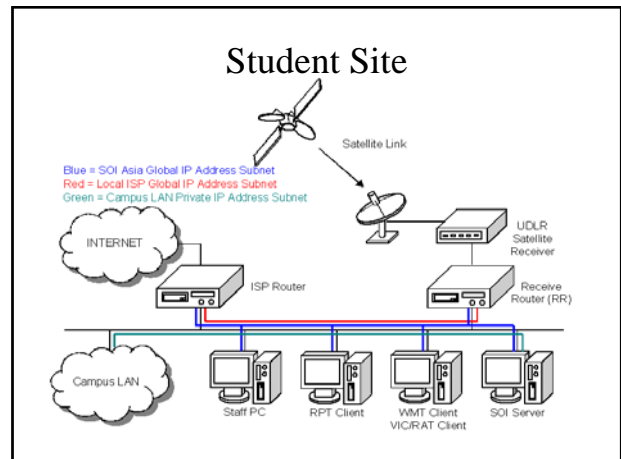
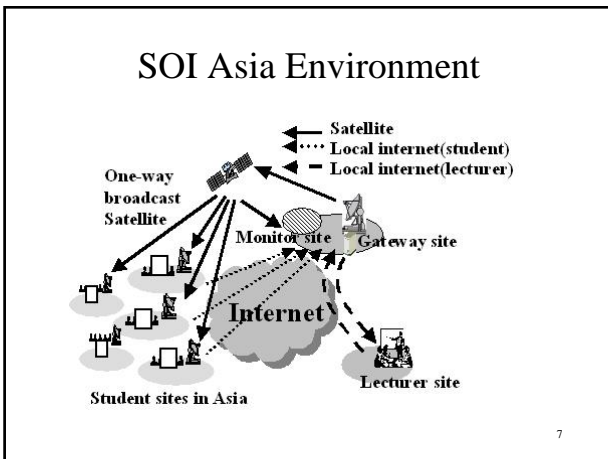
- Management & Policy making
  - Steering Committee
- Curriculum development
  - Academic Committee
- Operation of distance education environment
  - Operators Committee
- Research
  - Research Committee

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## Operator Committee

- Members from every partners
- Operations to support distance learning
  - Setup/maintenance/new development of learning environment
  - Realtime class operation
  - Training for local new operators
  - Etc. ☺

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### SOI Asia workshop

- Objectives
  - To achieve sustainable operation of SOI-Asia project
  - To train SOI-Asia operators to be able to operate SOI-Asia network , server and classroom environment

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### SOI Asia workshop

- Expectation
  - Development of individual’s knowledge in concept and especially practice skills
  - New operators join with SOI Asia to actively support SOI Asia operation
  - Be trainer for new operators

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### Workshop content

- Internetworking with IPv6
  - Day1 and Day2 (22-23 August)
  - IPv6 network, IPv6 Routing(Unicast and Multicast)
  - Instructor : Mr. Achmad Husni Thamrin
- SOI Asia network
  - Day3 (24 August)
  - Concept of UDLR ( Unidirectional Link Routing Protocol)
  - How to configure SOI Asia router(RR)
  - Instructor: Mr. Kotaro Kataoka
  - Mr. Achmad Husni Thamrin

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### Workshop content

- SOI Asia server
  - Day 4 (25 August)
  - How to configure SOI Asia server
  - Instructor : Mr. Achmad Basuki
- SOI Asia satellite receiver box
  - Day 5 (26 August)
  - How to configure satellite receiver box
  - Instructor: Mr. Kotaro Kataoka
- SOI Asia realtime class
  - Day5 (26 August)
  - How to setup machines to support realtime class
  - Instructor: Ms. Shoko Mikawa

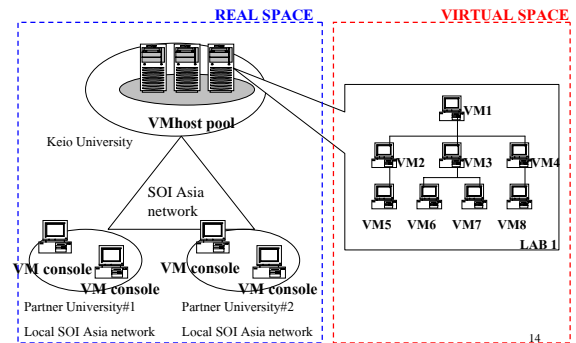
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## Workshop model

- Lecture
  - SOI Asia realtime class
- Hands-on Practice
  - Virtualization

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## Hands-on/Virtualization



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## VMhost

- Support virtualization
  - VMs(virtual machines) can be created
  - Virtual network between those VMs can be designed
- VMhost pool at Japan

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## VM console

- One PC for each lab participant
- Purpose
  - To be console showing screen of a VM
  - To interactively working on a VM
- IPv6 only , not suppose to browse normal IPv4 Internet

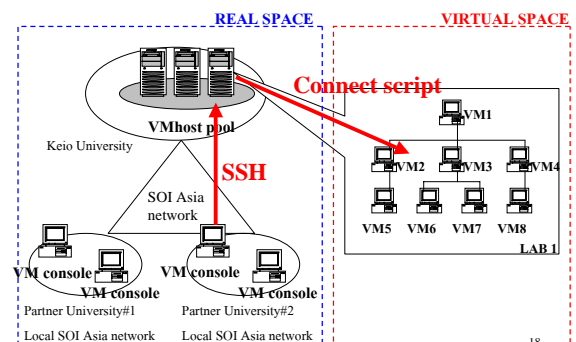
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## To access a VM

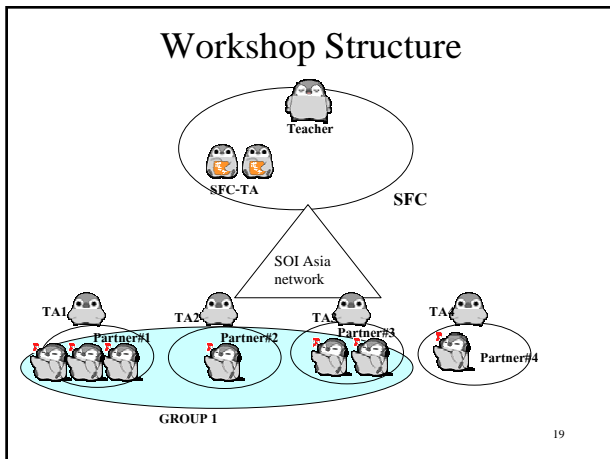
- From VM console (2 steps)
  1. SSH to VMhost (IPv6 only)
  2. At VMhost, run a script to connect to a VM
- Practice at the end of lecture

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## Access a VM



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- ### Group
- 1 Group = 6 participants
  - Group members from 2-3 partners
  - Your group number in “information for lab exercise” document
  - 1 group will do 1 lab topology, 1 person controls one VM
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- ### Group
- Lab work depends on members of a group
  - Please
    - Do not disappear from lab
    - Do not be late
    - Report your progress in lab exercise to local TA regularly
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- ### Group communication
- General communication (IRC, channel #soi-asia)
    - Realtime class operation
  - Group specific communication
    - Lab questions/ troubleshooting/ lab feedbacks
- Group1, IRC channel #soi-asia-ws1  
Group2, IRC channel #soi-asia-ws2  
Group3, IRC channel #soi-asia-ws3  
Group4, IRC channel #soi-asia-ws4
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- ### This workshop
- 42 participants(7 groups) from 17 partner countries
  - 15 Universities in 10 countries
  - Please be patient!
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- ### Documents
- Information for lab exercise
  - Introduction to SOI Asia Workshop
  - Internetworking with IPv6
  - SOI Asia network
  - SOI Asia server
  - UDBOX satellite receiver
  - SOI Asia realtime class
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## Practice Access VM

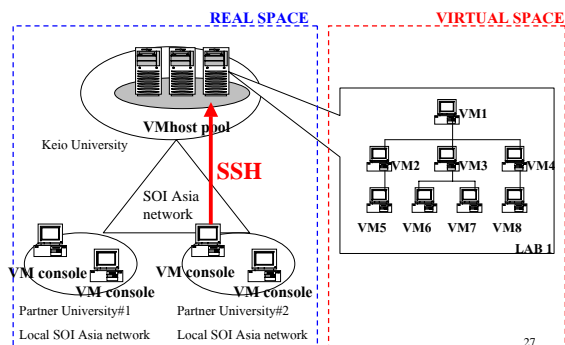
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## Document for this practice

- “Information for lab exercise” document
  - Per-user information
    - VMhost IP, username, password, VM connect script
- “Introduction to SOI Asia Workshop” document
  - How to access your VM

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## Access a VM



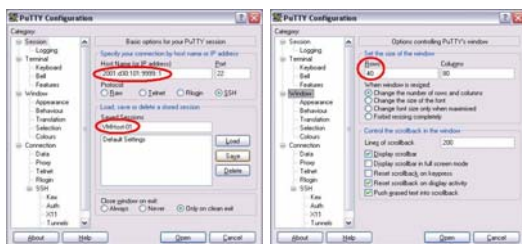
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## Configuring ssh client (PuTTY)

- Use PuTTY program
  - Your TA will show you where is putty program in your PC
- Basic configuration
  - Lines=40, Columns=80
  - Save configuration
- Step by step PuTTY configuration

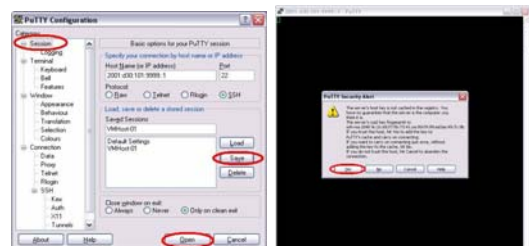
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## Configuring ssh client (PuTTY)



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## Configuring ssh client (PuTTY)



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### Accessing VM Host

- Prepare your username and password to access the VM Host. (Please refer to “Information for lab exercise” doc.)
- Using PuTTY to access the VM Host
- Using “./connect.sh” script to connect to VM

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### Accessing VM Host



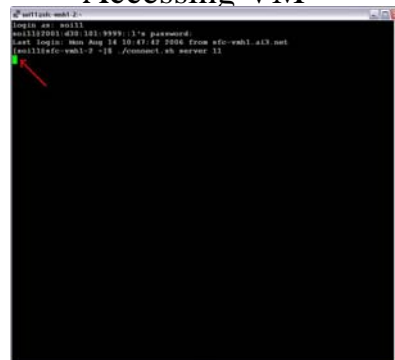
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### Accessing VM Host



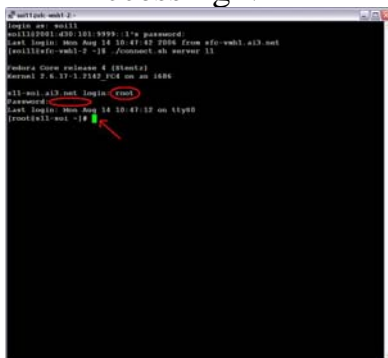
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### Accessing VM



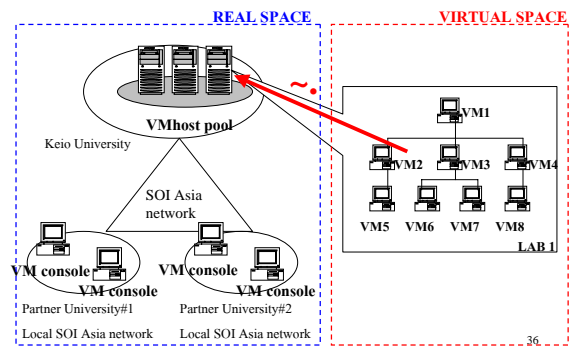
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### Accessing VM



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### Exit from a VM



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## Exit from VM

```
test4@stfc-vmh3:~$ ssh -X test4@10.143.250:~
login as: test4
test4@10.143.250:~$ password:
Last login: Sat Jul 29 22:45:13 2006 from localhost.localdomain
[test4@stfc-vmh3 ~]$ ./connect.sh server 4
test4@localhost:~$ password:
Fedora Core release 4 (Stentz)
Kernel 2.6.17-1.2142_FC4 on an i686
vH2-server4.a13.net login: root
Password:
Last login: Sat Jul 29 22:46:14 on ttySD
[test4@vH2-server4 ~]$ exit
```

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## ~. To disconnect from VM

```
test4@stfc-vmh3:~$ ssh -X test4@10.143.250:~
# exit
logout
FreeBSD/i386 (Amnesiac) (ttyD0)
login: Connection to localhost closed.
[test4@stfc-vmh3 ~]$
```

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## Practice time

- Follow instructions in “Introduction to SOI Asia Workshop” document
- Using login information from “Information for lab exercise” document
- 30 minutes

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## Quiz

- 30 minutes
- TA will show you the quiz question and answer sheet file
- Participant will fill in answer in answer sheet.
- TA will collect the answer files and send to teacher using file uploader in workshop webpage

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Thank you

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