SOI-Asia Global-E-Workshop 2008 Overview

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1. Introduction

In year 2001, SOI-Asia project was launched aiming to contribute to higher education in Asian region by utilizing satellite based Internet infrastructure. The project has 27 partner universities and research institutes in 13 Asian countries, and developed Internet environment at each partner site to share the live/archived lectures from Japan and partners. For autonomous operation of the project, each operator should be capable of maintaining the SOI-Asia environment in each partner site. In order to train the operators, the project organized five SOI-Asia Operator's Workshops and 1 special workshop for TU in the past. In year 2006, SOI Asia partner universities, for the first time, had jointly organized a "global-e-workshop" which utilizes the distance education environment and employs the virtualization technology to create an Asia-wide virtual hands-on workshop environment at 17 partner universities in 10 countries, training 42 engineers from 19 partner universities. SOI Asia Global-E-Workshop 2008 will continue the "global-e-workshop" model and in addition, promote collaboration on skill and knowledge sharing by inviting senior SOI Asia operators from member universities to conduct lecture and instruct the hands-on practice to the new SOI Asia operators.

2. Objective of SOI-Asia Operator's Workshop

SOI-Asia Operator's Workshop has following 2 purposes.

(1) Participants understand basic of network architecture such as TCP/IP or routing technology, and acquire the knowledge and skills to operate IPv6-based network and SOI-Asia environment.

(2) Participants strengthen the partnership and cooperation with each other for the purpose of contributing to future operation of the SOI-Asia project.

3. ”Global-E-Workshop” Model

Different from the past face-to-face workshops which one or two operators from each site were traveling to join workshop at one host institution, the global-e-workshop aims to conduct locally in each institution to increase the utilization of SOI Asia distance education environment, increase chance to new operators to be able to learn SOI Asia technology and having more frequent workshops for up-to-date technology trainings. Therefore, with global-e-workshop model, workshop teachers will be giving lecture by SOI Asia partners through SOI Asia classroom environment. The hands-on part of the workshop will be held locally at each partner site with assistance from local TAs and virtualization technology involved to minimize the required equipments. Workshop participants will be joining workshop at their local institutions using their existing SOI Asia classroom environment.

To organize global-e-workshop, local TA is very important as they have to oversee class activities and must be able to explain SOI Asia technology concepts to local participants in place of teachers in remote site.

4. Requirements for Participating Institutions

Since global-e-workshop will be held at local institution, the following resources are required at each workshop participating institution.

4.1 SOI Asia Class Environment

SOI Asia class environment is used to deliver lecture from lecturers through gateway in Japan to partners, therefore the regular SOI Asia classroom resources as listed below are required during and operator workshop session(5 days).

- Classroom
- VIC/RAT PC
- RPT PC
- IRC PC
- 2 Screen & 2 projectors
- Audio/Video equipments

4.2 Network Environment

During workshop, workshop participants and TAs have to communicate with teachers in Japan, therefore below is requirement to use campus’s Internet to sends feedbacks.

- Terrestrial bandwidth for return traffic : 128 kbps minimum or at least it should be able to hold good audio stream from partner site to Japan.

4.3 Classroom Equipments

During lab session in the workshop, participants will practice to operate routers, servers and various applications, therefore following equipments are required.

- 1 PC for each participant connecting to SOI Asia network with following specification

  Pentium III 800MHz

  256M Memory

  20GB or larger HDD

  1 Ethernet Network Interface Card

  Windows XP SP1 or higher

4.4 Teaching Assistant(TA) / Supporting Staff

- One or more TA with following qualifications (Required)

  (TA is person who will assist workshop locally, overseeing class activities and understand SOI Asia technology to be able to explain to new operators)

  - TA is preferably to be operator who participated in AI3/SOI Asia Internship program in Japan, or else who joined operator workshop 2004-2006.
  - TA should have at least 1 year experience operating AI3/SOI Asia environment, or else have good background knowledge and practical experience about TCP/IP Internetworking.
  - TA must be permitted to fulltime participate in the 5-day operator workshop
- One or more support staff (Optional)

  (Support staff is person who assist TA in preparing equipments, class materials, etc before workshop starts)

  - Support staff should have good background knowledge and practical experience about TCP/IP Internetworking, Unix, Windows
  - Part-time assists TA in all workshop preparation

5. Participants

Each participating partner can invite new SOI Asia operators or current operators who would like to revisit their knowledge about SOI Asia technology to join in this workshop. The number of participants should not exceed 3 persons per 1 local TA.

SOI-Asia workshop participants should have following qualifications.

(1) Participant **must be permitted to fulltime participate in 5-day operator workshop**.

(2) Participant must **have skills on operating UNIX PC**, and **actually operates SOI-ASIA environment**

(3) An operator who **has enough typing skill not to disturb the progress of practice in the class**, and **understands the basic usage of "vi" as the editor of common use**

(4) An operator who **completes and submits his/her assignment to check the above described qualifications by the deadline which the program committee will set**

6. Collaborative Workshop Options

In the case that SOI Asia partner would like to have their new operators trained in SOI Asia workshop but not able to hold local workshop because of some specific reasons, for example, they are new SOI Asia partners or they does not have experienced TA as specified in section 4.4. Partners can collaborate with 2 proposed options.

6.1 Co-workshop Option

A co-workshop is an option that an inexperienced partner can send their new operators to be trained at a nearby partner site that has strong experience in SOI Asia/AI3 operation and that the hosting site agree to receive additional participants in their local workshop. SOI Asia project will assist to coordinate the workshop among co-partners. Necessary supports needed to hold the workshop will be discussed in details by SOI Asia project and the hosting candidate.

6.2 Experienced-TA Assistance Option

Experienced-TA Assistance is an option that an experienced TA from SOI Asia/AI3 experienced partner will be sent to assist workshop at an inexperience site. SOI Asia project will assist to coordinate to find suitable TA. Supports needed to send a TA is provided by SOI Asia project considering only necessary cases.

7. Schedule

30 January 2008	Call for workshop participation
8 February 2008	Application deadline
27-28 March 2008	Operator workshop preparation
31 March – 4 April 2008	Operator global-e-workshop

8. Venue

The global-e-workshop to be held at each participating partner sites.

9. Organizing Committee

Co-chairs	Shoko Mikawa (Keio University)
	Patcharee Basu (Keio University)
Program Chair	Achmad Husni Thamrin (Keio University)
	Kotaro Kataoka (Keio University)
Secretariat	SOI Asia Secretariat Team (secretariat@asia.soi.wide.ad.jp)
Local Chairs	Representative from each participating site coordinating overall workshop program
TA committee	TA from each participating site

9. Proposed Curriculum

Day 1: IPv4/IPv6 Introduction and Interoperability

Session 1: orientation, quiz

Session 2: TCP/IP Architecture basics

-Intro to computer network

-OSI and TCP/IP Model

-Encapsulation and decapsulation

-Internet and Internet services (mail, web, etc.)

-Introduction to IPv6

Session 3: Addressing and routing

- IPv6 addressing: architecture, notation, subnet, CIDR

-Concept of Subnet and Link

-ICMP and ICMPv6

-ARP and NDP

-Routing basics and static routing

-Practice

Session 4: OSPF routing and zebra

-Introduction to OSPF

-Zebra configuration basics

-Learning a network with OSPF and Zebra

-Practice

Day 2: Building network and Multicast

Session 1: OSPF routing and zebra

-Installing Zebra

-Deploying network with OSPF and Zebra

-Practice

Session 2: Multicast and multicast routing basics

-Introduction to multicast

-Multicast routing basics: IGMP & MLD, DVMRP, PIM-SM

Session 3: PIM-SM and XORP

-XORP configuration basics

-Learning a multicast network with PIM-SM and XORP

-Practice

Session 4: PIM-SM and XORP

-Installing XORP

-Learning a multicast network with PIM-SM and XORP

Day 3: SOI-Asia Network

Session 1: SOI Asia Network

-AI3 network

-UDLR basics and IPv6-only operation

Session 2: SOI-Asia network configuration

-Typical SOI-Asia network design

-Network configuration

Session 3-4: SOI Asia network configuration

-Deploying RO network

Day 4: SOI-Asia Server

Session 1: Introduction to SOI server

-Introduction to services on SOI Asia server

-System configuration

-System upgrade

Session 2: SOI Server Configuration

-DNS installation

-SMTP installation

-DHCP installation

Session 3: SOI Server Configuration

-File transfer service

-HTTP server installation

-Cache installation

Session 4: SOI server configuration

-Real streaming server

-MTM installation

Day 5: UDbox + SOI-Asia Classroom

Session 1: UDBox Installation - Configuration & AI3 Security Policy

-UDBox Installation & Configuration

-UDBox Troubleshooting

-AI3 security policy

Session 2: SOI-Asia Classroom Environment

-Introduction to SOI Asia class procedure and environment

-Audio/Video setup

-VIC/RAT, WMT operation, Video LAN

Session 3: SOI-Asia Classroom Environment

-RPT/LivePresenter operation

-Staff communication operation

-SOI-Asia Q/A

Session 4: Test