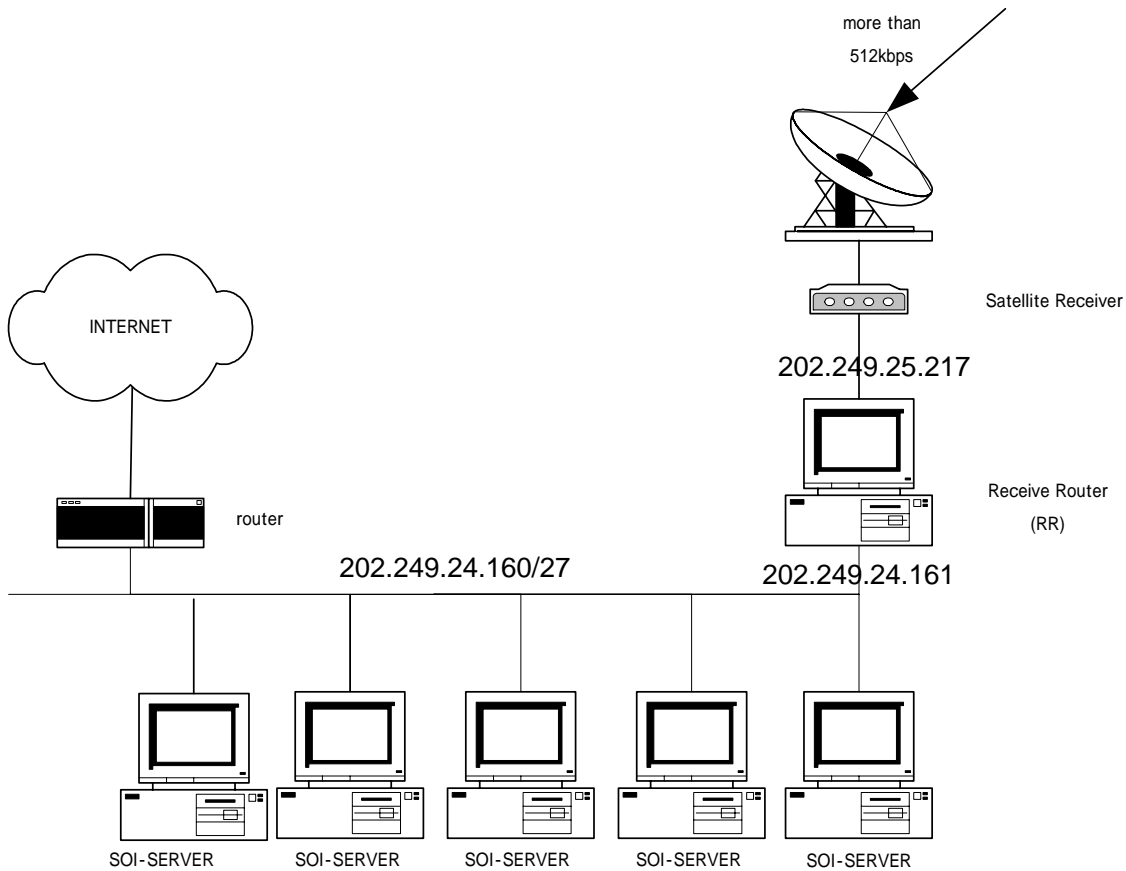


Classroom Network Topology



General Network Configuration

Subnet : 202.249.24.160/255.255.255.224
 RR : 202.249.24.161
 DNS : 202.249.24.18

IPs for SOI servers

UNIBRAW : 202.249.24.162 - 202.249.24.164
 UNHAS : 202.249.24.165 - 202.249.24.167
 UNSRAT : 202.249.24.168 - 202.249.24.170
 ITB : 202.249.24.171 - 202.249.24.173

IP Address Mapping <TEXTBOOK to CLASSROOM>

	Textbook	Classroom
Subnet	202.249.26.0	202.249.24.160
Netmask	255.255.255.248	255.255.255.224
RR	202.249.26.1	202.249.24.161
SOI server	202.249.26.2	Your machine IP
DNS	202.249.24.18	202.249.24.18

(STEP 3) Multicast Tree Mirroring System (MTM)

MTM is a software developed to distribute class materials and archive lectures from SOI Asia master server to partner's SOI servers.

- MTM installation

```
# cd /usr/local/src
# gzip -d mtmrd-1.0.tar.gz
# tar -xvf mtmrd-1.0.tar
# cd mtmrd-1.0
# make
# make install
# service mtmrd start
```

- Edit configuration file, /usr/local/mtm/mtm.conf, and modify it to contain following parameters and values.

```
#cd /usr/local/mtm
#vi mtm.conf
MTM_MULTICAST_ADDRESS=224.224.224.1
MTM_MULTICAST_PORT=49999
CMD_RUN_PASSWORD=SOI-seCREt
RUN_DIR=/usr/local/mtm/run/
LOG_DIR=/usr/local/mtm/log/
TMP_DIR=/tmp/mtm
```

- Enable MTM daemon and make it runs at system startup

```
# service mtmrd start
# chkconfig mtmrd on
```

- Check if the process is running and no error message in /usr/local/mtm/log/mtmrun.log

```
#ps -ax|grep mtmrd
18866 p0 D+ 0:00.00 /usr/local/mtm/bin/mtmrd
```

- To receive archive content, inform your SOI server's IP address to instructor.

- Check /usr/local/mtm/log/mtmjob.log for a record of successful transfer.

```
#more /usr/local/mtm/log/mtmjob.log
```

JOB_ID	TIME	ROOT_DIR	DESCRIPTION	STATUS	SCRIPT
1	06August2004-00:59:41	/soi/soi/class/test/video/	(null)	JOBDONE	(null)
2	06August2004-00:59:41	/soi/soi/class/test/slides/	(null)	JOBDONE	(null)

- Check if files exists in the directories or not

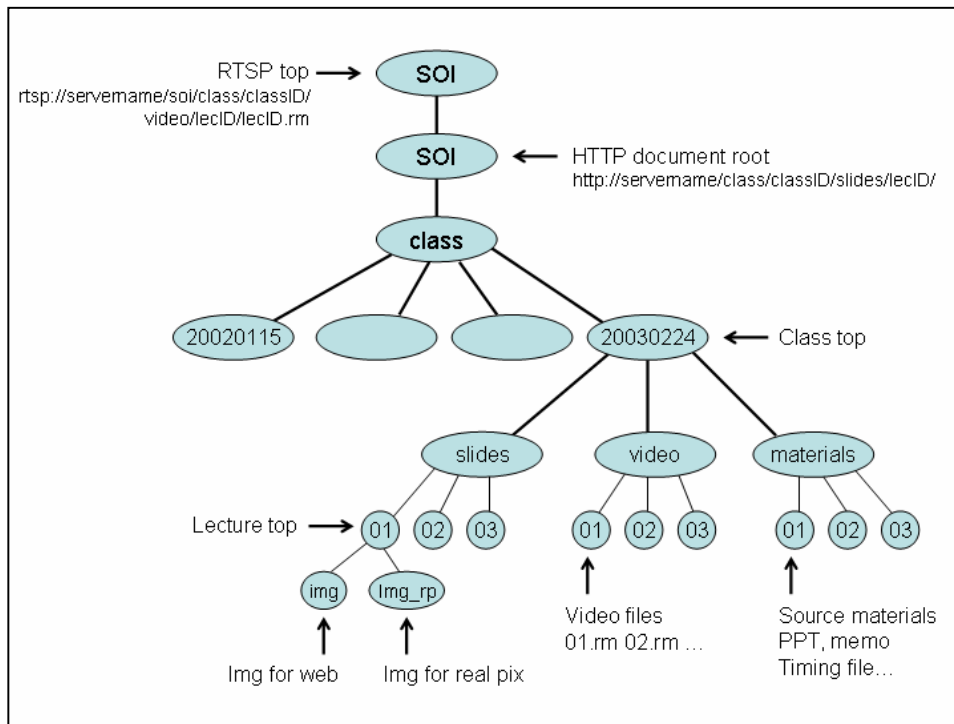
```
#ls /soi/soi/class/test/video/
real9video.rm
#ls /soi/soi/class/test/slides/
index.html
```

- Verification of contents.

On a windows machine

- use web browser to browse [http://\[your-server-ipaddress\]/class/test/slides/index.html](http://[your-server-ipaddress]/class/test/slides/index.html)
- use real player to play [rtsp://\[your-server-ipaddress\]/soi/class/test/real9video.rm](rtsp://[your-server-ipaddress]/soi/class/test/real9video.rm)

SOI Asia Directory Structure



Application Root directories

/soi is SOI Asia root directory of RTSP content
 /soi/soi is SOI Asia root directory of Web content

Archive lecture directories

/soi/soi/class/course_id is a root directory of course content containing 3 sub directories
 slides directory contains html pages, image files of presentation.
 video directory contains video files
 materials directory contains course materials
 Under these tree directories, files are separated by lecture ID.

SOI Asia procedure to receive class materials and archive lectures of a course

1. On each of SOI Asia course, SOI ASIA team will make an announcement through the operator mailing list to ask for partners' interests in receiving archive lectures. The announcement includes following information
 - Course Name
 - Course ID
 - Course Period
 - Number of lectures
 - Estimated size of archive content
 - Due date for partner to register participation
 - Test schedule
 - URL of mirror information/status
2. A participating partner verifies technical readiness of SOI server according to the following checklist.
 - Available disk space of /soi is more than estimated size

```
# df /soi
Filesystem      1K-blocks    Used Available Use% Mounted on
/dev/hda2       28921052   7002364 20449544 26% /
```
 - Available disk space of TMP_DIR specified in /usr/local/mtm/mtm.conf is at least 500M.

```
# df /tmp/mtm
Filesystem      1K-blocks    Used Available Use% Mounted on
/dev/hda2       28921052   7002364 20449544 26% /
```
 - MTM daemon is running and it automatically starts on system bootup.

```
#ps -ax|grep mtmrd
24970 pts/2    S      0:00 /usr/local/mtm/bin/mtmrd
# chkconfig --list|grep mtmrd
mtmrd        0:off 1:off 2:on 3:on 4:on 5:on 6:off
```
 - SOI server's hostname setting can be resolved to correct SOI server's IP address

```
# more /etc/sysconfig/network
NETWORKING=yes
HOSTNAME=sfc-soi.ai3.net
GATEWAY=202.249.26.1
# nslookup sfc-soi.ai3.net 127.0.0.1
Server:      127.0.0.1
Address:     127.0.0.1#53
Non-authoritative answer:
Name:   sfc-ro2-soi.ai3.net
Address: 202.249.26.10
```
3. Partner informs the participation by mailing to operator mailing list with following information.
 - Organization
 - SOI server's IP address/Hostname
 - Choice of content
 - Class materials and archive lectures
 - Only class material
 - Only archive lecture

To benefit from bandwidth optimization of multicast, partner is strictly requested to do the information by the due date.

4. On completion of each transaction<a class material, a lecture, a test>, SOI Asia team will announce the following information to operator mailing list or notify partners if any errors.
 - Course name
 - Course ID
 - Lecture ID
 - JOB ID and the corresponding directory
5. According to the transaction completion announcement, partner verifies the content on local server. A transaction could be a class materials transaction or a lecture transaction.

5.1 A class material transaction

A class materials transaction consists of one or more files in

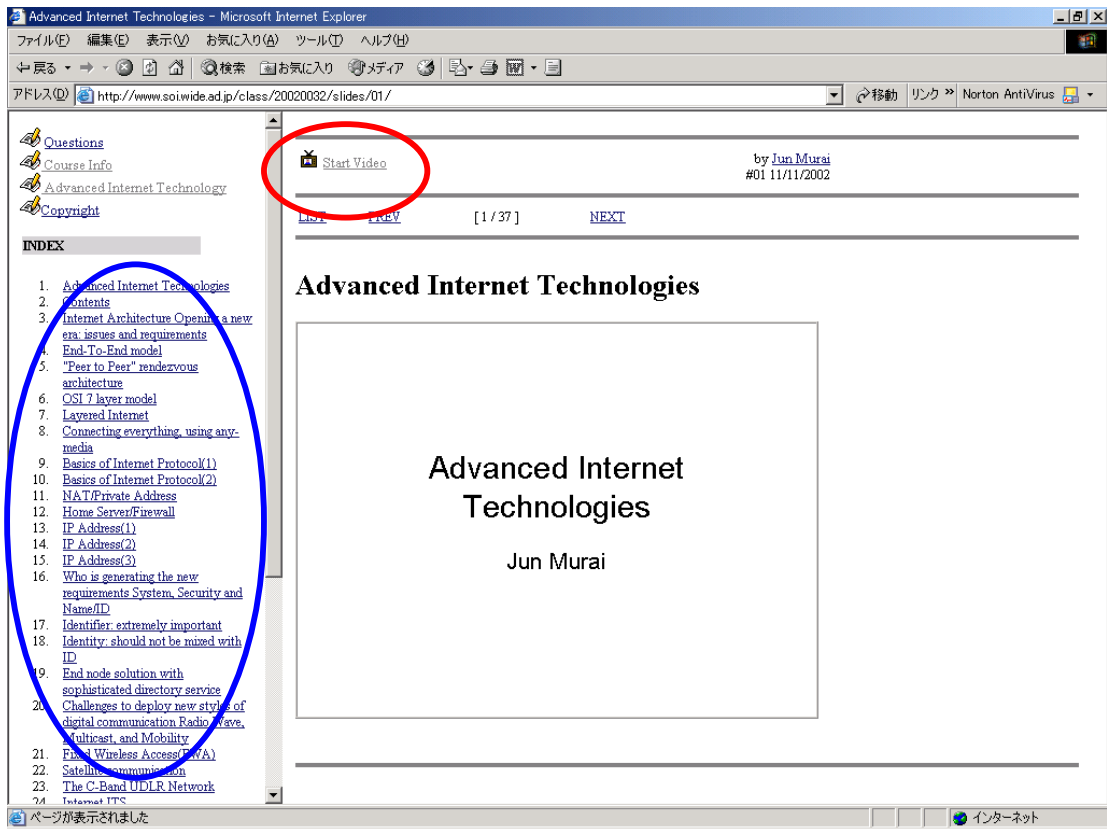
/soi/soi/class/class_id/materials/lecture_id/ directory. Please perform the following checks.

- Check that the specified JOB IDs are written in /usr/local/mtm/log/mtmjob.log.
- Download the file to a Windows machine and use the right application to check if it can be opened and displayed or not.

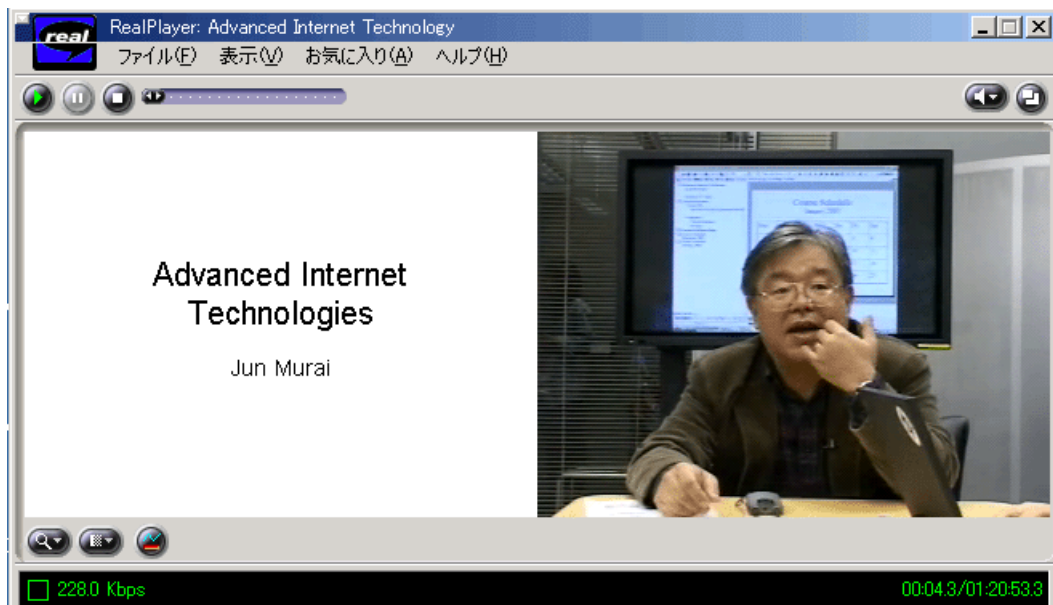
5.2 A lecture transaction

A lecture consists of two directories /soi/soi/class/class_id/video/lecture_id/ and /soi/soi/class/class_id/slides/lecture_id/. After completion of transmission, a customized script</soi/soi/util/customize_lecture.pl> will parse all files in slides directory to change the server part in all URLs to your SOI server's IP address(by resolving HOSTNAME in /etc/sysconfig/network). Please perform the following checks.

- Check that the specified JOB IDs of two directories are written in /usr/local/mtm/log/mtmjob.log.
- Check class web page by browsing
http://[your-server-ipaddress]/class//class_id/video/lecture_id/index.html



- Randomly click slide index on the left frame, and see the corresponding slide's figure shown in the right frame.
- Click "Start Video" button at the top of the page and check if lecture video is playing or not.



- If any problems encountered, please report to operator mailing list.