

SOI Asia Global E-Workshop Realtime Class Lab Session

[EXCERCESE 1] Confirm the IPv6 Installation and Firewall Disabled

- Realtime Class Operation PC has to be Windows XP SP2 or higher (** Your PC is already prepared to meet the specification)
- At Windows Command, type “ifconfig”, then you should be able to see that there are IPv6 addresses configured on your network interface. One should be global address (IP number starts with 2001:...) and the other should be link local address (IP number starts with fe80:....)

```
C:¥Documents and Settings¥funya> ipconfig
Windows
Ethernet adapter Local Area Connection 4:
    Connection-specific DNS Suffix  . :
    IP Address. . . . . : 169.254.254.101
    Subnet Mask . . . . . : 255.255.255.0
    IP Address. . . . . : 2001:d30:113:501:74b9:7117:150b:237e
    IP Address. . . . . : 2001:d30:113:501:2ff:38ff:fe74:2c53
    IP Address. . . . . : fe80::2ff:38ff:fe74:2c53%6
    Default Gateway . . . . . : fe80::2bd:a6ff:fe0a:100%6
```

- If you do know see the IPv6 address attached to your network interface, then you have to install IPv6 protocol in your windows machine.
- Open the Windows Command, and type “ipv6 install”
- Reboot machine after IPv6 protocol installation.

```
C:¥Documents and Settings¥funya> ipv6 install
Installing...
Succeeded
```

- In order to receive VIC/RAT streams, the windows firewall must be disabled.
- At control panel, security setting, please set your firewall to be off.

[EXERCISE 2] VIC/RAT Installation and Operation

[STEP 2-1] Installation of VIC/RAT

- Download and unzip the realtime application zip file (<http://www.soi.wide.ad.jp/soi-asia/ow/2008-spring/wstextbook/day5-realtime-application.zip>)
- To install VIC, double click on vic-2.8ucl1.1.6-ipv6-xp.exe
- To install RAT, double click on rat-4.2.24-ipv6-win2k.exe

- After finish installation, open windows command to run the application

```
C:\Documents and Settings\funya> "C:\Program Files\mbone\vic.exe" ff38:20:2001:d30:101:2:1:3/3333
C:\Documents and Settings\funya> "C:\Program Files\mbone\rat.exe" ff38:20:2001:d30:101:2:1:4/4444
```

- In order to easily startup the VIC/RAT application, make shortcuts on the desktop by right clicking on the desktop and create new shortcut.
 - Right click on Desktop, select “New” then “Shortcut”
 - On first window of wizard, type the following line to textbox and click next. (If location of your vic program locates differently, change path accordingly)
 - On next screen, type name of short cut as “VIC IPv6” and click Finish
 - Double click on newly created “VIC IPv6” shortcut and make sure vic program is running
- Because VIC/RAT program is receiving video/audio by default, on VIC program, you should receive audio. On RAT program, you should see the volume level changing on “Listen” part when a lecturer in remote site is speaking.

[STEP 2-2] Operating VIC

- To send video using VIC, local TA will demonstrate using real SOI Asia class environment which has a camera attached. Local TA will follow the below configurations to send the video
 - On VIC window, click Menu button.
 - ✧ Click the Device button and choose your video card.
 - ✧ Adjust sending rate and frame-per-sec with the two sliding bars in “Transmission section” to fit with your site’s available outgoing bandwidth. (If you have no idea of what should be set in rate and frame-per-sec, use 26kbps and 1fps setting)
 - ✧ Adjust encoding parameter at “Encoder” section. Recommended setting is h261, quality = ”3”
 - ✧ Input your site name in the “Site” section.
 - ✧ Check the “Transmit” checkbox at the upper-left corner to start sending the video. To stop sending the video, click the “Release” button.

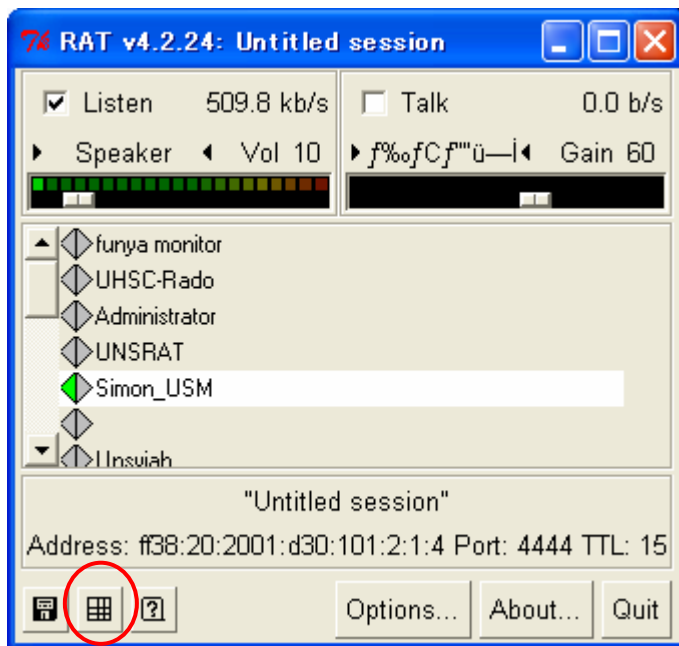
[STEP 2-3] Operating RAT

- To send audio using RAT, local TA will demonstrate using real SOI Asia class environment which has a microphone attached. Local TA will follow the below configuration to send audio.
 - On RAT window, click “Options” button.
 - ✧ At “Personal” Category, write your organization name into “Name” section.
 - ✧ At “Audio” Category, select “OFF” in the Silence suppression section, and Uncheck “Automatic Gain Control”. Set the sample Rate “8kHz”, and channels “Mono”
 - ✧ In the Transmission Category, select the Audio Encoding to “G726-32”
 - ✧ Click “Apply” button.
 - ✧ Try to send audio by clicking the “Talk” button in the RAT main window. It will enable you to send the audio at 32kbps.
 - ✧ The site name which is sending the audio will be shown with white background color

[STEP 2-4] Operating RAT – Confirm the Differences

- The RAT application assumes bi-directional link, and if we are sending the audio in low bandwidth, the receiving audio is also set to use a low bandwidth. Let's experience this situation.
 - ✧ Run RAT with above setting, and listen to the lecturer speaking/music running
 - ✧ Run RAT with below configurations
 - At "Personal" Category, write your organization name into "Name" section.
 - At "Audio" Category, select "OFF" in the Silence suppression section, and Uncheck "Automatic Gain Control". Set the sample Rate "16kHz", and channels "Mono"
 - In the Transmission Category, select the Audio Encoding to "Linear-16"
 - Click "Apply" button.
 - Listen to the lecturer speaking/music running. Please do not send audio in this session. It will enable you to send the audio at 256kbps, and normally we hear a lot of noise because of the packet loss.

- You can check the packet loss of RAT when you are sending audio by clicking the matrix button on the left-bottom corner.



The screenshot shows a window titled "Reception quality matrix" with a list of sites on the left and a grid of 20 columns representing different metrics. The sites listed are: funya monitor, UHSC-Rado, Administrator, UNSRAT, Simon_USM, Unsyiah, sisdiakat-UHNAS, tsuchy, thomas-ITB, PPE UB Brawjaya, WIDE-SIKK, lab, itb, Admin, NUOL, SFC-Gateway, Prince of Sengkla University, TI, UCSY, and UCSM. The rows for Simon_USM and SFC-Gateway are highlighted in green and contain 20 cells, each displaying "0%". All other rows are empty.

Site	Metric 1	Metric 2	Metric 3	Metric 4	Metric 5	Metric 6	Metric 7	Metric 8	Metric 9	Metric 10	Metric 11	Metric 12	Metric 13	Metric 14	Metric 15	Metric 16	Metric 17	Metric 18	Metric 19	Metric 20
funya monitor																				
UHSC-Rado																				
Administrator																				
UNSRAT																				
Simon_USM	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Unsyiah																				
sisdiakat-UHNAS																				
tsuchy																				
thomas-ITB																				
PPE UB Brawjaya																				
WIDE-SIKK																				
lab																				
itb																				
Admin																				
NUOL																				
SFC-Gateway	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Prince of Sengkla University, TI																				
UCSY																				
UCSM																				

[STEP 2-5] Operating RAT – Muting Other Sites

- When you're hearing a noise from a certain cite, you can mute a specific site.
 - ✧ Click the site's name, it will show the participating site's detailed information.
 - ✧ Go to Audio property
 - ✧ You can mute a site by clicking "Mute" checkbox.
 - ✧ You can also change volume by changing the slide bars in the Gain section.
 - ✧ The lecturer will send music from "SFC-Monitor", so please check you can mute SFC-Monitor locally.

[EXERCISE 3] LivePresenter Operation

- In the SOI Asia lecture environment, a PowerPoint presentation is displayed together with the lecture video stream. The slide changing is automatically synchronized between lecturer's PPT machine and student sites through a system called LivePresenter, developed by the project.
- Download and install FireFox from <http://www.mozilla.com/firefox/>
- Open the Audience View page for the LivePresenter: <http://sfc-cpu.ai3.net/~husni/LivePresenter/index.php>

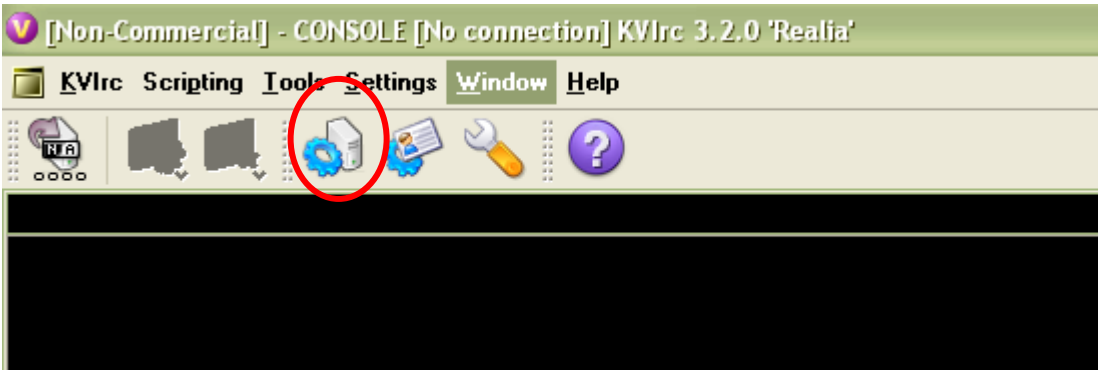
[EXERCISE 4] (STEP 1-2) Video LAN Installation

VideoLAN is used to receive video stream in window media format.

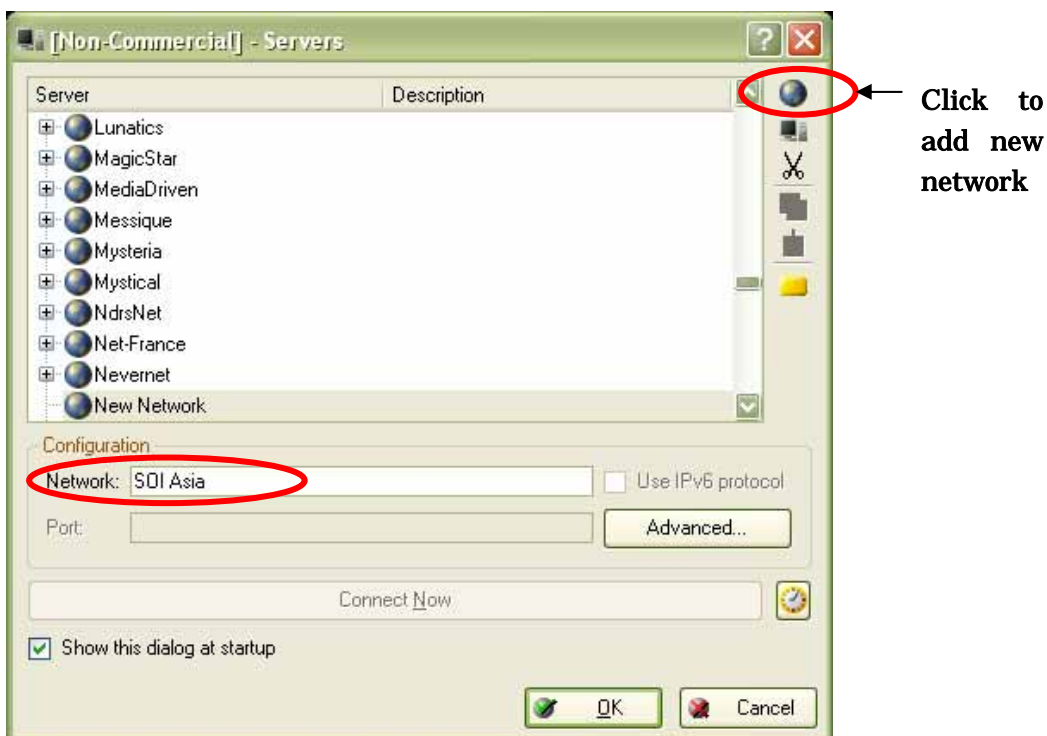
- Install "VideoLAN 0.8.6e" program from SOI Realtime applications CD or download VideoLAN 0.8(or higher) program from the URL below and install to the PC. <http://www.videolan.org/>
- Open <https://sfc-mtm.ai3.net/soiasia/stream/event/soiws2008> to start viewing the lecture
- In case you just want to test operability, please request to operator@asia.soi.wide.ad.jp to send test stream, then you will be able to receive IPv6 Test Program.

[EXERCISE 5] Staff Communication using IRC

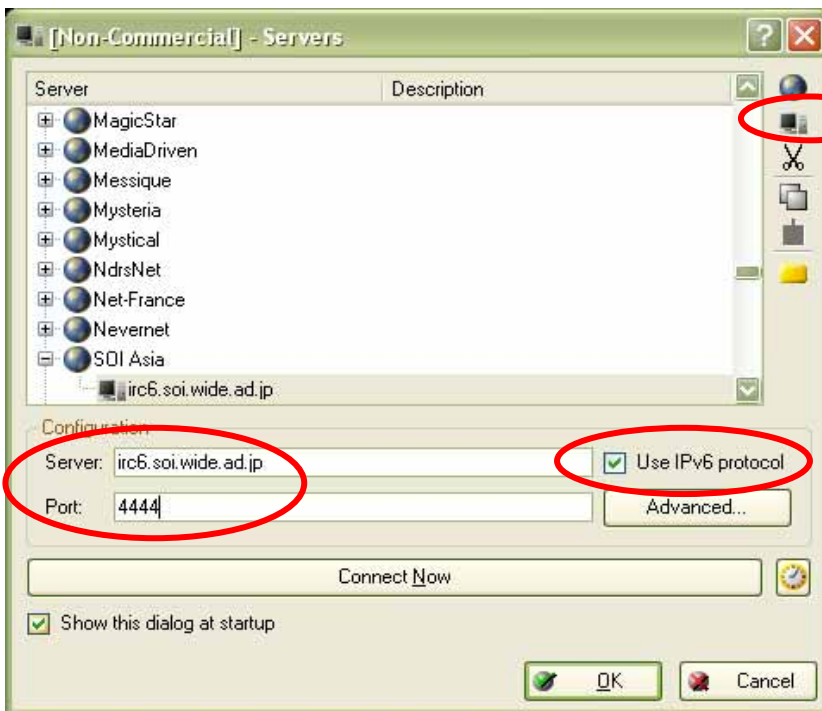
- Double click and install KVirc application from the unzipped realtime application zip.
- In the installation process, change the nickname from “newbie” to “YourName_SiteName” (For example, funya_SFC)
- Run Kvir program. Click “Configure servers” icon.



- Add new network and fill “SOI Asia” in the network text box.

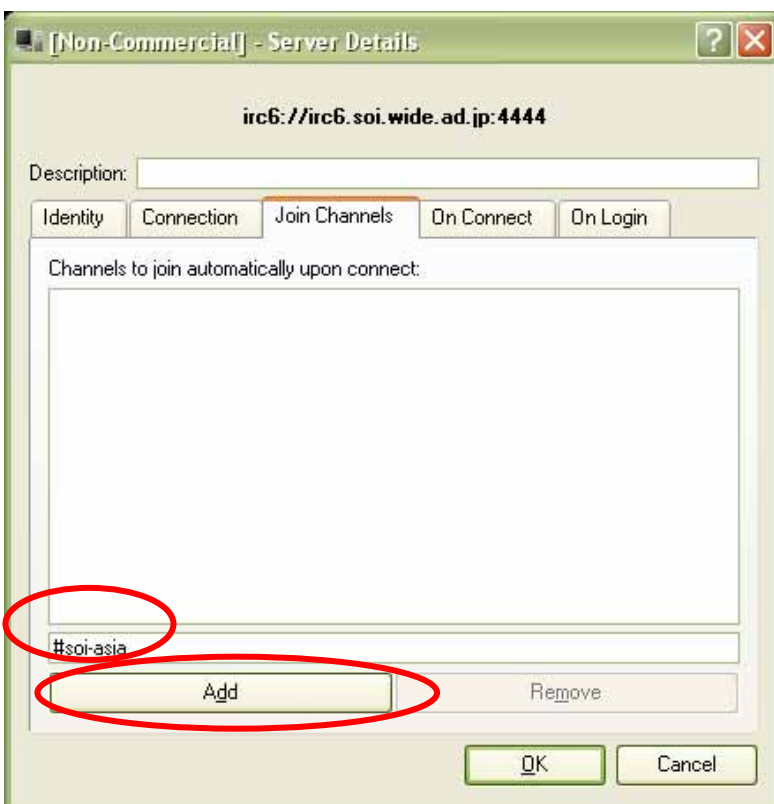


- Add new server and input “irc6.soi.wide.ad.jp” and “6532” as server and port accordingly. Check “Use IPv6 protocol” box.

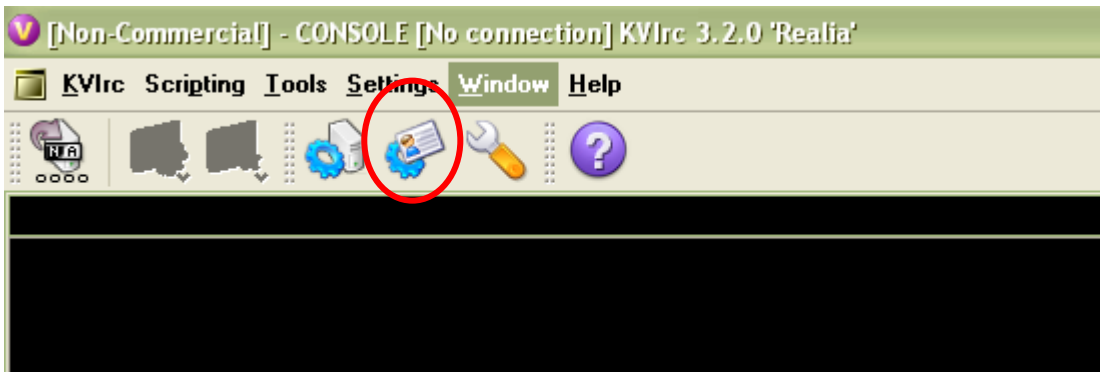


Click to
add new
server

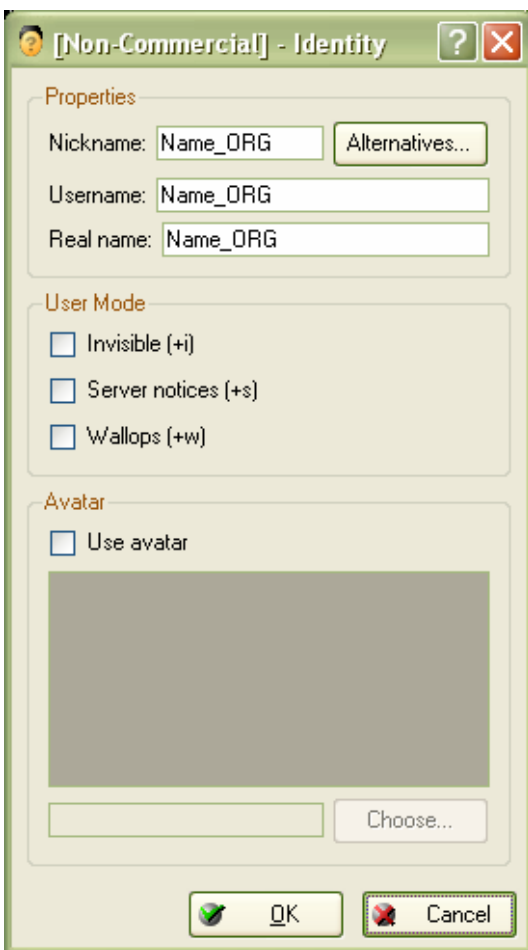
- Then click “Advanced” button, select the “Join Channels” tab and add “#soi-asia” into channel list.



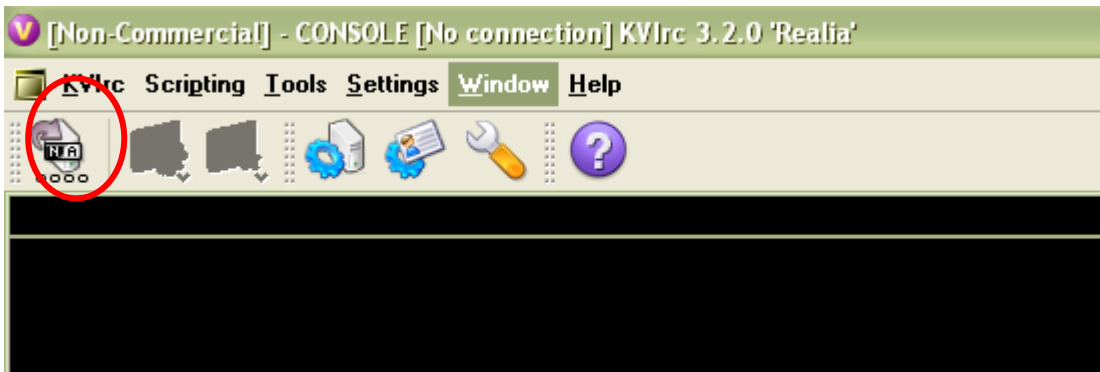
- Click “Configure Identity” icon.



- Put your name in “NAME_ORG” format in all name boxes, for example, “Soesoe_UCSY”.



- Click “Connect” icon.



- You will be connected to #soi-asia channel.

