

Smart TV SDK Emulator : Network Settings Guide

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Tutorial on how to use the network settings interface of the Samsung Smart TV Emulator.

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Prerequisites

To use this network settings feature, you will need :

Virtual Box(4.3.8 or later is recommended)

Samsung SMART TV Emulator 5.1

Internet connection

Tutorial Application Instructions

Some development environments require that the SMART TV Emulator virtual machine have certain network settings and/or requirements to connect to the internet through a proxy. The Network Settings menu has been added to make this configuration easier. The newly integrated Network Settings menu button is located above the console.

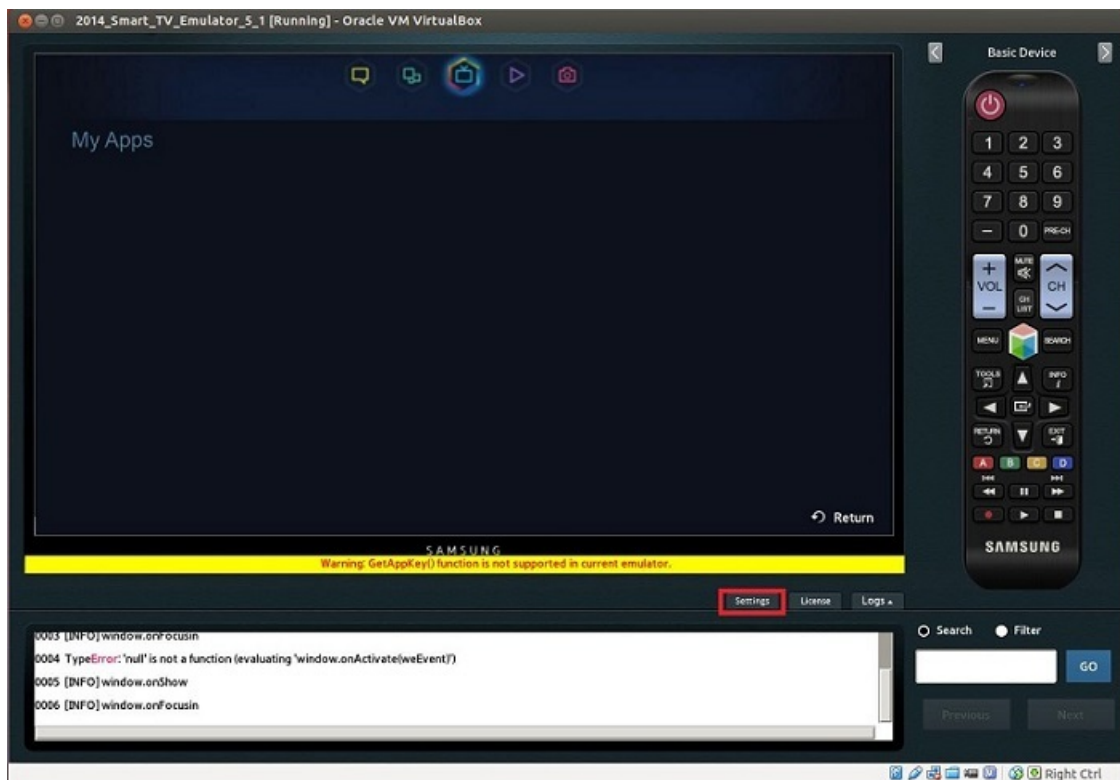


Figure 1 : Network setting button position in Emulator

Implementation Details

The Network Settings interface provides an easy way for the user to configure the network in the Samsung Smart TV SDK emulator. Here the user can easily change the IP address, subnet mask, and gateway, primary DNS, secondary DNS, proxy URL and proxy port. Whenever the network settings are changed, the system will validate whether the change is correct or not. If the change is correct then it will be saved otherwise the system will notify the user about the error.

This section of the document will represent every network setting options of the Network Settings GUI with proper description.

NAT Network Settings

The user can toggle between NAT mode and the Bridged Network mode. For NAT, a default IP setting will be applied by the system. In this mode the user wouldn't be able to make any change to both IP settings and proxy settings options. It's also need to change the network mode to NAT in the emulator setting which will also be informed by the System. Note that after making a change, you much close the Emulator and update the Emulator's network setting using the Virtual Box GUI.

Previous State : Network mode is Bridged Network

Action : User select NAT mode and then presses OK button with confirming the change.

Output : Current Network mode is NAT

☐ NAT Network
 ☒ Bridge Network

IP address:

Subnet mask:

Default gateway:

Primary DNS:

Secondary DNS:

☒ Proxy Enable

Proxy URL:

Proxy Port:

Figure 2 : Before switching to NAT mode

☒ NAT Network
 ☐ Bridge Network

IP address:

Subnet mask:

Default gateway:

Primary DNS:

Secondary DNS:

☐ Proxy Enable

Proxy URL:

Proxy Port:

Figure 3 : Switch to NAT Network

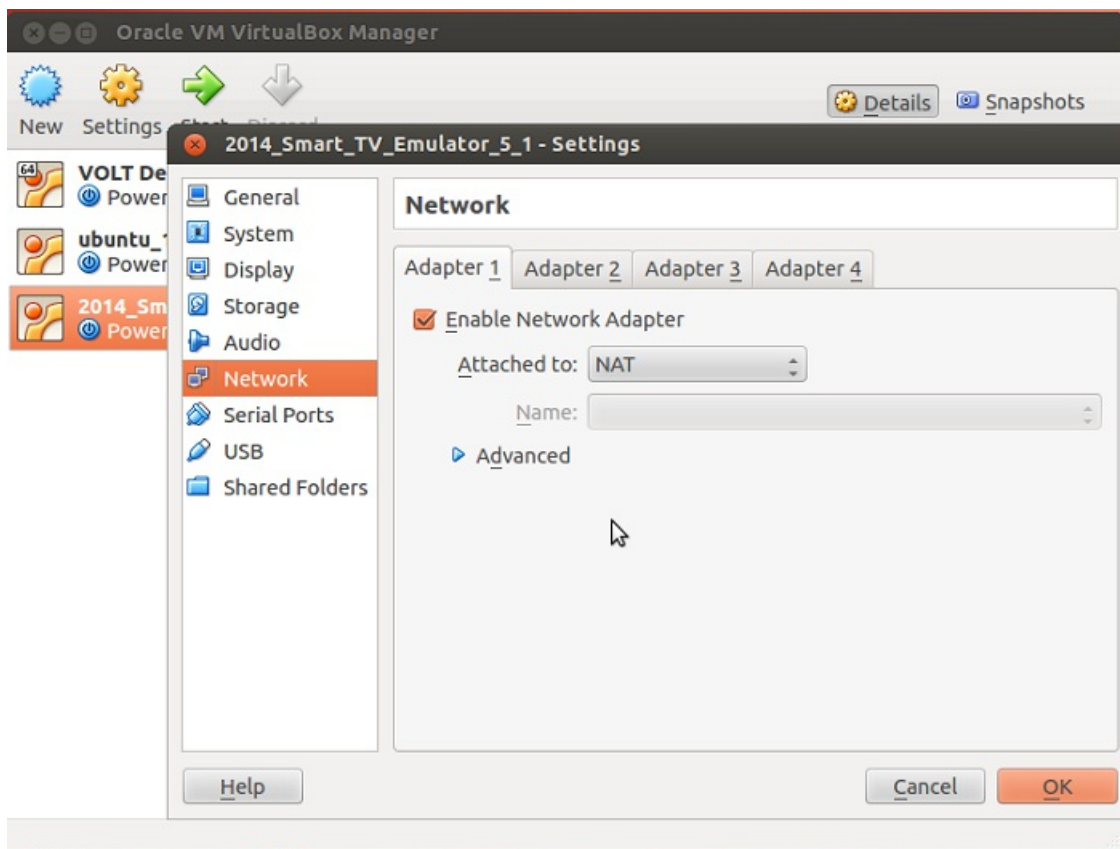
☒ NAT Network
 ☐ Bridge Network

IP address:

Please select **NAT** in your VirtualBox Network Adapter Setting.

Settings Path: VirtualBox > Setting > Network > Adapter1 > NAT (Attached to).

Figure 4 : Notification after successful switch to NAT mode



Bridge Network Settings

The user can switch to Bridged Network mode from NAT mode. If the user is already in Bridged Network mode, they can modify the network setting. Before saving any changes system will validate whether the given information is ok or not. If the given information contains any error, the system will prevent the user from saving the change and inform them about the error. Red text color indicates the error.

In case of switching from NAT mode to Bridged Network mod, the user must close the Emulator and change the network mode to Bridged Network in the emulator setting.

Previous State : Network mode is NAT

Action : User should follow the following steps:

- Select Bridge mode
- Update Network information
- Press OK

Output : Current Network mode is Bridged Network

☒ NAT Network ☐ Bridge Network

IP address:
 Subnet mask:
 Default gateway:
 Primary DNS:
 Secondary DNS:
☐ Proxy Enable
 Proxy URL:
 Proxy Port:

Figure 5 : Before switching to Bridged mode

☐ NAT Network ☒ Bridge Network

IP address:
 Subnet mask:
 Default gateway:
 Primary DNS:
 Secondary DNS:
☒ Proxy Enable
 Proxy URL:
 Proxy Port:

Figure 6 : Switch to Bridged Network

☐ NAT Network ☒ Bridge Network

IP address:

You switched to **BRIDGE** mode and changes **IP** settings.
 Please select **Bridged Adapter** in your VirtualBox Network Adapter Setting.
Settings Path: VirtualBox > Setting > Network > Adapter1 > Bridged Adapter (Attached to).

Figure 7 : Notification after successful switch to Bridged mode

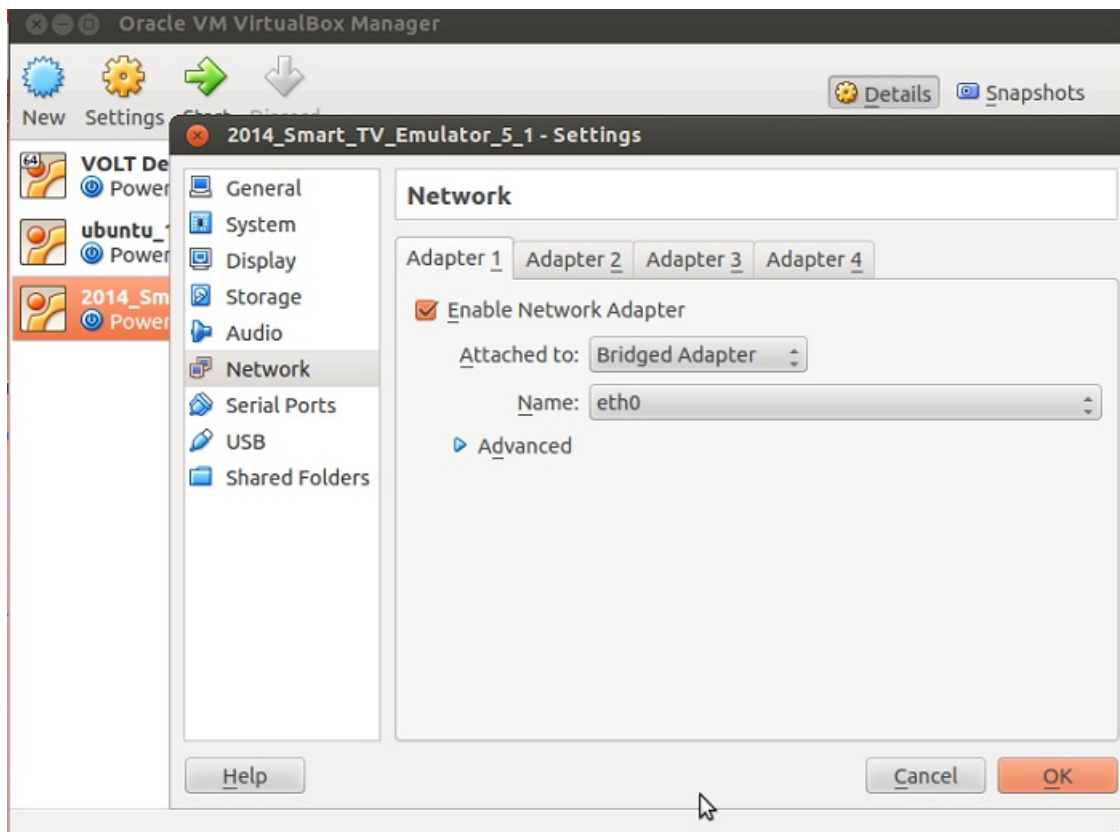


Figure 8 : Virtual Box Network setting change to Bridged mode

IP Address Settings

Initially the default IP will be loaded in the IP address field. The user can change this IP to an appropriate value for their system.

Previous State : Current IP is valid or invalid or no IP is assigned

Action : User give a valid IP address in the IP address input field and then presses OK button with confirming the change.

Output : IP will be changed to the given IP.

Figure 9 : IP Address filed to change IP

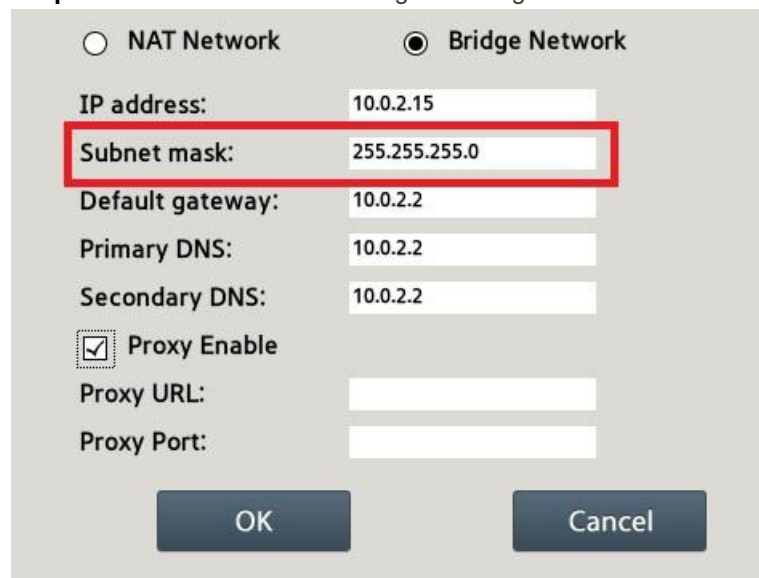
Subnet Mask Settings

The default subnet mask will be loaded when the user switches to Bridged Network mode initially. The user can change this mask and it will be validated upon saving the change.

Previous State : Current subnet mask is valid or invalid or not assigned

Action : The User gives a valid subnet mask in the subnet mask input field and then presses OK button. The system confirms the change.

Output : Subnet mask will be changed to the given subnet mask.



The image shows a network configuration dialog box. At the top, there are two radio buttons: "NAT Network" (unselected) and "Bridge Network" (selected). Below these are several input fields: "IP address:" with the value "10.0.2.15", "Subnet mask:" with the value "255.255.255.0", "Default gateway:" with the value "10.0.2.2", "Primary DNS:" with the value "10.0.2.2", and "Secondary DNS:" with the value "10.0.2.2". There is also a checkbox labeled "Proxy Enable" which is checked. Below the checkbox are two more input fields: "Proxy URL:" and "Proxy Port:". At the bottom of the dialog are two buttons: "OK" and "Cancel". The "Subnet mask:" input field is highlighted with a red rectangular border.

Figure 10 : Subnet Mask Field to change Subnet Mask

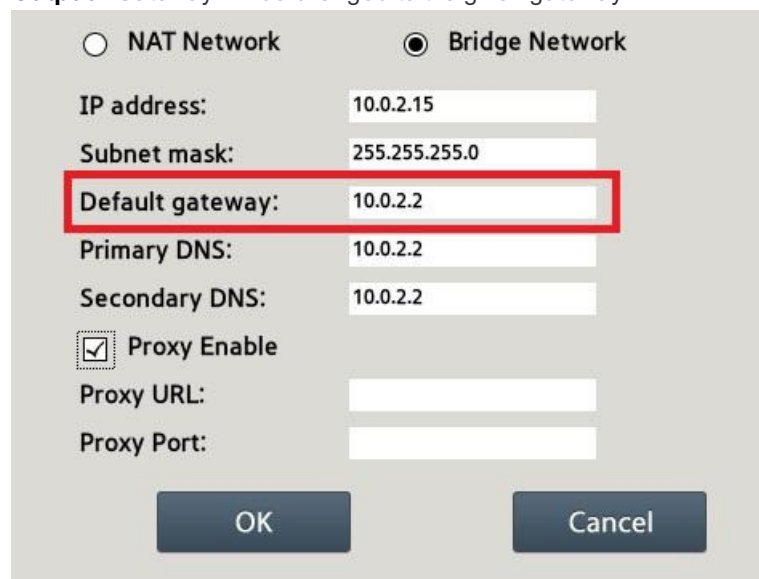
Gateway Settings

Initially the default gateway value will be shown in this field. The user can change this gateway address to a new value that is appropriate for their network.

Previous State : Current gateway is valid or invalid or not assigned

Action : The user gives a valid gateway address in the gateway address input field and then presses OK. The system confirms the change.

Output : Gateway will be changed to the given gateway.



The image shows the same network configuration dialog box as in Figure 10. The "Subnet mask:" field now contains the value "255.255.255.0". The "Default gateway:" input field, which previously contained "10.0.2.2", is now highlighted with a red rectangular border. All other fields and controls remain the same.

Figure 11 : Default Gateway field to change gateway

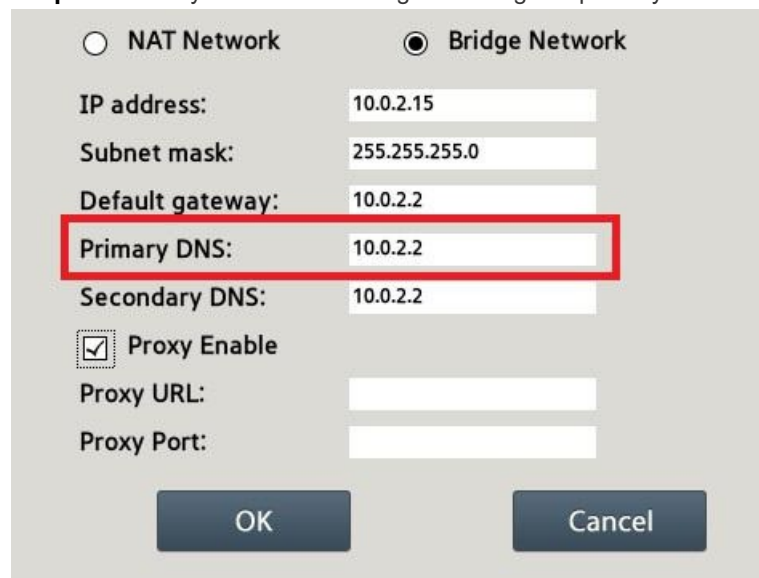
Primary DNS Settings

Initially the default Primary DNS value will be shown in this field. The user can change this Primary DNS address to a new value that is appropriate for their network.

Previous State : Current primary DNS is valid or invalid or not assigned

Action : The user gives a valid primary DNS address in the primary DNS input field and then presses OK button. The system confirms the change.

Output : Primary DNS will be changed to the given primary DNS.



☐ NAT Network ☒ Bridge Network

IP address: 10.0.2.15

Subnet mask: 255.255.255.0

Default gateway: 10.0.2.2

Primary DNS: 10.0.2.2

Secondary DNS: 10.0.2.2

☒ Proxy Enable

Proxy URL:

Proxy Port:

OK Cancel

Figure 12 : Primary DNS field to change DNS

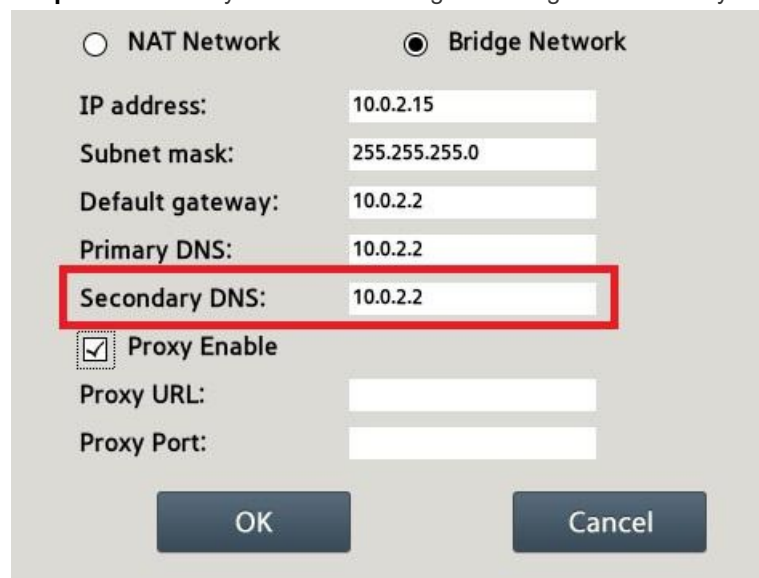
Secondary DNS Settings

The Secondary DNS is not mandatory but the user can set a valid secondary DNS value if they choose.

Previous State : Current secondary DNS is valid or invalid or not assigned

Action : The user gives a valid secondary DNS address in this field. The user presses the OK button. The system confirms the change.

Output : Secondary DNS will be changed to the given secondary DNS.



☐ NAT Network ☒ Bridge Network

IP address: 10.0.2.15

Subnet mask: 255.255.255.0

Default gateway: 10.0.2.2

Primary DNS: 10.0.2.2

Secondary DNS: 10.0.2.2

☒ Proxy Enable

Proxy URL:

Proxy Port:

OK Cancel

Figure 13 : Secondary DNS field to change secondary DNS

Proxy URL Settings

By default the proxy settings option is unchecked. To configure the proxy settings option, the user should check the "Proxy Enable" checkbox field. The proxy URL and port can then be set. Currently the proxy URL field only accepts IP address.

Previous State : Current proxy URL is valid or invalid or not assigned

Action : The user gives a valid proxy URL/IP in the proxy URL in this input field. The user presses the OK button. The system confirms the change.

Output : Proxy URL will be changed to the given proxy URL/IP.



The screenshot shows a network configuration window with two radio buttons at the top: "NAT Network" (unselected) and "Bridge Network" (selected). Below these are several input fields: "IP address:" (10.0.2.15), "Subnet mask:" (255.255.255.0), "Default gateway:" (10.0.2.2), "Primary DNS:" (10.0.2.2), and "Secondary DNS:" (10.0.2.2). A checkbox labeled "Proxy Enable" is checked. Below the checkbox, the "Proxy URL:" field is highlighted with a red rectangle. The "Proxy Port:" field is empty. At the bottom are "OK" and "Cancel" buttons.

Figure 14 : Proxy URL field to change proxy URL

Proxy Port Settings

The Second option in the Proxy setting is proxy port setting. In the proxy port setting field the user can set a valid port for a proxy. The proxy port should be within four digits.

Previous State : Current proxy port is valid or invalid or not assigned

Action : The user gives a valid proxy port in the proxy port input field. The user presses the OK button. The system confirms the change.

Output : Proxy port will be changed to the given proxy port.



This screenshot is identical to Figure 14, showing the same network configuration window. However, in this instance, the "Proxy Port:" field is highlighted with a red rectangle, while the "Proxy URL:" field is no longer highlighted.

Figure 15 : Proxy port field to change proxy port

Possible Problems

Sometimes user may face some problems with saving the network information which is mostly related with the validation issue. To avoid this error please follow the standard input format for every field like IP, netmask, DNS etc.

Configuring the network settings of a virtual machine may take a long time based on PC performance.

The user may experience unexpected errors while giving URL in the proxy URL field because currently this field only accepts IP addresses. To avoid this error please use any valid IP for proxy.