

# 2.1 Network Configuration

After logging in you can set up the Network configuration in two steps:

- 1. Assign an IP address to each NIC on your server
- 2. Assign a default gateway and one or two DNSes

## 2.1.1 Assign an IP address to each NIC

To achieve this first goal you select the **Interfaces** in the section **SERVER CONFIGURATION**, from the main menu.

ApplianceNetworkInterface List

Name	Alias	Address
eth0	PUBLIC	176.9.250.118/255.255.255.0
eth1	VPN	10.0.1.10/255.255.255.0

figure 1. the interface(s) detected

In the page body an interface such the one in fig. 1 shows you all the NIC actually detected. Click on the NIC's name (in our example it's "eth0").

Edit ApplianceNetworkInterface

Name: eth0

Alias: PUBLIC

Address: 176.9.250.118

Netmask: 255.255.255.0


 Update

figure 2. edit the nic configuration


The page body will change as in fig. 2.

Configure the eth0 interface with the following parameters:

- IP address
- Network Mask


When you're done you can click the **'Update'** button in the form's bottom. This applies the new configuration as you can see it in the page body:

ApplianceNetworkInterface List

 Appliance Network Interface updated

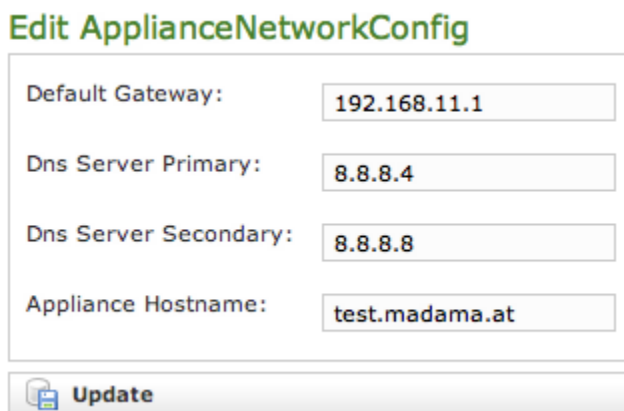
Name	Address
eth0	176.9.233.97/255.255.255.248

figure 3. The NIC configuration is changed

 Pay attention to change your workstation IP accordingly to the new server's NIC configuration: else you can lose the access to the server and to the server's Web console.

## 2.1.2 Assign a default gateway and DNS(es)

To complete the network configuration you should probably setup your default gateway and almost one DNS server as well. Such configurations are possible by **Network Configuration** in the section **SERVER CONFIGURATION**, from the main menu.



**Edit ApplianceNetworkConfig**

Default Gateway:	192.168.11.1
Dns Server Primary:	8.8.8.4
Dns Server Secondary:	8.8.8.8
Appliance Hostname:	test.madama.at


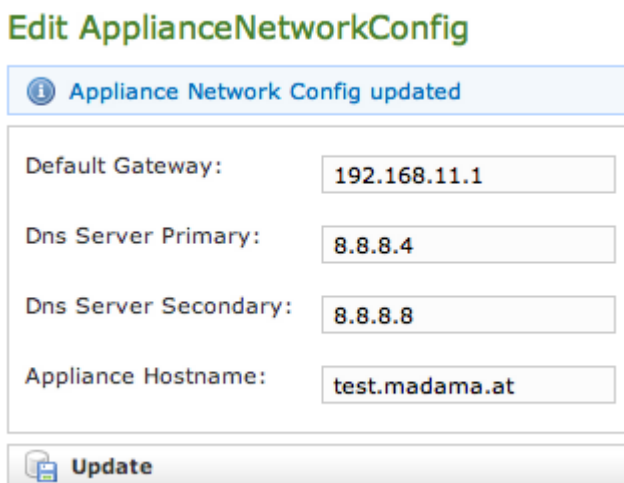
 **Update**

figure 4. edit network configuration


The page body will show the "Edit Appliance Network Config" as in [figure 4. edit network configuration](#). Configure the eth0 interface with the following parameters:

- **Default Gateway (mandatory to reach out the Internet)**
- **Dns Server Primary (mandatory to resolve domains and hostnames into IP addresses)**
- **Dns Server Secondary (optional)**
- **Appliance hostname**

When you're done you can click the **'Update'** button in the form's bottom. This applies the new configuration as you can see it in the page body:



**Edit ApplianceNetworkConfig**

 **Appliance Network Config updated**

Default Gateway:	192.168.11.1
Dns Server Primary:	8.8.8.4
Dns Server Secondary:	8.8.8.8
Appliance Hostname:	test.madama.at


 **Update**

figure 5. network configuration updated



The gateway configuration can break up the communication between the server and your workstation. Take care to check both before applying.

## 2.1.3 Manual Network configuration

Both the below procedures are possible via console access, using the SSH internal server. Gain a privilege access to the console using the "root" user.

### 2.1.3.1 Assign an IP address to each NIC

To manually assign an IP address to a specified NIC you should use the **iface-configure.sh** script located in **/data/bin/**. It accept the card name, the IP address to assign and its netmask as in the following example:

```
/data/bin/iface-configure.sh eth0 78.47.213.169 255.255.255.0
```

After you press the Enter key, the script configures and restarts the network configuration.

```
PrivateServer Devel
Kernel 2.6.35.11-83.fc14.x86_64 on an x86_64 (tty1)
ha1 login: root
Password:
[root@ha1 ~]# /data/bin/iface-configure.sh eth0 176.9.233.100 255.255.255.248
eth0 176.9.233.100 255.255.255.248
Shutting down interface eth0: [ OK ]
Shutting down loopback interface: [ OK ]
Bringing up loopback interface: [ OK ]
Bringing up interface eth0: [ OK ]
[root@ha1 ~]# _
```



Beware that you pass to the script the correct values, else you could cut yourself out of the server.

To configure the NIC properly you **must** pass the three options specified above.



If called with no options, then the above script returns the actual NICs configuration.

After the script exits please restart the tomcat service as well using the command:

```
/data/bin/restart-http.sh
```

### 2.1.3.2 Assign a default gateway and DNS(es)

To manually assign an IP address to a specified NIC you should use the **net-configure.sh** script located in **/data/bin/**. It accept the gateway IP address, two DNS addresses and hostname, as in the following example:

```
/data/bin/net-configure.sh 46.4.25.83 8.8.8.8 9.9.9.9 privateserver.local
```

After you press the Enter key, the script configures and restarts the network configuration.

You can pass to the script just the gateway and the first DNS IP addresses. If secondary DNS is missing, pass the empty string ("") as parameters



Beware you passed the correct values to the script or else you could cut yourself out of the server.

To configure the NIC properly you **must** pass almost the gateway and the first DNS server IP.

If called with no options, then the script return the actual network configuration.

```
[root@ha1 ~]# /data/bin/net-configure.sh 176.9.233.102 8.8.8.8
setnetconf 176.9.233.102 8.8.8.8
176.9.233.102,8.8.8.8,,
Shutting down interface eth0: [ OK ]
Shutting down loopback interface: [ OK ]
Bringing up loopback interface: [ OK ]
Bringing up interface eth0: [ OK ]
[root@ha1 ~]# _
```

## 2.1.4 Configure static routes



The static routes configuration is an advanced topic. It has to be done only if strictly necessary and can lead to serious communication issues if not perfectly understood.



The following lines are partially excerpted from the [http://www.centos.org/docs/5/html/5.1/Deployment\\_Guide/s1-networkscripts-static-routes.html](http://www.centos.org/docs/5/html/5.1/Deployment_Guide/s1-networkscripts-static-routes.html) page. All rights granted.

Static route configuration is stored in a `/etc/sysconfig/network-scripts/route-interface` file. For example, static routes for the `eth0` interface would be stored in the `/etc/sysconfig/network-scripts/route-eth0` file. The `route-interface` file has two formats: IP command arguments and network/netmask directives. We will refer just to the first case.

### IP Command Arguments Format

Define a default gateway on the first line. This is only required if the default gateway you set above is not good for this NIC

```
default X.X.X.X dev interface
```

`X.X.X.X` is the IP address of the default gateway. The `interface` is the interface that is connected to, or can reach, the default gateway.

Define a static route. Each line is parsed as an individual route:

```
X.X.X.X/X via X.X.X.X dev interface
```

`X.X.X.X/X` is the network number and netmask for the static route. `X.X.X.X` and `interface` are the IP address and interface for the default gateway respectively. The `X.X.X.X` address does not have to be the default gateway IP address. In most cases, `X.X.X.X` will be an IP address in a different subnet, and `interface` will be the interface that is connected to, or can reach, that subnet. Add as many static routes as required.

The following is a sample `route-eth0` file using the IP command arguments format. The default gateway is 192.168.0.1, interface `eth0`. The two static routes are for the 10.10.10.0/24 and 172.16.1.0/24 networks:

```
default 192.168.0.1 dev eth0
10.10.10.0/24 via 192.168.0.1 dev eth0
172.16.1.0/24 via 192.168.0.1 dev eth0
```

Static routes should only be configured for other subnets. The above example is not necessary, since packets going to the 10.10.10.0/24 and 172.16.1.0/24 networks will use the default gateway anyway. Below is an example of setting static routes to a different subnet, on a machine in a 192.168.0.0/24 subnet. The example machine has an `eth0` interface in the 192.168.0.0/24 subnet, and an `eth1` interface (10.10.10.1) in the 10.10.10.0/24 subnet:

```
10.10.10.0/24 via 10.10.10.1 dev eth1
```



### Duplicate Default Gateways

If the default gateway is already assigned from DHCP, the IP command arguments format can cause one of two errors during start-up, or when bringing up an interface from the down state using the `ifup` command: "RTNETLINK answers: File exists" or 'Error: either "to" is a duplicate, or "x.x.x.x" is a garbage.', where `x.x.x.x` is the gateway, or a different IP address. These errors can also occur if you have another route to another network using the default gateway. Both of these errors are safe to ignore.

## 2.2 Network Segregation