AKIPS Network Monitor
Installation, Configuration & Upgrade Guide
Version 17

AKIPS Pty Ltd

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1 Minimum Hardware Requirements

Network Size	Minimum Platform
Smallish • 5,000 interfaces • 10,000 flows/sec	• Virtual Machine • 1 dedicated CPU core • 4 GB memory • 100 GB disk (fixed size)
Medium • 50,000 interfaces • 100,000 flows/sec	• Virtual Machine • 2 dedicated CPU cores • 8 GB memory • 200 GB disk (fixed size)
Large • 100,000 interfaces • 500,000 flows/sec	• Virtual Machine • 4 dedicated CPU cores • 16 GB memory • 500 GB disk (fixed size)
Huge • 500,000 interfaces • 500,000 flows/sec	• Virtual Machine • 8 dedicated CPU cores • 32 GB memory • 1 TB disk (fixed size)
Humongous! • Over 1 million interfaces • Over 1 million flows/sec	Contact AKIPS. Probably works OK in a virtual machine. May require dedicated hardware. • 8 dedicated CPU cores • Lots of memory (64 GB to 128 GB) • Multiple TB of disk

1.1 Physical Hardware

AKIPS highly recommends installing and evaluating the Network Monitor in a virtual machine environment before investing in any physical hardware. This is because all network environments are different (e.g. number of devices, interfaces, traps, syslog, users, netflow, etc.) and a one-size-fits-all hardware specification is not appropriate. AKIPS Network Monitor has sufficient internal statistics and graphs to indicate how well it is performing.

AKIPS Network Monitor does not require specialised hardware to scale to 1,000,000 interfaces (e.g. SSD, 10G Ethernet), but it may require a decent dedicated disk system instead of a SAN.

Contact AKIPS Tech Support for hardware recommendations if your installation is very large.

1.2 Virtual Machine

AKIPS Network Monitor has been engineered to scale within a virtual machine environment. The amount of CPU, RAM, and disk is determined by many things, including the number of devices/interfaces/MIB objects being monitored, amount of SNMP traps and syslog, and amount of Netflow data being stored.

AKIPS recommends the following *minimum* virtual environment:

- CPU: 1 CPU core (64bit, dedicated CPU to the VM)
- Memory: 4 GB
- Disk: 100 GB (fixed size only, not dynamically resized)

AKIPS Network Monitor is known to work in the following VM environments:

- Microsoft Hyper-V
- Oracle VirtualBox
- VMWare

IMPORTANT NOTES:

- **AKIPS is 64 bit only**
- **Do NOT use a dynamically sized virtual disk. Only use a fixed size disk.**
- **The VM guest network interface must be configured to allow promiscuous mode.**

Use the *Admin* ⇛ *Performance Graphs* menus after installation to determine how much CPU, memory, and disk is being consumed. Make sure there is ample free CPU and memory. Adding a second CPU core will significantly decrease the number of *context switches*, which will improve performance.

1.3 VMware

Use the following settings for a VMware guest:

- Emulated LSI SCSI controller
- Promiscuous mode allowed for the VM

1.4 VirtualBox

Use the following settings for VirtualBox

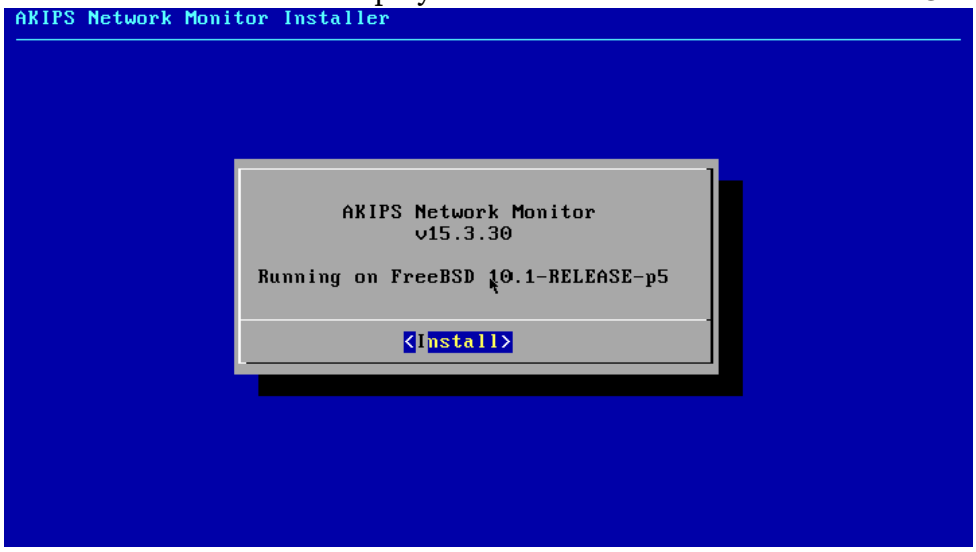
- Chipset ICH3
- SATA controller
- Fixed sized VDI (not dynamically resized)
- Turn off audio, USB and serial ports
- Network Bridge Adapter
- Promiscuous mode = Allow VMs

2 Software Installation

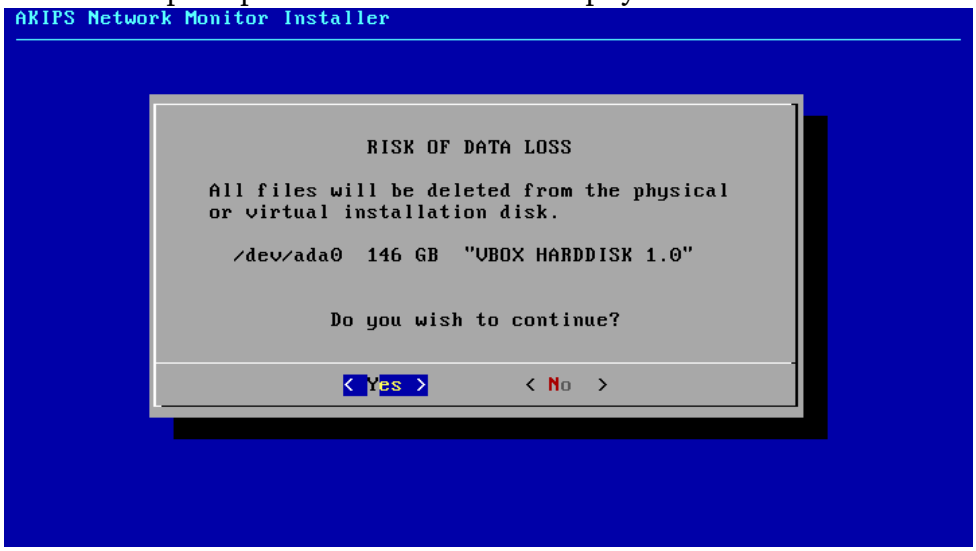
IMPORTANT NOTES:

- No registration is required to download AKIPS Network Monitor.
- No license key is required to install and configure AKIPS Network Monitor.
- A license key is required to unlock data history older than 2 days. Some features may require a license key, e.g. alerting or backup.

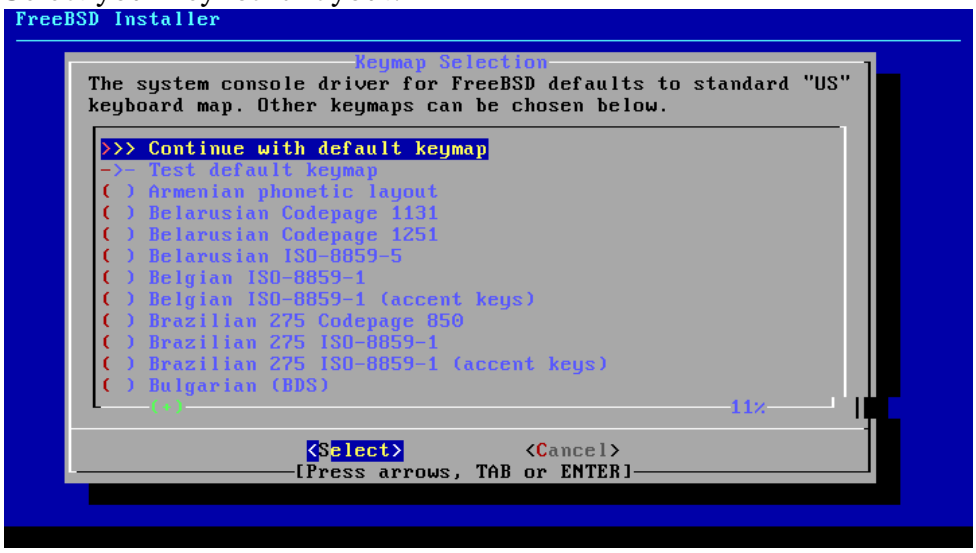
1. Download the AKIPS installation CD ISO image. It is assumed that the user knows how to either:
   (a) Boot a virtual machine with a CD ISO image
   (b) Write a raw CD ISO image to a blank CD and boot a physical PC
2. If using a virtual machine, make sure the guest VM is configured for a 64-bit guest OS and the interface allows promiscuous mode.
3. If using VMWare, make sure the emulated disk controller is LSI.
4. Boot the AKIPS CDROM ISO.
5. Initial Screen. This will display the version of AKIPS and FreeBSD® being installed.



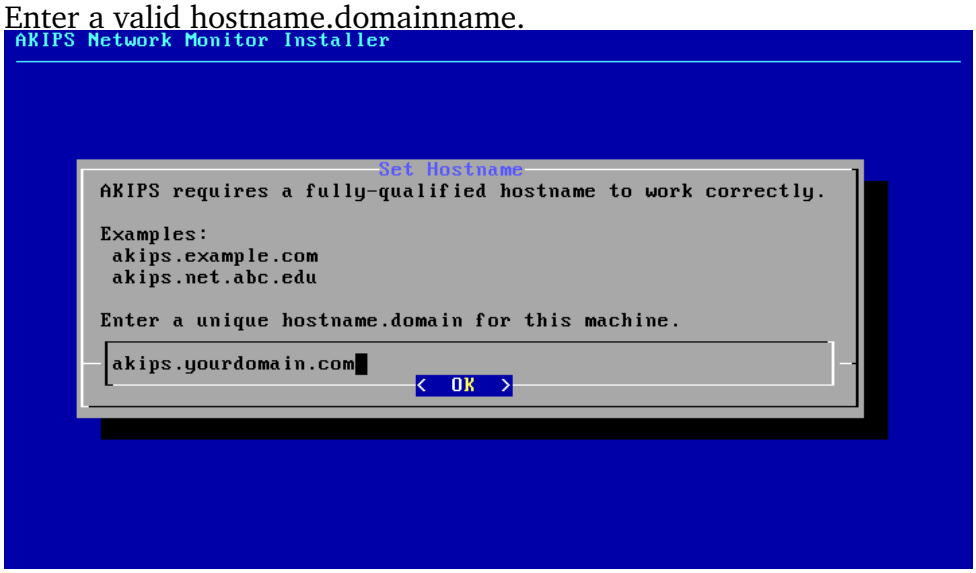
6. You will be prompted that all data on the physical or virtual disk will be destroyed.



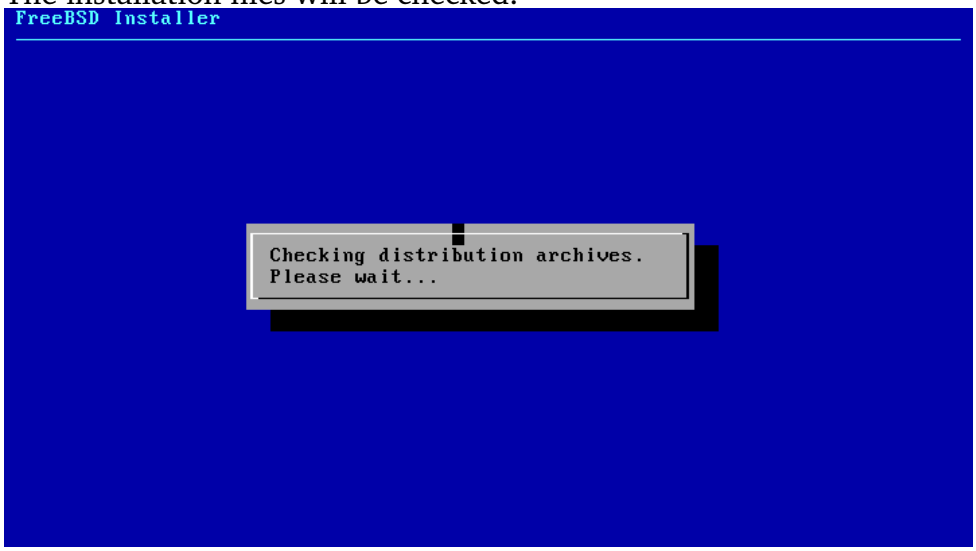
7. Select your keyboard layout.



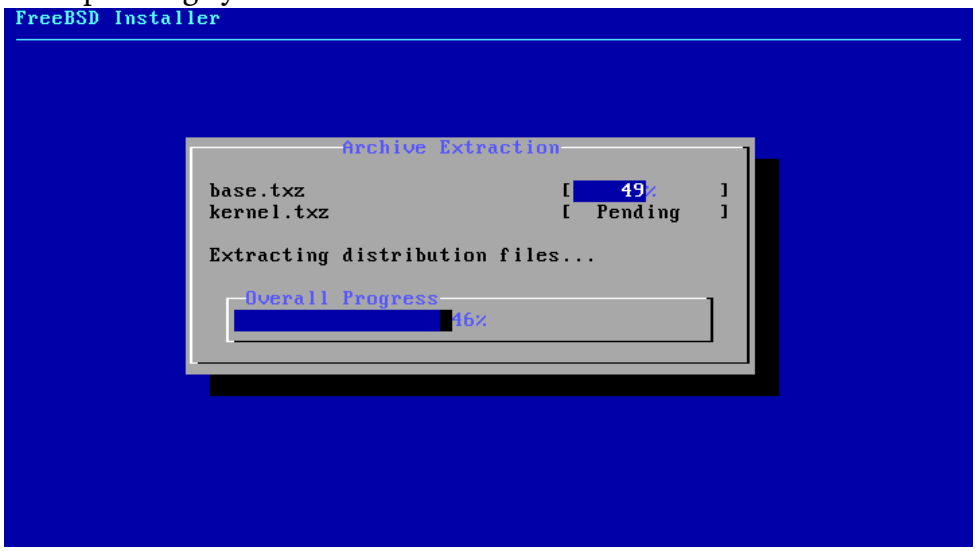
8. Enter a valid hostname.domainname.



9. The installation files will be checked.

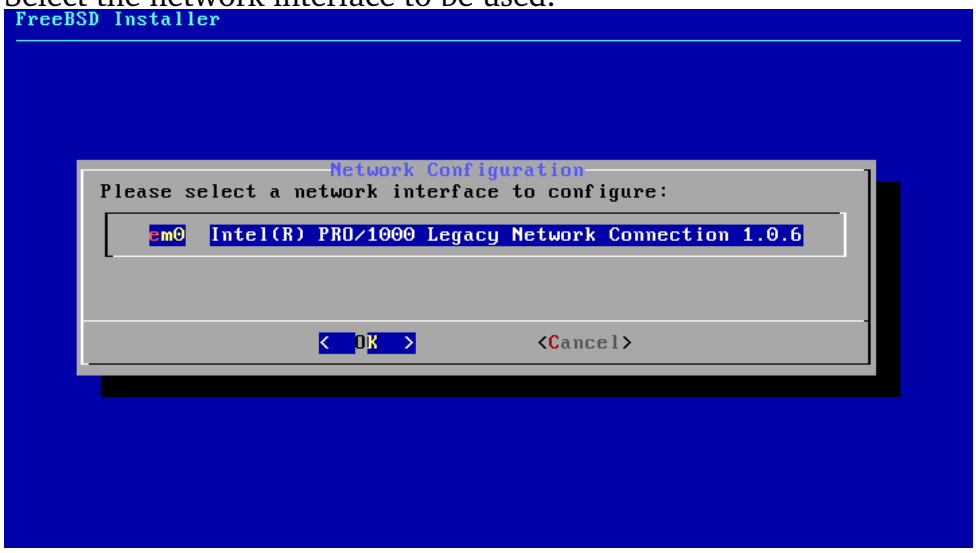


10. The operating system files will be extracted.

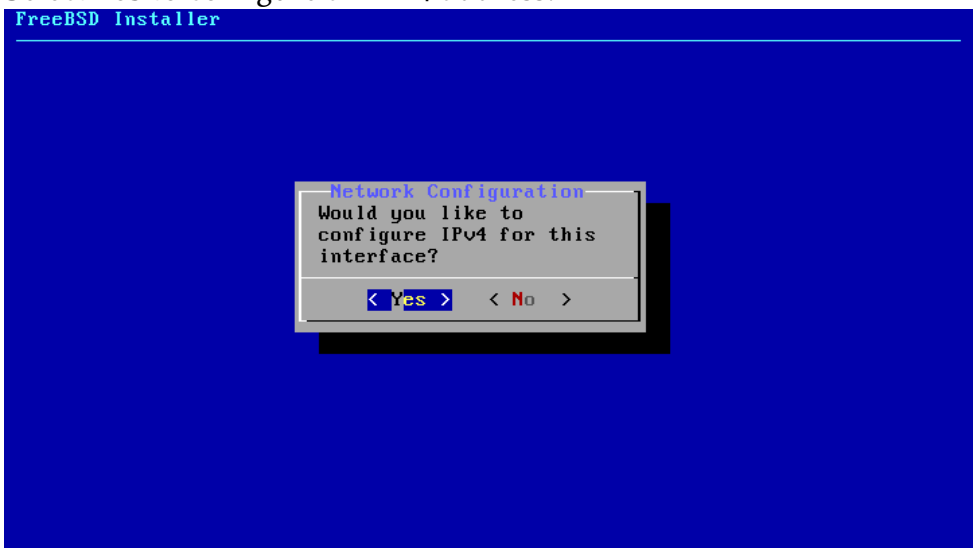


11. Enter a password for the *admin* user.

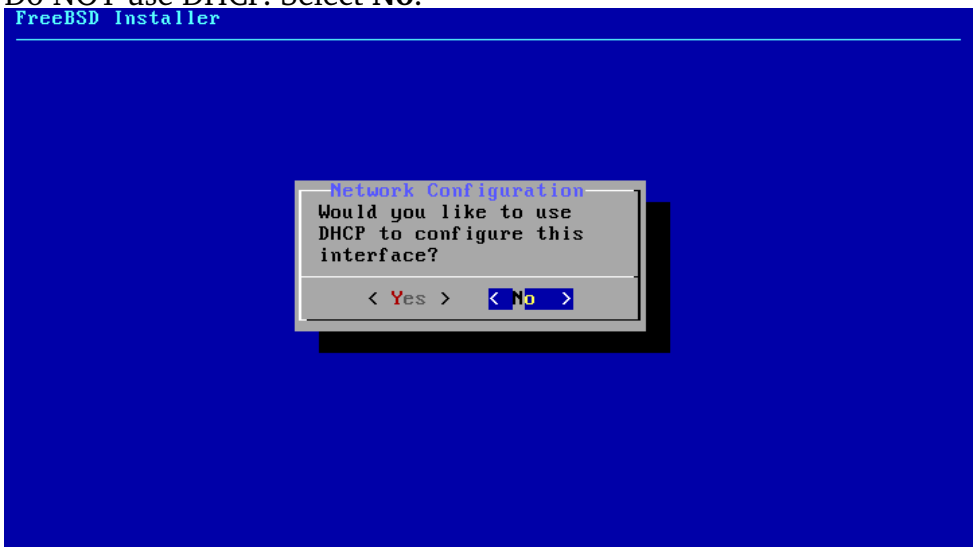
12. Select the network interface to be used.



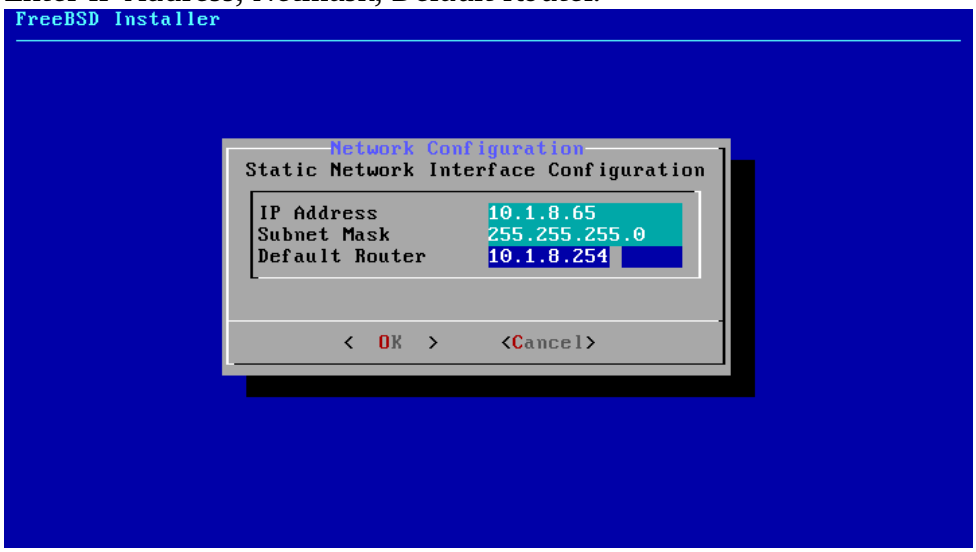
13. Select **Yes** to configure an IPv4 address.



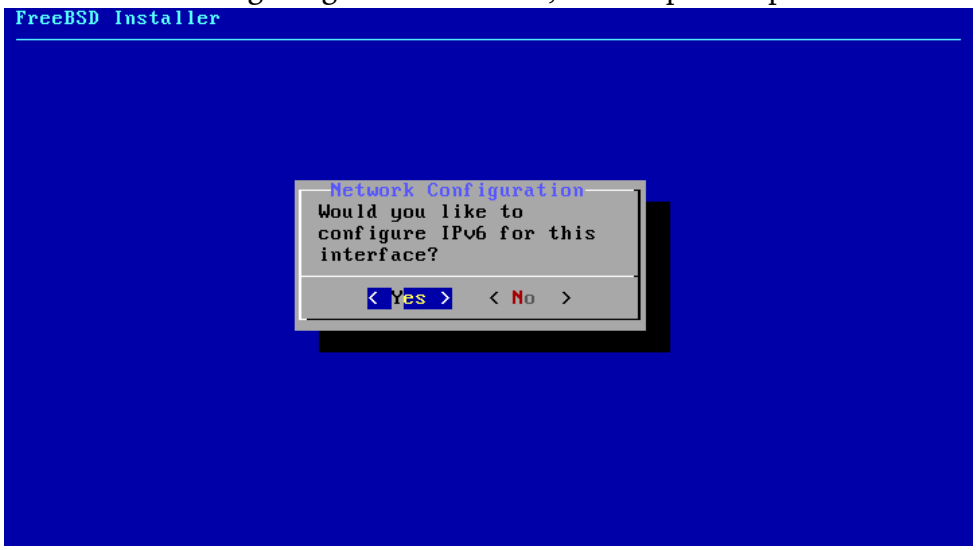
14. Do NOT use DHCP. Select **No**.



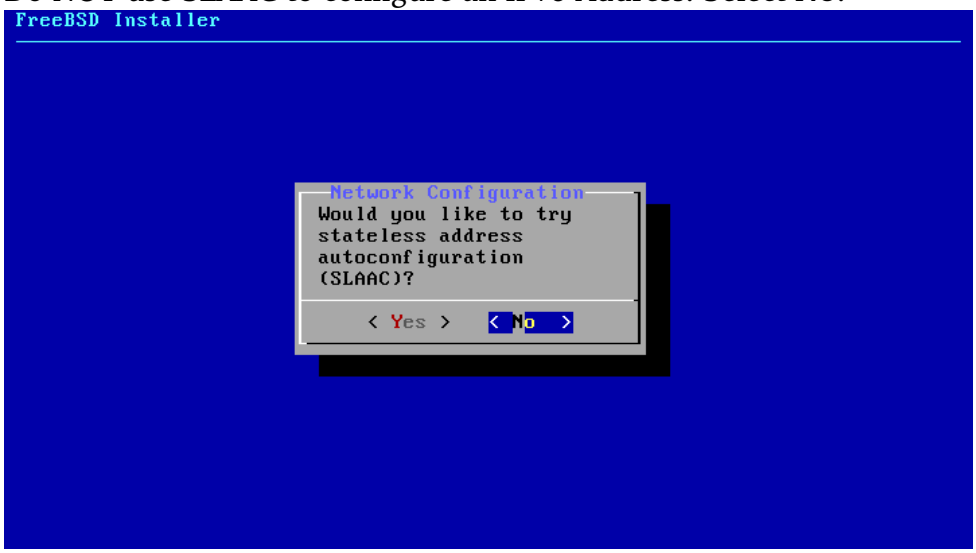
15. Enter IP Address, Netmask, Default Router.



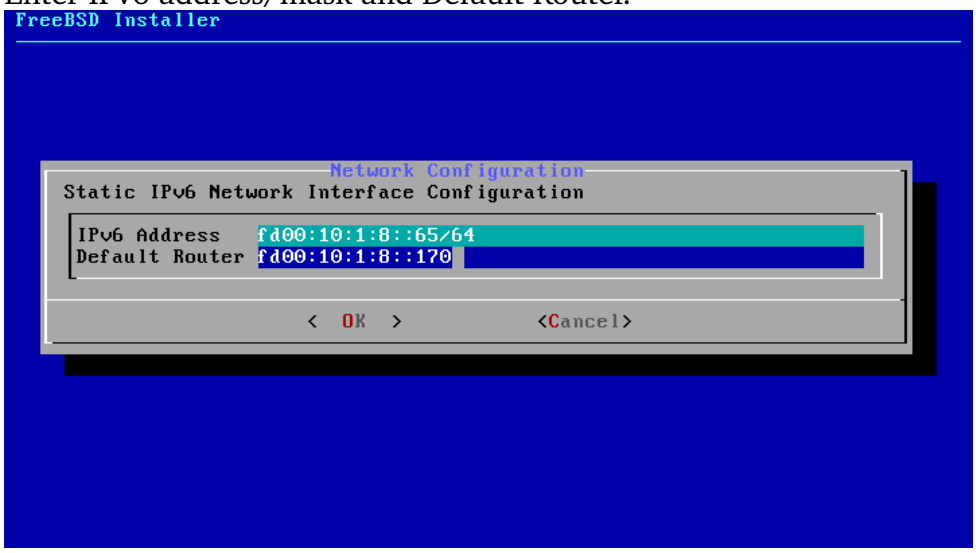
16. Select **Yes** if configuring a IPv6 address, else skip to step 19.



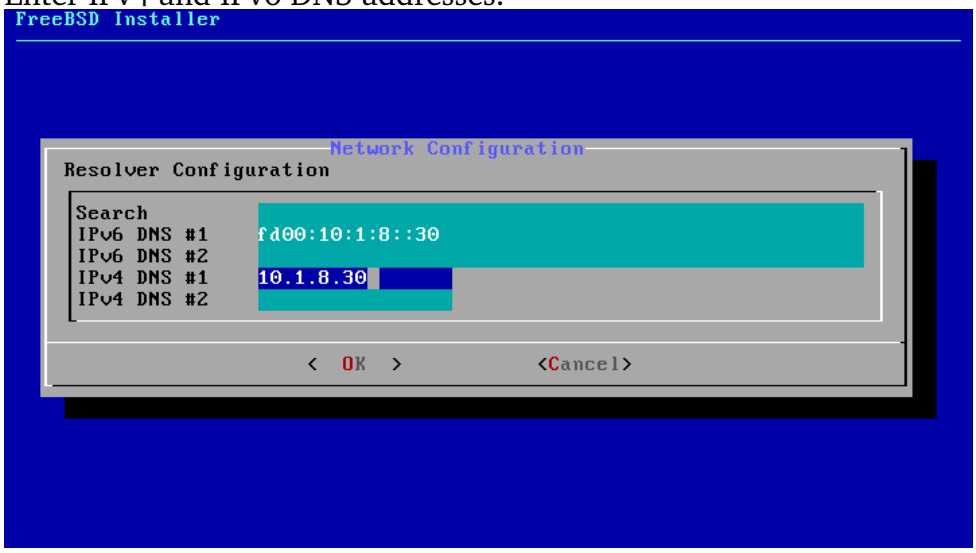
17. Do NOT use SLAAC to configure an IPv6 Address. Select **No**.



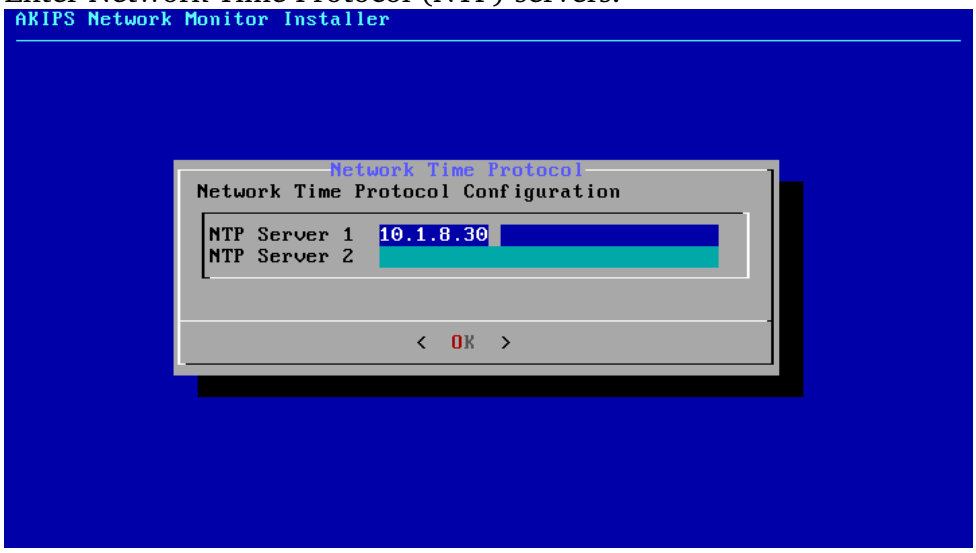
18. Enter IPv6 address/mask and Default Router.



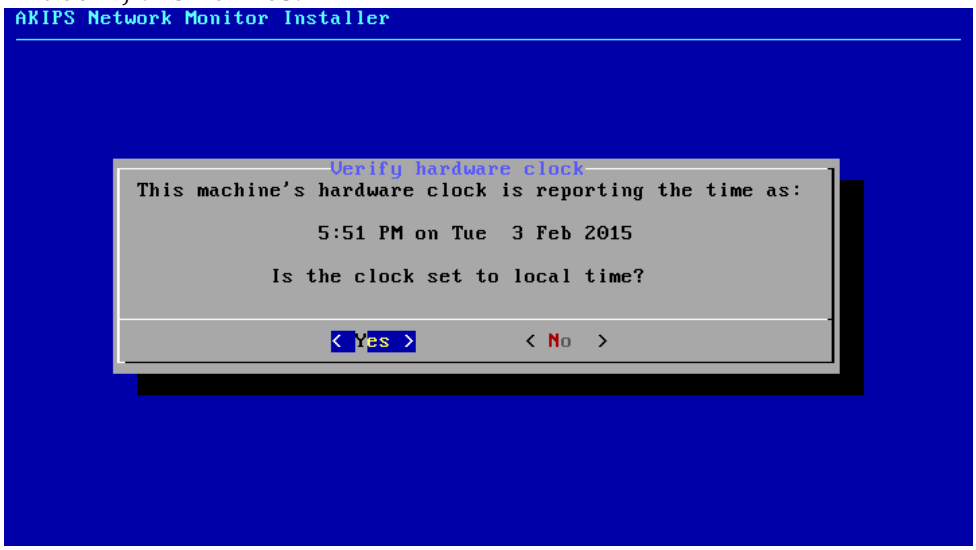
19. Enter IPv4 and IPv6 DNS addresses.



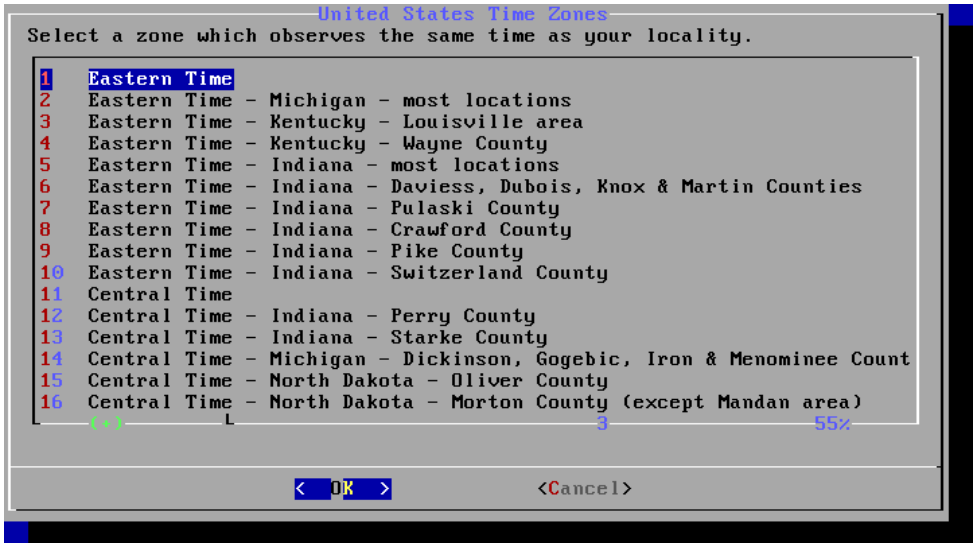
20. Enter Network Time Protocol (NTP) servers.

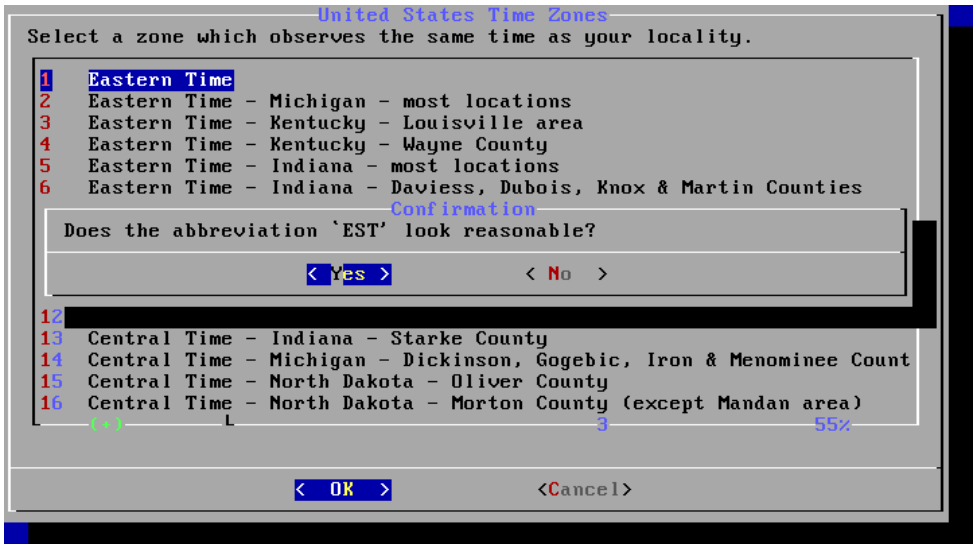


21. Select **Yes** if the displayed time is set to local time. Select **No** if the displayed time is UTC. If in doubt, answer **Yes**.

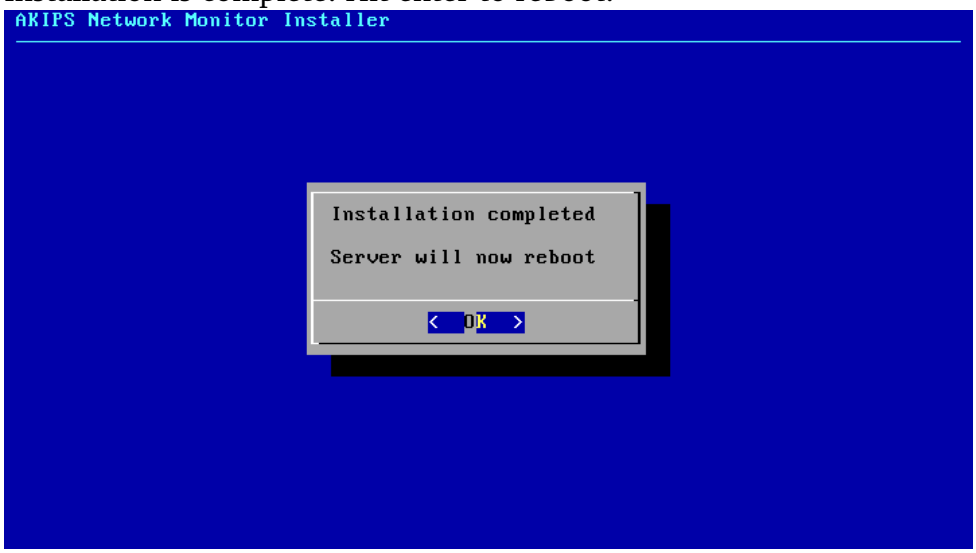


22. Select time zone.





23. Installation is complete. Hit enter to reboot.



24. After the server has rebooted, point your browser at your AKIPS server IP address and login as the ***admin*** user.

3 Software Upgrade

There are two types of AKIPS CDROM ISO images.

1. Full OS and AKIPS software installation/upgrade ISO. This ISO can be used for either a full clean installation, or an upgrade of an existing installation. An upgrade of the OS on a running system only takes a few minutes to complete.
2. AKIPS software upgrade only ISO. This ISO can be used to upgrade an existing installation.

To upgrade an existing system:

1. Download the specified CDROM ISO to your PC from the AKIPS web site.
2. Login to your AKIPS server as *admin*.
3. Go to the *Admin* ⇛ *Update* menu.
4. Choose the ISO image to upload.
5. Click *Start Upgrade*.

When performing a software only upgrade, the upgrade script will stop and remove the old version, then install the new version. This typically takes about one minute.

When performing a complete OS and software upgrade, verbose output will be displayed on its progress. The system will reboot after the upgrade. This typically takes only a few minutes.

4 Initial Configuration

Login to the AKIPS server as the ***admin*** user.

4.1 Operating System

Go to **Admin** ⇛ **System Settings** and fill in each of the appropriate values for NTP and Email servers. Changes to these settings take effect on the next reboot.

4.2 Network Discovery

1. Go to **Admin** ⇛ **Discover/Rewalk** and fill in each section as per the help documentation and examples.
2. Configure some initial ping ranges. Start out with a small portion of your network.
3. Configure your SNMP parameters.
4. Configure your device matching rules.
5. **Save** and run the **Discover**.
6. Wait until the discover has completed. It typically takes a few minutes to complete. Each stage of the discover will output logging information.
7. Wait 5 minutes for some data to be collected and view some reports.
   For example:
   - **TopN** ⇛ **IPv4 Ping Round Trip Time**
   - **TopN** ⇛ **Interface Utilisation**

4.3 Syslog

Configure some routers and switches to send syslog messages to the AKIPS server. Syslog messages can be viewed in **Tools** ⇛ **Syslog** control panel.

4.4 SNMP Traps

Configure some routers and switches to send SNMP Trap messages to the AKIPS server. Traps can be viewed in **Tools** ⇛ **SNMP Traps** control panel.

4.5 Netflow

1. Configure a router to send Netflow records to the AKIPS Server on port number 4739, 9995 or 9996. AKIPS supports Netflow v5, v9 and IPFIX.
2. Wait 5 minutes for some flow records to be processed and then check the **Tools** ⇛ **Netflow** control panel. The IP Address of the router will be displayed in the **Meter** dropdown option.
3. Go to **Admin** ⇛ **Netflow Meters** and set:
   (a) Meter Title
   (b) Dashboard checkbox
4. Go to **Dashboards** ⇛ **Netflow**. Each of the protocol and address labels are clickable.