

AKiPS™

Network Monitoring Software

Install & upgrade guide



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Chapter 1

About this guide

The AKIPS *Install & upgrade guide* assists users to install and upgrade AKIPS Network Monitoring Software.

The following **Abbreviations** (see 1.1), **Text conventions** (see 1.2) and **Syntax** (see 1.3) are used throughout AKIPS's guides.

1.1 Abbreviations

3DES	triple data encryption standard
ADB	AKIPS database
AES	advanced encryption standard
AKIPS	Always Keep It Purely Simple :)
API	application programming interface
ARP	address resolution protocol
AS	autonomous system
BFD	bidirectional forwarding detection
BGP	border gateway protocol
CA	certificate authority
CBQoS	class-based quality of service
CDP	Cisco discovery protocol
CGI	computer gateway interface
CIDR	classless inter-domain routing
CLI	command line interface
CPU	central processing unit
CSR	certificate signing request
CSV	comma-separated values
cURL	client url
DHCP	dynamic host configuration protocol
DN	distinguished name
DNS	domain name system
FQDN	fully qualified domain name
GB	gigabyte
GRE	generic routing encapsulation
GUI	graphical user interface
HTTP	hypertext transfer protocol
HTTPS	hypertext transfer protocol secure
IF-MIB	interface MIB
IP	internet protocol
IPFIX	internet protocol flow information export
IPSLA	internet protocol service level agreement
IS-IS	intermediate system to intermediate system

LAN	local area network
LDAP	lightweight directory access protocol
LLDP	link layer discovery protocol
MAC	media access control
MIB	management information base
NAS	network-attached storage
NDP	neighbour discovery protocol
NIC	network interface card
NMS	network-monitoring software
NTP	network time protocol
OID	object identifier
OS	operating system
PCRE	Perl-compatible regular expressions
PEM	privacy-enhanced mail
PFX	personal information exchange format
PKCS	public key cryptography standards
png	portable network graphics
POSIX	portable operating system interface
PSSH	parallel secure shell
QoS	quality of service
RADIUS	remote authentication dial-in user service
RAID	redundant array of independent disks
RAM	random-access memory
RTT	round-trip time
SAN	storage area network
SCSI	small computer system interface
SHA	secure hash algorithm
SMI	structure of management information
SMTP	simple mail transfer protocol
SNMP	simple network management protocol
SSH	secure shell
SSL	secure sockets layer
STARTTLS	start transport layer security
stderr	standard error
sysadmin	system administrator

TACACS+	terminal access controller access-control system plus
TCP	transmission control protocol
TLS	transport layer security
TOS	type of service
UID	user identifier
UDP	user datagram protocol
UTC	coordinated universal time
VLAN	virtual local area network
VM	virtual machine
WAN	wide area network

1.2 Text conventions

Menu options are in **bold**.

E.g. **Go to Admin > System > System Settings**

Bold is also used for emphasis or clarity.

E.g. The **backup server** must have double the disk space of the **production server**.

Links to other parts of this guide are shown as **red** boxes.

E.g. The following **Abbreviations** (see 1.1), **Text conventions** (see 1.2) and **Syntax** (see 1.3) are used throughout AKIPS's guides.

Websites and email addresses are in **blue**.

If they are also hyperlinks, they are shown as **cyan** boxes.

E.g. <https://www.akips.com>

Code is in **monospace**.

Further:

Command syntax is in **red monospace**.

E.g. `{ddd} {hh:mm} to {hh:mm}`

Input (by the user) is in **blue monospace**.

E.g. `tf dump last7d`

Output (by AKIPS) is in **cyan monospace**.

E.g. `cisco-74-1-1 sys ip4addr = 10.74.1.1`

1.3 Syntax

Syntax may be presented in this guide across multiple lines due to layout constraints. When using AKIPS, you will need to run commands in a single line.

Parameters (fields expecting a substituted value) are contained within { } (braces).

E.g. `{type} {value}`

Optional parameters are contained within [] (square brackets).

E.g. `[index,{description}]`

Optional parameters may be nested.

E.g.

`mlist {type} [{parent regex} [{child regex} [{attribute regex}]]]`

For values separated by a | (pipe), choose one option only.

E.g. `[any|all|not group {group name} ...]`

Multiple parameters will have an ... (ellipsis).

E.g. `not group {group name} ...`

Chapter 2

Platform requirements

AKIPS is engineered for a VM environment.

Before installing AKIPS, ensure that your platform meets the following minimum requirements:

Number of interfaces	Minimum requirements
up to 100,000	VM 2+ CPU cores 8 GB RAM 200 GB disk space
100,000 to 250,000	VM 4+ CPU cores 16 GB RAM 500 GB disk space
250,000+	VM 8+ CPU cores 32 GB RAM 1 TB disk space

If you are installing AKIPS onto a backup server, double the disk space listed. (Refer to the 'Backing up AKIPS' chapter in the *AKIPS Backup & restore guide*.)

To view the video *Deploying AKIPS on a VM vs hardware*, visit <https://vimeo.com/manage/videos/524030745>

2.1 Software

2.1.1 CPU

AKIPS requires dedicated CPUs.

CPU cores which are shared between VMs on a VM host will lead to CPU resource starvation.

This typically leads to:

- jumps in time
- gaps in polling
- false outage reports.

2.1.2 Storage

AKIPS runs a realtime database. Its performance depends on sequential read/write performance, and minimal storage fragmentation and latency.

AKIPS requires:

- preallocated/thick (not thin) provisioning
- eager (not lazy) zeroed.

2.1.3 VMware

When configuring a VMware guest:

- use an emulated LSI SCSI controller
- lock the MAC address to the VM.

2.2 Hardware

We recommend installing and evaluating AKIPS in a VM environment before investing in any hardware.

All hardware must be compatible with our FreeBSD OS.

AKIPS monitors 1,000,000+ interfaces without specialised hardware. However, it may require a dedicated RAID storage system instead of a SAN or NAS. In this case, contact support@akips.com to discuss your specific configuration needs.

Chapter 3

Installing AKIPS

To view the video *Installing AKIPS*,
visit <https://vimeo.com/manage/videos/521646329>

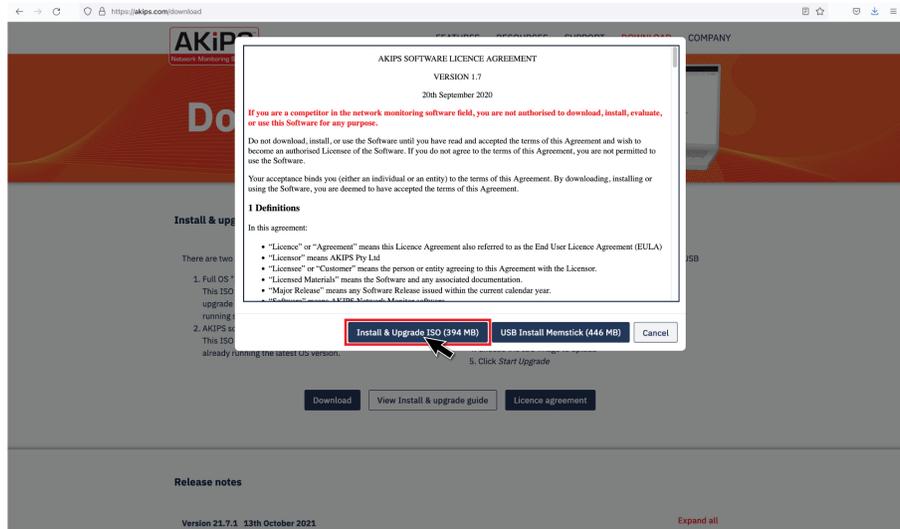
To install AKIPS:

Go to <https://www.akips.com/download>

In the **Install & upgrade** section, click **Download**.

Read the *AKIPS Software Licence Agreement*.

Click **Install & Upgrade ISO** only if you agree to the terms.

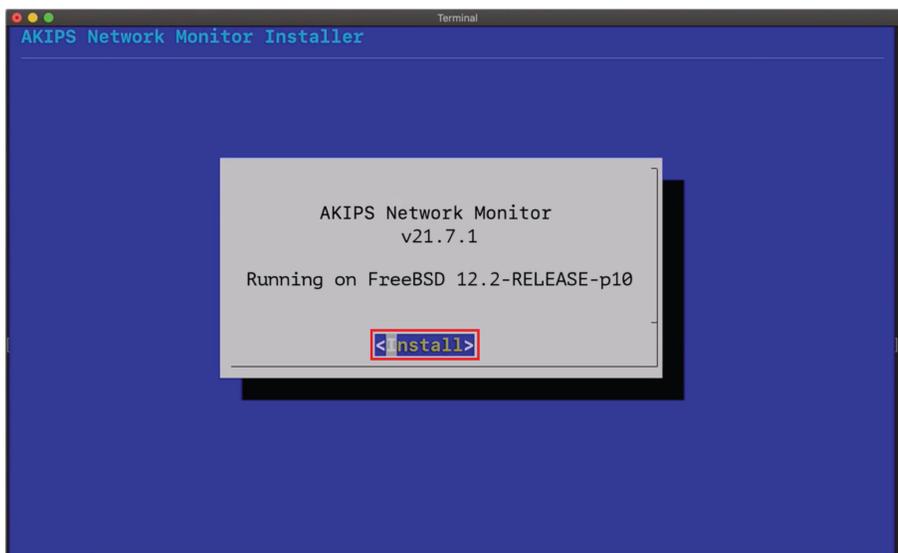


Graphic 1: accepting the AKIPS licence agreement

Create the VM and attach the installer disk image file (ISO).

Configure the VM settings and boot.

At the **AKIPS Network Monitor** screen, select **Install**.

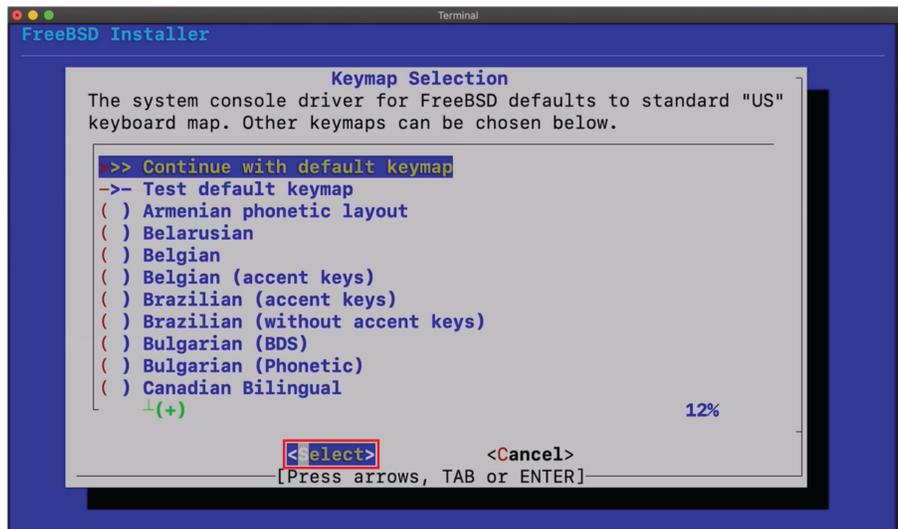


Graphic 2: starting the AKIPS installation

At the **RISK OF DATA LOSS** screen, select **Yes**.

At the **Keymap Selection** screen:

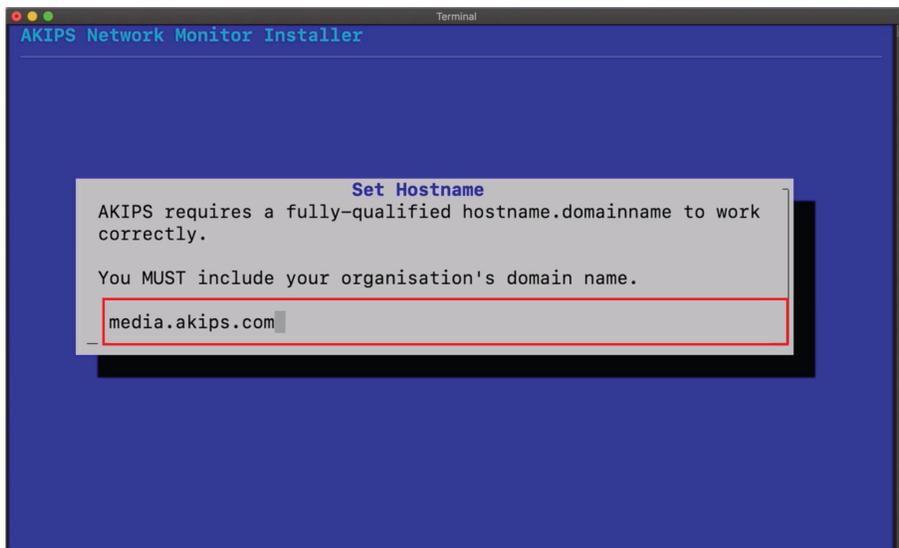
- hit **Enter** to select the default or
- scroll to select your preference and then hit **Enter**.



Graphic 3: configuring the keymap

At the **Set Hostname** screen, type a valid hostname.domain

Hit **Enter**.

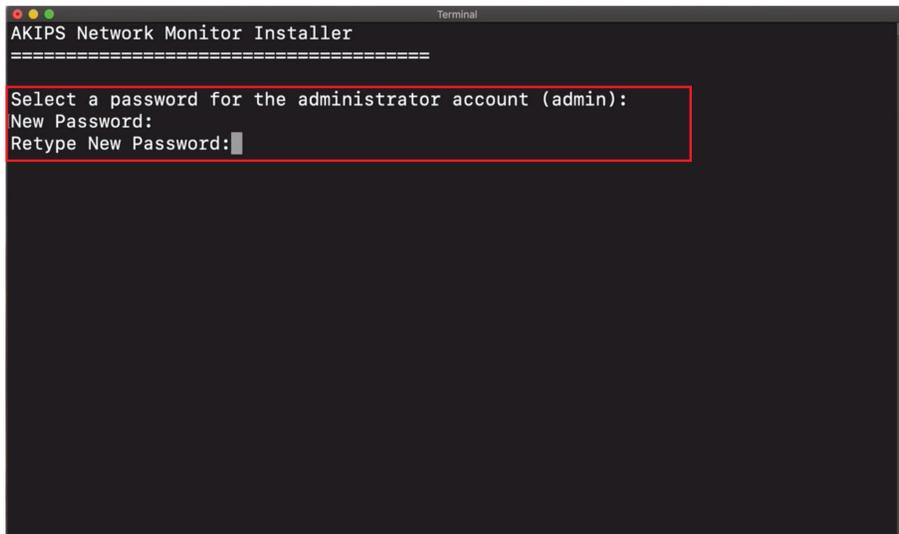


Graphic 4: setting the hostname

Enter a password. This will apply to the root, akips and admin accounts.

Retype the password to confirm.

Hit **Enter**.



Graphic 5: setting the password

At the **Network Configuration** screen, select a network interface.

Select **OK**.

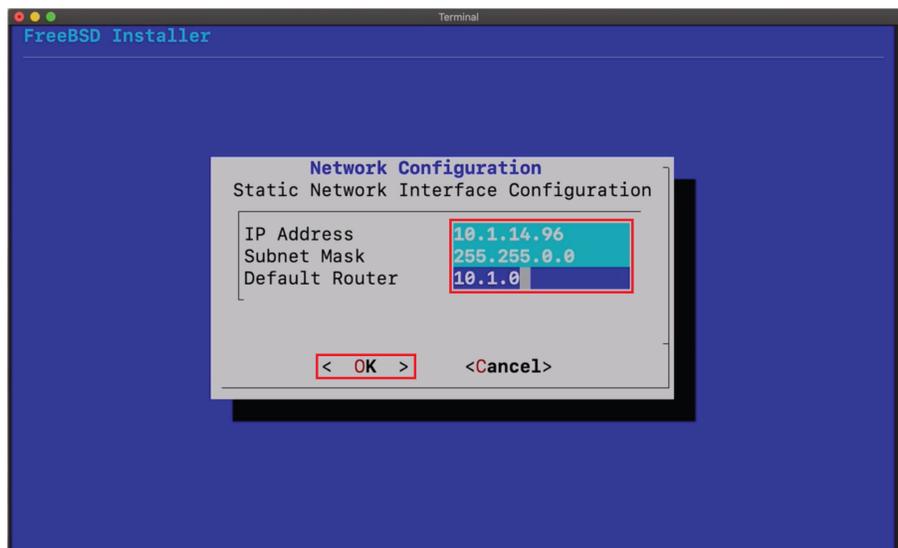
At the **IPv4** prompt, select **Yes**.

At the **DHCP** prompt, select **No**.

At the **Network Configuration: Static Network Interface Configuration** screen, complete the following text fields:

- IP address
- subnet mask
- default router.

Select **OK**.

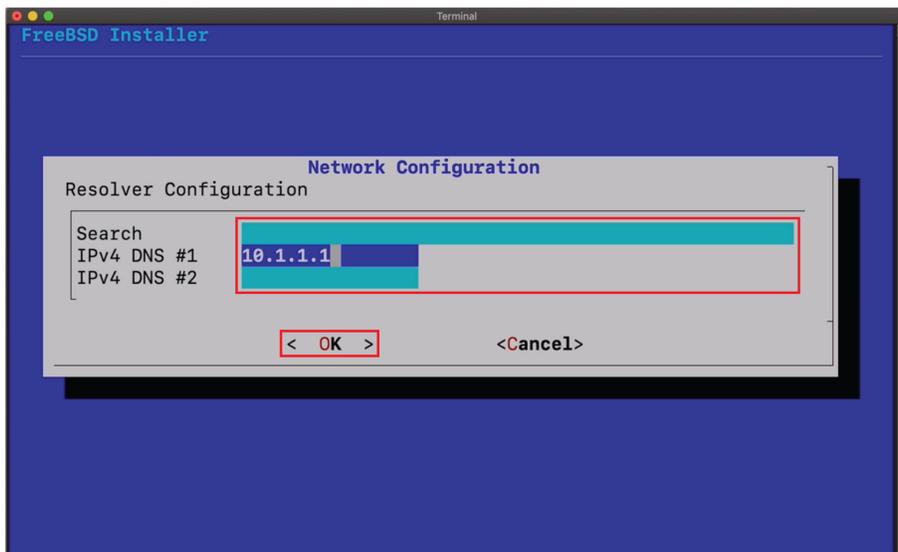


Graphic 6: configuring the static network interface

At the **IPv6** prompt, select **No**.

At the **Network Configuration: Resolver Configuration** screen, enter at least one DNS address.

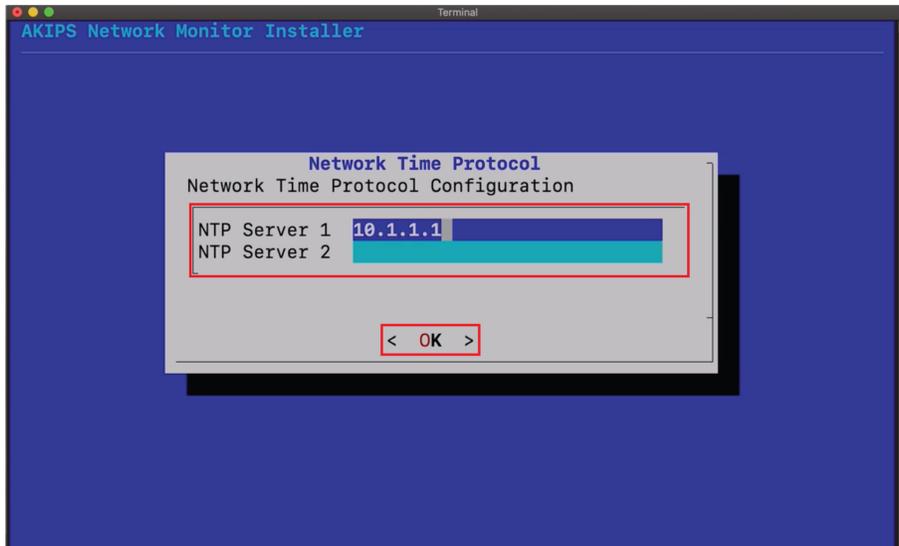
Select **OK**.



Graphic 7: configuring the network resolver

At the **Network Time Protocol Configuration** screen, enter the NTP server address.

Select **OK**.

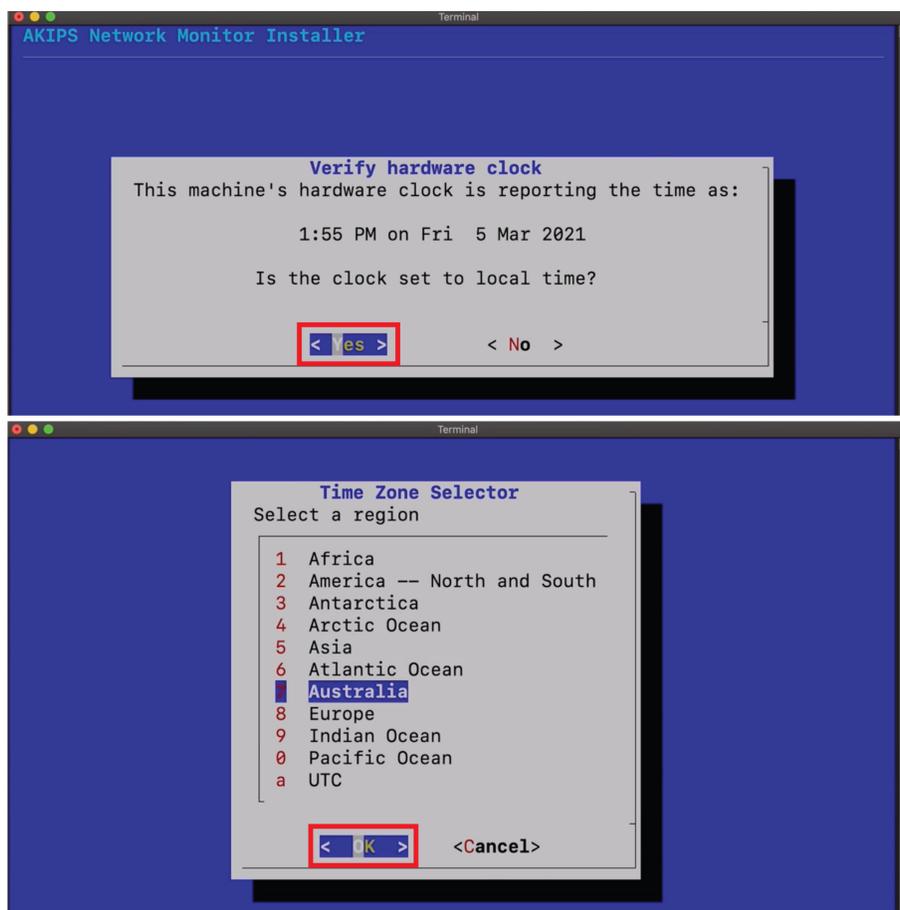


Graphic 8: configuring the network time protocol

Review the **Verify hardware clock** screen:

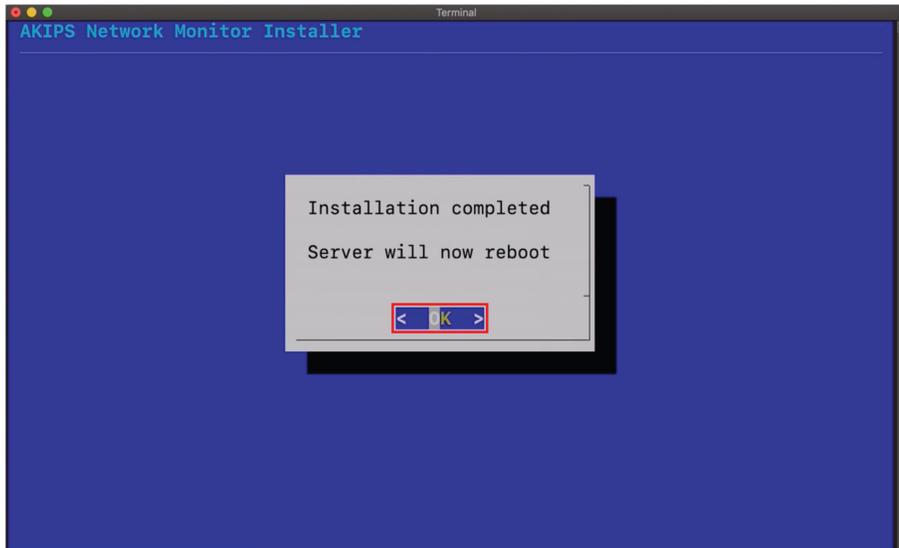
- if the clock is set to local time, select **Yes**
- if the clock is not set to local time, select **No**.

On the following timezone screens, select your applicable timezone.



Graphic 9: configuring the hardware clock and timezone

After AKIPS has finished installing, select **OK** to reboot the server.



Graphic 10: rebooting the server

AKIPS will run a number of processes which will not require you to take any action.

AKIPS will prompt you to log in with your admin account.

To finalise the installation process, click **Accept License**.

Chapter 4

Discovering your network

AKIPS runs its network discover based on IP address ranges and SNMP parameters.

To discover your network:

Log into AKIPS with your admin account.

Go to **Admin > Discover > Discover / Rewalk**.

Using the guidance on the right-hand side, complete the **Discover / Rewalk** panel.

Ensure that you complete both:

- **2. Ping Scan Ranges**
- **3. SNMP Parameters.**

Click **Save Changes**.

AKIPS Dashboards Reports Tools Admin New PDF Licensed to demo1 v21.7.1 User: admin

Discover / Rewalk

Save Changes Discover Rewalk

1. Daily Discovery Schedule

Discover 3am
Rewalk 1am

2. Ping Scan Ranges

```
rate 2000
10.2.8.0/16
10.131.8.0/16
```

3. SNMP Parameters

```
version 2 community foobar
version 2 community public
version 3 user barney sha password aes128 password
version 3 user fred sha password aes256 password
version 3 user fred sha password des password
version 3 user wllna md5 password
```

Discover / Rewalk

- **Discover new devices**
Perform ping and SNMP scans of the address ranges specified in **Ping Scan Ranges**. This will scan for and add new devices. Any existing device found in the scan will have its configuration updated. Note that this will only update existing devices found in Ping Scan Ranges.
- **Rewalk existing devices**
Detect any changes to the network configuration of devices polled by AKIPS. This will not scan for new devices.

1. Daily Discovery Schedule

Schedules a daily automated discovery or rewalk of your network. The best time to schedule a discovery is while the network is being used (i.e. during business hours).

2. Ping Scan Ranges

This defines the IPv4 and IPv6 address ranges the discover will use when performing a ping sweep.

- Each rule is evaluated and executed in order.
- Lines starting with a "!" are ignored.
- The addresses for each rule are pinged intelligently so as not to affect any single link/interface.
- Tunable options include:
 - **rate**
Limits the number of ping requests sent per second. The default rate is 1000. The maximum rate is 100,000.
 - **pass**
This is the number of times each IP address is pinged. The default of 2 passes gives more reliable results than a single pass because it allows time for remote devices to wake up from sleep modes before they respond. The maximum number of passes is 3.
 - **limit**
This is the maximum number of seconds a rule is allowed per pass. If the calculated runtime of a rule is longer than the limit, then the rule is skipped. The default time limit is 60 seconds. The maximum value for limit is 1800 seconds (30 minutes).
 - **wait**
The number of seconds to wait for a ping response. The default is 3 seconds. The maximum wait value is 10 seconds.

Examples:

```
! Set some "go fast" things
rate 10000
pass 2

! Scan the 10.1.1.0 subnet
```

Graphic 11: configuring the discover settings

Click **Discover**.

When AKIPS has finished discovering your network, it will display a message in green.

Wait for five minutes, then check the following tables:

- **Reports > Device > IPv4 Ping Statistics**
- **Reports > Interface > Statistics**

If the tables populate with data, then AKIPS is working.

Chapter 5

AKIPS licence

To view the video *AKIPS licence*,
visit <https://vimeo.com/manage/videos/514080623>

To request an AKIPS evaluation key:

Log into AKIPS with your admin account.

On the homepage, click **Software Activation**.

Click **Request Evaluation Key**.

Complete all mandatory text fields.

Click **Request a Trial Key**.

AKIPS will display a message to confirm that we are processing your request.

To activate an AKIPS licence:

After the AKIPS team has emailed a licence key to you, copy the key.

Log into AKIPS with your admin account.

On the homepage, click **Software Activation**.

Paste the key into the **Licence Key** text field.

Click **Activate Licence**.

When AKIPS has successfully activated your licence, it will display a message in green.

Chapter 6

Upgrading AKIPS

AKIPS recommends that you always upgrade to the latest version.

To view the video *Upgrading AKIPS*,
visit <https://vimeo.com/manage/videos/516553339>

Case study

When a customer tried to upgrade AKIPS, the SHA256 matched the release notes, yet he received the error message 'Package has incorrect checksum'.

He was able to successfully upgrade when he used a different browser (Firefox instead of Chrome).

To upgrade AKIPS:

Go to <https://www.akips.com/download>

In the **Install & upgrade** section, click **Download**.

Click **Install & Upgrade ISO**.

Save the file onto your computer.

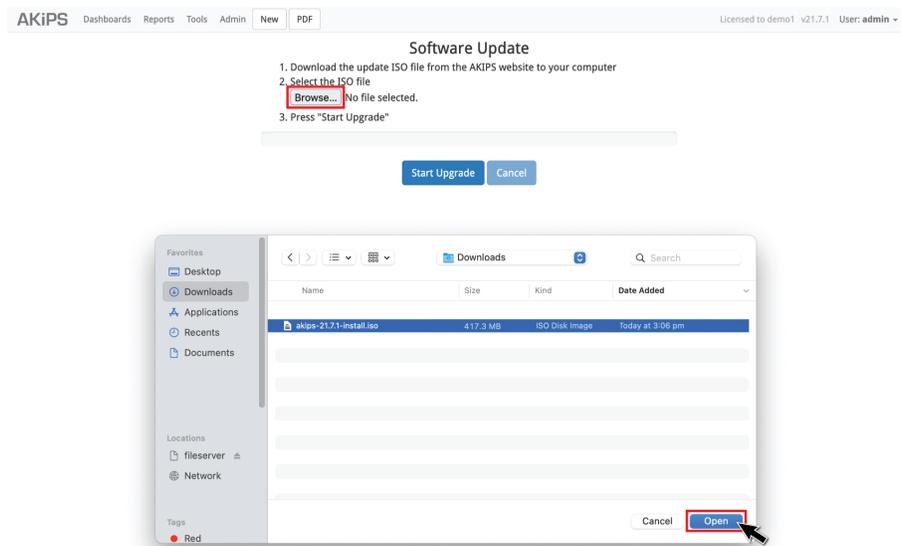
The software will download, displaying the version number in the filename.
E.g. akips-21.7-upgrade.iso

Log into AKIPS with your admin account.

Go to **Admin > System > Update**.

Click **Browse** to locate the downloaded file.

Click **Open**.



Graphic 12: locating and opening the software update file

Click **Start Upgrade**.

After the upload has completed, AKIPS will automatically upgrade the software.

```

AKiPS  Dashboards  Reports  Tools  Admin  New  PDF  Licensed to demo1 v21.7.1  User: admin
Software Update
Upgrading 21.7 to 21.7.1...
=====
Installing new operating system onto the alternate root device
This should only take a few moments...
=====
Installing 21.7.1 to akips-root1 on ada8
Clearing /alt (akips-root1)...
Extracting operating system...
=====
Extracting kernel...
.....
Setting time zone
Copying /boot files
Copying /etc files
Merging password file
Merging group file
Mounting package directory
Installing packages...
Installing ca_root_nss-3.69.1.txz...
Installing expat-2.4.1.txz...
Installing freetype2-2.11.8.txz...
Installing fridibi-1.8.10.txz...
Installing graphite2-1.3.14.txz...
Installing iou-69.1.1.txz...
Installing indexinfo-8.2.1.txz...
Installing iperf3-3.10.1.1.txz...
Installing jpeg-turbo-2.1.1.txz...
Installing libnet-1.13.3.txz...
Installing libpoll-shim-0.0.20210418.txz...
Installing libffi-3.3.1.txz...
Installing libiconv-1.16.txz...
Installing libwind-20201110.txz...
Installing pcre-8.45.txz...
Installing perl5-5.32.1.1.txz...
Installing pismem-0.40.0.1.txz...
Installing png-1.6.37.1.txz...
Installing postgresql11-client-11.13.txz...
Installing smartmontools-7.2.1.txz...
Installing snappy-1.1.9.1.txz...
Installing stream-5.10.txz...
Installing tsm-3.2a.txz...
Installing cyrus-sasl-2.1.27.2.txz...

```

Graphic 13: upgrading AKIPS

If the upgrade is for the AKIPS software only:

AKIPS will update the version details on the menu bar and resume monitoring your network.

If the upgrade is for both the OS and AKIPS software:

AKIPS will reboot your OS.

Refresh your browser to continue using AKIPS.

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