



TimeIPS Server

IPS256T
Virtual Machine
on a VMware host

Installation Guide

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WARNING: The TimeIPS IPSVM virtual machine license allows you to run a single instance of TimeIPS on your own hardware. If you would like to operate multiple instances of TimeIPS for testing or redundancy, please contact the TimeIPS Technical Support department first. Allowing unauthorized copies of your TimeIPS virtual machine image to operate may trigger a non-refundable cancellation of your license and may cause all such copies to become inoperable.

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Prepare and Plan

TimeIPS installations consist of one “master” server system and, optionally, one or more network clock "client" stations. For a TimeIPS virtual machine configuration, a host operating system, virtualization software and a TimeIPS VM image operate together to make a “master” server system.

Configuration and administration of TimeIPS is primarily done over the network with a web browser. An administration console allows for initial configuration of the VM image's network settings.

Network clocks can be connected on a LAN (Local Area Network) or at remote locations connected on a WAN (Wide Area Network) via secure VPN (Virtual Private Network). These clocks can be located at any door or entrance to your facility, or at any location which is convenient for your employees to clock in and out.

We recommend a TimeIPS network clock at each employee entrance to your facility and/or in your central break-room. Each clock will require an AC power outlet and a connection to your local area network.

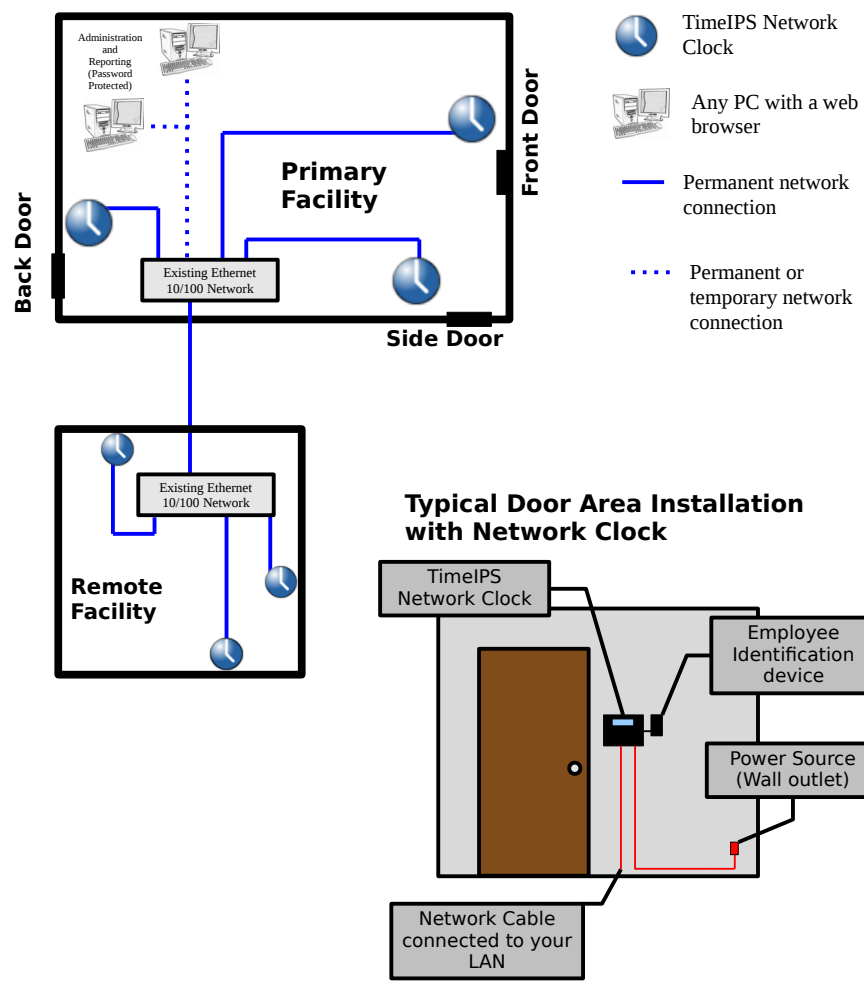
Please examine the diagram on the next page to assist in planning your TimeIPS installation. Additional network clocks can be added at any time to entrances or any location within your organization.

Layout and Installation Considerations

Overall Installation Notes:
Installation of the TimeIPS system normally takes less than an hour. If you have multiple locations, a complex network or are not familiar with networking, installation may take longer. Our Technical Support department is available to assist if you have installation questions.

All TimeIPS systems and clocks should be installed in an indoor location, out of direct sunlight, meeting the temperature requirements listed on the back cover of their Installation Guides.

Possible Primary and Remote Facility Installation



TimeIPS VM Server Overview and Requirements

The TimeIPS VM (Virtual Machine) operates on a host server. Efficient virtual machine operation requires a server with a CPU providing hardware virtual machine support. You must also provide an operating system with a suitable virtualization package.

The required hardware for a host server:

- 64-bit Intel processor with the XD (eXecute Disable) bit and at least two cores or 64-bit AMD processor with the NX (No eXecute) bit and at least two cores.
- 2GHz clock speed or faster recommended
- Intel XD or AMD NX bit must be enabled in system BIOS
- For 64-bit virtual machines, hardware virtualization support is required. This requires an Intel processor with “Intel VT-x” support or an AMD processor with “AMD-V” support.
- Storage Device: 80GB or larger. (Free disk space of at least 50 GB after OS installation recommended.)
- System RAM: minimum of 4GB. (more recommended)

Suggested virtual machine parameters:

- 1 or 2 CPU core(s)
- 2GB – 8GB RAM

Recommended and supported virtualization:

- VMware ESXi version 6.5 or similar

Recommended additional considerations:

For protection of your data, we recommend:

- 1) Configuring your host server with RAID. We recommend two drives configured as RAID 1 (mirror). Consult ESXi documentation for information regarding configuring a RAID array in your host server.
- 2) Using a suitable server-grade UPS for power backup. Configure the operating system to shut down gracefully in the event of an extended power outage.
- 3) Use of fast SSDs (solid state drives) for the data area storing the VM image. Using a fast SSD can dramatically improve the TimeIPS VM performance and responsiveness.
- 4) Backing up your data regularly. Backup files can be created manually through the web interface or automatically by using our off-site backup service. You may also want to periodically shut down your VM and make a backup copy of the actual image file.

Obtaining Your VM Image

Your VM image will be available for download as a .zip file. You must unzip the file before the image can be used in your virtualization environment.

Open your web browser and visit www.timeips.com/downloads. Enter the access code you received via e-mail and click on Submit. Right-click on the link provided and select “Save Link As . . .” Save the file to a convenient location. The download process may take a few minutes.

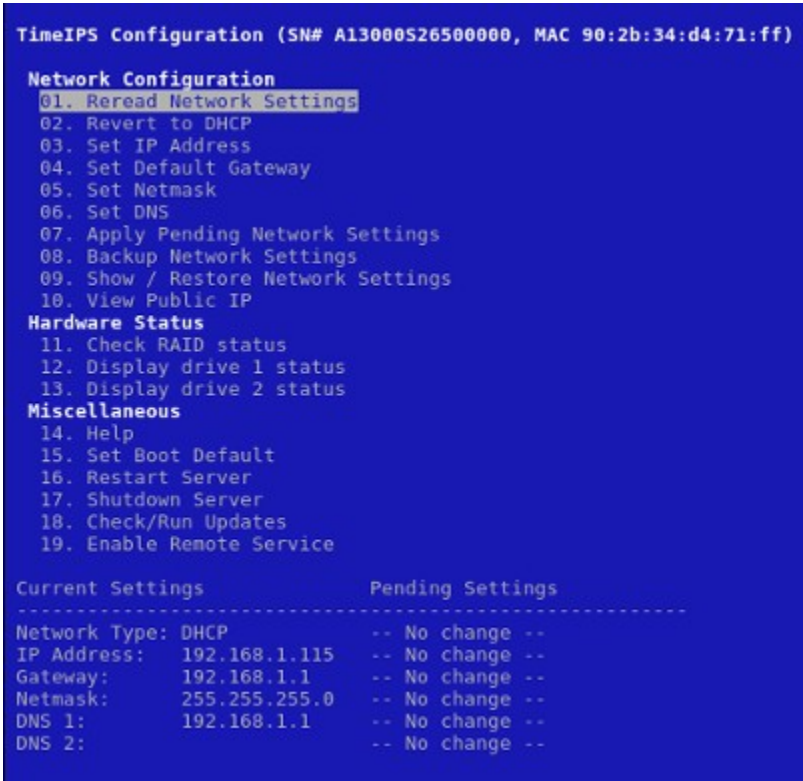
Launch the TimeIPS VM

The installation may differ depending on the VMware product and version you have. These steps were used in VMware ESXi version 6.5.

- Select Create/Register VM
- Select Deploy a virtual machine from an OVF or OVA file
- Provide a meaningful name for the VM, such as “TimeIPS,” and select the <serial number>.ovf and TimeIPS_<serial number>.vmdk files you downloaded and unzipped
- Select the appropriate data store for the VM
- Select the appropriate network mappings and provisioning for the VM
- Click Finish

Using the Menu to Set or View the IP Address

The TimeIPS VM image will boot to a menu providing a number of basic functions, including viewing and setting the IP address, switching from DHCP to Static addressing, restarting and shutting down the image, etc.



Running on a System Without Hardware Virtualization

For production installations, the TimeIPS VM image should run on a system with hardware virtualization support. This requires an Intel processor with “Intel VT-x” support or an AMD processor with “AMD-V” support. Most processors made in the last few years support one of these technologies and will work well for a virtual machine host.

Older systems without hardware virtualization support can be used with reduced performance. Systems without hardware virtualization support can only be used with 32-bit virtual machine images (such as the TimeIPS VM) when using ESXi version 6.5.

Initial Login Using IP Address

Go to a PC on your network with a web browser.

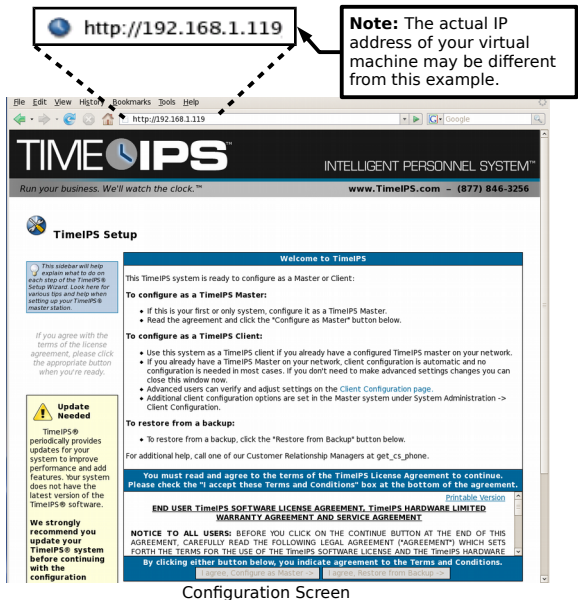
In your web browser, enter the IP address of your virtual machine. The IP address of your virtual machine can be found on the blue screen referenced on Page 7 of this guide.

Beginning with the screen shown here, follow the instructions on each screen.

The setup process will include creating the first employee, who will have access to all areas of TimeIPS and who will be able to designate other employees as administrators and/or managers.

Once you complete the configuration, you can add and edit all settings and employees as needed.

For assistance with further configuration and use of TimeIPS, please visit our support web site at <http://support.timeips.com>. If you do not find the information you need there, call our Technical Support department at 316.264.1600.



Note: When you have successfully connected to TimeIPS from your PC, the screen on your PC monitor should look like the screen above. After reading the information at the bottom of this page, you will be ready to proceed with the guided setup process.

Network Troubleshooting

In the event you are unable to reach the web interface for your TimeIPS VM, you may be having network related problems.

Make sure you can reach the IP address of your host system. Open a web browser on the server and browse to <http://<IP address of host system>>. If this works, check your firewall settings.

Network Requirements

Ports Used By TimeIPS

The following ports are used by TimeIPS on the Internet (if available) for the reasons described below:

- 80 (HTTP) Required for update downloads
- 25 (SMTP) Recommended for e-mail reports and messages
- 53 (DNS) Required for name resolution
- 123 (NTP) Recommended for time synchronization
- 443 (TimeIPS) Required for update and backup authorization

Best practice: Make sure your TimeIPS VM host has access to the Internet for all the ports listed above.

Ports Used by Network Clocks

Network clocks normally communicate with the server on port 80. An alternate port can be configured under System Settings in the Network Section. For network clocks on remote networks, we recommend a VPN for security. If a VPN is not available, it is possible to port-forward either port 80 or the alternate port and configure remote network clocks to find their master at the port-forwarded address.

Please visit <http://support.timeips.com> for additional network and port information.

Networking: Host and VM

To simplify networking, the default configuration in the VM is to automatically obtain an IP address using DHCP. If you want to set a static IP address without DHCP in the virtual machine, boot to the administration console (Page 7) and use the menu to configure a static IP address.

Special Considerations

Telephone clocking:

Telephone clocking can be used with a TimeIPS VM. Configuration assistance from the TimeIPS Technical Support department may be needed.

We recommend placing your TimeIPS telephone clocking device(s) on a LAN in the same subnet as your VM host for best results. (See note below on remote network considerations.)

The default configuration uses the following ports:

UDP: 5060

UDP: 16384 to 16482

These ports must be open for the VM image.

When configuring a telephone clocking device, specify the IP address the device will use. This will be the IP address of the VM image.

Note: VOIP devices on remote networks, including over the Internet, are possible but may require additional considerations as follows:

1. The ports listed above to be port forwarded on the host side.
2. Your host site must have a static Internet IP address and the address must be configured in TimeIPS.
3. Your TimeIPS telephone clocking device(s) must have a direct Internet address (either static or DHCP). For example, they CANNOT be behind a gateway with NAT.

Network Clocks NTP sync:

Network clocks need a time synchronization source.

- 1) Option 1: Configure your VM host to run NTPD and allow external access.
- 2) Option 2: Point all network clocks to ntp.timeips.com.
- 3) Option 3: Use the TimeIPS VM as the time source for network clocks.

Advanced Topics

File system checks

In rare cases, the file system inside the TimeIPS virtual machine image may need a “file system check.” This is usually caused by unclean shutdowns. To fix it, you will need to use the TimeIPS recovery partition. Please contact our Technical Support department for assistance in loading and using the recovery partition.

Technical Support

Technical Support Resources:

1. Our support web site at <http://support.timeips.com> offers extensive resources including documentation and our knowledge-base. Please check our support web site first, as it provides complete answers and instructions on almost everything. In the "Knowledge Base Search:" box, enter a few words describing your question. For example, if you have a question on payroll, enter "payroll" and browse the articles listed.
2. If you have a question not answered on our support site, you can call or e-mail us. A period of limited e-mail/phone support is included with your system. A serial number or registration number is required for this service. Additional support can be purchased by calling TimeIPS, or by visiting our web site at <http://secure.timeips.com>.
3. If you have a simple question, or need direction on how to use our support resources, feel free to e-mail us at support@timeips.com. If your question is quick, we'll be happy to help. If it's not, we'll let you know you need to purchase additional support.

Support website

<http://support.timeips.com>

Support e-mail

support@timeips.com

Support phone number

316.264.1600

System Specifications:

Requires host system with suitable virtualization software.

System Administration Requirements:

PC with modern OS.

(Linux™, MacOS™ or Windows™)

A network port and an up-to-date version of Firefox™ or Chrome™ web browser.

Network Requirements:

Internet connection required for e-mail notifications, time synchronization, updates and off-site backups

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Thank you for reading this manual carefully. If you noticed errors, have any suggestions or found typographical problems, we want to know! Please send an e-mail with the version code below and your feedback to documentation@timeips.com. We appreciate your time.

Version: IPSVM_2.0.3_VMware 170515