



TECHILA[®] WORKER INSTALLATION GUIDE LINUX

ADMINISTRATOR GUIDE

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1. Introduction

This document describes how you can install the Techila Worker software on a computer with a Linux operating system. After installing the Techila Worker software as described in this document, the Techila Worker will connect to Techila Server and will participate in computational Projects processed in the Techila Distributed Computing Engine (TDCE) environment.

The following procedures are described in this document:

- Installation
- Configuring the Techila Worker to Run Automatically

2. Prerequisites & Security

This section details prerequisites for Techila Worker installation and important security considerations. Read this section carefully before installing the Techila Worker.

For more information on the security features, see document "Techila Distributed Computing Engine Security Statement".

2.1. General Prerequisites

Before starting the operation, please make sure that the following prerequisites have been met:

- A new dedicated user account must be available for Techila Worker.
- The installation destination should be located on the local hard drive of the workstation. Note that all data is always written in this installation directory and its subdirectories. The installation directory and the directory where the installation files are unpacked must be different.
- Perform the installation as root or as using the dedicated user account.
- Verify the system date and time to make sure the Techila Worker Keys are generated correctly.
- Any other software which utilizes the idle CPU time (for example SETI@Home) should not be installed on the workstation. Otherwise they may interfere with the efficiency of the computations.

2.2. Required Files

The following files are need for the installation:

Filename	Description
setup.sh	The main installation program.
setup.inf	The setup configuration.
setup.tar	The installation data.

These files are stored in the Techila Worker installation package, which is available for download in the "Administrator Downloads" section of the Techila Extranet. The Techila Extranet is located at:

<http://www.techilatechnologies.com/extranet>

2.3. Security

- Deny the booting of the workstation from any external media (CD, DVD, floppy disk, USB memory stick, etc.) to prevent any unauthorized access to the hard drives.
- There is no need to open ports on the Techila Worker as all communications are from the Techila Worker to the server.

3. Installation

This Chapter contains instructions for the following procedures:

- Installing the Techila Worker
- Verification
- Finalizing the Installation

3.1. Installing the Techila Worker

This Chapter describes how to install the Techila Worker.

Procedure

1. Unpack the Techila Worker package using command:

```
tar xzf techila.worker.installer.linux.<arch>.<version>.tar.gz
```

This creates the `techila.worker.installer` directory, where all the required files will be unpacked.

Note that the directory where the package is unpacked and the installation directory must be different.

2. Change to the directory that was created using command :

```
cd techila.worker.installer
```

3. Configure the installation by editing the `setup.inf` file with a text editor. An example `setup.inf` file is shown below:

```
### Techila Worker - Setup Configuration

## Target directory
Dir=/opt/techila/worker

## Techila Worker User Account
Account=techila

## Techila Server Address
ServerHost=techila.example.com
ServerPort=20001

## Techila Worker Id
WorkerId=$HOSTNAME

StartService=TRUE
```

The following parameters are supported in the `setup.inf` file:

Parameter	Description
Dir	The destination directory for the installation.
Account	The user account running the Techila Worker.
ServerHost	The hostname (or IP address) of the Techila Server.
ServerPort	The port of the Techila Server.
WorkerId	An optional parameter that can be used to specify the name of the Techila Worker Key and the Alias of the Techila Worker shown in the Techila Web Interface.
StartService	When set to TRUE, starts the Techila Worker automatically.

Create a new user account on the workstation. Note, the commands shown below assume that the account `techila` has been configured in the `setup.inf` file, if you have specified another account, modify the commands accordingly. Execute the commands as root:

```
groupadd techila
adduser --system --group techila
```

If the `adduser` command does not exist, please use the following commands:

```
groupadd techila
useradd --system -g techila -m techila
```

4. Run the installation script `setup.sh` as root or as the new user:

```
./setup.sh
```

If the `setup.inf` is not located in the same directory with `setup.sh`, the location can be defined by using `setup.inf` it as a parameter. For example:

```
./setup.sh /mnt/networkmount/techilasetup/techilasetup.inf
```

5. If prompted, answer the questions asked by the installation program. Note that questions will only be asked, if the values are not configured in the `setup.inf` file:

Question	Description
Please specify the user account for Techila Worker	The user account created earlier. This question is asked only if the installation script is executed as root, otherwise the active account is used automatically.
Please specify the server host.	The hostname or IP address of the Techila Server.
Please specify the server port.	The port of the Techila Server. The default value is 20001.
Please specify the target directory.	The destination directory for the installation.

The Techila Worker software will start after the installation is complete.

3.2. Verification

To verify that the installation was successful, check that the following processes are running. Processes can be viewed with command: `ps -fu <Account>`:

- wrapper
- run.sh
- java

The processes will automatically become visible after installation has been completed successfully. No reboot will be required.

Also verify that the Techila Worker is connected to the Techila Server by opening the Techila Web Interface and verifying that the new Techila Worker Key is visible in the **Admin -> Keys -> Worker Keys** page.

After you have verified that the installation was successful, please proceed and finalize the installation process as described in Chapter 3.3

3.3. Finalizing the Installation

Before the Techila Worker is able to receive computational Jobs, the status of the Techila Worker Key must be set to trusted by using the Techila Web Interface. To set the status of the Techila Worker Key to trusted, please follow the instructions in the document "Techila Distributed Computing Engine Administration Guide" in Chapter *Adding a new Techila Worker to the Techila system*.

Note! The latest Techila Virtual Server has been configured to automatically trust Techila Worker Keys, which means that you will not need to manually trust the Techila Worker Keys. The Techila Worker Keys will also be automatically trusted if you have configured your Techila Server to automatically trust Techila Worker Keys.

Please note that after you have installed the Techila Worker software and set the status of the Techila Worker Key to 'trusted', no other manual configuration of the Techila Worker is required. All required components will be transferred in Bundles to the Techila Workers from the Techila Server.

Further information

The Techila Worker can be configured to start automatically. For more information, see Chapter 4.

4. Configuring the Techila Worker to Run Automatically

This Chapter describes how you can configure the Techila Worker to run automatically after restarting the operating system.

Prerequisites

- Techila Worker has been successfully installed
- The scripts must have the required rights to be run

The Techila Worker software can be configured to run automatically using the following approaches:

- Approach 1: Configuring automatic startup on newer systems (using **systemd**)
- Approach 2: Configuring automatic startup on older systems (without **systemd**)

The procedures for these approaches are described below:

4.1. Configuring Automatic Startup on Newer Systems (using **systemd**)

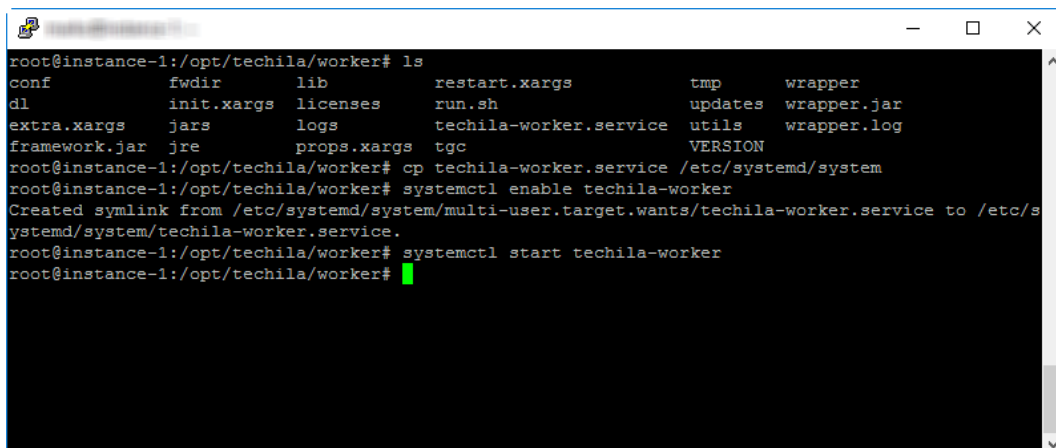
1. Copy the unit configuration file `techila-worker.service` from the Techila Worker installation directory to the `/etc/systemd/system` directory as root:

```
cp techila-worker.service /etc/systemd/system/
```

2. Execute the following commands as root:

```
systemctl enable techila-worker  
systemctl start techila-worker
```

The screenshot below illustrates the output of the commands when executed on a Linux computer where the Techila Worker software has been installed to directory `/opt/techila/worker`.



```
root@instance-1:/opt/techila/worker# ls  
conf          fwdir         lib           restart.xargs tmp          wrapper  
dl            init.xargs   licenses     run.sh       updates     wrapper.jar  
extra.xargs   jars         logs         techila-worker.service  utils       wrapper.log  
framework.jar jre          props.xargs  tgc          VERSION  
root@instance-1:/opt/techila/worker# cp techila-worker.service /etc/systemd/system  
root@instance-1:/opt/techila/worker# systemctl enable techila-worker  
Created symlink from /etc/systemd/system/multi-user.target.wants/techila-worker.service to /etc/systemd/system/techila-worker.service.  
root@instance-1:/opt/techila/worker# systemctl start techila-worker  
root@instance-1:/opt/techila/worker#
```

4.2. Configuring Automatic Startup on Older Systems (without systemd)

1. Copy the `tgc.init` script from the Techila Worker installation directory to the `/etc/init.d/` directory as root:

```
cp utils/tgc.init /etc/init.d/techila
```

2. Depending on what Linux distribution you are using, use the following commands to configure the Techila Worker processes to be automatically started and stopped during boot and shutdown.

On **Debian** based Linux distributions, use command:

```
update-rc.d techila defaults
```

On **Redhat** based Linux distributions, use command:

```
chkconfig --add techila
```

5. Uninstallation

This Chapter describes how you can uninstall the Techila Worker.

Prerequisites

- You need to have access to the Techila Worker directory.

Note

- The commands must be executed as root
- Uninstalling the Techila Worker will not remove the Worker Key from the Techila Server. The Worker Key can be removed by using the Techila Web Interface as described in Chapter *Removing Worker Keys* in the Techila Administration Guide. The Worker Key should be removed after the Techila Worker has been uninstalled

Procedure

1. Change your current working directory to the Techila Worker installation directory.
2. Stop the Techila Worker processes by executing the applicable command as root:

```
/etc/init.d/techila stop
```

OR

```
systemctl stop techila-worker
```

3. Disable the automatic startup of the Techila Worker with the applicable command, depending on how the Techila Worker automatic startup has been configured:

If `update-rc.d` was used, execute: `update-rc.d -f techila remove`

OR

If `chkconfig` was used, execute: `chkconfig --del techila`

OR

If `systemd` was used, execute: `systemctl disable techila-worker`

4. If required, remove the `techila` script executed during startup from the `/etc/init.d/` directory.

```
rm /etc/init.d/techila
```

5. Remove the Techila Worker installation directory using the `rm` command. For example, if the Techila Worker installation directory is `/opt/techila/worker` the directory can be removed with command.

```
rm -Rf /opt/techila/worker
```