

# Install SGX

Ensure your hardware is [Secret Node Compliant](#) .

If you're running a local machine or bare-metal and not a cloud-based VM -

1. Go to your BIOS menu
2. Enable SGX (Software controlled is not enough)
3. Disable Secure Boot
4. Disable Hyperthreading (recommended)
- 5.

Installation

Install SGX

If you are a node runner all you must do to install SGX is to save this as a script and run it.

Download the SGX install script

```
...  
Copy wgethttps://raw.githubusercontent.com/SecretFoundation/docs/main/docs/node-guides/sgx
```

```
...
```

Execute the script

```
...
```

Copy sudobashsgx

```
...
```

Copy of raw script.

```
...
```

sgx Copy

## ! /bin/bash

```
sudoapt-getupdate&&sudoaptupgrade-y sudoapt-getinstallmakebuild-essentialgccgitjqchronydkmssgpg-agent-y
```

```
UBUNTUVERSION=$(lsb_release-r-s|cut-d'.'-f1) PSW_PACKAGES='libsgx-enclave-common libsgx-aesm-launch-plugin  
libsgx-aesm-epid-plugin libsgx-aesm-quote-ex-plugin libsgx-urts sgx-aesm-service libsgx-uae-service autoconf libtool make  
gcc'
```

```
if((UBUNTUVERSION<16));then echo"Your version of Ubuntu is not supported. Must have Ubuntu 16.04 and up. Aborting  
installation script..." exit1 elif((UBUNTUVERSION==16));then DISTRO='xenial' OS='ubuntu16.04-server'  
elif((UBUNTUVERSION==18));then DISTRO='bionic' OS='ubuntu18.04-server' elif((UBUNTUVERSION==20));then  
DISTRO='focal' OS='ubuntu20.04-server' elif((UBUNTUVERSION==22));then DISTRO='jammy' OS='ubuntu22.04-server' fi
```

```
echo"\n\n#####" echo"##### Installing Intel SGX driver #####"  
echo"#####\n\n"
```

## Download SGX driver

```
if((UBUNTUVERSION==16));then
```

## Ubuntu 16 was deprecated by the latest Intel SGX drivers

```
wget"https://download.01.org/intel-sgx/sgx-linux/2.13/distro{OS}/sgx_linux_x64_driver_2.11.0_0373e2e.bin" elif((  
UBUNTUVERSION==22));then
```

# Ubuntu 22 is not supported in sgx-linux/v2.17

```
wget"https://download.01.org/intel-sgx/latest/linux-latest/distro{OS}/sgx_linux_x64_driver_2.11.54c9c4c.bin" else
wget"https://download.01.org/intel-sgx/sgx-linux/2.17/distro{OS}/sgx_linux_x64_driver_1.41.bin" fi
```

## Make the driver installer executable

```
chmod+x./sgx_linux_x64_driver_*.bin
```

## Install the driver

```
sudo./sgx_linux_x64_driver_*.bin
```

## Remount /dev as exec, also at system startup

```
sudo tee /etc/systemd/system/remount-dev-exec.service > /dev/null << EOF [Unit] Description=Remount /dev as exec to allow
AESM service to boot and load enclaves into SGX
```

```
[Service] Type=oneshot ExecStart=/bin/mount -o remount,exec /dev RemainAfterExit=true
```

```
[Install] WantedBy=multi-user.target EOF
```

```
sudo systemctl enable remount-dev-exec sudo systemctl start remount-dev-exec
```

```
echo "\n\n#####" echo "##### Installing Intel SGX PSW #####"
echo "#####\n\n"
```

## Add Intel's SGX PPA

```
echo "deb [arch=amd64] https://download.01.org/intel-sgx/sgx_repo/ubuntu DISTRO main"|
sudo tee /etc/apt/sources.list.d/intel-sgx.list wget -qO- https://download.01.org/intel-sgx/sgx_repo/ubuntu/intel-sgx-deb.key|
sudo apt-key add - sudo apt update
```

```
sudo apt install -y PSW_PACKAGES
```

...

Testing your SGX setup

Run `secretd init-enclave`

See [Verify SGX](#) for a guide how to test your setup.

Uninstall

To uninstall the Intel(R) SGX Driver, run:

...

Copy `sudo /opt/intel/sgxdriver/uninstall.sh`

...

The above command produces no output when it succeeds. If you want to verify that the driver has been uninstalled, you can run the following, which should print SGX Driver NOT installed :

...

Copy `ls /dev/isgx &> /dev/null && echo "SGX Driver installed" || echo "SGX Driver NOT installed"`

...

To uninstall the SGX SDK, run:

...

Copy `sudo "HOME"/.sgxsdk/sgxsdk/uninstall.sh rm -rf "HOME"/.sgxsdk"`

...

To uninstall the rest of the dependencies, run:

...

Copy `sudo apt purge -y libsgx-enclave-common libsgx-enclave-common-dev libsgx-urts sgx-aesm-service libsgx-uae-service libsgx-launch libsgx-aesm-launch-plugin libsgx-ae-le`

...

## Refs

1. <https://github.com/apache/incubator-teaclave-sgx-sdk/wiki/Environment-Setup>
2. [https://github.com/openenclave/openenclave/blob/master/docs/GettingStartedDocs/install\\_oe\\_sdk-Ubuntu\\_18.04.md](https://github.com/openenclave/openenclave/blob/master/docs/GettingStartedDocs/install_oe_sdk-Ubuntu_18.04.md)
3. <https://github.com/apache/incubator-teaclave-sgx-sdk/blob/783f04c002e243d1022c5af8a982f9c2a7138f32/dockerfile/Dockerfile.1804.nightly>
4. <https://edp.fortanix.com/docs/installation/guide/>
- 5.

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