

Cadence Machine Fingerprint User Guide

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Preface

This guide provides information regarding the Cadence Machine Fingerprint (mfp) utility.

Audience

This guide is intended to be used by Cadence license administrators.

Related Documentation

For more information, see the following documentation:

- [Cadence License Manager](#)

Cadence Machine Fingerprint

- [Introduction to Cadence Machine Fingerprint](#)
- [Downloading and Installing Cadence Machine Fingerprint](#)
- [Supported Host Configurations](#)
- [Setting mfp Command Line Options](#)
- [Using mfp and Imutil](#)
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 - [Why do I need Amazon EC2 Elastic Network Interface ID?](#)
 - [Why do I get the message "/.Imutil: No such file or directory"?](#)

Introduction to Cadence Machine Fingerprint

Cadence Machine Fingerprint (mfp) is a utility to enable an installation of Cadence License Manager. The utility is required for running license servers on physical machines, virtual machines (VMs) or cloud-based host systems. mfp creates a "fingerprint" of the host and writes it to the generated output files. These files are used in producing license files that can be used by Cadence License Manager running on the same host.

This utility is used in combination with Flexera Imutil, and is available on Linux and Windows. Contact your Cadence Account Manager about the suitability of your host in terms of operating system, instruction set architecture, and virtualization.

Downloading and Installing Cadence Machine Fingerprint

Cadence Machine Fingerprint can be downloaded from <https://www.cadence.com/support/Pages/downloads.aspx> at "Cadence Machine Fingerprint Download".

Supported Host Configurations

Instruction Set Architectures

- x86_64 and ARM64 instruction set architectures are supported.

Operating Systems

- Linux Operating Systems: RHEL7 (>=RHEL7.4), RHEL8, and SLES12 are supported.
- Windows Operating Systems: Windows 10, Windows Server 2016, and Windows Server 2019 are supported.

Virtualization

- Physical machines are supported.
- Docker containers are not supported.
- Server virtual machines, such as VMWare ESX and Citrix XEN are supported.
- Desktop virtual machines, such as VirtualBox, Parallels, and VMWare desktop are not supported.

Cloud

- Amazon EC2 Instances, Microsoft Azure Instances, and Google Compute Engine Instances are supported.

Setting mfp Command Line Options

For physical machines and virtual machines, no command line options are needed.

For cloud-based hosts, the "-cl" option is required to indicate the cloud type. The supported cloud types are:

- "aws" (Amazon EC2 Instance)
- "azure" (Microsoft Azure Instance)
- "gce" (Google Compute Engine Instance)

Using mfp and lmutil

1. Open a command line interface (cmd.exe on Windows or a shell on Linux).
2. Change to the directory containing `mfp` and `lmutil` (or `mfp.exe` and `lmutil.exe`).
3. Run `./mfp [options]` on the command prompt (`.\mfp` on Windows).
4. Run `./lmutil lmhostid -o vm_hostid.txt` on the command prompt (`.\lmutil` on Windows).
5. Send `mfp_out.txt`, `mfp_out.xml` and `lm_hostid.txt` to your Cadence Account Manager.

Tips and Troubleshooting

You can quickly solve most problems encountered by mfp by following the instructions in this section.

What happens when mfp detects multiple IP addresses?

When mfp finds more than one IP address for a fingerprint, it prompts you to select one address.

Example:

```
$ ./mfp

mfp 21.01-s002
Copyright 2012-2021 Cadence Design Systems, Inc. All rights reserved worldwide.

Gathering machine information...
    Multiple IP Addresses detected.
    **Use an IP address that will not change over time.
    IP Addresses are:
        1) 10.160.44.145
        2) 192.168.0.2
    Pick an IP Address to use (Type in a number between 1 and 2):
```

For some host types, particularly VM hosts, it is necessary that the chosen address is not modified for continued operation of Cadence License Manager. Therefore, addresses assigned by DHCP or addresses assigned to removable interface adapters must be avoided.

How can I check if a host has a fully qualified domain name?

For some host types, particularly VM hosts, it is necessary to have a fully qualified domain name (FQDN) for license file generation. To check if your host has an FQDN, run `mfp` and see if it reports a valid hostname and domain name.

A valid hostname is a non-empty string containing only printable characters, and a valid domain name is a non-empty string containing only printable characters with at least one '.'.

Example

```
$ ./mfp

mfp 21.01-s002
Copyright 2012-2021 Cadence Design Systems, Inc. All rights reserved worldwide.

Gathering machine information...
    Host name:      myhost
    Domain name:    cadence.com
    IPAddress:      10.207.136.7
    Generating text file: mfp_out.txt with this information
    Generating XML file: mfp_out.xml with this information
    Please forward these files to Cadence Design Systems.

$
```


If `mfp` does not report a valid hostname and domain name, consider the following options:

- Contact your Cadence Account Manager to confirm that a valid hostname and domain name

are needed for the host type.


- Use a different host with a valid hostname and domain name.
- Modify the hostname and domain name of the host to make them suitable.

How can I change the hostname and domain name of the host?

 This can cause the host and network to malfunction. This task should only be done by a network administrator. The following suggestions may not be suitable for some networks.

In the following example, we assume that the chosen FQDN is "starwars.somegalaxyfarfaraway.com" and that its IP address is 10.10.133.1.

Setting FQDN on Linux

 `sudo` permission is needed for setting FQDN.

1. Edit `/etc/hosts`.
2. Add a line with IP address, FQDN, and alias in that order separated by spaces.

```
$ cat /etc/hosts
10.10.133.1 starwars.somegalaxyfarfaraway.com starwars
$
```

3. Confirm FQDN.

```
$ hostname -f
starwars.somegalaxyfarfaraway.com
$
```

4. Add "`DOMAINNAME=somegalaxyfarfaraway.com`" to `/etc/sysconfig/network`.
5. Add "`kernel.domainname=somegalaxyfarfaraway.com`" to `/etc/sysctl.conf`.
6. Restart the Network Service.

```
$ service network restart
```

7. Confirm the changes are as expected.

```
$ hostname
starwars
$ hostname -f
starwars.somegalaxyfarfaraway.com
$ dnsdomainname
somegalaxyfarfaraway.com
$ ./mfp

mfp 21.01-s002
Copyright 2012-2021 Cadence Design Systems, Inc. All rights reserved worldwide.


Gathering machine information...

      Host name:      starwars
      Domain name:    somegalaxyfarfaraway.com
      IPAddress:      10.10.133.1

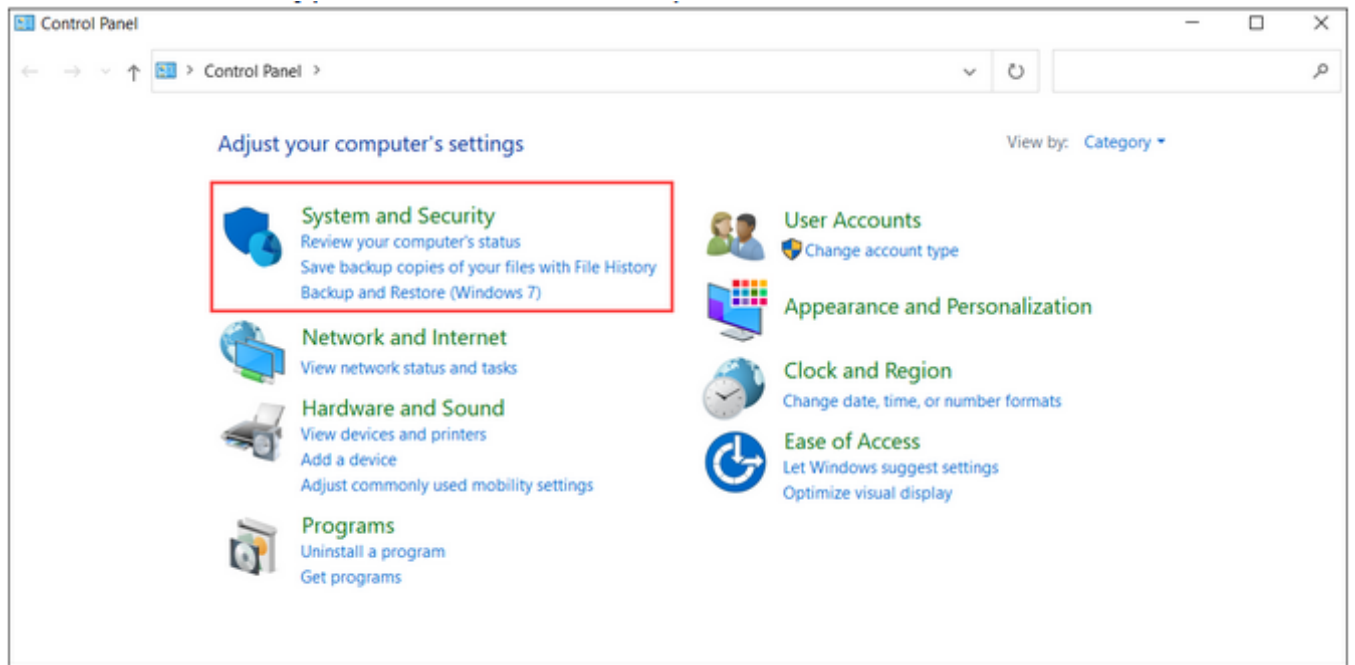
      Generating text file: mfp_out.txt with this information
      Generating XML file: mfp_out.xml with this information
      Please forward these files to Cadence Design Systems.

$
```

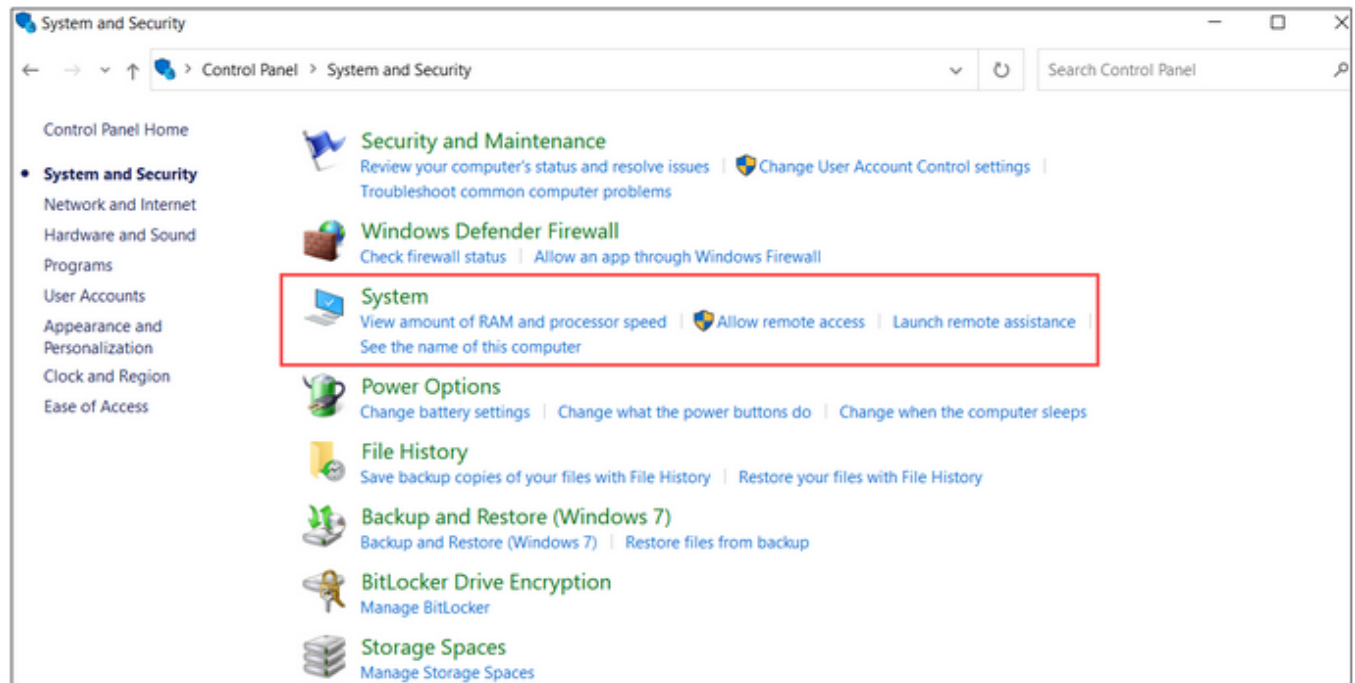
Setting FQDN on Windows

 Admin privileges are needed to change computer name and domain name.

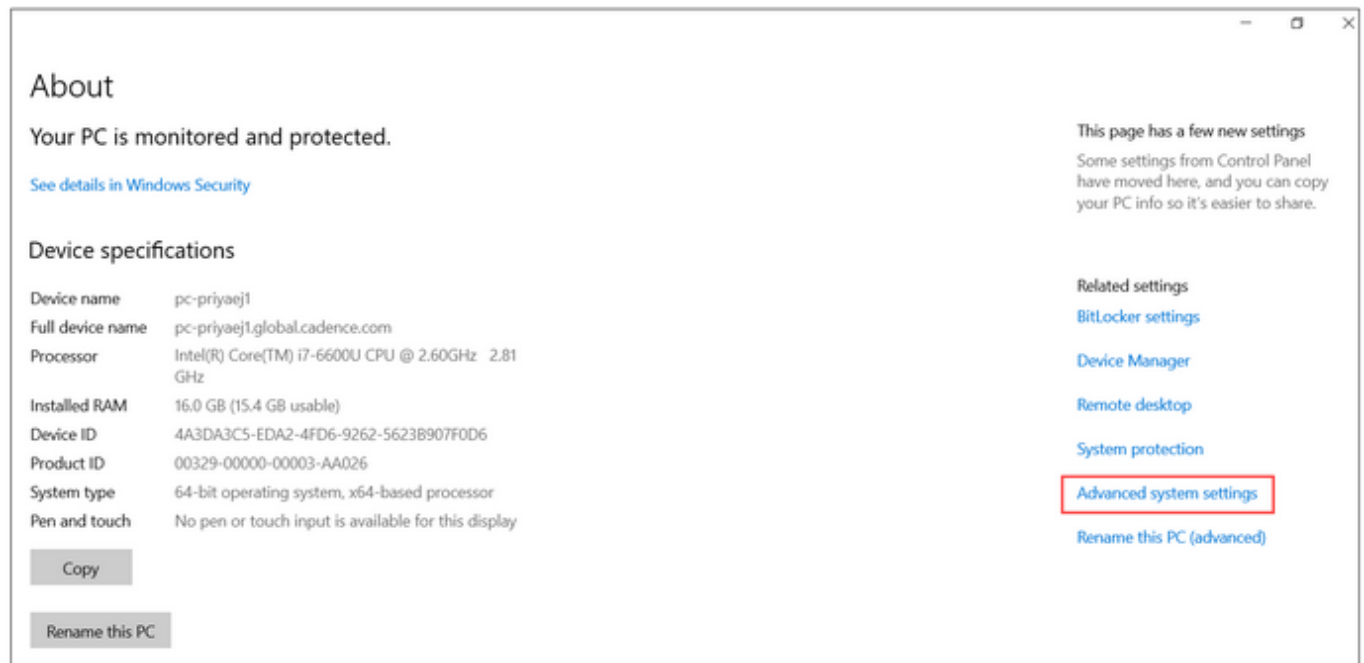
1. In the Search bar, type "*Control Panel*" and press *Enter*.



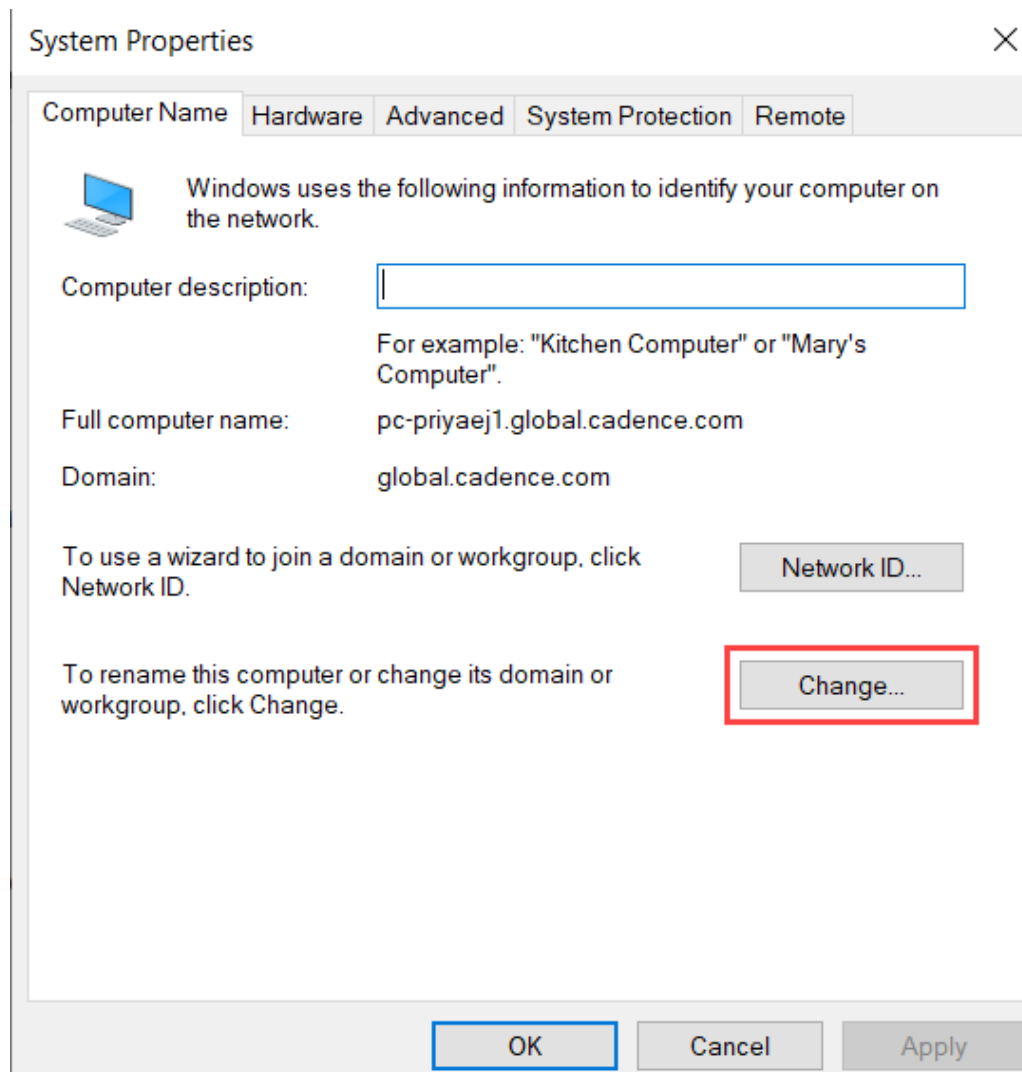
2. Navigate to "System and Security", and click "System".



3. Click "Advanced system settings".



4. On the "Computer Name" tab, click "Change..."



5. Change "*Computer name*" to "*starwars*".

Computer Name/Domain Changes ✕

You can change the name and the membership of this computer.
Changes might affect access to network resources.

Computer name:
starwars

Full computer name:
starwars.global.cadence.com

[More...](#)

Member of

☒ Domain:
somegalaxyfarfaraway.com

☐ Workgroup:

[OK](#) [Cancel](#)

6. Under "*Member of*", select "*Domain*", and enter "*somegalaxyfarfaraway.com*".
7. Click *OK*.
8. Restart the computer.
9. Run mfp again to make sure the changes are effective.

Why do I need Amazon EC2 Elastic Network Interface ID?

On an Amazon EC2 instance, the Elastic Network Interface (ENI) ID must be set before mfp is run. If the ID changes after mfp is run, Cadence License Manager will fail.

Why do I get the message "./lmutil: No such file or directory"?

When lmutil is run, it produces an error message.

```
$ ./lmutil
-bash: ./lmutil: No such file or directory
$
```

This happens if a dynamically linked library needed by lmutil is not installed on your host. This library is available with the Linux Standard Base support package, which can be installed as follows.

```
sudo apt update
sudo apt install lsb
```

See https://en.wikipedia.org/wiki/Linux_Standard_Base for more information.