

Project Name: MATE	Document Name: MATE 1.0b Installation guide
Code: MATE0009-I1.0	Versión: 1.1

# MATE

## MATE 1.0b Installation Guide

### MATE0009-I1.1 Version 1.1

#### Control de versiones

Versión	Fecha	Descripción	Responsable
1.0	18/9/11	Release	Rodrigo Echeverría
1.1	2/5/12	Modificadas algunas dependencias	Daniel Roca

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## **1. Introduction**

### ***1.1. Who is this document for?***

This document is made mainly for the final users of the application who want to know how to install and execute MATE.

### ***1.2. Contents***

In this guide we cover all the steps to follow to get MATE installed and running.

### ***1.3. Scope***

This guide only applies to MATE, the installation process for its dependencies, like Dyninst or MPI, is not covered by this document. Also this guide doesn't provide information about the applications to tune.

### ***1.4. Document structure***

This document consists of 4 chapters, the first of them is this introduction. Chapter 2, Dependencies, shows MATE dependencies and where to find them. Chapter 3, Installation, explains how to install and which options are offered to the user to customize this process. Chapter 4, Running MATE explains which arguments must be passed to its binaries.

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## 2. Dependencies

### 2.1. Dyninst

The most critical dependency for MATE is Paradyn's Dyninst API. MATE is programed to work with the last one at this date (7.0.1) Which can be downloaded here:

<http://www.paradyn.org/html/dyninst7.0-software.html>

### 2.2. MPI

Mate requires MPI in compilation time for future expansion plans, so right now, any version or implementation should be fine.

### 2.3. Other dependencies

MATE also needs:

- libelf & libdwarf: we can install them from repository by doing

```
sudo apt-get libdwarf-dev libelf1 libelf-dev
```

- libiberty: which is inside the package binutils-dev.

## 3. Installation

The installation of MATE is similar to any UNIX like system installation: ./configure + make + make install.

### 3.1. Configure

Configure allows the user to customize the installation, for this it provides the following options:

#### 3.1.1. General options

-help	Display this help message
-prefix=<dir>	Specify the destination directory (by default /usr/local/MATE)
-arch=<arch>	Specify the target architecture
Valid architectures	xt3, craycnl, bgp, bgl, ibm64, bm64linux, sunx86_64, crayxmt, solaris2-64, mips32, sgi64, sgio32
-with-make=<dir>	Specify the location of makeFile
-with-doxygen=<dir>	Specify the location of doxygen tool

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### 3.1.2. Compiler related options

-c++=<compiler>	Specify the c++ compiler
valid compilers:	CC, KCC, g++, *xlc*, cxx, pgCC, pgcpp, FCC, guidec++, aCC, c++, ecpc, g++4, icpc, scgcc, scpathCC, pathCC, orCC
-cc=<compiler>	Specify the c compiler
valid compilers:	cc, gcc, gcc4, KCC, guidec, *xlc*, ecc, icc, pathcc, powerpc-bgp-linux-gcc, pgcc, fcc, orcc, qk-pgcc
-with-binutils=<dir>	Specify the location of binutils dir

### 3.1.3. MPI related options

-mpiinc=<dir>	Specify the location of the MPI include dir
-mpilib=<dir>	Specify the location of the MPI library dir
-mpilibrary=<library>	Specify a different MPI library
for example:	-pilibrary=-lmpi_r for specifying a thread-safe MPI library

### 3.1.4. Dyninst related options

-dyninstinc=<dir>	Specify the location of the Dyninst include dir
-dyninstlib=<dir>	Specify the location of the Dyninst library dir
-dwarf=<dir>	Specify the location of the libdwarf library

## 3.2. Make

Make has four main targets:

- make: compiles the application and puts the binaries of Analyzer and AC in MATE/bin, the DMLib in MATE/lib and a model of their configuration files in MATE/conf
- make install: installs MATE in the prefix chosen (by default /usr/local/MATE)
- make clean: deletes the useless files generated in the compilation
- make doc: creates the document of MATE in MATE/doc with Doxygen

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## 4. Running MATE

MATE can be ran from the central node, and consist in running Analyzer and AC like this:

Analyzer:

```
./Analyzer <AppPath> [<AppArgs>]
```

or

```
./Analyzer -config file.ini <App> [<AppArgs>]
```

AC

```
export LD_LIBRARY_PATH="<<MATE_location>/MATE/lib"
export DYNINSTAPI_RT_LIB
="<<Dyninst_location>/dyninstAPI/<arch>/lib/libdyninstAPI_RT.so"
mpirun -mf machinefile AC [-config file.ini] target_mpi_app
[target_mpi_app_args]
```

To close the application is enough to type 's' in the terminal where Analyzer is running (it will close the ACs)