

Rapport programmation par composant

Dans le cadre du cours programmation par composant, nous avons instancié une machine virtuelle sur google cloud pour pouvoir exécuter les différents programmes.

État de l'essai gratuit : Il vous reste 276,27 € de crédit et 89 jours d'essai gratuit. Passez à la version complète pour bénéficier d'un accès illimité à l'ensemble des fonctionnalités de Google Cloud Platform. IGNORER ACTIVER

Google Cloud My First Project Rechercher des ressources, des documents, d... Recherche

Compute Engine Instances de VM [CRÉER UNE INSTANCE](#) [IMPORTER LA VM](#) [ACTUALISER](#) [APPRENDRE](#)

Machines virtuelles

- Instances de VM
- Modèles d'instances
- Nœuds à locataire unique
- Images système
- TPU
- Remises sur engagement ...
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INSTANCES OBSERVABILITÉ PLANIFICATIONS D'INSTANCES

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Filtre Saisissez le nom ou la valeur de la propriété

État	Nom ↑	Zone	Recommandations	Utilisé par	Adresse IP interne	Adres	Connecter
<input checked="" type="checkbox"/>	tp-composant	us-west4-b			10.182.0.2 (nic0)	34.12 (nic0)	SSH

Actions associées

[Découvrir la sauvegarde et la reprise après sinistre](#) **NOUVEAU**
Sauvegardez vos VM et configurez la reprise après sinistre

[Afficher le rapport de facturation](#)
Affichez et gérez votre facturation Compute Engine

Nous avons cloné le répertoire git et installé les commandes nécessaires pour la compilation.

```
Processing triggers for man-db (2.9.4-2) ...
Processing triggers for libc-bin (2.31-13+deb11u5) ...
koundambengue@tp-composant:~$ git clone https://github.com/Kounda/lib_partageable_2023.git
Cloning into 'lib_partageable_2023'...
remote: Enumerating objects: 37, done.
remote: Counting objects: 100% (37/37), done.
remote: Compressing objects: 100% (25/25), done.
Receiving objects: 100% (37/37), 7.00 KiB | 3.50 MiB/s, done.
remote: Total 37 (delta 9), reused 37 (delta 9), pack-reused 0
Resolving deltas: 100% (9/9), done.
```

La commande make, pour la compilation des fichiers sources :

```

koundambengue@tp-composant:~/lib_partageable_2023$ make
cd main && make install
make[1]: Entering directory '/home/koundambengue/lib_partageable_2023/main'
mkdir ../bin
for component in Composant1 Composant2; do \
    cd ../$component; \
    make install; \
done
make[2]: Entering directory '/home/koundambengue/lib_partageable_2023/Composant1'
mkdir -p ../lib
g++ -fPIC -I../interfaces -c Composant1.cpp -o Composant1.o
gcc -o libComposant1.so -shared Composant1.o
cp libComposant1.so ../lib/libComposant1.so
make[2]: Leaving directory '/home/koundambengue/lib_partageable_2023/Composant1'
make[2]: Entering directory '/home/koundambengue/lib_partageable_2023/Composant2'
g++ -fPIC -I../interfaces -c Composant2.cpp -o Composant2.o
gcc -o libComposant2.so -shared Composant2.o
cp libComposant2.so ../lib/libComposant2.so
make[2]: Leaving directory '/home/koundambengue/lib_partageable_2023/Composant2'
g++ -fPIC -I../interfaces -c main.cpp -o main.o
g++ main.o -L ../lib -lComposant1 -lComposant2 -o main
cp main ../bin; \
cp ../lib/libComposant1.so ../lib/libComposant2.so ../bin
make[1]: Leaving directory '/home/koundambengue/lib_partageable_2023/main'
cd bin; \
LD_LIBRARY_PATH=. ./main
Composant 1 version 1.2.2.0
valeur 1 :8 valeur 2 :15
koundambengue@tp-composant:~/lib_partageable_2023$ '

```

Test de objdump -T main

```

koundambengue@tp-composant:~/lib_partageable_2023/main$ objdump -T main
main:      file format elf64-x86-64

DYNAMIC SYMBOL TABLE:
0000000000000000      DF *UND* 0000000000000000      GLIBCXX_3.4 _ZSt4endlIcSt11char_traitsIcEERSt13basic_ostreamI
T To ES6
0000000000000000      DF *UND* 0000000000000000                        _Z10composant2ii
0000000000000000      DF *UND* 0000000000000000                        _Z10composant1ii
0000000000000000      DF *UND* 0000000000000000                        _Z20getComposant1Versionv
0000000000000000      DF *UND* 0000000000000000      GLIBC_2.2.5 _cxa_atexit
0000000000000000      DF *UND* 0000000000000000      GLIBCXX_3.4 _ZStlsISt11char_traitsIcEERSt13basic_ostreamIcT_E
S5_Pkc
0000000000000000      DF *UND* 0000000000000000      GLIBCXX_3.4 _ZNSoIsEPFRSoS_E
0000000000000000      DO *UND* 0000000000000000      GLIBCXX_3.4 _ZSt4cout
0000000000000000      DF *UND* 0000000000000000      GLIBCXX_3.4 _ZNSt8ios_base4InitC1Ev
0000000000000000      DF *UND* 0000000000000000      GLIBCXX_3.4 _ZNSoIsEi
0000000000000000      w  D *UND* 0000000000000000                        ITM_deregisterTMCloneTable
0000000000000000      DF *UND* 0000000000000000      GLIBC_2.2.5 _libc_start_main
0000000000000000      w  D *UND* 0000000000000000                        gmon_start
0000000000000000      w  D *UND* 0000000000000000                        ITM_registerTMCloneTable
0000000000000000      DF *UND* 0000000000000000      GLIBCXX_3.4 _ZNSt8ios_base4InitD1Ev
0000000000000000      w  DF *UND* 0000000000000000      GLIBC_2.2.5 _cxa_finalize

koundambengue@tp-composant:~/lib_partageable_2023/main$ '

```

Test objdump -T libComposant1.so

```
koundambengue@tp-composant:~/lib_partageable_2023/main$ cd /home/koundambengue/lib_partageable_2023/Composant1
koundambengue@tp-composant:~/lib_partageable_2023/Composant1$ objdump -T libComposant1.so

libComposant1.so:      file format elf64-x86-64

DYNAMIC SYMBOL TABLE:
0000000000000000 w  D *UND* 0000000000000000 __cxa_finalize
0000000000000000 w  D *UND* 0000000000000000 __ITM_registerTMCloneTable
0000000000000000 w  D *UND* 0000000000000000 __ITM_deregisterTMCloneTable
0000000000000000 w  D *UND* 0000000000000000 __gmon_start__
0000000000001138 g  DF .text 0000000000000000 _Z20getComposant1Versionv
0000000000001124 g  DF .text 0000000000000014 _Z16addition_interneii
0000000000001105 g  DF .text 000000000000001f _Z10composant1ii
```

Test objdump -C -T libComposant1.so

```
koundambengue@tp-composant:~/lib_partageable_2023/Composant1$ objdump -C -T libComposant1.so

libComposant1.so:      file format elf64-x86-64

DYNAMIC SYMBOL TABLE:
0000000000000000 w  D *UND* 0000000000000000 __cxa_finalize
0000000000000000 w  D *UND* 0000000000000000 __ITM_registerTMCloneTable
0000000000000000 w  D *UND* 0000000000000000 __ITM_deregisterTMCloneTable
0000000000000000 w  D *UND* 0000000000000000 __gmon_start__
0000000000001138 g  DF .text 0000000000000000 getComposant1Version()
0000000000001124 g  DF .text 0000000000000014 addition_interne(int, int)
0000000000001105 g  DF .text 000000000000001f composant1(int, int)
```

Test objdump -T libComposant2.so

```
koundambengue@tp-composant:~/lib_partageable_2023/Composant2$ objdump -T libComposant2.so

libComposant2.so:      file format elf64-x86-64

DYNAMIC SYMBOL TABLE:
0000000000000000 w  D *UND* 0000000000000000 __cxa_finalize
0000000000000000 w  D *UND* 0000000000000000 __ITM_registerTMCloneTable
0000000000000000 w  D *UND* 0000000000000000 __ITM_deregisterTMCloneTable
0000000000000000 w  D *UND* 0000000000000000 __gmon_start__
00000000000010f5 g  DF .text 0000000000000013 _Z10composant2ii
```

Test objdump -C -T libComposant2.so

```
koundambengue@tp-composant:~/lib_partageable_2023/Composant1$ cd /home/koundambengue/lib_partageable_2023/Composant2
koundambengue@tp-composant:~/lib_partageable_2023/Composant2$ objdump -T libComposant2.so

libComposant2.so:      file format elf64-x86-64

DYNAMIC SYMBOL TABLE:
0000000000000000 w  D *UND* 0000000000000000 __cxa_finalize
0000000000000000 w  D *UND* 0000000000000000 __ITM_registerTMCloneTable
0000000000000000 w  D *UND* 0000000000000000 __ITM_deregisterTMCloneTable
0000000000000000 w  D *UND* 0000000000000000 __gmon_start__
00000000000010f5 g  DF .text 0000000000000013 _Z10composant2ii
```

A présent, nous allons décommenter les lignes extern "C"

Voici ce que nous avons en sorti :

```
koundambengue@tp-composant:~/lib_partageable_2023$ make
cd main && make install
make[1]: Entering directory '/home/koundambengue/lib_partageable_2023/main'
cp main ../bin; \
cp ../lib/libComposant1.so ../lib/libComposant2.so ../bin
make[1]: Leaving directory '/home/koundambengue/lib_partageable_2023/main'
cd bin; \
LD_LIBRARY_PATH=. ./main
Composant 1 version 1.2.2.0
valeur 1 :8 valeur 2 :15
```

Test objdump -T main

```
koundambengue@tp-composant:~/lib_partageable_2023/main$ objdump -T main
main:      file format elf64-x86-64

DYNAMIC SYMBOL TABLE:
0000000000000000      DF *UND* 0000000000000000      GLIBCXX_3.4  _ZSt4endlIcSt11char_traitsIcEERSt13basic_ostreamI
T_T0_ES6_
0000000000000000      DF *UND* 0000000000000000      _Z10composant2ii
0000000000000000      DF *UND* 0000000000000000      _Z10composant1ii
0000000000000000      DF *UND* 0000000000000000      _Z20getComposant1Versionv
0000000000000000      DF *UND* 0000000000000000      GLIBC_2.2.5  __cxa_atexit
0000000000000000      DF *UND* 0000000000000000      GLIBCXX_3.4  _ZSt15IcSt11char_traitsIcEERSt13basic_ostreamIcT_E
S5_Pkc
0000000000000000      DF *UND* 0000000000000000      GLIBCXX_3.4  _ZN5SolsEPFRSoS_E
0000000000000000      DO *UND* 0000000000000000      GLIBCXX_3.4  _ZSt4cout
0000000000000000      DF *UND* 0000000000000000      GLIBCXX_3.4  _ZNSt8ios_base4InitCIEv
0000000000000000      DF *UND* 0000000000000000      GLIBCXX_3.4  _ZN5SolsEi
0000000000000000      w  D *UND* 0000000000000000      _ITM_deregisterTMCloneTable
0000000000000000      DF *UND* 0000000000000000      GLIBC_2.2.5  __libc_start_main
0000000000000000      w  D *UND* 0000000000000000      _gmon_start__
0000000000000000      w  D *UND* 0000000000000000      _ITM_registerTMCloneTable
0000000000000000      DF *UND* 0000000000000000      GLIBCXX_3.4  _ZNSt8ios_base4InitDIEv
0000000000000000      w  DF *UND* 0000000000000000      GLIBC_2.2.5  __cxa_finalize
```

Test objdump -C -T main

```
koundambengue@tp-composant:~/lib_partageable_2023/main$ objdump -C -T main
main:      file format elf64-x86-64

DYNAMIC SYMBOL TABLE:
0000000000000000      DF *UND* 0000000000000000      GLIBCXX_3.4  std::basic_ostream<char, std::char_traits<char> >
& std::endl<char, std::char_traits<char> >(std::basic_ostream<char, std::char_traits<char> >&)
0000000000000000      DF *UND* 0000000000000000      composant2(int, int)
0000000000000000      DF *UND* 0000000000000000      composant1(int, int)
0000000000000000      DF *UND* 0000000000000000      getComposant1Version()
0000000000000000      DF *UND* 0000000000000000      GLIBC_2.2.5  __cxa_atexit
0000000000000000      DF *UND* 0000000000000000      GLIBCXX_3.4  std::basic_ostream<char, std::char_traits<char> >
& std::operator<< <std::char_traits<char> >(std::basic_ostream<char, std::char_traits<char> >&, char const*)
0000000000000000      DF *UND* 0000000000000000      GLIBCXX_3.4  std::ostream::operator<<(std::ostream& (*) (std::o
stream&))
0000000000000000      DO *UND* 0000000000000000      GLIBCXX_3.4  std::cout
0000000000000000      DF *UND* 0000000000000000      GLIBCXX_3.4  std::ios_base::Init::Init()
0000000000000000      DF *UND* 0000000000000000      GLIBCXX_3.4  std::ostream::operator<<(int)
0000000000000000      w  D *UND* 0000000000000000      _ITM_deregisterTMCloneTable
0000000000000000      DF *UND* 0000000000000000      GLIBC_2.2.5  __libc_start_main
0000000000000000      w  D *UND* 0000000000000000      _gmon_start__
0000000000000000      w  D *UND* 0000000000000000      _ITM_registerTMCloneTable
0000000000000000      DF *UND* 0000000000000000      GLIBCXX_3.4  std::ios_base::~Init()
0000000000000000      w  DF *UND* 0000000000000000      GLIBC_2.2.5  __cxa_finalize
```

Test objdump -T libComposant1.so

```
value1 1.0 value2 2.10
koundambengue@tp-composant:~/lib_partageable_2023$ cd Composant1
koundambengue@tp-composant:~/lib_partageable_2023/Composant1$ objdump -T libComposant1.so

libComposant1.so:          file format elf64-x86-64

DYNAMIC SYMBOL TABLE:
0000000000000000 w D *UND* 0000000000000000 __cxa_finalize
0000000000000000 w D *UND* 0000000000000000 _ITM_registerTMCloneTable
0000000000000000 w D *UND* 0000000000000000 _ITM_deregisterTMCloneTable
0000000000000000 w D *UND* 0000000000000000 __gmon_start__
0000000000000138 g DF .text 0000000000000000d _Z20getComposant1Versionv
0000000000000124 g DF .text 00000000000000014 _Z16addition_interneii
0000000000000105 g DF .text 0000000000000001f _Z10composantlii
```

Test objdump -C -T libComposant1.so

```
koundambengue@tp-composant:~/lib_partageable_2023/Composant1$ objdump -C -T libComposant1.so

libComposant1.so:          file format elf64-x86-64

DYNAMIC SYMBOL TABLE:
0000000000000000 w D *UND* 0000000000000000 __cxa_finalize
0000000000000000 w D *UND* 0000000000000000 _ITM_registerTMCloneTable
0000000000000000 w D *UND* 0000000000000000 _ITM_deregisterTMCloneTable
0000000000000000 w D *UND* 0000000000000000 __gmon_start__
0000000000000138 g DF .text 0000000000000000d getComposant1Version()
0000000000000124 g DF .text 00000000000000014 addition_interne(int, int)
0000000000000105 g DF .text 0000000000000001f composant1(int, int)
```