SAGA PRACTICAL

ISSGC 2009

http://issgc-server-01.polytech.unice.fr/saga/

Ole Weidner, Shantenu Jha CCT/LSU   July 14th 2009
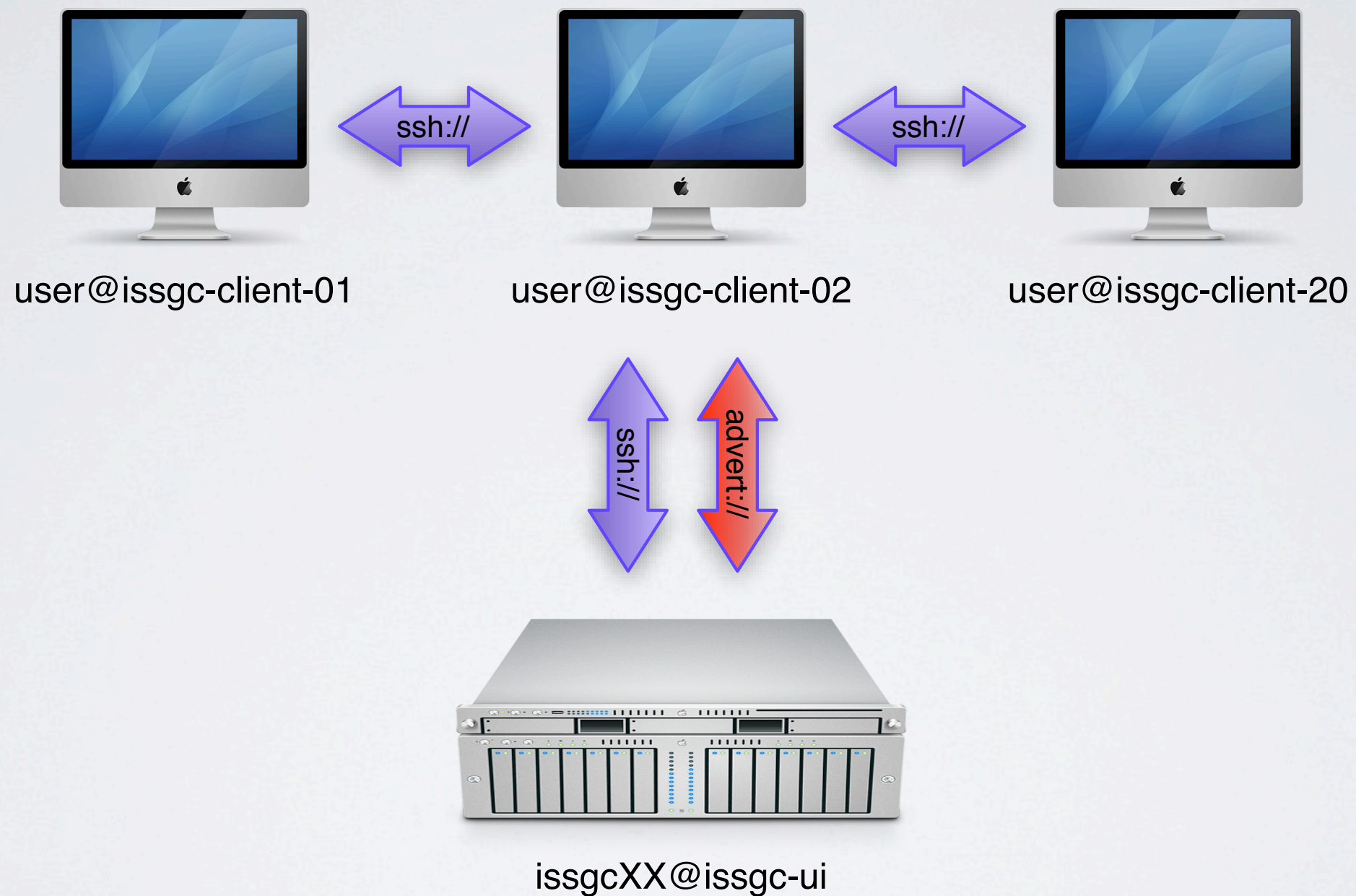
```
issgc01  >  134.59.140.152   /home/user/issgc01/        issgc21  >  134.59.140.160   /home/user/issgc21/
issgc02  >  134.59.140.152   /home/user/issgc02/        issgc22  >  134.59.140.161   /home/user/issgc22/
issgc03  >  134.59.140.152   /home/user/issgc03/        issgc23  >  134.59.140.161   /home/user/issgc23/
issgc04  >  134.59.140.153   /home/user/issgc04/        issgc24  >  134.59.140.161   /home/user/issgc24/
issgc05  >  134.59.140.153   /home/user/issgc05/        issgc25  >  134.59.140.162   /home/user/issgc25/
issgc06  >  134.59.140.153   /home/user/issgc06/        issgc26  >  134.59.140.162   /home/user/issgc26/
issgc07  >  134.59.140.156   /home/user/issgc07/        issgc27  >  134.59.140.162   /home/user/issgc27/
issgc08  >  134.59.140.156   /home/user/issgc08/        issgc28  >  134.59.140.163   /home/user/issgc28/
issgc09  >  134.59.140.156   /home/user/issgc09/        issgc29  >  134.59.140.163   /home/user/issgc29/
issgc10  >  134.59.140.157   /home/user/issgc10/        issgc30  >  134.59.140.163   /home/user/issgc30/
issgc11  >  134.59.140.157   /home/user/issgc11/        issgc31  >  134.59.140.164   /home/user/issgc31/
issgc12  >  134.59.140.157   /home/user/issgc12/        issgc32  >  134.59.140.164   /home/user/issgc32/
issgc13  >  134.59.140.158   /home/user/issgc13/        issgc33  >  134.59.140.164   /home/user/issgc33/
issgc14  >  134.59.140.158   /home/user/issgc14/        issgc34  >  134.59.140.165   /home/user/issgc34/
issgc15  >  134.59.140.158   /home/user/issgc15/        issgc35  >  134.59.140.165   /home/user/issgc35/
issgc16  >  134.59.140.159   /home/user/issgc16/        issgc36  >  134.59.140.165   /home/user/issgc36/
issgc17  >  134.59.140.159   /home/user/issgc17/        issgc37  >  134.59.140.166   /home/user/issgc37/
issgc18  >  134.59.140.159   /home/user/issgc18/        issgc38  >  134.59.140.166   /home/user/issgc38/
issgc19  >  134.59.140.160   /home/user/issgc19/        issgc39  >  134.59.140.166   /home/user/issgc39/
issgc20  >  134.59.140.160   /home/user/issgc20/        issgc40  >  134.59.140.167   /home/user/issgc40/
```

```
source   /opt/saga-1.3.1-issgc/share/saga/saga-env.sh
```

Make sure everything works:

```
saga-job run ssh://user@issgc-client-XX /bin/hostname
saga-job run ssh://issgcXX@issgc-ui /bin/hostname

saga-advert list_directory advert://issgc-ui//issgcXX/ ?
```

- SAGA comes with simple command line tools that allow to access basic package functionality.

- The source code is very simple and a great starting point to explore the SAGA package APIs:

  - saga-advert http://issgc-server-01.polytech.unice.fr/saga/cltools/advert/

  - saga-file http://issgc-server-01.polytech.unice.fr/saga/cltools/file/

  - saga-job http://issgc-server-01.polytech.unice.fr/saga/cltools/job/

  - saga-replica http://issgc-server-01.polytech.unice.fr/saga/cltools/replica/

- API documentation

  - http://issgc-server-01.polytech.unice.fr/saga/apidoc/

- Programming manual

  - http://issgc-server-01.polytech.unice.fr/saga/manual.pdf

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- Simple file copy example: copy.cpp

```cpp
#include <saga/saga.hpp>

int main(int argc, char * argv[])
{
  saga::url source("ssh://issgc12@issgc-ui//etc/passwd");
  saga::url target(".");
  saga::filesystem::file file (source, saga::filesystem::Read);
  file.copy(target);

  return 0;
}
```

- Simple file copy example: Makefile

```
SAGA_SRC = $(wildcard *.cpp)
SAGA_ADD_BIN_OBJ = $(SAGA_SRC:%.cpp=%.o)
SAGA_BIN = copy

include $(SAGA_LOCATION)/share/saga/make/saga.application.mk
```

- Or do it the hard way:

```
g++ -Wall -I/opt/saga-1.3.1-issgc/include -pthread \
-L/opt/saga-1.3.1-issgc/lib \
-lsaga_engine -lsaga_package_file example.cpp
```

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- Make sure that the SAGA libraries can be found by the loader. saga-env.sh takes care about that.

- If something goes wrong - use SAGA_VERBOSE:

```
SAGA_VERBOSE=10 ./example
```

- The source code can be found here:

  - http://issgc-server-01.polytech.unice.fr/saga/examples/hello_world.cpp

- Change these lines:

```
#define HOST1 "ssh://issgc<ID>@issgc-ui.polytech.unice.fr"
#define HOST2 "ssh://issgc<ID>@issgc-ui.polytech.unice.fr"
#define HOST3 "ssh://issgc<ID>@issgc-ui.polytech.unice.fr"
```

- The source code can be found here:

  - http://issgc-server-01.polytech.unice.fr/saga/examples/depending_jobs.cpp

- Change this line:

```
#define RESULT_STORE   "advert://issgc-ui//issgcXX/dep_job_result"
```

- Make sure the advert entry is empty

```
saga-advert remove_entry advert://issgc-ui//issgcXX/dep_job_result
```

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- Copy executable

```
scp depending-jobs issgc-client-XX:/tmp/saga/
```

- Run the example:

```
./depending-jobs ssh://user@issgc-client-XX ssh://issgcXX@issgc-client-XX
```

- Retrieve result from the advert service

```
saga-advert retreive_entry advert://issgc-ui//issgcXX/result_ex_2
```

- We saw simple examples from three different API packages:

  - advert package

  - job package

  - file package

- All the example code was rather simple, but of course it can be used to develop applications of arbitrary complexity

- More packages available:

  - replica, service discovery, cpr, streams

THANKS

http://saga.cct.lsu.edu