Présentation du logiciel de versionnage SOS de CLIOSOFT utilisé pour le projet BB130

SOS version 7.03.p10
- Schéma de principe 2
- Base de données PostgreSQL 3
- Communication Client-Serveur 4

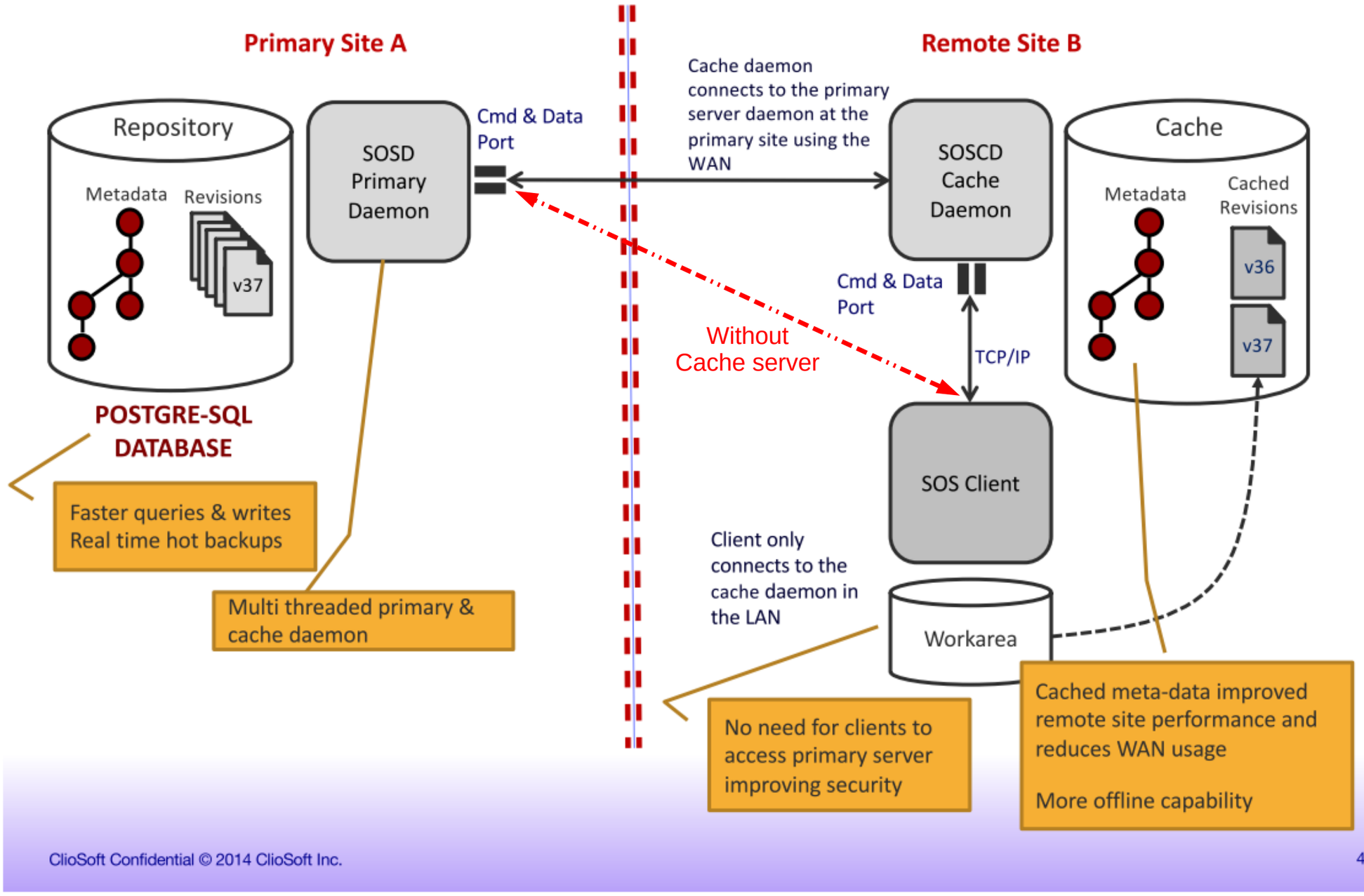
Procédures d'utilisation
- Commandes de base : sosadmin, sos 5, 6
- Exemple : primary server <=> without cache server 7
- Exemple : primary server <=> cache server 8

Arborescences
- Fichiers de configuration 9, 10
- Base de données PostgreSQL 11

Descriptif du matériel et des logiciels mis en place 12

Schema

7.0 Client-server – cache communication



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Databases

- Postgre-SQL database
  - Increased reliability and performance
  - Smaller repository size

- Meta data synced to cache servers in real-time
  - Faster operations at remote site
  - Reduced load on primary server

- SQLite DB to maintain workarea state (.workareadb)
  - Faster work area creation as directory structure in database not DIR files

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Client-Server-communication

- Atomicity
  - Much faster operations from remote site
  - Dramatically reduces effects of network latency
  - Change sets maintained in DB (No command support yet)
- Multi-threaded daemons
  - Much better performance and scalability as each daemon can concurrently handle multiple requests simultaneously
  - Each server daemon can handle more projects, users, and traffic without performance degradation
- Improved load balancing as most client queries are handled by the cache servers
- Clients only communicate with one daemon (cache server, unless it is not set up) streamlining and optimizing data transfer

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Each user must create his **project** by the command ***cpr*** in order to use in **MANUEL** mode this command.

SOSAdmin

This command is used on the SOS principal server (sos_HOST) which conserv all the design versionning
and on every remote server (HOST) where all designers can work.

Log in as the responsable of the project, and run the command ***sosadmin***.

Thus, the administrator who creates a primary server or a cache server becomes the owner of all these PostgreSQL databases
and their configuration files (the term server refers to a SOS software daemon).

primary server contains all versions of the libraries, cellviews, and other files associated with a design.
cache server contains a part of this design.
without cache server to access directly to a primary server.

Only the administrator may **start up**, shut down, edit or delete his achievements.

After choosing a **primary server** on **sos_HOST**, the administrator defines a **new project** to associate it with his design.

Note :

The administrator can specify by the command ***sosadmin***, the host-based access control rules
and by the file **sosd.cfg**, the access control for the specific users in fonction of their role and their group.

The administrator can configure some of the server and PostgreSQL database parameters through the Advanced settings dialog box :
• Thread pool: number of threads for the server.
• Max connections: maximum parallel connections to the database at any given point.
• Shared buffers: buffer memory for the PostgreSQL database.
Based on the number of users and the size of the project data, these parameters can be adjusted to gain maximum performance.

Each user must create his **project** by the command ***cpr*** in order to use in **MANUEL** mode this command.

SOS

This command is used **only** on every server (HOST) where the responsable of the project and all designers can work.
This configuration is **specific** to this host.

Integration of SOS with the CADENCE ***virtuoso*** software requires modifying three of these configuration files :
.cdsinit, cdsLibMgr.il, cdsinfo.tag.

First, the **administrator** runs the command ***sos***, chooses a **symbolic name for Server** and one of its proposed **project**s in order to create his **work area** associated to a local cache server or a remote primary server.
Finaly, the administrator copies the initial set of design files. Then he can use the command ***virtuoso*** and modify **cds.lib**.

After, **each designer** will execute the same commands and add the files of the **project** in his own **work area**.

Note :

The SOS software creates a **.SOS** directory in the work area.
Depending on the user's choice, it contains configuration files and / or not the local copies of a part of design.
To minimize the amount of disk space consumed by the copies of the project, it should better to choose **Links to Smart Cache**.
To run faster simulation and verification jobs, it should better to choose **Local Copies**.

Primary Server <=> Without Cache Server

Administrator sos_HOST : *sosadmin&* <=> Administrator HOST : *sosadmin&*

New ① — Startup ②

Symbolic name for Server : **S_PN_projet**

Set up a new primary server — sos_HOST — Port_N

/datas_sos/sos_HOST/repository_path/G_projet/S_PN_projet.rep

/datas_sos/sos_HOST/repository_backup/G_projet/S_PN_projet.rep_bck

Do not use caching — - — -

-

-

log

/opt/cliosoft/SERVERS7/LOCAL/S_PN_projet/server.log

Projects > New ③

Name of the Project : **N_projet**

Project Path

/datas_sos/sos_HOST/repository_path/G_projet/S_PN_projet.rep/N_projet/

Configuration File

N_projet/setup/sosd.cfg

New ④

Symbolic name for Server : **W_PN_projet**

Use an existing primary server — sos_HOST — Port_N

-

-

Do not use caching — - — -

-

-

log

-

Projects

Project Name : **N_projet**

Administrator|User HOST : *sos&*

File > New Workarea ⑤

Server Name : **W_PN_projet**

Project Name : **N_projet**

Workarea Dir : <G_projet>**/Administrator|User_projet**

Local Copies

log

<G_projet>/Administrator|User_projet/sos.log

Primary Server <=> Remote Cache Server

Administrator sos_HOST : *sosadmin&*

New ① **Startup** ②

Symbolic name for Server : **S_PN_projet**

Set up a new primary server sos_HOST Port_N
/datas_sos/sos_HOST/repository_path/G_projet/S_PN_projet.rep
/datas_sos/sos_HOST/repository_backup/G_projet/S_PN_projet.rep_bck

Set up a new cache server [sos_HOST] [Port_N+1]
[/datas_sos/sos_HOST/cache_path/G_projet/S_PN_projet.cac]
[/datas_sos/sos_HOST/cache_backup/G_projet/S_PN_projet.cac_bck]

log
/opt/cliosoft/SERVERS7/LOCAL/S_PN_projet/server.log
[/opt/cliosoft/SERVERS7/LOCAL/S_PN_projet/srv_cache.log]

Projects > New ③

Name of the Project : **N_projet**

Project Path
/datas_sos/sos_HOST/repository_path/G_projet/S_PN_projet.rep/N_projet/

Configuration File
N_projet/setup/sosd.cfg

<=>

Administrator HOST : *sosadmin&*

New ④ **Startup** ⑤

Symbolic name for Server : **CS_PN_projet**

Use an existing primary server sos_HOST Port_N
-
-

Set up a new cache server HOST Port_N+2
/datas_sos/HOST/cache_path/G_projet/CS_PN_projet.cac/
/datas_sos/HOST/cache_backup/G_projet/CS_PN_projet.cac_bck/

log
/opt/cliosoft/SERVERS7/REMOTE/CS_PN_projet/srv_cache.log

Projects

Project Name : **N_projet**

Administrator|User HOST : *sos&*

File > New Workarea ⑥

Server Name : **CS_PN_projet**
Project Name : **N_projet**
Workarea Dir : <G_projet>**/Administrator|User_projet**

Links to Smart Cache
log
<G_projet>/Administrator|User_projet/sos.log

Primary and Cache Server Configuration

Administrator sos_HOST|HOST > *sosadmin&*

cliosoft : groupe des utilisateurs de CLIOSOFT
clsmgr, sosadmin : manageurs de l'application CLIOSOFT
Administrator : responsable du projet (umask 007)

/opt/cliosoft/SERVERS7/

clsmgr:cliosoft rwx r-x r-x

LOCAL
(Primary Server Directory)
sosadmin:cliosoft rwx rws ---

S_PN_projet
(symbolic name for server)
Administrator:cliosoft rwx r-s ---

PROJECTS
(projects associated with the symbolic name)
Administrator:cliosoft rwx r-s ---

N_projet
(project name)
Administrator:cliosoft rw- r-- ---
" "

server.acl
(host or IP address access control rules)
Administrator:cliosoft rw- r-- ---
Edit Server Configuration > …
Access Control
+
[-@IP]
[-host]

serverdb.cfg
(server configuration)
Administrator:cliosoft rw- r-- ---
Edit Server Configuration > …
Host Name
Host Port : 5000 – 50000
Repository Path [Repository Backup]
Max DB connections : 60 - 60
Shared buffers MB : 128 – 128
Number of threads : 24 – 36
Use SSL : ...

server.log
(log file)
Administrator:cliosoft rw- r-- ---
...

sosd.lck
(server definition)
Administrator:cliosoft rw- r-- ---
sosd
Administrator
Host Name
localhost:10.0
sosd Processus Number
date of departure

REMOTE
(Cache Server Directory)
sosadmin:cliosoft rwx rws ---

CS_PN_projet
(symbolic name for server)
Administrator:cliosoft rwx r-s ---

serverdb.cfg

soscd.lck

srv_cache.log

Without Cache Server Configuration

cliosoft : groupe des utilisateurs de CLIOSOFT
clsmgr, sosadmin : manageurs de l'application CLIOSOFT
Administrator : responsable du projet (umask 007)

Administrator HOST > *sosadmin&*

/opt/cliosoft/SERVERS7/
clsmgr:cliosoft rwx r-x r-x

REMOTE
(Without Cache Server Directory)
sosadmin:cliosoft rwx rws ---

W_PN_projet
(symbolic name for server)
Administrator:cliosoft rwx r-s ---

serverdb.cfg
(server configuration)
Administrator:cliosoft rw- r-- ---
Edit Server Configuration > ...
Host Name
Host Port : 5000 – 50000

Max DB connections : 60 - 60
Shared buffers MB : 128 – 128
Number of threads : 24 – 36
Use SSL : ...

Administrator sos_HOST|HOST > *sosadmin&*

/datas_sos/sos_HOST|HOST/

sosadmin:sosadmin rwx rwx r-x

cliosoft : groupe des utilisateurs de CLIOSOFT
clsmgr, sosadmin : manageurs de l'application CLIOSOFT
Administrator : responsable du projet (umask 007)
sosadmin : administrateur des projets

repository_path
(Primary Server Directory)
sosadmin:sosadmin rwx r-x r-x

Groupe_projet
(project of user group)
Administrator:G_projet rwx rws ---

S_PN_projet.rep
(repository directory)
Administrator:G_projet rwx r-s ---

1

2

1

N_projet
(project name)
Administrator:G_projet rwx --- ---

setup
(directory)
Administrator:Administrator rwx --- ---

sosd.cfg
(access control of project)
Administrator:Administrator rw- r-- ---
ADMIN Administrator, sosadmin ;

2

pg_data
(PostgreSQL relational database)
Administrator:G_projet rwx --- ---

pg_sosd.log
(log file)
Administrator:Administrator rw- --- ---
...

postgresql.conf
(configuration file)
Administrator:Administrator rwx r-x r-x
...
dynamic_shared_memory_type = none

cache_path
(Cache Server Directory)
sosadmin:sosadmin rwx r-x r-x

Groupe_projet
(project of user group)
Administrator:G_projet rwx rws ---

CS_PN_projet.cac
(cache directory)
Administrator:G_projet rwx r-x --x

1

2

1

N_projet
(project name)
Administrator:G_projet rwx --x --x

2

pg_data
(PostgreSQL relational database)
Administrator:G_projet rwx --- ---

pg_soscd.log
(log file)
Administrator:Administrator rw- --- ---
...

postgresql.conf
(configuration file)
Administrator:Administrator rwx r-x r-x
...
dynamic_shared_memory_type = none

Hardware and Software

	clrlpcldap01	clrmesos02	**clrmecad06**	clrmecad03	clrmecad04
server type	*Virtual*	*Virtual*	***Real***	*Virtual*	*Virtual*
Processor	*2*	*4*	*40*	*12*	*24*
CPU GHz	*2,3*	*2,3*	*2,3*	*2,3*	*2,3*
RAM Gb	*3,8*	*3,7*	*62,6*	*15,4*	*21,2*
CentOS 7					
/xusers/0_commun/ /xusers/1_profils/ /xusers/2_works/		remote mounting from clrmecad06:/zusers/*_*/	**local** mounting from /zusers/*_*/	remote mounting from clrmecad06:/zusers/*_*/ (replication from clrmecad06)	remote mounting from clrmecad06:/zusers/*_*/
/xusers/3_projets/		remote mounting from clrmecad06:/zusers/3_projets/	**local** mounting from /zusers/3_projets/	remote mounting from clrmecad06:/zusers/3_projets/ (replication from clrmecad06)	remote mounting from clrmecad06:/zusers/3_projets/
/simul/iaocao/		remote mounting from clrmecad06:/zsimul/iaocao/	**local** mounting from /zsimul/iaocao/	remote mounting from clrmecad06:/zsimul/iaocao/	remote mounting from clrmecad06:/zsimul/iaocao/
/eda/cadence/ *EUROPRACTICE 2016-17*		remote mounting from clrmecad06:/ztools/cadence/	**local** mounting from /ztools/cadence/	remote mounting from clrmecad06:/ztools/cadence/ (replication from clrmecad06)	remote mounting from clrmecad06:/ztools/cadence/
/xtools/tsmc/ *TSMC CERN 013 1.4c 3*		remote mounting from clrmecad06:/ztools/tsmc/	**local** mounting from /ztools/tsmc/	remote mounting from clrmecad06:/ztools/cadence/ (replication from clrmecad06)	remote mounting from clrmecad06:/ztools/tsmc/
/opt/cliosoft/SERVERS7/ *SOS 7.03.p10*		**LOCAL/S_projet/**	**REMOTE/W_projet/** [REMOTE/CS_projet/]	**REMOTE/W_projet/** [REMOTE/CS_projet/]	**REMOTE/W_projet/** [REMOTE/CS_projet/]
/datas_sos/HOST/ *SOS 7.03.p10*		**repository_path/.../S_projet/**	[cache_path/.../CS_projet/]	[cache_path/.../CS_projet/]	[cache_path/.../CS_projet/]