

Start of System

Server	-	Client A	Comment
SC=None	(Csc=0)	last_sync=0	No sync count.
Ssc=None		obj=None	No objects.
Obj=None			
	-	Client B	
	(Csc=0)	last_sync=0	Csc would appear as zero.
		obj=None	

Local Change

Server	-	Client A	Comment
SC=None	(Csc=0)	last_sync=0	Client A creates an object locally.
Ssc=None		sid=0, ls=0, lc=1	
Obj=None			
	-	Client B	
	(Csc=0)	last_sync=0	Csc would appear unchanged.
		obj=None	

Start Upload Phase

Server	<<<	Client A	Comment
SC=1, isC=0	sid=0, ls=0	last_sync=0	Session started.
Ssc=1		sid=0, ls=0, lc=1	Ssc is issued outside of the data transaction.
Obj=None			
	-	Client B	
	(Csc=0)	last_sync=0	Csc would appear unchanged.
		obj=None	

Server	>>>	Client A	Comment
SC=1, isC=1	id=1, ls=1	last_sync=0	New object will be committed due to provided sid=0.
Ssc=None		sid=1, ls=1, lc=0	Session is marked committed.
id=1, ls=1			List of objects is returned.
	-	Client B	
	(Csc=1)	last_sync=0	Csc would appear changed.
		obj=None	

Start Download Phase

Server	<<<	Client A	Comment
SC=1, isC=1	last_sync=0	last_sync=0	Client A download phase.
Ssc=None		sid=1, ls=1, lc=0	Client sends last_sync.
id=1, ls=1			
	-	Client B	
	(Csc=1)	last_sync=0	Csc would appear unchanged.
		obj=None	

Server	>>>	Client A	Comment
SC=1, isC=1	Csc=1	last_sync=1	Server returns objects where ls > last_sync and lastUpdatedBy != clientId
Ssc=None	Obj=None	sid=1, ls=1, lc=0	
id=1, ls=1			
	-	Client B	
	(Csc=1)	last_sync=0	Csc would appear unchanged.
		obj=None	

Start Download Phase

Server	-	Client A	Comment
SC=1, isC=1	(Csc=1)	last_sync=1	Client B download phase.
Ssc=None		sid=1, ls=1, lc=0	Client sends last_sync.
id=1, ls=1			
	<<<	Client B	
	last_sync=0	last_sync=0	Csc would appear unchanged.
		obj=None	

Server	-	Client A	Comment
SC=1, isC=1	(Csc=1)	last_sync=1	Server returns objects where ls > last_sync and lastUpdatedBy != clientId
Ssc=None		sid=1, ls=1, lc=0	
id=1, ls=1			
	>>>	Client B	
	Csc=1	last_sync=1	Csc would appear unchanged.
	id=1, ls=1	sid=1, ls=1, lc=0	

Local Change

Server	-	Client A	Comment
SC=1, isC=1	(Csc=1)	last_sync=1	Client A changes object locally.
Ssc=None		sid=1, ls=1, lc=1	
id=1, ls=1			
	-	Client B	
	(Csc=1)	last_sync=1	Csc would appear unchanged.
		sid=1, ls=1, lc=0	

Start Upload Phase

Server	Client A	
SC=2, isC=0	sid=1, ls=1	last_sync=1
Ssc=2	sid=1, ls=1, lc=1	
id=1, ls=1		
-	Client B	
(Csc=1)	last_sync=1	
	sid=1, ls=1, lc=0	

Session started.
Ssc is issued outside of the data transaction.

Csc would appear unchanged.

Server	Client A	
SC=2, isC=1	id=1, ls=2	last_sync=1
Ssc=None	sid=1, ls=2, lc=0	
id=1, ls=2		
-	Client B	
(Csc=2)	last_sync=1	
	sid=1, ls=1, lc=0	

Object committed due to provided ls >= LS.
Session is marked committed.
List of objects is returned.

Csc would appear changed.

Local Change

Server	Client A	
SC=2, isC=1	(Csc=2)	last_sync=1
Ssc=None	sid=1, ls=2, lc=0	
id=1, ls=2		
-	Client B	
(Csc=2)	last_sync=1	
	sid=1, ls=1, lc=1	

Local change made to previous version of object.

Csc would appear unchanged.

Start Upload Phase

Server	Client A	
SC=3, isC=0	(Csc=2)	last_sync=1
Ssc=3	sid=1, ls=2, lc=0	
id=1, ls=2		
<<<	Client B	
sid=1, ls=1	last_sync=1	
	sid=1, ls=1, lc=1	

Session started.
Ssc is issued outside of the data transaction.

Csc would appear unchanged.

Server	Client A	
SC=3, isC=1	(Csc=3)	last_sync=1
Ssc=None	sid=1, ls=2, lc=0	
id=1, ls=2		
>>>	Client B	
id=1, ls=2	last_sync=1	
	sid=1, ls=2, lc=0	

Object is not committed due to NOT ls >= LS.
Session is marked committed.
List of objects is returned, sid #1 with values.
Possible notice to user:
Csc would appear changed.

Sync returned new versions, some local changes disgarded.
Sync before making changes to avoid this.

Local Change

Server	Client A	
SC=3, isC=1	(Csc=3)	last_sync=1
Ssc=None	sid=1, ls=2, lc=0	
id=1, ls=2		
-	Client B	
(Csc=3)	last_sync=1	
	sid=1, ls=2, lc=1	

Local change made to current version of object.

Csc would appear unchanged.

Start Upload Phase

Server	Client A	
SC=4, isC=0	(Csc=3)	last_sync=1
Ssc=4	sid=1, ls=2, lc=0	
id=1, ls=2		
<<<	Client B	
sid=1, ls=2	last_sync=1	
	sid=1, ls=2, lc=1	

Session started.
Ssc is issued outside of the data transaction.

Csc would appear unchanged.

Server	Client A	
SC=4, isC=1	(Csc=4)	last_sync=1
Ssc=None	sid=1, ls=2, lc=0	
id=1, ls=4		
>>>	Client B	
id=1, ls=4	last_sync=1	
	sid=1, ls=4, lc=0	

Object is committed due to provided ls >= LS.
Session is marked committed.
List of objects is returned.

Csc would appear changed.

Start Download Phase

Server	Client A	
SC=4, isC=1	last_sync=1	last_sync=1
Ssc=None	sid=1, ls=2, lc=0	
id=1, ls=4		
-	Client B	
(Csc=4)	last_sync=1	
	sid=1, ls=4, lc=0	

Client A download phase.
Client sends last_sync.

Csc would appear unchanged.

Server	Client A	
SC=4, isC=1	Csc=4	last_sync=4
Ssc=None	id=1, ls=4	sid=1, ls=4, lc=0
id=1, ls=4		
-	Client B	
(Csc=4)	last_sync=1	
	sid=1, ls=4, lc=0	

Server returns objects where LS > last_sync and lastUpdatedBy != clientId

Csc would appear unchanged.

Start of System

Server	-	Client A
SC=None	(Csc=0)	last_sync=0
Ssc=None		obj=None
Obj=None		
	-	Client B
	(Csc=0)	last_sync=0
		obj=None

Comment

No sync count.
No objects.

Csc would appear as zero.

Local Change

Server	-	Client A
SC=None	(Csc=0)	last_sync=0
Ssc=None		sid=0, ls=0, lc=1
Obj=None		
	-	Client B
	(Csc=0)	last_sync=0
		obj=None

Client A creates an object locally.

Csc would appear unchanged.

Local Change

Server	-	Client A
SC=None	(Csc=0)	last_sync=0
Ssc=None		sid=0, ls=0, lc=1
Obj=None		
	-	Client B
	(Csc=0)	last_sync=0
		sid=0, ls=0, lc=1

Client B creates an object locally.

Csc would appear unchanged.

Start Upload Phase

Server	<<<	Client A
SC=1, isC=0	sid=0, ls=0	last_sync=0
Ssc=1		sid=0, ls=0, lc=1
Obj=None		
	-	Client B
	(Csc=0)	last_sync=0
		sid=0, ls=0, lc=1

Session started.
Ssc is issued outside of the data transaction.

Csc would appear unchanged.

Start Upload Phase

Server	-	Client A
SC=1, isC=0	(Csc=0)	last_sync=0
SC=2, isC=0		sid=0, ls=0, lc=1
Ssc=2		
Obj=None		
	<<<	Client B
	sid=0, ls=0	last_sync=0
		sid=0, ls=0, lc=1

Session started.
Ssc is issued outside of the data transaction.

Csc would appear unchanged.

Server	>>>	Client A
SC=1, isC=1	id=1, ls=1	last_sync=0
SC=2, isC=0		sid=1, ls=1, lc=0
Ssc=None		
id=1, ls=1	-	Client B
	(Csc=1)	last_sync=0
		sid=0, ls=0, lc=1

New object will be committed due to provided sid=0.
Session is marked committed.
List of objects is returned.

Csc would appear changed.

Server	-	Client A
SC=1, isC=1	(Csc=2)	last_sync=0
SC=2, isC=1		sid=1, ls=1, lc=0
Ssc=None		
id=1, ls=1	>>>	Client B
id=2, ls=2	id=2, ls=2	last_sync=0
		sid=2, ls=2, lc=0

New object will be committed due to provided sid=0.
Session is marked committed.
List of objects is returned.

Csc would appear changed.

Start Download Phase

Server	<<<	Client A
SC=1, isC=1	last_sync=0	last_sync=0
SC=2, isC=1		sid=1, ls=1, lc=0
Ssc=None		
id=1, ls=1		
id=2, ls=2	-	Client B
	(Csc=2)	last_sync=0
		sid=2, ls=2, lc=0

Client A download phase.
Client sends last_sync.

Csc would appear unchanged.

Start Download Phase

Server	-	Client A
SC=1, isC=1	(Csc=2)	last_sync=0
SC=2, isC=1		sid=1, ls=1, lc=0
Ssc=None		
id=1, ls=1		
id=2, ls=2	<<<	Client B
	last_sync=0	last_sync=0
		sid=2, ls=2, lc=0

Client B download phase.
Client sends last_sync.

Csc would appear unchanged.

Server	>>>	Client A
SC=1, isC=1	Csc=2	last_sync=2
SC=2, isC=1	id=2, ls=2	sid=1, ls=1, lc=0
Ssc=None		sid=2, ls=2, lc=0
id=1, ls=1		
id=2, ls=2	-	Client B
	(Csc=2)	last_sync=0
		sid=2, ls=1, lc=0

Server returns objects where ls > last_sync and lastUpdatedBy != clientId

Csc would appear unchanged.

Server	-	Client A
SC=1, isC=1	(Csc=2)	last_sync=2
SC=2, isC=1		sid=1, ls=1, lc=0
Ssc=None		sid=2, ls=2, lc=0
id=1, ls=1		
id=2, ls=2	>>>	Client B
	Csc=2	last_sync=2
	id=1, ls=1	sid=2, ls=2, lc=0
		sid=1, ls=1, lc=0

Server returns objects where ls > last_sync and lastUpdatedBy != clientId

Csc would appear unchanged.

Local Change

Server	-	Client A
SC=1, isC=1	(Csc=2)	last_sync=2
SC=2, isC=1		sid=1, ls=1, lc=1
Ssc=None		sid=2, ls=2, lc=0
id=1, ls=1		
id=2, ls=2	-	Client B
	(Csc=2)	last_sync=2
		sid=2, ls=2, lc=0
		sid=1, ls=1, lc=0

Client A changes an object locally.

Csc would appear unchanged.

Local Change

Server	-	Client A
SC=1, isC=1	(Csc=2)	last_sync=2
SC=2, isC=1		sid=1, ls=1, lc=1
Ssc=None		sid=2, ls=2, lc=0
id=1, ls=1		
id=2, ls=2	-	Client B
	(Csc=2)	last_sync=2
		sid=2, ls=2, lc=0
		sid=1, ls=1, lc=1

Client B changes the same object locally.

Csc would appear unchanged.

Start Upload Phase

Server	Client A
SC=3, isC=0	last_sync=2
Ssc=3	sid=1, ls=1, lc=1
id=1, ls=1	sid=2, ls=2, lc=0
id=2, ls=2	
-	Client B
(Csc=2)	last_sync=2
	sid=2, ls=2, lc=0
	sid=1, ls=1, lc=1

Session started.
Ssc is issued outside of
the data transaction.
Trailing committed SC rows
are deleted.

Csc would appear unchanged.

Start Upload Phase

Server	Client A
SC=3, isC=0	last_sync=2
SC=4, isC=0	sid=1, ls=1, lc=1
Ssc=4	sid=2, ls=2, lc=0
id=1, ls=1	
id=2, ls=2	
-	Client B
sid=1, ls=1	last_sync=2
	sid=2, ls=2, lc=0
	sid=1, ls=1, lc=1

Session started.
Ssc is issued outside of
the data transaction.

Csc would appear unchanged.

Server	Client A
SC=3, isC=1	last_sync=2
SC=4, isC=0	sid=1, ls=3, lc=0
Ssc=None	sid=2, ls=2, lc=0
id=1, ls=3	
id=2, ls=2	
-	Client B
(Csc=3)	last_sync=2
	sid=2, ls=2, lc=0
	sid=1, ls=1, lc=1

Object committed due to
provided ls >= ls.
Session is marked committed.
List of objects is returned.

Csc would appear changed.

Server	Client A
SC=3, isC=1	last_sync=2
SC=4, isC=1	sid=1, ls=3, lc=0
Ssc=None	sid=2, ls=2, lc=0
id=1, ls=3	
id=2, ls=2	
-	Client B
id=1, ls=3	last_sync=2
	sid=2, ls=2, lc=0
	sid=1, ls=3, lc=0

Object is not committed due
to NOT ls >= ls.
Session is marked committed.
List of objects is returned,
sid #1 with values.
Possible notice to user:

Csc would appear changed.

Alternate Outcome

Server	Client A
SC=3, isC=0	last_sync=2
SC=4, isC=1	sid=1, ls=1, lc=1
Ssc=None	sid=2, ls=2, lc=0
id=1, ls=4	
id=2, ls=2	
-	Client B
id=1, ls=4	last_sync=2
	sid=2, ls=2, lc=0
	sid=1, ls=4, lc=0

Object committed due to
provided ls >= ls.
Session is marked committed.
List of objects is returned.

Csc would appear unchanged.

Server	Client A
SC=3, isC=1	last_sync=2
SC=4, isC=1	sid=1, ls=4, lc=0
Ssc=None	sid=2, ls=2, lc=0
id=1, ls=4	
id=2, ls=2	
-	Client B
(Csc=4)	last_sync=2
	sid=2, ls=2, lc=0
	sid=1, ls=4, lc=0

Object is not committed due
to NOT ls >= ls.
Session is marked committed.
List of objects is returned,
sid #1 with values.
Possible notice to user:

Csc would appear changed.

Start of System Server - Client A SC=None (Csc=0) last_sync=0 Ssc=None obj=None Obj=None - Client B (Csc=0) last_sync=0 obj=None		Comment No sync count. No objects. Csc would appear as zero.
Local Change Server - Client A SC=None (Csc=0) last_sync=0 Ssc=None sid=0,ls=0,lc=1 Obj=None - Client B (Csc=0) last_sync=0 obj=None		Client A creates an object locally. Csc would appear unchanged.
Local Change Server - Client A SC=None (Csc=0) last_sync=0 Ssc=None sid=0,ls=0,lc=1 Obj=None - Client B (Csc=0) last_sync=0 sid=0,ls=0,lc=1		Client B creates an object locally. Csc would appear unchanged.
Start Upload Phase Server <<< Client A SC=1,isC=0 sid=0,ls=0 last_sync=0 Ssc=1 sid=0,ls=0,lc=1 Obj=None - Client B (Csc=0) last_sync=0 sid=0,ls=0,lc=1		Session started. Ssc is issued outside of the data transaction. Csc would appear unchanged.
Start Upload Phase Server - Client A SC=1,isC=0 (Csc=0) last_sync=0 SC=2,isC=0 sid=0,ls=0,lc=1 Ssc=2 Obj=None - Client B sid=0,ls=0 last_sync=0 sid=0,ls=0,lc=1		Session started. Ssc is issued outside of the data transaction. Csc would appear unchanged.
Server >>> Client A SC=1,isC=1 id=1,ls=1 last_sync=0 SC=2,isC=0 sid=1,ls=1,lc=0 Ssc=None id=1,ls=1 - Client B (Csc=1) last_sync=0 sid=0,ls=0,lc=1		New object will be committed due to provided sid=0. Session is marked committed. List of objects is returned. Csc would appear changed.
Local Change Server - Client A SC=1,isC=1 (Csc=2) last_sync=0 SC=2,isC=1 sid=1,ls=1,lc=1 Ssc=None id=1,ls=1 - Client B id=2,ls=2 (Csc=2) last_sync=0 sid=2,ls=2,lc=0		Client A changes an object locally. Csc would appear unchanged.
Local Change Server - Client A SC=1,isC=1 (Csc=2) last_sync=0 SC=2,isC=1 sid=1,ls=1,lc=1 Ssc=None id=1,ls=1 - Client B id=2,ls=2 (Csc=2) last_sync=0 sid=2,ls=2,lc=1		Client B changes an object locally. Csc would appear unchanged.
Start Upload Phase Server <<< Client A SC=3,isC=0 sid=1,ls=1 last_sync=0 Ssc=3 sid=1,ls=1,lc=1 id=1,ls=1 id=2,ls=2 - Client B (Csc=2) last_sync=0 sid=2,ls=2,lc=1		Session started. Ssc is issued outside of the data transaction. Trailing committed SC rows are deleted. Csc would appear unchanged.
Start Upload Phase Server - Client A SC=3,isC=0 (Csc=2) last_sync=0 SC=4,isC=0 sid=1,ls=1,lc=1 Ssc=4 id=1,ls=1 id=2,ls=2 - Client B sid=2,ls=1 last_sync=0 sid=2,ls=2,lc=1		Session started. Ssc is issued outside of the data transaction. Csc would appear unchanged.
Server - Client A SC=3,isC=0 (Csc=2) last_sync=0 SC=4,isC=1 sid=1,ls=1,lc=1 Ssc=None id=1,ls=1 id=2,ls=4 - Client B id=2,ls=4 last_sync=0 sid=2,ls=4,lc=0		Object will be committed due to ls >= ls. Session is marked committed. List of objects is returned. Csc would appear unchanged.
Server >>> Client A SC=3,isC=1 id=1,ls=3 last_sync=0 SC=4,isC=1 sid=1,ls=3,lc=0 Ssc=None id=1,ls=3 id=2,ls=4 - Client B (Csc=4) last_sync=0 sid=2,ls=4,lc=0		Object will be committed due to ls >= ls. Session is marked committed. List of objects is returned. Csc would appear changed.

Start of System

Server		Client A	Comment
SC=None	(Csc=0)	last_sync=0	
Ssc=None		obj=None	No sync count. No objects.
Obj=None			
	-	Client B	
	(Csc=0)	last_sync=0	Csc would appear as zero.
		obj=None	

Server	-	Client A	Object committed to server. (Raw data load example) (Do not perform online) (Recovery or preload example)
SC=1, isC=1	(Csc=1)	last_sync=0	
Ssc=None		obj=None	
id=1, LS=1			
	-	Client B	
	(Csc=1)	last_sync=0	Csc would appear as 1.
		obj=None	

Start Download Phase

Server	<<<	Client A	Client A download phase. Client sends last_sync.
SC=1, isC=1	last_sync=0	last_sync=0	
Ssc=None		obj=None	
id=1, LS=1			
	-	Client B	
	(Csc=1)	last_sync=0	Csc would appear unchanged.
		obj=None	

Server	>>>	Client A	Server returns objects where LS > last_sync and lastUpdatedBy != clientId
SC=1, isC=1	Csc=1	last_sync=1	
Ssc=None	id=1, LS=1	sid=1, LS=1, LC=0	
id=1, LS=1			
	-	Client B	
	(Csc=1)	last_sync=0	Csc would appear unchanged.
		obj=None	

Start Download Phase

Server	-	Client A	Client B download phase. Client sends last_sync.
SC=1, isC=1	(Csc=1)	last_sync=1	
Ssc=None		sid=1, LS=1, LC=0	
id=1, LS=1			
	<<<	Client B	
	last_sync=0	last_sync=0	Csc would appear unchanged.
		obj=None	

Server	-	Client A	Server returns objects where LS > last_sync and lastUpdatedBy != clientId
SC=1, isC=1	(Csc=1)	last_sync=1	
Ssc=None		sid=1, LS=1, LC=0	
id=1, LS=1			
	>>>	Client B	
	Csc=1	last_sync=1	Csc would appear unchanged.
	id=1, LS=1	sid=1, LS=1, LC=0	

Start of System

Server		-	Client A	Comment
SC=None	(Csc=0)		last_sync=0	
Ssc=None			obj=None	No sync count. No objects. Csc would appear as zero.
Obj=None				
		-	Client B	
	(Csc=0)		last_sync=0	
			obj=None	

Start Download Phase

Server		<<<	Client A	Comment
SC=None	last_sync=0		last_sync=0	
Ssc=None			obj=None	Client A download phase. Client sends last_sync. Csc would appear unchanged.
Obj=None				
		-	Client B	
	(Csc=0)		last_sync=0	
			obj=None	

Server		>>>	Client A	Comment
SC=None	Csc=0		last_sync=0	
Ssc=None	Obj=None		obj=None	Server returns objects where lS > last_sync and lastUpdatedBy != clientId
Obj=None				
		-	Client B	
	(Csc=0)		last_sync=0	
			obj=None	Csc would appear unchanged.

LEGEND

LEGEND

SC	Sync Count
isC	isCommitted
Csc	Committed sync count*
Ssc	Session sync count*
id	Object ID on server
lS	Object last sync on server
last_sync	last sync down on client
sid	server object_id
ls	object last_sync
lc	local changes

*generated by queries.