CBOE*Direct Operator Procedures*

Version 3.0

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Introduction

This document is a guide to the operation of the CBOE*Direct* System. The CBOE*Direct* system is responsible for the real-time electronic trading of Options, Stock Futures and Strategy products. The CBOE*Direct* System receives its order and quote input from the CMI Interface, FIX 4.2 , and TPF (via Compass and FIX/ORS) & from COMPASS(Stock Futures).

To determine what sections of this document have changed since its last revision, see the section below. Also, throughout the document, revision bars are used in the margins to show paragraphs or sections of the document that have changed.

Document Layout

- *Start of Day Procedures* – This section explains the how to do a VSDL download, how to assign classes to clusters and sessions, hot to start the system, how to start the sessions, how to start Tpf, Tips,Compass,Copp and CTM connections and the verification stage for all of the steps.
- *Intra Day Procedures* – The section explains what has to be monitored intraday, intraday series add.
- *End of Day Procedures* – This section explains the end of day flow, nothing dones,price adjustments, creating next day.
- *Expiration Procedures* – This section explains the end of day flow, nothing dones,price adjustments, creating next day.
- *Manual/Miscellaneous Procedures* – This section explains the manual ways of doing certain things like monitoring queues, looking at unacked fills, starting/ending sessions manually.
- *Maintenance Procedures* – This section explains symbol maintenance, user maintenance, trading session maintenance functions.

Revision Information

1) Start of Day procedures
2) End Of Session procedures.
3) Added commands for manul startup, shutdown and failover.

Related Documents

There are references to the following documents in various places throughout this document.

CBOE*Direct* SMA Console Users Guide

CBOE*Direct* System Administration GUI Users Guide

CBOE*Direct* Patrol Procedures

CBOE*Direct* Failover Tests

CBOE*Direct* Notation's and Terminology

CBOE*Direct* Name	Description
GlobalCluster	Comprises of 2 hosts one setup as primary and one setup as a backup. ***(Each host is also known as a 'Global Server')***. All components common to the CBOE*Direct* system run on these servers.
BusinessCluster	Comprises of 2 hosts one setup as primary and one setup as a backup. ***(Each host is also known as a 'Business Server').*** The business server runs the trading engine and is responsible for accepting orders, quotes and executing trades.
FrontEnd	The front end is used for routing messages (received by the CAS) to appropriate business server and to the global server.
TradingSession	The CBOE*Direct* system can handle multiple sessions. Each session has a start time and end time associated with it. The CBOE*Direct* system configures trading classes in sessions. Currently there are 3 sessions configured W_AM1(Also known as the ETH session) and W_MAIN(also known as the External Session, TPF Session), ONE_MAIN(Stock Futures). Example IBM can be configured in W_AM1 and W_MAIN sessions. If a firm submits an order for W_MAIN session then the order will be routed to TPF. If the order is submitted for the W_AM1 session then the order will be routed to CBOE*Direct* system.
TradingClasses,Classes	Name of the trading symbol as defined by TIPS. All derivatives are a part of the trading class. E.g. Trading class = IBM (contains derivatives IBQ,IBZ,LIB)
TradingProduct,Products	The specific option series.
RoutingGroups	In addition to TradingClasses being configured in sessions, the classes are also configured in routing groups. ***The routing group basically defines which Business cluster manages what set of products***. (e.g. RoutingGroup Name = TradeServer1 on BusinessCluster1 Assigned Classes = OEX,DJX,RUT) (e.g. RoutingGroup Name = TradeServer2 on BusinessCluster2 Assigned Classes = IBM)
Alarm Monitor Terminal	The terminal that displays system alarms.
Information Monitor Terminal	The terminal that display informational messages (e.g. Completion of end of session, end of day, end of day purge), VSDL Product downloads
Global Server Terminal	The login `'xterm'` terminal used for entering manual commands.

CBOEDirect Name	Description
Business Server Terminal	The login 'xterm' terminal used for entering manual commands.
Front end Terminal	The login 'xterm' terminal used for entering manual commands.
SA GUI,SysAdmin Gui	CBOE*Direct*'s System administration Gui used for CBOE*Direct*'s Maintenance functions and for Control functions on TradingSessions,User Maintenance, Performing product state changes,end of session,end of day etc.
CAS	Client Application Services – The remote application that runs on the client side and communicates with the CBOE*Direct* system.
Sub Cluster	Each cluster can be broken up into sub clusters. Each sub cluster will run under a different login on the same host. Each sub cluster will run the same set of processes.
Market Data Global Cluster	Comprises of 2 hosts one setup as primary and one setup as a backup. This is used for distributing external market data received from TIPS and PDS

Start of Day Procedures

Introduction

This section describes the steps that need to be taken to get* CBOE*Direct system ready for the current business day and then how to start the* CBOE*Direct system and verify if the system came up without any errors.

OPTIONS: VSDL download is the first step in getting the system ready for the current day.

STOCK FUTURES: There is no download step here but the products are created & assigned to the correct session template by the help desk .

Start Of Day Flow In Short

Below is the list of steps that need to be performed in the **specified order** for this process to work correctly.

Note Each step listed is depended on the previous step. So if the 1st step was not successfully executed(with or without errors) you will have to repeat all the steps ..

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1) For Stock Futures make sure the Help Desk has created the products and assigned them to the correct session template .
2) **Fix the symbolMap file for remapped symbols (see section on updating the symbol map file later in the document).**
3) Bring up the processes on the Global Server needed to do the VSDL download.
4) Start Vsdl download (This process first downloads all Symbols and aliases from TIPS and then for each symbol and alias CBOE*Direct* requests TPF for VSDL download).
5) If today is expiration day then mark the products that expire today as being inactive.
6) After the download is complete, the classes need to be assigned to sessions (TPF provides this information to CBOE*Direct* in the VSDL download messages). This information is what is used in this step to assign the classes to the correct sessions.
7) After the classes are assigned to sessions , they need to be assigned to business clusters.
8) **Bring up the SA Gui and make sure the classes are assigned to the correct sessions (specially check the classes that have been added or deleted). If there are any errors then correct the problem repeat all the steps starting with step 2.**

Note DO NOT GO TO THE NEXT STEP AND CREATE THE BUSINESS DAY, IF YOU KNOW THE CLASSES HAVE NOT BEEN ASSIGNED TO THE SESSIONS.

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9) Finally we will create the current business day on the same day the system will be started for trading. **Only after this step is executed will the CAS users be allowed to login to the CBOE*Direct* system. At this point all the sessions will be created but they will be in the closed state.**
10) **Start the rest of the system.**
11) Enable the external connections.

VSDL Download

Note Do not perform the download if the business day has already been created for today, if you need to re-do the download after the business day has been created CALL **CBOE*Direct*** SUPPORT (because the database tables need to be updated manually). See the section **Checking Session States** on how to verify if the business day has been created for today.
ALTHOUGH – another option would be to recover from the database exports/backups from last night that were taken after the END OF DAY. If you do that you can re-do the download.

Pre-requisites check list

Before this procedure is performed you should perform the following checks, otherwise the whole process may have to be repeated (based on which step has failed as explained above)

Make sure the business day has not already been created [see the section Checking Session States for more details].

Make sure End Of Day was done for the previous day [see the section **Verifying if End Of Day was Done** for more details].

For Stock Futures make sure the Help Desk has created the products and assigned them the correct session.

Make sure all Symbol maintenance changes have been made on TIPS for the CBOE*Direct* application (Specially if new classes have been added or old classes removed).

Make sure all Aliases are correctly defined in TIPS.

Make sure TPF system has marked ETH CLASSES to be ETH eligible.

Make sure TPF system has marked HYBRID CLASSES to be HYBRID eligible.

Make sure Membership has made all the changes to the membership system.

TIPS must be up and running and ready to accept connections.

TPF must be up and running.

HGW must be up and running.

Make sure all the infrastructure processes are running on all the CBOE*Direct* boxes.

Make sure you have updated the symbolMapFile for reporting classes that need to be remapped ,

Starting VSDL Download Processes

Note **You need to bring up the processes listed below only on the primary Global Server.** There is no need to bring these up on the slave box**.** This is done only to save time in this step. See the ***System Startup (Patrol) procedures*** on how to start these processes **individually**.
Make sure you have updated the symbol map file(if there is a need to do so) before you do this step, otherwise you may end up repeating the Start Of Day process. See section on 'Updating the symbol map file' later in the document under 'Manual/Miscellaneous procedures section'.

Start the Id Server.

Start the Global Server.

Start the Tpf Global Adapter.

Start the Tips Adapter.

Enabling external download connections on the primary Global Server

This section shows you how start the external connections on the primary global server (for Tips and TPF Global Adapter) and how to verify if the connections are up.

Find a `xterm` logged into the primary global server.

Type the command **`cd $RUN_DIR`** and press <ENTER> when you are done.

Type the command **`downloadServices start.`**

The above step will enable all the TIPS Adapter and TPF Global Adapter connections.

Verification

This section explains how to verify if all the needed connections to TIPS and TPF are established.

On a `xterm` logged into the primary global server type the command **`cd $RUN_DIR`** and press <ENTER> when you are done.

Type the command **`downloadServices check`** and press <ENTER>.

You should see the following connections . Not all of them are needed for the VSDL download. The needed connections are marked in **bold.**

Make sure the `TipsProductDownloadConnection` shows connected.

Make sure the `VsdlService` shows `true/true` which means it is connected and logged in.

```
Connection status for server TipsAdapter
TipsProductDownloadConnection    Connected to m31a:15000

Sequencer status for server TpfGlobal (connected/loggedIn) (send#/recv#)
ControlService                          true/true
VsdlService                             true/true
```

Starting the VSDL Download

This section explains how to start and monitor the completion of products downloads from TIPS and TPF.

Bring up a `xterm` window logged into the primary GlobalServer.

Type the command **`cd $RUN_DIR`** and press <ENTER> key when you are done.

Type the command **`tail -f log/GlobalServer.log`** and press <ENTER> key when you are done. This will monitor the `GlobalServer.log` file so verification can be done on how the downloads are progressing.

Bring up another `xterm` window logged into the primary GlobalServer.

Type the command **`cd $RUN_DIR`** and press <ENTER> key when you are done.

Type the command **startProductDownload** and press the <ENTER> key when you are done.

Verification

On the GlobalServer.log file you should see the following messages.

Note First TIPS download is done and then TPF download is done as part of this process.

```
low information 2001/3/12 16:44:14.60 GlobalServer GlobalServer
:atgsvr1(170.137.230.86)
"ProductMaintenanceServiceHome:ProductDownloadController>>> Starting product
download from TIPS" 0

low information 2001/3/12 16:44:18.65 GlobalServer GlobalServer : atgsvr1
(170.137.230.86)  "ProductMaintenanceServiceHome:ProductDownloadController>>> TIPS
Download complete" 0

low information 2001/3/12 16:44:23.65 GlobalServer GlobalServer : atgsvr1
(170.137.230.86)  "ProductMaintenanceServiceHome:ProductDownloadController>>>
Starting download of 107 reporting classes from TPF" 0

GlobalServer:atgsvr1(170.137.230.86)
ProductMaintenanceServiceHome:ProductDownloadController>>> Completed reporting
class AA" 0

low information 2001/3/12 16:44:25.34 GlobalServer GlobalServer :atgsvr1
(170.137.230.86)  "ProductMaintenanceServiceHome:ProductDownloadController>>>
Number of remaining classes = 106" 0

…… so on till Number of Classes remaining = 0.

low information 2001/3/12 16:45:59.34 GlobalServer GlobalServer
:atgsvr1(170.137.230.86)
"ProductMaintenanceServiceHome:ProductDownloadController>>> Number of remaining
classes = 0" 0

low information 2001/3/12 16:45:59.36 GlobalServer GlobalServer
:atgsvr1(170.137.230.86)
"ProductMaintenanceServiceHome:ProductDownloadController>>> TPF download complete
- making products not received inactive" 0

low information 2001/3/12 16:45:59.44 GlobalServer GlobalServer
:atgsvr1(170.137.230.86)
"ProductMaintenanceServiceHome:ProductDownloadController>>> Starting to publish
classes after download" 0
```

```
low information 2001/3/12 16:46:09.98 GlobalServer GlobalServer :atgsvr1
(170.137.230.86)  "ProductMaintenanceServiceHome:ProductDownloadController>>>
Completed publishing classes after download" 0

low information 2001/3/12 16:46:09.98 GlobalServer
lobalServer:atgsvr1(170.137.230.86)
"ProductMaintenanceServiceHome:ProductDownloadController>>> All download
processing complete." 0
```

When you see the message "**`All download processing complete`**". That means we are done with the product download. This will be last message in the log file at the time. Since nothing else is going on in the system.

Make sure there were no alarms in this time period while the download was going on.

Note After you are done with this procedure remember to **`<CTRL-c>`** out of all the terminals where you have **`tail –f log/xxxx`** running to monitor the logs.

Error Handling

What if the connection's go down in the middle of the download

Generally the download will abort if in the middle of download the TIPS or TPF connections go down. Once the download aborts, the download has to be re-started after corrective actions are taken.

What if the TIPS connections are not established

Generally, the CBOE*Direct* system will automatically try and recover the TIPS connections.

Make sure you have enabled TIPS to accept connections.

Make sure you have started the connections on CBOE*Direct* (using the command **`downloadServices start`** …) as explained above.

What if the TPF connections are not established

Generally, the CBOE*Direct* system will automatically try and recover the connections.

Make sure you have enabled **VSDL** service on TPF to accept connections.

Make sure host gateway is up.

Make sure you have started the connections on CBOE*Direct* (using the command **`downloadServices start`** …) as explained above.

Marking products inactive on EXPIRATION DAY

Note: This procedure needs to be executed only on the day of expiration.

This section explains how to inactivate products that are supposed to expire on the day of expiration. This applies only to AM settled products.

This step is done because we don't want users to trade against those products. But when we do a TPF VSDL download we get those products. Hence this procedure to mark them inactive.

Make sure you have completed the VSDL download.

Bring up a `xterm` window logged into the primary GlobalServer.

Type the command **`cd $RUN_DIR`** and press <ENTER> key when you are done.

Type the command **setExpiringProductsInactive** and press the <ENTER> key when you are done.

Wait for the command to complete.

Assigning Classes To Sessions

Note Do not perform this step if you have already created the business day for today, See the beginning of VSDL download section above for more details on how to recover out of this situation.

Session Code Map

Associated with every class is a session code that is assigned to it. The value specified in the session code determines what session's that class will be traded in.

Below is the list of session codes and how they get mapped in CBOE*Direct.*

Session Code	Eligible Trading Session	Source of Session code
H	W_MAIN(HYBRID) - Options Trading during the day for Hybrid eligible classes.	TPF – VSDL download
N	W_MAIN(TPF) - Options Trading during the day on TPF	TPF – VSDL download
A	W_AM1(ETH) - Options Trading early morning.	TPF – VSDL download
NA	W_MAIN(TPF) - Options Trading during the day on TPF. W_AM1(ETH) - Options Trading early morning.	TPF – VSDL download
	ONE_MAIN - Stock Futures Trading during the day.	Help desk will assign Futures classes to the appropriate template.
HA	W_MAIN(HYBRID) - Options Trading during the day for Hybrid eligible classes. W_AM1(ETH) - Options Trading early morning.	TPF – VSDL download

Note After assigning the classes to sessions(explained just below) you can use the command `showClasses –bySession` to verify if the classes have been assigned correctly[see the manual/miscellaneous section for more details on `showClasses`]

Assigning classes to sessions

This section explains how to assign classes to sessions. The information on which classes get assigned to which sessions is provided by TPF in the download done in the previous step.

Bring up a `xterm` window logged into the primary GlobalServer.

Type the command **`cd $RUN_DIR`** and press <ENTER> key when you are done.

Type the command **`tail –f log/GlobalServer.log`** and press <ENTER> key when you are done. This will monitor the GlobalServer.log file so verification can be done on how the assignments are progressing.

Bring up another `xterm` window logged into the primary GlobalServer.

Type the command **`cd $RUN_DIR`** and press <ENTER> key when you are done.

Type the command **assignClassesToSessions** and press the <ENTER> key when you are done.

You will be prompted for confirmation. Type **`yes`** to continue on with the assignment otherwise type anything else and press <ENTER> key to quit. **Note**: This call will hang till the assignment completes. (So be patient it may take a few minutes or so, in the mean time you can monitor the GlobalServer.log file to see the progress), See the verification section below.

Note After you are done with this procedure remember to **`<CTRL-c>`** out of all the terminals where you have **`tail –f log/xxxx`** running to monitor the logs.

Verification

In the `GlobalServer.log` file you should see the following messages. If these messages scroll by that is ok, the message you are interested in is the last message in the log file after the assignment is complete.

```
low information 2001/3/12 16:50:00.97 GlobalServer GlobalServer
:atgsvr1 (170.137.230.86)
"TradingSessionServiceHome:TradingSessionServiceImpl>>> Starting
build of class mapping to sessions. Now querying for all product
classes." 0
```

```
low information 2001/3/12 16:50:04.19 GlobalServer GlobalServer :atgsvr1
(170.137.230.86)  "TradingSessionServiceHome:TradingSessionServiceImpl>>> Found
(69) classes that may potentially be configured in sessions." 0
```

```
low information 2001/3/12 16:50:04.43 GlobalServer GlobalServer : atgsvr1
(170.137.230.86)  "TradingSessionServiceHome:TradingSessionServiceImpl>>>
Completed build of class mapping to sessions." 0
```

When you see the message "**`Completed build of class mapping to sessions`**". That means we are done with the product download.

Also at this time the command you executed above will finally return and tell you whether it succeeded or not.

Make sure there were no alarms in this time period while the assignment was going on.

If you know of any new classes and which session they should be assigned to you can use the SA GUI to verify if the classes have been assigned to the correct sessions(See SA GUI users guide on how to do this).

Assigning Classes To Business Clusters

Note Do not perform this step if you have already created the business day for today, See the beginning of VSDL download section above for more details.
BEFORE YOU EXECUTE THIS STEP MAKE SURE THE HELP DESK HAS ASSIGNED FUTURES CLASSES TO THE Futures template (ONE_MAIN.all) associated with the ONE_MAIN session.

This section explains how to assign classes to clusters. The information on which classes get assigned to which cluster is defined in a configuration file. Currently the distribution is setup to be done by the combination of First character of the symbol and the session code.

Bring up a `xterm` window logged into the primary GlobalServer.

Type the command **`cd $RUN_DIR`** and press <ENTER> key when you are done.

Type the command **assignClassesToRoutingGroups –debug -update** and press the <ENTER> key when you are done.

You will be prompted for confirmation. Type **`yes`** to continue on with the assignment otherwise type anything else and press <ENTER> key to quit.
Note: This call will hang till the assignment completes. (So be patient it may take a few minutes or so).

Note **If you don't give the [-update] option the program will not update the system** but will go through the whole assignment process internally. This can be useful for debugging purposes when you want to just check and see if all classes can be assigned to clusters without actually updating the system.

The [-debug] option is optional you don't have to specify this option. It is advisable though to specify this option because when specified the program will create a detailed log of what classes it has assigned to what sessions. Can provide useful information for debugging latter in case of errors. When this option is specified it may take a little bit longer for the program to run.

Verification

When you submit the command you will see an output similar to the own show below on the terminal you just ran the command on.

```
Mon Mar 12 16:53:00 CST 2001:: ------------------------------------------------
Mon Mar 12 16:53:00 CST 2001:: STARTING NEW RE-CONFIGURATION. Display only = false
Mon Mar 12 16:53:00 CST 2001:: ------------------------------------------------
Mon Mar 12 16:53:00 CST 2001:: Found property ListOfGroups:
atgtest2TradeServer,atgtest2ExternalTradeServer
Mon Mar 12 16:53:00 CST 2001:: GroupName : atgtest2TradeServer
   AutoAssignUnderlyings : true
   ProductTypesToConfigure : 7,11
   SessionCodesToConfigure : NA,YA
   SymbolDistribution :
   FirstCharSymbolDistribution :
A,B,C,D,E,F,G,H,I,J,K,L,M,N,O,P,Q,R,S,T,U,V,W,X,Y,Z


Mon Mar 12 16:53:00 CST 2001:: GroupName : atgtest2ExternalTradeServer
   AutoAssignUnderlyings : true
   ProductTypesToConfigure : 7,11
   SessionCodesToConfigure : N,NA
   SymbolDistribution :
   FirstCharSymbolDistribution :
A,B,C,D,E,F,G,H,I,J,K,L,M,N,O,P,Q,R,S,T,U,V,W,X,Y,Z


 ----- May be Lot's more messages ----


Mon Mar 12 16:53:13 CST 2001:: ------------------------------------------------
Mon Mar 12 16:53:13 CST 2001:: Completed assigning classes to groups.....
Mon Mar 12 16:53:13 CST 2001:: ------------------------------------------------
```

When you see the message "**`Completed assigning classes to groups`**" it means the assignment completed successfully.

If there were errors in assignment then you will see an error on the terminal instead of the completed message as shown above and you should call CBOE*Direct* support immediately.

Creating Current Business Day

Note ***Before you do this step it is good idea to check if the classes have been assigned to sessions and to business clusters/groups (see the Manual/Miscellaneous Section (Verifying class assignments)*** *on how to verify class assignments manually). You can verify the new and removed classes as a quick check , if you know what the new classes are for today and what classes have been removed today.*
It is a good idea to do this check so you can re-do all the above steps listed starting with the VSDL download section. Otherwise you may end up recovering from the database backups/restore from the previous day and loose time doing that.

This section shows you how to create a business day. It is very important that this step be executed, otherwise the trading sessions will not start and no CAS users will be allowed to login to the CBOE*Direct* system.

When the business day is created all the trading sessions(Underlying,W_MAIN,W_AM1 & ONE_MAIN) are created for the current day & all the products are configured in the sessions.

After the CurrentBusinessDay has been created the CAS users are now allowed to login to the CBOE*Direct* system.

Bring up a `xterm` window logged into the primary GlobalServer.

Type the command **`cd $RUN_DIR`** and press <ENTER> key when you are done.

Type the command **`createCurrentBusinessDay`** and press <ENTER> key when you are done.

You will be prompted for confirmation. Type **`yes`** to continue on with the creation otherwise Press <ENTER> key to quit.

Make sure there are no alarm on the AlarmMonitor.

Verification

After the command completes you will see either a completion status like this on the screen (along with whole lot of other messages).

`Current business day (03/15/01) has been created.`

Make sure all the sessions (i.e. W_MAIN, W_AM1, ONE_MAIN and Underlying) have been created and assigned to the Current Business Day. (See the Manual/Miscellaneous section Monitoring tools → Checking Session States for more details).

Error Handling

If you see the error: **`Current business day (03/15/01) is already started`**

- Then you are have already created the session. Check the Date field in the error message to verify if it is the correct date.

If you see the error: **`Current business day (03/15/01) has ended – day not restarted`**

- Then you are trying to create the session on the wrong day(i.e. you are trying to create the session too early – which has already ended today).

Starting post VSDL Download Processes

Note See the Patrol procedures on how to startup these processes. You can just start the whole Global Server again using patrol. If the processes are already running patrol will just move on to the next process.

Start the remaining following processes on the primary global Server.

Start the SMS Server

Start the Membership adapter

Start the Frontend process.

Start the Copp Global Adapter

Start the Compass Adapter

CBOE*Direct* System Startup

Below listed is the order of system startup.

Start the processes on primary GC (already done from above)

Start the processes on primary Market Data GC

Start the processes on ALL the primary Business Servers.

Start frontend processes on all the frontend boxes.

Start all the CAS's , SACAS's and FIX CAS's.

Start the processes on secondary GC.

Start the processes on secondary Market Data GC.

Start the processes on ALL the secondary Business Servers.

Start the system using Patrol

Reference the Patrol document for *CBOEDirect* application system startup procedures.

Start the system manually using the unix command line

Reference the section below towards the end of the document on `Manual Startup/Shutdown procedures`, if you need to startup and shutdown the system manually using the unix command line.

Checking CBOE*Direct* Processes

Checking processes using Patrol

Reference the Patrol document for information on checking CBOE*Direct* application processes.

Checking processes manually

Reference the section below towards the end of the documents on Manual checking processes, if you need to check what processes are running on a specific box using the unix command line.

Enabling all external connections on the Global Server

This section shows you how start the external connections on the **primary** global server (for Tips,Copp,Compass and TPF Global Adapter) and how to verify if the connections are up.

Find a `xterm` logged into the primary global server.

Type the command **`cd $RUN_DIR`** and press <ENTER> when you are done.

Type the command **`globalExternalServices start`** and press <ENTER>.

The above step will enable all the TIPS Adapter, COPP Adapter, Compass Adapter and TPF Global Adapter connections.

Note Donot ever enable connections on the slave side.

Verification

This section explains how to verify if all the needed connections are established.

Find a `xterm` logged into the **primary** global server.

Type the command **`cd $RUN_DIR`** and press <ENTER> when you are done.

Type the command **`globalExternalServices check`** and press <ENTER>.

You should see the following connections. Sequence number's on ALL COMPASS connections should be '0'.

Note **On Primary Server:** All TIPS & COMPASS connections should show **Connected.** If not then the connection is either recovering automatically or was never started to begin with.

```
------------------------------------------------------------
Connection status for server 'TipsAdapter'
------------------------------------------------------------
ServiceName                         ConnectionInfo
--------------------------          ----------------
TipsProductDownloadConnection     Connected to m1a:15000


------------------------------------------------------------
Connection status for server 'CompassAdapter'
------------------------------------------------------------
ServiceName                         ConnectionInfo
--------------------------          ----------------
M9CompassOrderServiceConnection      Connected to m9a:NNNN
M8CompassOrderServiceConnection      Connected to m8a:NNNN
M9CompassReportsServiceConnection    Connected to m9a:NNNN
M8CompassReportsServiceConnection    Connected to m8a:NNNN
```

Note **On Primary Server**: All Tpf Global, Copp & Compass connections should show connection/logged in as ‘true/true’.

```
---------------------------------------------
Appl status for server 'TpfGlobal'
---------------------------------------------
ServiceName                 Connected/LoggedIn  Send/Recv Seq Nbrs
-------------------------   ------------------ --------------------

ControlService              true/true
VsdlService                 true/true
MktIndService               true/true

---------------------------------------------
Appl status for server 'CoppGlobalAdapter'
---------------------------------------------
ServiceName                 Connected/LoggedIn  Send/Recv Seq Nbrs
-------------------------   ------------------ --------------------

CoppGlobalService           true/true


---------------------------------------------
Appl status for server 'CompassAdapter'
---------------------------------------------
ServiceName                 Connected/LoggedIn  Send/Recv Seq Nbrs
-------------------------   ------------------ --------------------

M9CompassOrderService       true/true          0/0
M8CompassOrderService       true/true          0/0
M9CompassReportsService     true/true          0/0
M8CompassReportsService     true/true          0/0
```

Repeat the above steps **on the slave** Global Server.

On the slave: For TIPS all the connections should show ‘No Connection’

On the slave: For CoppGlobal, Compass and TPFGlobal all the connections should show ‘false/false’ i.e. none of them should be connected or logged in.

Error Handling

What if the sequence numbers are not ‘0’ on the Compass Adapter

If the sequence numbers are not zero that means the cleanup was not run the previous day.

There are multiple ways to get out of this situation

1) You can reset the sequence numbers for all compass connections to ‘0’. See the section on RESETTING COMPASS SEQUENCE NUMBERS.
2) Shutdown all the adapters **on the primary and slave Global Server’s**, then call server support and have the support person truncate the comm_sequencers table **on the Global Server** after that you can restart all the adapters.

Enabling external connections on the primary Market Data Global Server

This section shows you how start the external connections on the primary market data global server (for Tips & PDS Adapter) and how to verify if the connections are up.

Find a `xterm` logged into the primary market data global server.

Type the command **`cd $RUN_DIR`** and press <ENTER> when you are done.

Type the command **`globalExternalServices start`** and press <ENTER>.

The above step will enable all the TIPS Adapter and Pds Adapter connections.

Note Donot ever enable connections on the slave side.

Verification

This section explains how to verify if all the needed connections are established.

Find a `xterm` logged into the **primary** market data global server.

Type the command **`cd $RUN_DIR`** and press <ENTER> when you are done.

Type the command **`globalExternalServices check`** and press <ENTER>.

You should see the following connections.

Note **On Primary Server:** All TIPS & PDS connections should show **Connected.** If not then the connection is either recovering automatically or was never started to begin with.

```
------------------------------------------------------------
Connection status for server 'TipsAdapter'
------------------------------------------------------------
ServiceName                      ConnectionInfo
-------------------------        ----------------
TipsUnderlyingConnection         Connected to m1a:15000
TipsUnderlyingUdpAConnection      Connected to m1a:15000
TipsUnderlyingUdpBConnection      Connected to m1a:15000

------------------------------------------------------------
Connection status for server 'PdsAdapter'
------------------------------------------------------------
ServiceName                      ConnectionInfo
-------------------------        ----------------
PdsMarketDataConnection         Connected to pds32a:15000
```

Repeat the above steps **on the slave** market data Global Server.

On the slave: All the connections should show ‘`No Connection`’

Error Handling

What if the connection is down and there are alarms

- It is possible that TIPS & PDS have not yet been enabled to accept the connections.
- If you are seeing alarm's on the alarm monitor like the one show below, for example, that means the system is trying to recover the connection. If this happens most likely the Remote system is not enabled to accept the connections.

```
high systemAlarm 2001/3/14 23:35:05.26 TipsAdapter.Connection
TipsAdapter:devsvr1(170.137.230.78)  "Unable to connect service
TipsUnderlyingConnecion to RemoteAddr(null,-1)  BindAddr(170.137.237.255,30210).
java.net.ConnectException: Connetion refused" 0
```

```
high systemAlarm 2001/3/14 23:35:12.29 TipsAdapter.ConnectionManager
TipsAdapter:devsvr1(170.137.230.78)  "Trying client connection RemoteAddr(null,-1
)  BindAddr(170.137.237.255,30210) for service: TipsUnderlyingConnection" 0
```

- If all other systems look ok and you think they are enabled to accept CBOE*Direct* connections then call CBOE*Direct* support.

What if connection is down and there are no alarms

- Generally the processes will try to recover every 7 seconds automatically. If they still don't connect this is probably because the connection is disabled or you are looking on the slave box.
- If you don't see alarms indicating that the connection is trying to recover as show above then call CBOE*Direct* support immediately. In addition you can also try to start the connections manually. See the section Manual/Miscellaneous Procedures-->Starting External Connections **OR** you can repeat the above procedure.

Enabling external connections on ALL primary business server's

This section shows you how to start all the external connections on **ALL** the primary business server's and how to verify if the connections are up.

Note Run this procedure on **ALL** the primary business servers.
On prdbc01a and prdbc01b we run only TpfAdapter and CtmAdapter.
On prdbc02a and prdbc02b we run only CtmAdapter and CoppAdapter.
On prdbc03a and prdbc03b we run only TpfAdapter and CtmAdapter.

Find a `xterm` logged into the primary business server.

Type the command **`cd $RUN_DIR`** and press <ENTER> when you are done.

Type the command **`businessExternalServices start`** and press <ENTER>.

The above step will enable all the configured connections.

Repeat the above procedure on all primary business servers.

Note Donot ever enable connections on the slave side.

Verification – Tpf and CTM Connections(BusinessCluster 1)

Find a `xterm` that is logged into the primary BusinessServer(prdbc01a or prdbc01b).

Type the command **`cd $RUN_DIR`** `and Press <ENTER> key after you are done.`

Type the command **`businessExternalServices check`** and `Press <ENTER> key after you are done.`

You should see the output **similar** to the one shown below.

This command will show the following connections for both TPF and CTM.

All connections should show connected and logged in as true/true

All services (excepting MdrService and TagService **for TPF**) should show send/recv sequence numbers of 0. For MdrService and TagService we don't do sequence accounting hence no sequence numbers are shown.

All services (excepting the AcknowledgementService **for CTM**) should show send/recv sequence numbers of 0. For AcknowledgementService we don't do sequence accounting hence no sequence numbers are shown.

```
-----------------------------------------------
APPL status for server 'TpfAdapter'
-----------------------------------------------
ServiceName                   Connected/LoggedIn  Send/Recv Seq Nbrs
---------------------------   ------------------- --------------------

MdrService                    true/true
OrderServiceInbound           true/true           0/0
ReportsServiceOutbound        true/true           0/0
LastSaleService               true/true           0/0
TagService                    true/true
OrderServiceOutbound          true/true           0/0
ReportsServiceInbound         true/true           0/0
QuoteService                  true/true           0/0


-----------------------------------------------
APPL status for server 'CtmAdapter'
-----------------------------------------------
ServiceName                   Connected/LoggedIn  Send/Recv Seq Nbrs
---------------------------   ------------------- --------------------

OptionsAcknowledgementsService true/true
OptionsReportsService          true/true          0/0
```

Repeat the above steps on the slave and all the connections should show ‘false/false’ i.e. none of them should be connected or logged in.

Verification –COPP & CTM Connections(Business Cluster 2)

Find a `xterm` that is logged into the primary BusinessServer(prdbc02a or prdbc02b)

Type the command **`cd $RUN_DIR`** and `Press <ENTER> key after you are done`

Type the command **`businessExternalServices check`** and `Press <ENTER> key after you are done`

You should see the output **similar** to the one shown below

This command will show the following connections for both TPF and CTM

All connections should show connected and logged in as true/true

All services (excepting the AcknowledgementService **for CTM**) should show send/recv sequence numbers of 0. For AcknowledgementService we don't do sequence accounting hence no sequence numbers are shown

```
-------------------------------------------
APPL status for server 'CtmAdapter'
-------------------------------------------
ServiceName                  Connected/LoggedIn  Send/Recv Seq Nbrs
--------------------------   ------------------- -------------------

FuturesAcknowledgementsService true/true
FuturesReportsService          true/true         0/0


-----------------------------------------------
APPL status for server 'CoppAdapter'
-----------------------------------------------
ServiceName                  Connected/LoggedIn  Send/Recv Seq Nbrs
--------------------------   ------------------- --------------------

CoppLastSaleService          true/true
CoppCurrentMarketService     true/true
```

Repeat the above steps on the slave and all the connections should show `'false/false' i.e. none of them should be connected or logged in.`

Verification – Tpf and CTM Connections(BusinessCluster 3)

Note There are 3 environments on this cluster. You need to repeat this procedure for each environment. Each environment has a different login.

Find a `xterm` that is logged into the primary BusinessServer(prdbc01a or prdbc01b).

Type the command **`cd $RUN_DIR`** and `Press <ENTER> key after you are done.`

Type the command **`businessExternalServices check`** and `Press <ENTER> key after you are done.`

You should see the output **similar** to the one shown below.

This command will show the following connections for both TPF and CTM.

All connections should show connected and logged in as true/true

All services (excepting MdrService and TagService **for TPF**) should show send/recv sequence numbers of 0. For MdrService and TagService we don't do sequence accounting hence no sequence numbers are shown.

All services (excepting the AcknowledgementService **for CTM**) should show send/recv sequence numbers of 0. For AcknowledgementService we don't do sequence accounting hence no sequence numbers are shown.

```
-----------------------------------------------
APPL status for server 'TpfAdapter'
-----------------------------------------------
ServiceName                   Connected/LoggedIn  Send/Recv Seq Nbrs
--------------------------    ------------------ --------------------

MdrService                    true/true
OrderServiceInbound           true/true           0/0
ReportsServiceOutbound        true/true           0/0
LastSaleService               true/true           0/0
TagService                    true/true
OrderServiceOutbound          true/true           0/0
ReportsServiceInbound         true/true           0/0
HybridQuoteService1           true/true           0/0
HybridQuoteService2           true/true           0/0
HybridQuoteService3           true/true           0/0
```

```
---------------------------------------------
APPL status for server 'CtmAdapter'
---------------------------------------------
ServiceName                  Connected/LoggedIn  Send/Recv Seq Nbrs
--------------------------   ------------------ --------------------

HybridAcknowledgementsService true/true
HybridReportsService          true/true          0/0
```

Repeat the above steps on the slave and all the connections should show ‘false/false’ i.e. none of them should be connected or logged in.

Error Handling

What if the connection is down and there are alarms

- It is possible that TPF,CTM,HGW have not yet been enabled to accept the connections.
- If you are seeing alarm's on the alarm monitor like the one show below, for example, that means the system is trying to recover the connection. If this happens most likely the Remote system is not enabled to accept the connections.

```
high systemAlarm 2001/3/14 23:35:05.26 TipsAdapter.Connection
TipsAdapter:devsvr1(170.137.230.78)  "Unable to connect service
TipsUnderlyingConnecion to RemoteAddr(null,-1)  BindAddr(170.137.237.255,30210).
java.net.ConnectException: Connetion refused" 0

high systemAlarm 2001/3/14 23:35:12.29 TipsAdapter.ConnectionManager
TipsAdapter:devsvr1(170.137.230.78)  "Trying client connection RemoteAddr(null,-1
)  BindAddr(170.137.237.255,30210) for service: TipsUnderlyingConnection" 0
```

- If all other systems look ok and you think they are enabled to accept CBOE*Direct* connections then call CBOE*Direct* support.

What if connection is down and there are no alarms

- Generally the processes will try to recover every 7 seconds automatically. If they still don't connect this is probably because the connection is disabled or you are looking on the slave box.
- If you don't see alarms indicating that the connection is trying to recover as show above then call CBOE*Direct* support immediately. In addition you can also try to start the connections manually. See the section Manual/Miscellaneous Procedures-->Starting External Connections **OR** you can repeat the above procedure.

Starting Sessions

This section shows you how to check the session status for all sessions and make sure they are open.

Note Generally all the sessions are started automatically at the times specified in the Current System configuration guide. If the system is not configured to start the sessions automatically then use the SA GUI to start the sessions.

Currently the CBOE*Direct* system is configured with 4 sessions.

W_AM1 – This is the ETH session.

W_MAIN – This is the openoutcry/TPF session + HYBRID session.
There are 2 templates/sub-sessions configured under this one session
a) W_MAIN.all – Non Hybrid classes (Regular RTH session)
b) W_MAIN.hybrid – Hybrid Classes

ONE_MAIN – This is Stock Futures session.

Underlying – For users wanting to display the equity underlying/recap information.
DO NOT START THIS SESSION.

Note You will have to repeat this verification step for each session(W_AM1 ,W_MAIN & ONE_MAIN) based on the time when they start.

Verification

Find a PC running the Sys Admin GUI.

Make sure the sessions and the Business day have been created for Today (Refer to SYS Admin GUI users guide, "Intraday Procedures", page 29).

Make sure all sessions point to the business day with Todays date. (Refer to SYS Admin GUI users guide, "Intraday Procedures", page 29, on how to see this information).

Refer to the Sys Admin Users Guide ("Starting a Trading Session", page 9) on how to check the session states.

All the session's (`W_AM1, W_MAIN and ONE_MAIN` should show `OPEN`).

Check the product states for all the products in all the session's using the SAGUI ("Starting a Trading Session", page 9). **Make sure they are all in CLOSED state.**
NOTE: There should be no products in NO_SESSION state.
You can also use the command `showProductStatesBySession` on the primary GC box to get a summary of how many products are in closed/NO-Session state. See the Manual section for details on how to use the command.

Make sure there are no alarms on the Alarm monitor screen.

Find a xterm logged in to the primary GlobalServer.

Type the command **`grep "Completed event.*START_SESSION.*Nbr called" log/GlobalServer.log`** and press <ENTER> key when you are done, You should see an output similar to the one shown below to guarantee that all the processes in the system have been notified of startSession and none of them had errors.

We do this check because the SA GUI might show the session has been started , but all the business servers might not be up. So this check helps us ensure that all business servers are all up and ready.

You should see the one message for each of the sessions (W_AM1, W_MAIN & ONE_MAIN).

```
low information 2001/3/12 13:59:22.49 GlobalServer GlobalServer:atgsvr1
(170.137.230.86)  "<default log> ClientAction: [Session = W_AM1].
Completed event START_SESSION. [Nbr called(7), Nbr completed(7), Nbr
exceptions(0), Nbr failures(0)]" 0
```

Note **Nbr completed** should be same as **Nbr called** and **Nbr Exceptions** and **Nbr Failures** must be **0**.

Error Handling

What if all sessions are not open?

This may happen if the Business Day for the current day was not created, in which case the timers will not kick off automatically.

In this case you may need to create the business day for the current day and try to restart the sessions manually. (IN THIS CASE, CALL CBOE*Direct* SUPPORT IMMEDIATELY BEFORE YOU DO THIS STEP MANUALLY).

See the section on ‘End Of Day Procedures’ on how to create the business day.

See the SA GUI Users guide ("Starting a Trading Session", page 9) on how to start the session manually.

What if all sessions are open and there are alarms on the Alarm monitor?

Call CBOE*Direct* support immediately.

What if the Business day was not created for today?

Call CBOE*Direct* Support immediately and you can continue to create the Business Day for today (See the POST-END OF DAY Procedures towards the end of the document on how to do this).

What if there are products in NO_SESSION state?

What this means is that no user will be able to submit orders for those products.

Call CBOE*Direct* Support immediately. They may have to restart the TradeServer’s handling that session.

Pre-Open

This section will show you how to verify if the products in the session are in pre-open state.

This check applies only to the **`W_AM1(ETH) session, ONE_MAIN (Stock Futures) session & W_MAIN.hybrid sub-session`**.

Note Generally the products will automatically go into pre-open state at the specified time. See the Current System configuration guide for the Pre-open time on all sessions.

For all of the above listed sessions the products will automatically enter the pre-open state when the pre-open timer expires

No Product State change occurs for sessions **`W_MAIN.all(Non Hybrid sub-session) and Underlying`** (This is because these products are not traded in the CBOE*Direct* system).

Verification

Find a PC running the Sys Admin GUI.

See the Sys Admin Users Guide ("Starting a Trading Session", page 9) on how to check the Product states for a session.

Make sure all products in the above listed sessions are now in pre-open state. (Products in all other sessions should show CLOSED state).

Make sure there are no alarms on the Alarm monitor screen.

Error Handling

What if the products did not pre-open?

This may happen if the session is not configured to pre-open automatically, in which case the timers will not kick off automatically (See the SA GUI Users guide, "Intraday Procedures", page 31, on how to verify if the session is configured to automatically open the products).

See the SA GUI Users Guide ("Starting a Trading Session", page 9) on how to set the product states manually to pre-open. (NOTIFY CBOE*Direct* SUPPORT BEFORE YOU DO THIS).

All other cases

Call CBOE*Direct* support immediately.

Opening Rotation/Open

This section will show you how to verify if the products in the session are in opening rotation state and how they get into the open state. This check applies only to the **`W_AM1(ETH) session, ONE_MAIN (Stock Futures) session & W_MAIN.hybrid sub-session`**.

Generally the products will automatically go into opening rotation state at the specified time. See the Current System configuration guide for the opening rotation time on all sessions.

For all of the above listed sessions the products will automatically enter the opening rotation state when the opening rotation timer expires.

No Product State change occurs for sessions `W_MAIN.all(Non-Hybrid)` and `Underlying` (This is because these products are not traded in the CBOE*Direct* system).

Verification

Find a PC running the Sys Admin GUI.

See the Sys Admin Users Guide ("Starting a Trading Session", page 9) on how to check the Product states for a session.

Make sure all products in listed sessions (above) are now in opening rotation state. **(Products in all other sessions should show a CLOSED state).**

Make sure there are no alarms on the Alarm monitor screen.

After some amount of time (randomly selected between time range of 30-40 seconds) all products will automatically open.

Using the SA GUI ("Starting a Trading Session", page 9) make sure all products in the listed sessions (above) are now in open state. (Products in all other sessions should still show a CLOSED state).

Make sure there are no alarms on the Alarm monitor screen.

Error Handling

What if the products did not open?

- This may happen if the session is not configured to pre-open automatically, in which case the timers will not kick off automatically. (See the SA GUI Users guide, "Intraday Procedures", page 31, on how to verify if the session is configured to automatically open the products). See the SA GUI Users Guide ("Starting a Trading Session", page 9) on how to set the product states manually to pre-open. (NOTIFY CBOE*Direct* SUPPORT BEFORE YOU DO THIS).
- Some products may not open in case they have market orders at the opening and there are no valid quotes. There is nothing you can do about this case (it is not an error).

All other cases

Call CBOE*Direct* support immediately.

Intraday-Day Procedures

Intraday Series Add - Options

This is generally done on TPF. (See the TPF procedures on how to add new series intra-day). When new series are added in TPF. TPF notifies CBOE*Direct* over the control service of the CLASS that has been updated. CBOE*Direct* will then request the intraday download for that class automatically and configure the new series on the fly in all the sessions and business clusters this class is configured for.

Verification

Find a terminal running the SA GUI.

Refer to the SA GUI Users guide ("Intraday Procedures", page 32) to verify if the new products have been received by CBOE*Direct*.

Error Handling

What if the new series do not show up in the* CBOE*Direct system?

Call CBOE*Direct* support.

Intraday Series Add – Stock Futures

This is generally done on the SA GUI. (See the SA GUI procedures on how to add new series intra-day).

Verification

Find a terminal running the SA GUI.

Refer to the SA GUI Users guide ("Intraday Procedures", page 32) to verify if the new products have been received by CBOE*Direct*.

Error Handling

What if the new series do not show up in the* CBOE*Direct system?

Call CBOE*Direct* support.

Stock Split Downloads (Options & Stock Futures)

During the day price adjustments are entered on TPF. When that happens TPF sends CBOE*Direct* a complete download of all adjustments.

Since Options and Stock futures are based on the same underlying products (i.e. Stocks) this procedure applies to the W_AM1, W_MAIN and ONE_MAIN sessions.

Adjustments are applied at the `'End Of Day'` on the specified `'run_day'.`

Note If there are complaints that people are not seeing their pending adjustments, we can verify if the CBOE*Direct* system received the STOCK SPLIT DOWNLOAD from TPF as follows.

Verification

Find a **xterm** logged into the primary global Server.

Type the command **`cd $RUN_DIR`** and press the <ENTER> key when you are done.

Type the command **`grep "STOCK SPLIT DOWNLOAD" log/TpfGlobal.log`** and press the <ENTER> key when you are done.

You will see an output similar to the one shown below if CBOE*Direct* received a Stock split download from TPF. Please verify the time shown in the output with the complaint time to see if you were expecting a download at that time.

```
low information 2001/3/13 14:56:05.38 TpfGlobalAdapter TpfGlobal:atgsvr1
(170.137.230.86)  "ControlService/CONTROL-SBT01 [PRIMARY] RECEIVED: BEGIN STOCK
SPLIT DOWNLOAD MESSAGE FROM TPF." 0

low information 2001/3/13 14:56:07.28 TpfGlobalAdapter TpfGlobal:atgsvr1
(170.137.230.86)  "ControlService/CONTROL-SBT01 [PRIMARY] RECEIVED: STOCK SPLIT
DOWNLOAD COMPLETE FROM TPF." 0
```

Call CBOE*Direct* support if you were expecting a Stock split download and did not receive one.

Checking Queues

Note To monitor the queues manually see the section Manual/Miscellaneous Procedures → Monitoring Queues -- > Checking Queues towards the end of the document.

Generally the system queue's are monitored automatically and alarms are logged if there are queues building up in the system.

Note Call CBOE*Direct* support if you see alarms on the alarm monitor indicating that queues are building up and the queues keep growing.

Example of alarm that you will see if queues are building up.

```
high systemAlarm 2001/3/12 10:17:00.09 TpfAdapter
TpfAdapter:atgsvr1(170.137.230.86)  "<default log> Queuing on queue:
TpfReportsServiceOutboundQueue/nbrQueued(46), sizeOfFreeList(0),
maxQueueDepth(2147483647)" 0

NOTE: The value 'nbrQueued(46)' in the above example that tells you how many
messages are currently there in the queue 'TpfReportsServiceOutboundQueue'.
```

Membership Downloads

Introduction

This section here explains how the membership downloads work and how to deal with errors.

Once the membership adapter is started, it will automatically get Membership and MPP data from the Membership and MPP tables(that are snapshot every day) and update the CBOE*Direct* system (The global server and the Id Server need to be up for this process to work correctly).

Note Only incremental changes are downloaded(i.e. only the changes since the last time membership download was done). As long as the membership adapter is running it will try and download the incremental changes every 5 minutes **(This time period can be changed to any value through configuration).**

Verification

This section here shows you how to monitor the membership downloads.

Bring up a `xterm` window logged into the primary GlobalServer.

Type the command **`cd $RUN_DIR`** and press <ENTER> key when you are done.

Type the command **`tail –f log/MemAdapter.log`** and press <ENTER> key when you are done. This will monitor the MemAdapter.log file so verification can be done on how the download is progressing.

On the MemAdapter log you should see the output similar to the one shown below.

```
low information 2001/3/12 16:50:04.19 …. "Loading membership data. Since,
FIRMS- 2001/3/12 16:50:04.19
USERS- 2001/3/12 16:50:04.19
DPM ASSIGNED CLASSES - 2001/3/12 16:50:04.19
MM ASSIGNED CLASSES - 2001/3/12 16:50:04.19


This is what you will see when the firms are being loaded.

low information 2001/3/12 16:50:04.19 …..  "Loading membership data --- FIRMS."

low information 2001/3/12 16:50:04.19 …..  "Loading firm ABC"

low information 2001/3/12 16:50:04.19 …..  "Loaded firm ABC"

--- And so on for all firms that have been changed or are new.---

When all the firms are successfully loaded you will see the following

low information 2001/3/12 16:50:04.19 … "Number of firms successfully loaded = 10

This is what you will see when the users are being loaded.

low information 2001/3/12 16:50:04.19 …..  "Loading membership data --- USERS."

low information 2001/3/12 16:50:04.19 …..  "Loading user XYZ"

low information 2001/3/12 16:50:04.19 …..  "Loaded user XYZ"

When all the users are successfully loaded you will see the following
```

```
low information 2001/3/12 16:50:04.19 … "Number of users successfully loaded = 10
```

When the download is finally complete you will see the following message

```
low information 2001/3/12 16:50:04.19 … "Membership Data loaded successfully".
```

Membership download is successfully complete when you see the message "**Membership Data loaded successfully"** in the log above.

Note After you are done with this procedure remember to **<CTRL-c>** out of all the terminals where you have **`tail -f log/xxxx`** running to monitor the logs.

Error Handling

In case of database errors the membership adapter will try to recover the database connections every 10 seconds and if successful it will restart the download automatically. **You will generally see alarms on the AlarmMonitor indicating the reason of the failure.**

While recovering you will see the following messages in the `MemAdapter.log` file

```
low information 2001/3/12 16:50:04.19 … "Recovering"

low information 2001/3/12 16:50:04.19 … "Recovery failed, re-queuing recovery
timer. 10000 milliseconds"
```

Note Notify CBOE*Direct* support if you see errors in database recovery.

Some times you may see alarms but the download continues on. This happens generally when the membership data is bad in which case, only the specific user or firm in error is not loaded. To correct the user information, membership needs to fix the problem and the CBOE*Direct* system will automatically pick it up in the next download iteration.

How to verify if symbols are tagged with TPF

You will use this procedure when there is a complaint from TPF that they are unable to route Order/Fills to CBOE*Direct* for a particular symbol.

Here are the steps you need to follow.

Find the name of the options symbol for which you want to verify if we have tagged TPF.

Find the business cluster that is trading that symbol.

Find a `xterm` logged into the primary business server where the symbol is trading.

Type the command **`cd $RUN_DIR`** and press <ENTER> when you are done.

Type the command **`ar TpfAdapter showApplService Tag`** and press <ENTER> when you are done.

You will see the following output. Verify the symbol is in the 'Symbols Tagged' shown below, If so the symbol is tagged. If not CALL CBOE*Direct* SUPPORT.

```
ServiceName/Type/Connection : TagService/Client/TAGDATA-SBT01
Service Impl                :
com.cboe.externalIntegrationServices.tpfAdapter.tagService.TagService
      Connected/LoggedIn        : true/true
      Waiting For Confirm       : false
      Do Sequence Accounting    : false
      Sequencer name            : null
      Login timeout             : 10000
      Login password            : null
      Data confirm timeout      : 10000
      Confirm Before Processing : false
      Time Last Message Sent    : Fri Apr 27 08:47:06 CDT 2001
      Time Last Message Received: Wed Dec 31 18:00:00 CST 1969
      Last Message Sent         :
             Version          : 2
             Command          : DATA
             Origin           : SBT01
             Destination      : TAGDATA
             Key              : (0)
             ApplHeader       : (0 bytes):
             Data             : (13 bytes): VT   REPORTS
             Total Length     : 36
      Last Message Received     : None.
      Symbols have been loaded from configuration: false
      Sleep time between tags in millis: 2
      Services Tagged: ORDERS,REPORTS
      Symbols Tagged:
            AA,AOE,AOL,AOO,AOW,DJV,DJW,DJX,DLQ,DLY,
            SPQ,SPT,SPV,SPX,SXB,SXG,SXM,SXY,SXZ,SYV,
            SZP,T,VAN,VDL,VEE,VFX,VGN,VIB,VIU,VOC,
            VON,VOR,VT,VYH,WAN,WDQ,WEW,WFX,WGM,WIB,
            WIU,WOK,WOQ,WT,WXW,WYH,WYZ,YDJ,YDK,YDX
```

How to Re-tag symbols to TPF

Generally you would execute this procedure if TPF thinks the symbols is not tagged and if the symbol shows up in the tag list as explained in the previous section.

To re-tag, the procedure is as follows

Find the name of the options symbol for which you want to verify if we have tagged TPF.

Find the business cluster that is trading that symbol.

Find a `xterm` logged into the primary business server where the symbol is trading.

Type the command **`cd $RUN_DIR`** and press <ENTER> when you are done.

Type the command **`ar TpfAdapter retagToTPF all`** and press <ENTER> when you are done.

How to verify what CAS's are logged in to the system

Note You can also use the SAGUI for this. See SA GUI users guide for more details.

This sections shows you how to manually verify

Find a `xterm` logged into the primary Global Server

Type the command **`cd $RUN_DIR`** and press <ENTER> when you are done.

Type the command **`ar SMSServer printComponents | grep SOURCE`** and press <ENTER> when you are done.

You will see the following output on the screen telling you what CAS's are logged in to the system. Check the Running/active flag. (Running means the process is up and running and the Active flag means the process is in MASTER state).

```
-> AdminCASServer1atgcas2(type=SOURCE,id=AdminCASServer1atgcas2,!running,!active)
-> CASServer1atgcas2(type=SOURCE,id=CASServer1atgcas2,!running,!active)
-> CASServer2atgcas2(type=SOURCE,id=CASServer2atgcas2,!running,!active)
```

Displaying a User's login history

This sections shows you how to display the login/logout history for the user. This will show you all times the user has logged in and logged out.

Find a `xterm` logged into the primary Global Server

Type the command **`cd $RUN_DIR`** and press <ENTER> when you are done.

Type the command **`ar SMSServer printUserLoginHistory <userName>`** and press <ENTER> when you are done. Where **`<userName>`** is the user's acronym whose history you want to see.

Displaying all logged in users

The sections shows you how to display all the currently logged in user's and to which CAS's they are logged in.

Find a `xterm` logged into the primary Global Server

Type the command **`cd $RUN_DIR`** and press <ENTER> when you are done.

Type the command **`ar SMSServer printUserSessions`** and press <ENTER> when you are done.

Force logoff a User

This section shows you how to force fully logoff a user from the system.

Note Generally you may need to do this when a user is not allowed to login because the CBOE*Direct* system thinks the user is logged on another CAS or if the CBOE*Direct* system thinks the user is already logged in and the user thinks he should not be logged in.

Find a `xterm` logged into the primary Global Server

Type the command **`cd $RUN_DIR`** and press <ENTER> when you are done.

Type the command **`ar SMSServer logoutUser <user-id> <cas-name> true`** and press <ENTER> when you are done where

<user-id> is the acronym of the user you want to log off.

<cas-name> is the cas the user is logged into to. You can use the procedures explained above in this chapter to find out which CAS the user is logged into.

End Of Session Procedures

This section explains the various steps that are involved in the end of session process starting with the closing of products , updating & disseminating summaries, updating open interest, updating and disseminating settlement values and finally ending sessions.

Close – Closing Products

This section will show you how to verify if the products in the sessions are in a closed state. **This check applies to W_AM1(ETH) , W_MAIN & ONE_MAIN sessions.**

Note Generally the products will automatically close at the specified time. See the Current System configuration guide for the CLOSE time on all sessions. If the system is not configured to automatically then the SA GUI can be used to manually close the products.

This is very important step. If this step fails then pretty much the rest of end of day will fail. Also this is the first step in the End Of Session procedure and has to be executed before any other step.

Verification

Find a PC running the Sys Admin GUI.

See the Sys Admin Users Guide ("Starting a Trading Session", page 9) on how to check the Product states for a session.

Make sure all products in all the above listed sessions are now in closed state.

Make sure there are no alarms on the Alarm monitor screen.

Error Handling

What if the products did not close?

This may happen if the session is not configured to close the products automatically, in which case the timers will not kick off automatically (See the SA GUI Users guide, "Intraday Procedures", page 31, on how to verify if the session is configured to automatically open the products).

See the SA GUI Users Guide ("Ending a Trading Session", page 36) on how to close the products manually (NOTIFY CBOE*Direct* SUPPORT BEFORE YOU DO THIS).

All other cases

Call CBOE*Direct* support immediately.

Nothing Dones

This section explains how to send nothing dones back to the firms for DAY orders that did not trade today in a session.

Note We send nothing dones for sessions W_MAIN.hybrid, W_AM1 and ONE_MAIN session. **The times when nothing dones are to be sent are different for W_AM1 and ONE_MAIN sessions.**

For W_AM1 session: Nothing dones are sent at 08:30 am.
For ONE_MAIN session: Nothing dones are sent at 03:30 pm.
For W_MAIN.hybrid session: Nothing dones are triggered by a message from TPF.

Use the procedure below to send nothing dones.

Find a `xterm` logged into the primary Global Server.

Type the command **`cd $RUN_DIR`** and press <ENTER>.

Sending Nothing Dones for ONE_MAIN

Make sure all products in this session are in CLOSED state.

Type the command **`sendNothingDones ONE_MAIN`** and press <ENTER>.

Wait for the command to complete.

Sending Nothing Dones for W_AM1

Make sure all products in this session are in CLOSED state.

Type the command **`sendNothingDones W_AM1`** and press <ENTER>.

Wait for the command to complete.

Sending Nothing Dones for W_MAIN.hybrid

NOTE: Nothing dones for this session are triggered by TPF.

Make sure all products in this session are in CLOSED state before you run Purge Day Orders on TPF..

Run Purge day orders on TPF. This step will trigger a message to be sent to CBOEDirect over the ControlService that runs on the GlobalServer. This message will trigger Nothing Done processing on CBOEDirect.

Verification

Find a `xterm` logged into the primary Global Server and

Type the command **`cd $RUN_DIR`** and press <ENTER>.

Type the command **`checkEndOfDay`** and press <ENTER>.

You should see the following information, there will be an entry for every session you have generated nothing dones for.

```
------------------------------------------------------------------------------------------------------------
NOTHING DONES SENT FOR SESSION 'W_AM1' FOR DATE -> '02-26-02'.
------------------------------------------------------------------------------------------------------------
```

Load Open Interest

This section explains the procedure of how to load open interest information for futures products.

Note We load open interest only for futures products. Also the open interest tables are updated by the DBA's. This update is done via Oracle database snapshots. Once the snapshot's are complete we can load the open interest information into CBOE*Direct* using the procedure documented below .

Find a `xterm` logged into the primary Global Server.

Type the command **`cd $RUN_DIR`** and press <ENTER>.

Type the command **`loadOpenInterest`** and press <ENTER>.

Wait for the command to complete.

Verification

Note You can either use the script checkEndOfDay [see details in section **Verifying if End Of Day was Done** for more details] **OR** you can use the steps explained below.

Find a `xterm` logged into the primary Global Server.

Type the command **`cd $RUN_DIR`** and press <ENTER>.

Type the command **`tail –f log/GlobalServer.log`** to verify if loading open interest completed successfully.

You should see the following messages in the log file.

```
low information 2002/2/11 15:15:35.15 GlobalServer
GlobalServerClient: dte2 "ProductMaintenanceServiceHome>>>
Querying database to get latest OPEN INTEREST data." 0
```

```
low information 2002/2/11 15:15:35.43 GlobalServer GlobalServerClient:dte2
"ProductMaintenanceServiceHome>>> Found '288' open interest entries that need to
be updated. Now querying PQS and creating internal OpenInterestStruct" 0
```

```
high systemAlarm 2002/2/11 15:16:28.35 GlobalServer GlobalServerClient:dte2
"ProductMaintenanceServiceHome>>> Failed to get product for open interest update
ABH1N 2/16/2002. Skipping record" 0
```

```
low information 2002/2/11 15:16:28.35 GlobalServer GlobalServerClient:dte2
"ProductMaintenanceServiceHome>>> Updating '0' open interest entries."
```

```
low information 2002/2/11 15:16:28.35 GlobalServer
GlobalServerClient:dte2 "ProductMaintenanceServiceHome>>>
Completed updating open interest.." 0
```

Once you see the message **"Completed updating open interest"** it means we have loaded the open interest successfully.

Update Settlement Prices

This section explains the procedure of how to update settlement prices for futures products.

Note We update settlement prices only for futures products and this step applies only to the ONE_MAIN session currently.

Make sure all the products are closed for this session before proceeding.

Find a `xterm` logged into the primary Global Server.

Type the command **`cd $RUN_DIR`** and press <ENTER>.

Type the command **`updateSettlementPrices` ONE_MAIN** and press <ENTER>.

Wait for the command to complete.

Note If you run this command after help desk has made modification's then all their modification will be lost and Help desk will have to re-enter their modifications again.

Verification

Note You can either use the script checkEndOfDay [see details in section **Verifying if End Of Day was Done** for more details] **OR** you can use the steps explained below.

Find a `xterm` logged into the primary Global Server.

Type the command **`cd $RUN_DIR`** and press <ENTER>.

Type the command **`tail –f log/GlobalServer.log`** to verify if Updating Settlement Prices completed successfully.

You should see the following messages in the log file

```
low information 2002/2/11 15:16:28.35 GlobalServer
GlobalServerClient:dte2 All settlement prices updated for classes
in ONE_MAIN"
```

Once you see the above message it means we have successfully calculated and updated the settlement prices.

Send Settlement Prices For Verification

This section explains the procedure of how to send settlement prices for futures products to OneChicago for verification.

Note Currently this section applies only to ONE_MAIN session.
Settlement prices have to be updated before going through this procedure. After OneChicago verifies the settlement prices, Help desk will be notified to correct any prices if there is any problem

Make sure settlement prices have been updated successfully

Find a `xterm` logged into the primary Global Server.

Type the command **`cd $RUN_DIR`** and press <ENTER>.

Type the command sendSettlementPricesForVerification and press <ENTER>.

Wait for the command to complete.

Help desk will be notified by OneChicago to correct and verify the settlement prices just generated. Help desk has a SA GUI to fix the prices if they are not correct.

Verification

After sendSettlementPricesForVerification is successfully executed, it will print out the following message:

Settlement price report has been sent for verification.

Disseminate Settlement prices to SIAC

This section explains the procedure of how to disseminate settlement prices for futures products.

Make sure help desk has verified that all settlement prices are ok before you run thru this procedure.

Note We disseminate settlement prices only for futures products and this step applies only to the ONE_MAIN session currently.

Make sure you have updated the settlement prices before you disseminate them to SIAC.

Find a `xterm` logged into the primary Global Server.

Type the command **`cd $RUN_DIR`** and press <ENTER>.

Type the command **`coppAdmin startSettlement ONE_MAIN`** and press <ENTER>.

Wait for the command to complete.

If the command completes successfully you will see the following information on the screen

```
--------------------------------------------------------------------------------
Completed settlement dissemination for session : ONE_MAIN.
--------------------------------------------------------------------------------
```

Verification

Note You can either see the scrolling COPP log for settlement prices that are been disseminated to SIAC or you can use the procedure documented below to see the progress of the dissemination.

Find a `xterm` logged into the primary Global Server.

Type the command **`cd $RUN_DIR`** and press <ENTER>.

Type the command **`tail –f log/CoppGlobalAdapter.log`** to verify progress of settlement dissemination.

You should see the following messages in the log file.

```
low information 2002/2/11 22:54:52.12 CoppGlobalAdapter.coppAdapter.SettlementProvider
CoppGlobalAdapterClient:dte2(170.137.230.22)  "CoppGlobalService Starting settlement
dissemination for session: ONE_MAIN"

low information 2002/2/11 22:54:52.12 CoppGlobalAdapter.coppAdapter.SettlementProvider
CoppGlobalAdapterClient:dte2(170.137.230.22)  "CoppGlobalService Querying Trading
Session Service for getClassesBySessionForType(sessionName, ProductTypes.FUTURE) for
session: ONE_MAIN"

low information 2002/2/11 22:54:52.30 CoppGlobalAdapter.coppAdapter.SettlementProvider
CoppGlobalAdapterClient:dte2(170.137.230.22)  "CoppGlobalService Sent Settlement
prices [0 of 29] classes, for session : ONE_MAIN"

…….. And so on till you see the following message

low information 2002/2/11 22:54:52.30 CoppGlobalAdapter.coppAdapter.SettlementProvider
CoppGlobalAdapterClient:dte2(170.137.230.22)  "CoppGlobalService Completed settlement
dissemination for session: ONE_MAIN"
```

Once you see the message **"Completed settlement dissemination for session ONE_MAIN"** it means we have finished sending settlement prices to COPP.

Create Settlement Price Report

This section explains the procedure of how to create settlement price report for futures products.

Make sure help desk has verified that all settlement prices are ok before you run thru this procedure.

Note We create settlement price report only for futures products and this step applies only to the ONE_MAIN session currently.

Find a `xterm` logged into the primary Global Server.

Type the command **`cd $RUN_DIR`** and press <ENTER>.

Type the command **`createSettlementPriceReport`** **ONE_MAIN** and press <ENTER>.

Wait for the command to complete.

Verification

Find a xterm logged into the primary Global Server

Type the command **`cd $RUN_DIR/log`** and press <ENTER>.

Type the command **`ls –l settlement*`** and you should see something like following list. **Make sure the settlement price file for the current day has been created.**

```
-rw-rw-r--   1 tradeeng testsbt    73365 Oct  8 14:14 settlementPrice20021008.txt
```

Send Settlement Prices Report to OCC and CME

This section explains the procedure of how to send settlement price report to OCC and CME for futures products.

Note We send settlement price report only for futures products to OCC and CME and this step applies only to the ONE_MAIN session currently.

Make sure the settlement price report has been already genereted.

Find a `xterm` logged into the primary Global Server.

Type the command **`cd $RUN_DIR`** and press <ENTER>.

Type the command **`sendSettlementPrices`** and press <ENTER>.

Wait for the command to complete.

Verification

Find a xterm logged into the primary Global Server

Type the command **`cd $RUN_DIR/log`** and press <ENTER>.

Type the command **`grep "It is known to JES" SendSettlementPrice.log`** and you should see the following:

250-It is known to JES as JOB07182.

This will indicate that the settlement price report has been successfully sent to OCC

Type the command **tail –10 `SendSettlementPrice.log`** and you should see the '**Transfer complete' below**. It means that the settlement price has been successfully sent to CME.

331 Password required for FCBEFTP.

230 User FCBEFTP logged in.

150 ASCII data connection for PFTP.FCBEDATA.FSETL (170.137.230.24,57872).

226 **Transfer complete**.

local: settlementPrice20021008.txt remote: PFTP.FCBEDATA.FSETL

73730 bytes sent in 0.035 seconds (2080.26 Kbytes/s)

221 Goodbye.

Update Summary

This section explains the procedure of how to update summary information for futures products.

Note We update summary information only for futures products and this step applies only to the ONE_MAIN session currently.

Make sure all the products are closed for this session before proceeding.

Find a `xterm` logged into the primary Global Server.

Type the command **`cd $RUN_DIR`** and press <ENTER>.

Type the command **`updateSummary ONE_MAIN`** and press <ENTER>.

Wait for the command to complete.

Verification

Note You can either use the script checkEndOfDay [see details in section **Verifying if End Of Day was Done** for more details] **OR** you can use the steps explained below.

Find a `xterm` logged into the primary Global Server.

Type the command **`cd $RUN_DIR`** and press <ENTER>.

Type the command **`tail –f log/GlobalServer.log`** to verify if summary got updated successfully.

You should see the following messages in the log file.

```
low information 2002/2/11 16:27:39.30 GlobalServer
GlobalServerClient:dte2(170.137.230.22)  "MarketDataSummaryServiceHome:<anonymous>>>>>
Updating Summary Information : Found '29' classes for session : ONE_MAIN"

low information 2002/2/11 16:27:39.31 GlobalServer
GlobalServerClient:dte2(170.137.230.22)  "MarketDataSummaryServiceHome:<anonymous>>>>>
Updating Summary Information : Getting open interest for classes for session :
ONE_MAIN"

…… other messages that show the progress

low information 2002/2/11 16:27:44.98 GlobalServer
GlobalServerClient:dte2(170.137.230.22)  "MarketDataSummaryServiceHome:<anonymous>>>>>
Updating Summary Information : For session : ONE_MAIN. 100 % complete."

low information 2002/2/11 16:27:45.84 GlobalServer
GlobalServerClient:dte2(170.137.230.22)  "MarketDataSummaryServiceHome:<anonymous>>>>>
Updating Summary Information : Completed for session : ONE_MAIN"
```

Once you see the message **`"Updating Summary Information : Completed for session : ONE_MAIN"`** it means we have successfully updated summary information.

Disseminate Summary to SIAC

This section explains the procedure of how to disseminate summary information for futures products.

Note We disseminate summary information only for futures products and this step applies only to the ONE_MAIN session currently.

Make sure you have updated the summary information and loaded the open interest information before you disseminate summaries to SIAC.

Find a `xterm` logged into the primary Global Server.

Type the command **`cd $RUN_DIR`** and press <ENTER>.

Type the command **`coppAdmin startSummary ONE_MAIN`** and press <ENTER>.

Wait for the command to complete.

If the command completes successfully you will see the following information on the screen.

Completed summary dissemination for session : ONE_MAIN.

Verification

Note You can either see the scrolling COPP log for summaries that are been disseminated or you can use the procedure documented below to see the progress of summary dissemination.

Find a `xterm` logged into the primary Global Server.

Type the command **`cd $RUN_DIR`** and press <ENTER>.

Type the command **`tail –f log/CoppGlobalAdapter.log`** to verify progress of settlement dissemination.

You should see the following messages in the log file.

```
low information 2002/2/11 22:56:45.21 CoppGlobalAdapter.coppAdapter.SummaryProvider
CoppGlobalAdapterClient:dte2(170.137.230.22)  "CoppGlobalService Starting summary
dissemination for session: ONE_MAIN"
low information 2002/2/11 22:56:45.91 CoppGlobalAdapter.coppAdapter.SummaryProvider
CoppGlobalAdapterClient:dte2(170.137.230.22)  "CoppGlobalService Sent Summaries for
[10 of 29] classes, for session : ONE_MAIN"
…. Other messages indicating progress
low information 2002/2/11 22:56:45.92 CoppGlobalAdapter.coppAdapter.SummaryProvider
CoppGlobalAdapterClient:dte2(170.137.230.22)  "CoppGlobalService Completed summary
dissemination for session : ONE_MAIN"
```

Once you see the message **`“Completed summary dissemination for session : ONE_MAIN"`** it means we have successfully sent summary information to COPP.

Disseminate Summary to OneChicago Email Group

This section explains the procedure of how to disseminate summary information for futures products to a OneChicago email group.

Make sure you have disseminated summaries to SIAC before you run this step.

Find a `xterm` logged into the primary Global Server.

Type the command **`cd $RUN_DIR`** and press <ENTER>.

Type the command **`futureSummaryReport ONE_MAIN`** and press <ENTER>.

Wait for the command to complete.

If the command completes successfully you will see the following information on the screen.

```
------------------------------
ALL done
------------------------------
```

Ending Session's

This section shows you how to check the session status for all sessions and make sure they are all 'closed' and have ended successfully.

Note Generally all the sessions are 'Closed' automatically at the times specified in the Current System configuration guide. Each session close's at different times. If the system is not configured to close the sessions automatically then you can use the SA GUI to close the sessions.

Before you close ONE_MAIN session make sure you have done the following

Loaded open interest.

Updated settlement prices.

Disseminated Settlement prices to SIAC, OCC and CME.

Updated summary.

Disseminate summary to SIAC.

Generated nothing dones.

Before you close W_AM1 session make sure you have done the following

Generated nothing dones.

Before you close W_MAIN session make sure you have done the following

Generated nothing dones.

Basic Flow

- The end of session step, internally in the system, comprises of various steps, each step has to complete successfully before the next step is performed.
- Basically for each step the SA GUI ("Intraday Procedures", page 30) shows the following information
  - Last event that was successfully completed.
  - Current event that was fired to all business clusters.
  - Whether the event completed or failed.

Please see the SA GUI Users guide on how to view the different *events* on the END OF SESSION PROCESS for W_AM1 ,W_MAIN & ONE_MAIN sessions.

Note You will have to repeat this verification step for each session, based on the time when they close.

Verification

Find a PC running the Sys Admin GUI.

See the Sys Admin Users Guide (Starting a Trading Session, page 9) on how to check the session states.

All the session's (`W_AM1, W_MAIN, ONE_MAIN` and `Underlying` should show `CLOSED`).

Make sure there are no alarms on the Alarm monitor screen.

Verify that there are no queues in the system (This procedure needs to be executed on all the primary business servers and the primary global server).

Find an xterm logged into the appropriate server.

Type the command **`cd $RUN_DIR`** and press <ENTER> when you are done.

Type the command **`showQueues`**`. Press <ENTER> key after you are done.`

You should see the output ***similar*** to the one show below **if the system is not queuing**.

```
DISPLAYING QUEUES FOR W_AM1 on 'devsvr1tst2'
---------------------------------------------------------------
Connected to jdbc:oracle:thin:@localhost:1521:SBTDD000
Found '19' queues.
---------------------------------------------------------------
Since no queue names are displayed here, it means the system is not queuing.


DISPLAYING QUEUES FOR W_MAIN on 'devsvr1tst2'
---------------------------------------------------------------
Connected to jdbc:oracle:thin:@localhost:1521:CBOEDIRECT DD000
Found '35' queues.
---------------------------------------------------------------
Since no queue names are displayed here, it means the system is not queuing.
```

If the system is queuing (Call *CBOEDirect* support immediately) then you may for example see the following output.

```
DISPLAYING QUEUES FOR ETH SESSION on 'devsvr1tst2'
---------------------------------------------------------------
Connected to jdbc:oracle:thin:@localhost:1521:SBTDD000
Found '19' queues.
---------------------------------------------------------------
0). CommandProcessor.queue.AMZN/nbrQueued(1) sizeOfFreeList(0)
1). CommandProcessor.queue.HU/nbrQueued(3)   sizeOfFreeList(10)
2). CommandProcessor.queue.AA/nbrQueued(5)   sizeOfFreeList(29)
```

When the last open session currently W_MAIN(TPF OpenOutcry session) is closed, you can now continue with the End of Day Procedure (*see End of Day procedures in the next section for more details*). The **Alarm below** lets you know that in the current configuration CBOE*Direct* does not automatically kick off END OF DAY (since it is triggered by TPF). The Alarm below also lets you know that the system is now ready for End Of Day.

Note If you don't see the alarm below then you can manually verify that we are now ready to do the end of day processing. To manually verify follow the following steps

Find an xterm logged in to the primary GlobalServer
Type the command **`cd $RUN_DIR`** and press <ENTER> when you are done.
Type the command **`grep "AUTOMATIC END OF DAY" log/GlobalServer.log`** and press <ENTER> when you are done.

```
high systemAlarm 2001/3/12 16:05:05.13 GlobalServer GlobalServer : atgsvr1
(170.137.230.86)  "TradingSessionServiceHome:TradingSessionService
Impl>>> (AUTOMATIC END OF DAY PROCESSING IS OFF). End Of Day not started, must be
triggered manually." 0
```

Verify the above step only after the last session (*W_MAIN*) has successfully ended.

Error Handling

What if all sessions are not closed?

This may happen if all the products in the session are not closed. In which case the End session will fail. In this case you may need to close the products manually (NOTIFY CBOE*Direct* SUPPORT FIRST). (See the 'Close' procedures above for more details).

See the SA GUI Users guide ("Intraday Procedures, page 30) on how to stop the session manually.

What if all sessions are closed and there are alarms on the Alarm monitor?

Call CBOE*Direct* support immediately.

What if I don't see the message "AUTOMATIC END OF DAY"

This message is logged only when the session configured as the last session (i.e. W_MAIN in this case) is closed **and if there are no other sessions open**.

The reason you did not see this message is because one of the other sessions was probably open at the time W_MAIN session ended.

In the situation just explained , the following message will be logged instead of "AUTOMATIC END OF DAY" when the W_MAIN session end's.

"**END OF DAY not yet performed because not all sessions are closed**"

You can grep for this message if you don't see the "AUTOMATIC END OF DAY" message.

Note All sessions must be in a closed state before END Of Day is performed.

Backups/Exports

Remember to take full CBOE*Direct* database backups and full exports for all (Global and business servers). **You need to take the full backup/export after all the sessions have ended successfully and before you start end of day**. (See DBA documentation on how to take backups for CBOE*Direct*).

You also need to take the export of 'W_AM1' session when the 'W_AM1' session has ended successfully.

Generating End Of Session reports

This section explains how to send End of session reports for each of the sessions. When this step is executed end of session reports are sent via email to the relevant parties.

Note Make sure you have ended the session for which you are generating end of session reports.

End Of Session reports for W_AM1

Login to **`prdbc01a`** or **`prdbc01b`**

Type the command **`endOfDayReports W_AM1`** and press <ENTER>

Wait for command to complete.

End Of Session reports for W_MAIN

Login to **`prdbc01a`** or **`prdbc01b`**

Type the command **`endOfDayReports W_MAIN`** and press <ENTER>

Wait for command to complete.

End Of Session reports for ONE_MAIN

Login to **`prdbc02a`** or **`prdbc02b`**

Type the command **`endOfDayReports ONE_MAIN`** and press <ENTER>

Wait for command to complete.

End Of Day Procedures

Introduction

This section first explains the basic end of day flow and then shows you how to proceed and verify that the End of day processing is complete.

Note Using the SA GUI make sure all sessions are closed before you run through this procedure. If the SA GUI is not available to you at the time you can use the script showSessionStatus (see Manual/Miscellaneous section **Checking Session States**) on how to run this script.

End Of Day Flow

The End of Day process on CBOE*Direct* is configurable to start either automatically, manually or triggered by TPF End Of Day when the last session in the business day ends successfully.

Currently, the End of Processing in the CBOE*Direct* system is configured such that it will be triggered by TPF. This is done because the End of Day processing has to be in sync with TPF and occurs at the same time as TPF end Of Day and also gives us the capability to do End Of Day through one system (TPF in this case).

Note ***Since the End of Day processing on*** CBOE*Direct* ***is triggered by TPF. You should also read the End of day procedures for TPF.***

There are various steps to the End of Day processing.

Note: End of Day processing should not be performed using the SA GUI.

1) Before you begin with END of Day processing you should take backups for the Oracle database for all Business Servers and for the Global Server. (This is in those rare situations when we need to re-do the end of day).
2) CBOE*Direct* Internally triggers the End Of Day Processing when the last session for the business day ends (but since automatic EOD is turned off you will see an alarm on the Alarm Monitor indicating just that). Also the session has to be marked in the CBOE*Direct* configuration , you can verify this using the SA GUI.
3) TPF will send a final Stock Split Adjustment download (see TPF EOD procedures on how to achieve this).
4) Now you would apply the price adjustments on TPF. (See TPF EOD Procedures).
5) After the adjustments are SUCCESSFULLY applied on TPF you will run another command on TPF, that command will send CBOE*Direct* a message ,triggering CBOE*Direct* to start its End Of Day Processing.
6) Upon receiving this message CBOE*Direct* will now apply the price adjustments.
7) Once CBOE*Direct* has finished applying price adjustments on all business servers, CBOE*Direct* will send TPF a message indicating that CBOE*Direct* price adjustment processing is complete.

8) When TPF receives this message only then TPF will send CBOE*Direct* a download of order adjustments (for those orders that were sent to TPF from CBOEDIRECT during the day).
9) CBOE*Direct* will update the orders appropriately as specified by TPF.
10) Upon receipt of the END ORDER ADJUSTMENT DOWNLOAD Message from TPF. CBOE*Direct* will continue with the END of DAY PURGE.
11) Once the purge is complete you will be running a script on all the CBOE*Direct* server's to cleanup the old log files etc.
12) Once the purge and cleanup is complete, Backup the database again on all business clusters and the global server. (This is the database that will be used for next day).

End Of Day Flow in short

1) Backup the database. (You should have already done this when the W_MAIN session had ended).
2) End of Day (where we apply the price adjustments internally and through the download received from TPF). This happens when you start with END OF DAY ON TPF (see Tpf procedures)
3) End Of Day Purge (Where we delete old records from the database older then a certain date). This happens when TPF sends CBOE*Direct* order adjustment download. (This happens when CBOE*Direct* sends a message to TPF indicating that it has finished applying all the price adjustments).
4) Shutdown the system
5) Run Cleanup.
6) Backup the database again.(This is what can be used for the next day restore→just in case you need to).

Re-Do/Repeat of End Of Day

There may be cases when you need to repeat the End Of Day procedure if already executed once.

This case generally happens when wrong adjustments were applied in TPF, which means they probably got applied to CBOE*Direct* (Since TPF triggers CBOE*Direct* end of day).

In this situation you will probably do a TPF restore and then you will also need to restore CBOE*Direct* database (on both the global and business server's) from the backups that were taken when the W_MAIN session ended, before repeating this EOD procedure.

Stock Split Downloads

This section will show you how to verify if TPF has sent CBOE*Direct* a final price adjustment download.

Note These are indications of what adjustments are being applied to what classes and when, not all of them may take effect today. CBOE*Direct* should definitely get a Adjustment download from TPF if there are adjustments that have todays run_date on the adjustments.

Verification

Find a xterm logged into the primary global server.

Type the command **`cd $RUN_DIR`** and press <ENTER> when you are done.

Type the command **`grep "STOCK SPLIT DOWNLOAD" log/TpfGlobal.log`** and press <ENTER> when you are done.

Verify if you see messages similar to the ones shown below: If so then you have received the final Stock Split download from TPF.

Verify the time stamp in the messages to make sure they are current times.

```
TpfGlobal.log.03-14-01.08:12:27:low information 2001/3/13 14:55:43.53
TpfGlobalAdapter TpfGlobal:atgsvr1(170.137.230.86)  "ControlService/CONTROL-SBT01
[PRIMARY] RECEIVED: BEGIN STOCK SPLIT DOWNLOAD MESSAGE FROM TPF." 0

TpfGlobal.log.03-14-01.08:12:27:low information 2001/3/13 14:55:43.78
TpfGlobalAdapter TpfGlobal:atgsvr1(170.137.230.86)  "ControlService/CONTROL-SBT01
[PRIMARY] RECEIVED: STOCK SPLIT DOWNLOAD COMPLETE FROM TPF." 0
```

Make sure there are no alarms on the alarm monitor.

Error Handling

What if I did not get the final download?

- This most likely means that EOD processing has not yet started on TPF.
- Make sure all TpfGlobal connections are up on the GlobalServer.
- If everything looks ok call TPF support.

What if I did not get the final download and there are alarms?

Call support.

Stock Split Completed on CBOE*Direct*

This section shows you how to verify if CBOE*Direct* has completed applying stock splits. As explained previously CBOE*Direct* gets a message from TPF indicating that TPF has successfully applied adjustments on receipt of this message CBOE*Direct* **will apply the adjustments automatically**. This sections shows you how to verify all of the above.

Verification

Find a xterm logged into the primary global server.

Type the command **`cd $RUN_DIR`** and press <ENTER> when you are done.

Type the command **`grep "Completed event.*PRICE_ADJ_COMPLETE.*Nbr called" log/GlobalServer.log`** and press <ENTER> when you are done.

You should see the following message

```
low information 2001/3/12 16:06:43.96 GlobalServer GlobalServer:atgsvr1
(170.137.230.86)  "<default log> ClientAction: [Session = $ALL$]. Completed event
PRICE_ADJ_COMPLETE. [Nbr called(7), Nbr completed(7), Nbr exceptions(0), Nbr
failures(0)]" 0
```

Note **`Nbr completed`** should be same as **`Nbr called`** and **`Nbr Exceptions`** and **`Nbr Failures`** must be **`0`**.

After the price adjustments are completed we will now verify that CBOE*Direct* is waiting for TPF to send all the adjusted orders to CBOE*Direct*.

On the primary Global Server Type the command **`cd $RUN_DIR`** and press <ENTER> when you are done.

Type the command
`grep "END OF DAY PRUGE WILL BEGIN" log/GlobalServer.log` and press <ENTER> when you are done. (You should see the following message)

```
low information 2001/3/12 16:06:44.01 GlobalServer GlobalServer
:atgsvr1(170.137.230.86)  "<default log> TradingSessionTpfEOBDStrategyImpl:
Price adjustment processing is now complete. We will now tell TPF and wait for TPF
to send us order adjustments. Once the order adjustments have been sent
successfully, then END OF DAY PRUGE WILL BEGIN." 0
```

Make sure there are no alarms on the alarm monitor.

Note Once all adjustments are applied on SBT , SBT will notify TPF that SBT is done applying adjustments and TPF will automatically send order adjustments to SBT.

Error Handling

If TPF is unable to send the Stock Split completed message and if you know for sure that there are no adjustments that need to be applied today anyway, then you can use the manual procedures to perform End Of Day. See the section Manual/Miscellaneous procedures → End of Day.

Order Adjustments

This sections shows you how to verify if CBOE*Direct* has received order adjustments from TPF.

Verification

Find a xterm logged into the primary global server.

Type the command **`cd $RUN_DIR`** and press <ENTER> when you are done.

Type the command **`grep "ORDER ADJUSTMENT DOWNLOAD" log/TpfGlobal.log`** and press <ENTER> when you are done.

You should see the following message
Verify the time stamp in the messages to make sure they are current times.

```
TpfGlobal.log.03-14-01.08:12:27:low information 2001/3/13 14:55:43.53
TpfGlobalAdapter TpfGlobal:atgsvr1(170.137.230.86)  "ControlService/CONTROL-SBT01
[PRIMARY] "RECEIVED: BEGIN ORDER ADJUSTMENT DOWNLOAD FROM TPF."

TpfGlobal.log.03-14-01.08:12:27:low information 2001/3/13 14:55:43.78
TpfGlobalAdapter TpfGlobal:atgsvr1(170.137.230.86)  "ControlService/CONTROL-SBT01
[PRIMARY] RECEIVED: ORDER ADJUSTMENT DOWNLOAD COMPLETE FROM
TPF."
```

Note Once CBOE*Direct* gets the final "`ORDER ADJUSMENT DOWNLOAD COMPLETE`" from TPF, CBOE*Direct* will automatically begin the end of day purge.

Error Handling

If TPF is unable to send the Adjusted Orders Download and if you know for sure that there are no adjustments that need to be applied today anyway, then you can use the manual procedures to perform End Of Day purge. See section Manual/Miscellaneous procedures → End of Day Purge.

End Of Day Purge

This section shows you how to verify if CBOE*Direct* End Of Day purge and End of day has completed successfully.

Verification

Find a xterm logged into the primary global server.

Type the command **`cd $RUN_DIR`** and press <ENTER> when you are done.

Type the command
`grep "End Of Day processing is now complete" log/GlobalServer.log`
and press <ENTER> when you are done. (You should see the following message).

```
low information 2001/3/12 16:11:07.54 GlobalServer GlobalServer
:atgsvr1(170.137.230.86)  "<default log> TradingSessionTpfEOBDStrategyImpl:End Of
Day processing is now complete ..." 0.
```

Make sure there are no alarms on the alarm monitor.

Now you need to force logoff all users and shutdown the system before you continue with the End of day cleanup.(See Patrol procedures on how to shutdown the system).

Logging Off all users

Note Before we shutdown the system we need to do this step. The reason this step is done is to clear out defunt logged in users, because there might be cases where the user(s) may have successfully logged in but later on their machines just dies hard, in which case CBOE*Direct* will not be notified and the user will stay logged in. This may cause a problem when the user tries to login the next day, the system will reject the login with an error stating that the user is already logged in. Hence we will forcefully logoff all users before we shutdown the system.

Find an `xterm` logged in to the primary global server.

Type the command **`cd $RUN_DIR`** and press <ENTER> key when you are done.

Type the command **`ar SMSServer removeAllSessions`** and press <ENTER> when you are done.

Note This will logoff all users including all the SA GUIs/Help Desk Gui's that are logged into the CBOE*Direct* system.

System Shutdown

Reference the Patrol document for CBOE*Direct* application system shutdown procedures.

End Of Day Cleanup

After the end of day processing is complete the system needs to be cleaned up, the following cleanup actions are taken.

1) Log files are saved off for a week.
2) Queue tables are cleared.
3) Sequence number are reset on CBOE*Direct* for the external connections (TPF and CTM) are reset back to 0.

This section shows you how cleanup the system after End of Day.

Note You need to run this procedure on 'ALL' boxes (primary and backup) in the CBOE*Direct* system.

To run this procedure you will need to login to each of the boxes.

For each box follow the procedure described below

Type the command **`cd $RUN_DIR`** and press <ENTER> when you are done

Type the command **`cleanupServer`** and press <ENTER> key when you are done.

You will be prompted for confirmation. Type **`yes`** and press <ENTER> if you want to continue with the cleanup, else typing any other key and pressing <ENTER> key will abort the cleanup.

Backups After EOD

Remember to take database backups. (See DBA documentation on how to take backups for CBOE*Direct*). This backup is what can be used for next day startup.

Expiration Procedures

Currently there are no special expiration procedures to be followed.

Manual/Miscellaneous Procedures

Updating the symbol map file

The **`symbolMapFile`** contains mapping of reporting classes to product class symbols.

This file is used to remap certain reporting classes that we get from a tips download to different product classes (ALL of such reporting classes and product classes point to the same underlying).

eg. From TIPS when we get the download for OEX we get the following information

OEX – Underlying class symbol name.

OEZ - Reporting class name

OEL - Reporting class name

OEW - Reporting class name

XEO - Reporting class name

XEA - Reporting class name

……..

What happens is all these above reporting classes get listed under the same product class OEX.

BUT what we want to do is list some of these reporting classes under different product classes.

As an example : We need to list the reporting classes 'XEO' & 'XEA' under product class 'XEO' **and not under** 'OEX'.

Then in the **`symbolMapFile`** you would add the following lines

`XEO=XEO`

`XEA=XEO`

But both XEO & OEX product classes will still point to the same underlying (OEX).

Command Line procedures to update this file

Login to the primary Global Server box.

Type the command **`cd $RUN_DIR`** and press <ENTER>.

Type the command **`vi symbolMapFile`** and press <ENTER> when done.

bYou are free to edit the file based on what the reporting class relationships are (either add new entries or delete the old entry).

After you are done editing the file save and quit the vi editor.

Starting Sessions

Command Line

This procedure is run from the primary GlobalServer.

Login to the primary GlobalServer

Type the command **`cd $RUN_DIR`** and press <ENTER> key when you are done.

Type the command **`startSession sessionName`** (where ***`sessionName`*** is W_AM1 ,W_MAIN or ONE_MAIN) and press <ENTER> key when you are done.

Follow the Start of Day procedures on how to verify if the session has started successfully.

SA GUI

See the SA GUI Users guide ("Intraday Procedures", page 29) for more details.

Ending Sessions

Command Line

This procedure is run from the primary GlobalServer.

Login to the primary GlobalServer

Type the command **`cd $RUN_DIR`** and press <ENTER> key when you are done.

Type the command **`endSession sessionName`** (where ***`sessionName`*** is W_AM1,W_MAIN or ONE_MAIN) and press <ENTER> key when you are done.

Follow the Start of Day procedures on how to verify if the session has started successfully.

SA GUI

See the SA GUI Users guide ("Intraday Procedures", page 29) for more details.

Setting Product States

Setting Product States By Session

Command Line(Pre-Open,Open,Close,Halt,OpeningRotation)

Note	For W_MAIN session use this command to only close products. All other states ar a e invalid.

This procedure is run from the primary GlobalServer.

Login to the primary GlobalServer

Type the command **`cd $RUN_DIR`** and press <ENTER> key when you are done.

Type the command
`setAllProductStatesForSession <sessionName> <newState>`

Where

sessionName is W_AM1 ,ONE_MAIN or W_MAIN.

newState is any of the following: (for example you can enter ‘1’ or ‘c’ for closed)

1 c closed

2 p pre-open

3 r opening-rotation

4 o open

5 h halted

6 f fast-market

8 on on-hold

Follow the Start of Day procedures on how to check the product states.

SA GUI(Pre-Open,Open,Close,Halt,OpeningRotation)

See the SA GUI Users guide ("Starting a Trading Session", page 9 and "Market Activity", page 12) for more details.

Setting Product States By Class Or By Individual Product

SA GUI (Pre-Open,Open,Close,Halt,OpeningRotation)

See the SA GUI Users guide ("Starting a Trading Session", page 9 and "Market Activity", page 12) for more details.

Starting-Stopping External Connections – Global Cluster

Command Line (Tips/Pds Connections on Global Server)

- Login to the primary GlobalServer
- **To Stop All Connections:**
  Type the command **`ar TipsAdapter stopAllServices`**
- **To Start All Connections:**
  Type the command **`ar TipsAdapter startAllServices`**
- **To Start a Specific Connection**
  Type the command **`ar TipsAdapter startService <serviceName>`**
- **To Stop a Specific Connection**
  Type the command **`ar TipsAdapter stopService <serviceName>`**
  where **`<serviceName>`** is one of the following
  - TipsProductDownloadConnection

Command Line (Tpf Connections on Global Server)

- Login to the primary Global Server.
- **To Stop All Connections:**
  Type the command **`ar TpfGlobal stopAllServices`**
- **To Start All Connections:**
  Type the command **`ar TpfGlobal startAllServices`**
- **To Start a Specific Connection**
  Type the command **`ar TpfGlobal startService <serviceName>`**
- **To Stop a Specific Connection**
  Type the command **`ar TpfGlobal stopService <serviceName>`**
  where **`<serviceName>`** is one of the following
  - TpfVsdlServiceconnection
  - TpfControlServiceConnection
  - TpfMktIndServiceConnection

Command Line (Compass Connections on Global Server)

- Login to the primary Global Server..
- **To Stop All Connections:**
  Type the command **`ar CompassAdapter stopAllServices`**
- **To Start All Connections:**
  Type the command **`ar CompassAdapter startAllServices`**
- **To Start a Specific Connection**
  Type the command **`ar CompassAdapter startService <serviceName>`**
- **To Stop a Specific Connection**
  Type the command **`ar CompassAdapter stopService <serviceName>`**
  where **`<serviceName>`** is one of the following.
  - M8CompassOrderServiceConnection.
  - M9CompassOrderServiceConnection.
  - M8CompassReportsServiceConnection.
  - M9CompassReportsServiceConnection.

Command Line (COPP Connections on Global Server)

- Login to the primary Global Server.
- **To Stop All Connections:**
  Type the command **`ar CoppGlobalAdapter stopAllServices`**
- **To Start All Connections:**
  Type the command **`ar CoppGlobalAdapter startAllServices`**
- **To Start a Specific Connection**
  Type the command **`ar CoppGlobalAdapter startService <serviceName>`**
- **To Stop a Specific Connection**
  Type the command **`ar CoppGlobalAdapter stopService <serviceName>`**
  where **`<serviceName>`** is one of the following.
  - CoppGlobalServiceConnection.

Starting-Stopping External Connections – Market Data Global Cluster

Command Line (Tips Connections on Global Server)

- Login to the primary GlobalServer
- **To Stop All Connections:**
  Type the command **`ar TipsAdapter stopAllServices`**
- **To Start All Connections:**
  Type the command **`ar TipsAdapter startAllServices`**
- **To Start a Specific Connection**
  Type the command **`ar TipsAdapter startService <serviceName>`**
- **To Stop a Specific Connection**
  Type the command **`ar TipsAdapter stopService <serviceName>`**
  where **`<serviceName>`** is one of the following
  - TipsUnderlyingUdpAConnection
  - TipsUnderlyingUdpBConnection
  - TipsUnderlyingConnection

Command Line (Pds Connections on Global Server)

- Login to the primary GlobalServer
- **To Stop All Connections:**
  Type the command **`ar PdsAdapter stopAllServices`**
- **To Start All Connections:**
  Type the command **`ar PdsAdapter startAllServices`**
- **To Start a Specific Connection**
  Type the command **`ar PdsAdapter startService <serviceName>`**
- **To Stop a Specific Connection**
  Type the command **`ar PdsAdapter stopService <serviceName>`**
  where **`<serviceName>`** is one of the following
  - PdsMarketDataConnection

Starting-Stopping External Connections – Business Cluster

Command Line (Tpf Connections on Business Cluster)

- Login to the appropriate primary business cluster.
- **To Stop All Connections:**
  Type the command **`ar TpfAdapter stopAllServices`**
- **To Start All Connections:**
  Type the command **`ar TpfAdapter startAllServices`**
- **To Start a Specific Connection**
  Type the command **`ar TpfAdapter startService <serviceName>`**
- **To Stop a Specific Connection**
  Type the command **`ar TpfAdapter stopService <serviceName>`**
  where **`<serviceName>`** is one of the following

  On Business Cluster 1 (W_AM1 session)

  - TpfMdrServiceConnection
  - TpfBestQuoteServiceConnection
  - TpfOrderServiceInboundConnection
  - TpfOrderServiceOutoundConnection
  - TpfReportsServiceInboundConnection
  - TpfReportsServiceOutoundConnection
  - TpfLastSaleServiceConnection
  - TpfTagServiceConnection

  On Business Cluster 3 (W_MAIN session)

  - TpfMdrServiceConnection
  - TpfOrderServiceInboundConnection
  - TpfOrderServiceOutoundConnection
  - TpfReportsServiceInboundConnection
  - TpfReportsServiceOutoundConnection
  - TpfLastSaleServiceConnection
  - TpfTagServiceConnection
  - TpfHybridQuoteService1Connection
  - TpfHybridQuoteService2Connection
  - TpfHybridQuoteService3Connection

Command Line (Ctm Connections on Business Cluster)

- Login to the appropriate primary business cluster.
- **To Stop All Connections:**
  Type the command **`ar CtmAdapter stopAllServices`**
- **To Start All Connections:**
  Type the command **`ar CtmAdapter startAllServices`**
- **To Start a Specific Connection**
  Type the command **`ar CtmAdapter startService <serviceName>`**
- **To Stop a Specific Connection**
  Type the command **`ar CtmAdapter stopService <serviceName>`**
  where **`<serviceName>`** is one of the following

  On Business Cluster 1 (W_AM1 session)

  - CtmOptionsReportsServiceConnection.
  - CtmOptionsAcknowledgementsServiceConnection.

  On Business Cluster 2 (ONE_MAIN session)

  - CtmFuturesReportsServiceConnection.
  - CtmFuturesAcknowledgementsServiceConnection.

  On Business Cluster 3 (W_MAIN session)

  - CtmHybridReportsServiceConnection.
  - CtmHybridAcknowledgementsServiceConnection.

Command Line (COPP Connections on Business Cluster)

- Login to the appropriate primary business cluster.
- **To Stop All Connections:**
  Type the command **`ar CoppAdapter stopAllServices`**
- **To Start All Connections:**
  Type the command **`ar CoppAdapter startAllServices`**
- **To Start a Specific Connection**
  Type the command **`ar CoppAdapter startService <serviceName>`**
- **To Stop a Specific Connection**
  Type the command **`ar CoppAdapter stopService <serviceName>`**
  where **`<serviceName>`** is one of the following.

  On Business Cluster 2 (ONE_MAIN session)

  - CoppLastSaleServiceConnection.
  - CoppCurrentMarketServiceConnection.

Verifying class assignments

This section shows you how to check class assignments manually. You may need to use this tool if you don't have an SA GUI available to you at the time or after you have done a VSDL product download and assigned the classes to clusters and sessions.

How to display class assignments for all sessions

Find an `xterm` logged in to primary GlobalServer.

Type the command **`showClasses -bySession`** and press <ENTER> when you are done.

You will see an output similar to the one shown below (Using this output you can verify if a specific class has been assigned to the correct sessions).

```
------------------------------------------------------------------
Classes for 'W_AM1'
------------------------------------------------------------------
AA,AOL,DJX,FDX,OEX,RUT,YHOO
------------------------------------------------------------------
Classes for 'W_MAIN'
------------------------------------------------------------------
AA,AMZN,AOL,DELL,DJX,FDX,GM,HOB,IBM,OEX
ORCL,RUT,SPX,T,YHOO
------------------------------------------------------------------
Classes for 'Underlying'
------------------------------------------------------------------
AA,AMZN,AOL,DELL,DJX,FDX,GM,HOB,IBM,OEX
ORCL,RUT,SPX,T,YHOO
```

How to display class assignments for a specific session

Find an `xterm` logged in to primary GlobalServer.

Type the command **`showClasses -bySession sessionName`** and press <ENTER> when you are done.
`Where session name is one of (W_AM1, W_MAIN, ONE_MAIN or Underlying)`

You will see an output similar to the one shown below (Using this output you can verify if a specific class has been assigned to the correct sessions).

```
------------------------------------------------------------------
Classes for 'W_AM1'
------------------------------------------------------------------
AA,AOL,DJX,FDX,OEX,RUT,YHOO
```

How to display class assignments for all cluster/groups

Note See `Appendix A` of *`CBOEDirect Configuration`* document to see the groups/clusters names and configuration for more details.

Find an `xterm` logged in to primary GlobalServer.

Type the command **`showClasses -byGroup`** and press <ENTER> when you are done.

You will see an output similar to the one shown below (Using this output you can verify if a specific class has been assigned to the correct sessions).

```
------------------------------------------------------------------
Classes for 'atgtest2BC01TradeServer1'
------------------------------------------------------------------
AA,AOL,DJX,FDX,OEX,RUT,YHOO
------------------------------------------------------------------
Classes for 'atgtest2BC01ExternalTradeServer1'
------------------------------------------------------------------
AA,AMZN,AOL,DELL,DJX,FDX,GM,HOB,IBM,OEX
ORCL,RUT,SPX,T,YHOO
------------------------------------------------------------------
Classes for 'atgtest2BC01TradeServer1.underlyingProducts'
------------------------------------------------------------------
AA,AMZN,AOL,DELL,DJX,FDX,GM,HOB,IBM,OEX
ORCL,RUT,SPX,T,YHOO
```

How to display class assignments for a specific cluster/groups

Note See `Appendix A` of `CBOEDirect Configuration` document to see the groups/clusters names and configuration for more details.

Find an `xterm` logged in to primary GlobalServer.

Type the command **`showClasses -byGroup groupName`** and press <ENTER> when you are done.

`Where`

`groupName` `is of the form` **`<ClusterId><ProcessName><ProcessNumber>,`**

`ClusterId` is one of **`BC01, BC02,…BC0n.`** [BC01 means business cluster 1, BC02 means business cluster 2 and so on].

`ProcessName` is one of **`TradeServer,ExtTradeServer`**. [TradeServer is used for W_AM1 session and ExtTradeServer is used for W_MAIN session].

`ProcessNumber` is one **`1,2…n`**. This identifies which process in the cluster will be trading that symbol you are checking.

You will see an output similar to the one shown below (Using this output you can verify if a specific class has been assigned to the correct sessions).

```
------------------------------------------------------------------
Classes for 'atgtest2BC01TradeServer1'
------------------------------------------------------------------
AA,AOL,DJX,FDX,OEX,RUT,YHOO
```

Displaying unassigned classes

Note If you see any class in this list that means the class has not been assigned and is not configured for trading. This can happen for the following 2 reasons.
(a) you have not run the scripts assignClassesToClusters and/or assignClassesToSessions.
(b) Tpf/Helpdesk has not assigned the class to the correct session template.

Find an `xterm` logged in to primary GlobalServer.

Type the command **`showClasses -unassigned`** and press <ENTER> when you are done. ***The number in parenthesis "(n)" is the product type code. See appendix for list of product type codes.***

You will see an output similar to the one shown below (Using this output you can verify if a specific class has not been assigned to the any session or cluster).

```
------------------------------------------------------------
Classes for 'UNASSIGNED IN CLUSTER GROUPS'
------------------------------------------------------------
AA(3).
------------------------------------------------------------
Classes for 'UNASSIGNED IN SESSIONS'.
------------------------------------------------------------
AOL(7).
```

Displaying classes not routed by session

Note This section will show you how to display classes that are configured in a session but not configured in any cluster. If you see any classes that are not assigned in this case it means you have not run the command that assigns classes to routing groups.

Find an `xterm` logged in to primary GlobalServer.

Type the command **`showClasses -unroutedBySession`** and press <ENTER>. ***The number in parenthesis "(n)" is the product type code. See appendix for list of product type codes.***

You will see an output similar to the one shown below (Using this output you can verify if a specific class has not been assigned to any cluster for a specific session).

```
------------------------------------------------------------
Classes for Session W_AM1 that are unrouted.
------------------------------------------------------------
AA(7).
------------------------------------------------------------
Classes for Session ONE_MAIN that are unrouted.
------------------------------------------------------------
AOL(4).
```

Sending Futures Settlement Prices

This section explains how to send settlement prices to OCC and/or CME.

Sending Settlement Prices

To send settlement prices to OCC and CME,

Find an `xterm` logged into the primary Global Server

Type **sendSettlementPrices**

You should see as output the following lines:

```
OCC report ftp ok
OCC job sent ok
CME report ftp ok
```

Sending Settlement Prices to OCC Only

To send settlement prices to OCC only,

Find an `xterm` logged into the primary Global Server

Type **sendSettlementPrices –occ**

You should see as output the following lines:

```
OCC report ftp ok
OCC job sent ok
```

Sending Settlement Prices to CME Only

To send settlement prices to CME only,

Find an `xterm` logged into the primary Global Server

Type **sendSettlementPrices –cme**

You should see as output the following line:

```
CME report ftp ok
```

Disseminate Futures Summary to OneChicago Email Group

This section explains the procedure of how to disseminate summary information for futures products to a OneChicago email group.

Make sure you have disseminated summaries to SIAC before you run this step.

Find a `xterm` logged into the primary Global Server.

Type the command **`cd $RUN_DIR`** and press <ENTER>.

Create summary report file and send email in one step

Type the command **`futureSummaryReport ONE_MAIN`** and press <ENTER>.

Wait for the command to complete.

If the command completes successfully you will see the following information on the screen.

```
------------------------------
ALL done
------------------------------
```

Create summary report file only and don't send email

Type the command **`futureSummaryReport ONE_MAIN`** **–generate** and press <ENTER>.

Wait for the command to complete.

If the command completes successfully you will see the following information on the screen.

```
------------------------------
ALL done
------------------------------
```

Send summary report email only

Type the command **`futureSummaryReport ONE_MAIN`** **–send** and press <ENTER>.

Wait for the command to complete.

If the command completes successfully you will see the following information on the screen.

```
------------------------------
ALL done
------------------------------
```

Displaying Product States

This section explains how to check the number of products in each state per session. Optionally, the 'product state count' can be obtained per class per session.

Displaying Product States by Session

This section describes how to obtain a count of how many products are in what state for a given session.

Find an xterm logged into the primary Global Server

Type **showProductStatesBySession –session ONE_MAIN**

"W_AM1", "W_MAIN", or any other valid session name may be substituted for "ONE_MAIN"

You should see output similar to below, which indicates how many products in the session are in each given state. States having a count of 0 for a given session are not displayed.

```
Show product state for session list {ONE_MAIN}:
------------------------------------------------------------
Product states for session ONE_MAIN:
  state OPEN count = 176
  state ON_HOLD count = 37
```

Displaying Product State Details by Session

This section describes how to obtain a count of how many products are in what state for each class in a given session.

Find an xterm logged into the primary Global Server

Type **showProductStatesBySession –session ONE_MAIN -showClasses**

"W_AM1", "W_MAIN", or any other valid session name may be substituted for "ONE_MAIN"

You should see output similar to below, which indicates how many products in the session are in each given state, and then on a per-class basis. States having a count of 0 for a given session are not displayed.

```
Show product state for session list {ONE_MAIN}:
------------------------------------------------------------
Product states for session ONE_MAIN:
  state OPEN count = 176
  state ON_HOLD count = 37
  Product states by class for ONE_MAIN:
    class AA (type FUTURE) state OPEN count = 4
    class ABY (type FUTURE) state OPEN count = 4
    class ABY (type STRATEGY) state ON_HOLD count = 1
(…)
```

Displaying Product States For All Sessions

This section describes how to obtain a count of how many products are in what state for a given session.

Find an xterm logged into the primary Global Server

Type **showProductStatesBySession**

You should see output similar to that of ***Displaying Product States by Session***, which will be repeated for every session.

Displaying Product State Details For All Sessions

This section describes how to obtain a count of how many products are in what state for a given session.

Find an xterm logged into the primary Global Server

Type **showProductStatesBySession -showClasses**

You should see output similar to that of ***Displaying Product State Details by Session***, which will be repeated for every session.

Useful 'Admin Requests' – 'ar commands'

Common stuff for running the 'ar' commands

Find an `xterm` logged into the Global Server / Business Server, primary or backup (Where ever you want run the command).

Type the command **`cd $RUN_DIR`** and press <ENTER> when you are done.

External services - Displaying connection information

To see detailed information of one or more connection's or the current setting like the retry timeout/retry count etc.

First login to the appropriate box where you want to run the command.

Type **`ar <processName> showContext`** and press <ENTER> to display all connections

`OR` you can use the command.

Type **`ar <processName> showContext <serviceName>`** and press <ENTER> when you are done

`where`

`<processName>` is one of

```
TipsAdapter
CompassAdapter
CoppAdapter
CoppGlobalAdapter
TpfAdapter
TpfGlobalAdapter
CtmAdapter
PdsAdapter
```

`And <serviceName>`

is one of the service names as specified in the System configuration for the specific process you are displaying information for.

External services – Displaying application information

To see detailed information about the service like

Queue depths

Last time a message was sent or received, last msg that was sent/received.

First login to the appropriate box where you want to run the command.

You can use the following commands to get more information about the service.

`ar <processName> showApplService` and press <ENTER> to display all services

`where`

`<processName>` is one of `TpfAdapter, TpfGlobal, CoppAdapter, CoppGlobalAdapter, CtmAdapter or CompassAdapter.`

Status Server

To see more information about the order status service and quote status service running in the status server.

Login to the business server you are interested in.

Type the command **`ar StatusServer showOssStats`** and press <ENTER> when you are done **`or`**

Type the command **`ar StatusServer showQssStats`** and press <ENTER> when you are done.

Membership Adapter (GlobalServer)

To see what time the last refresh was done and other information.

Login to the primary global server.

Type the command **`ar MemAdapter showMembershipStats`** and press <ENTER> when you are done.

Setting TPF Adapter Sequence number's (on Business Cluster)

Many connection's to TPF have sequence accounting being done on them.

Note Please don't confuse this with the TPFGlobalAdapter that runs on the GloablCluster. Currently the TPFGlobalAdapter does not use any sequence numbers.
Please refer to the CBOEDirect Configuration V3.0.doc file for the complete list of all connections and login names , the list below is a partial list. As more boxes are added the list will change.

This section documents how to set the send and receive sequence numbers where appropriate.

The TPF Services on which we currently do sequence accounting are

Service Name	**TPF Name**	**CBOE*Direct* Name**	**CBOE*Direct* Host**
OrderServiceInbound	ORDERS	SBT01	prdbc01a/prdbc01b
OrderServiceOutbound	ORDERS	SBT01OUT	prdbc01a/prdbc01b
ReportsServiceInbound	REPORTS	SBT01	prdbc01a/prdbc01b
ReportsServiceOutbound	REPORTS	SBT01OUT	prdbc01a/prdbc01b
LastSaleService	LASTSALE	SBT01	prdbc01a/prdbc01b
QuoteService	SBTQTE	SBT01	prdbc01a/prdbc01b

Setting Send Sequence nbr

To set the send sequence number on a TPF service use the following procedure

Login to the primary business server.

Type **`cd $RUN_DIR`** and press <ENTER>

Make sure the TPF Connections are established. The command will have no effect if the connections are not already established. [Use the command `showApplService tpf` to verify if we are logged into TPF and to verify what the current sequence number are]

Type **`ar TpfAdapter setSendSeqNbr [sequenceNbr] [TPF name] [`CBOE*Direct* `Name]`**

Where

sequenceNbr is whatever you want to change the sequence number to be.

TPF Name is the name of the TPF service as explained above.

CBOE*Direct* Name is the name of **CBOE*Direct*** service as explained above (each business cluster will have a different **CBOE*Direct*** Name).

You should see output similar to the one shown below after the command successfully executes.

```
Send sequence number for QuoteService/SBTQTE-SBT01 [PRIMARY] changed from 9 to
10000
```

Example :

To change send sequence number for QuoteService to 10000 you would type

```
ar TpfAdapter setSendSeqNbr 10000 CBOEDIRECT QTE CBOEDIRECT 01
```

Setting Receive Sequence nbr

To set the receive sequence number on a TPF service use the following procedure

Login to the primary business server.

Type **`cd $RUN_DIR`** and press <ENTER>

Make sure the TPF Connections are established. The command will have no effect if the connections are not already established. [Use the command `showApplService tpf` to verify if we are logged into TPF and to verify what the current sequence number are]

Type **`ar TpfAdapter setRecvSeqNbr [sequenceNbr] [TPF name] [CBOEDIRECT Name]`**

Where

sequenceNbr is whatever you want to change the sequence number to.

TPF Name is the name of the TPF service as explained above.

CBOE*Direct* Name is the name of CBOE*Direct* service as explained above (each business cluster will have a different CBOE*Direct* Name).

You should see output similar to the one shown below after the command successfully executes.

```
Receive sequence number for ReportsServiceInbound/REPORTS-CBOEDIRECT 01 [PRIMARY]
changed from 9 to 10000
```

`Example :`

`To change receive sequence number for ReportsServiceInbound to 10000 you would type`

```
ar TpfAdapter setRecvSeqNbr 10000 REPORTS SBT01
```

Setting Compass Adapter Sequence number's (on Global Cluster)

All connection's to Compass have sequence accounting being done on them.

This section documents how to set the send and receive sequence numbers where appropriate.

The Compass Services on which we currently do sequence accounting are

Service Name	COMPASS Name	CBOE*Direct* Name	CBOE*Direct* Host
M8CompassOrderService	CMPORD8	SBTORD8	prdgc01a/prdgc01b
M9CompassOrderService	CMPORD9	SBTORD9	prdgc01a/prdgc01b
M8CompassReportsService	CMPREP8	SBTREP8	prdgc01a/prdgc01b
M9CompassReportsService	CMPREP9	SBTREP9	prdgc01a/prdgc01b

Setting Send Sequence nbr

To set the send sequence number on a COMPASS service use the following procedure

Login to the primary global server.

Type **`cd $RUN_DIR`** and press <ENTER>

Make sure the COMPASS Connections are established. The command will have no effect if the connections are not already established. [Use the command `showApplService compass` to verify if we are logged into COMPASS and to verify what the current sequence number are]

Type

`ar CompassAdapter setSendSeqNbr [sequenceNbr] [COMPASS name] [`CBOE*Direct* `Name]`

Where

sequenceNbr is whatever you want to change the sequence number to.

COMPASS Name is the name of the COMPASS service as explained above.

CBOE*Direct* Name is the name of **CBOE*Direct*** service as explained above.

You should see output similar to the one shown below after the command successfully executes.

```
Send sequence number for M8CompassReportsService/CMREPD8-SBTREP8 [PRIMARY] changed
from 9 to 10000
```

Example :

To change send sequence number for Reports service [connected to compass module M8] to 10000 you would type

```
ar CompassAdapter setSendSeqNbr 10000 CMPREP8 SBTREP8
```

Setting Receive Sequence nbr

To set the receive sequence number on a COMPASS service use the following procedure

Login to the primary business server.

Type **`cd $RUN_DIR`** and press <ENTER>

Make sure the COMPASS Connections are established. The command will have no effect if the connections are not already stablished. [Use the command `showApplService compass` to verify if we are logged into COMPASS and to verify what the current sequence number are]

Type

```
ar CompassAdapter setRecvSeqNbr [sequenceNbr] [COMPASS name] [CBOEDIRECT  Name]
```

Where

sequenceNbr is whatever you want to change the sequence number to.

COMPASS Name is the name of the COMPASS service as explained above.

CBOEDIRECT Name is the name of CBOEDIRECT service as explained above.

You should see output similar to the one shown below after the command successfully executes.

```
Receive sequence number for M8OrderService/CMPORD8-SBTORD8 [PRIMARY] changed from
9 to 10000
```

`Example :`

`To change receive sequence number for OrderService [connected to compass module M8] to 10000 you would type`

```
ar CompassAdapter setRecvSeqNbr 10000 CMPORD8 SBTORD8
```

Manual End Of Day

CALL CBOE*Direct* SUPPORT BEFORE YOU RUN THIS COMMAND.

This command is run from the primary global server.

Note Be very careful when you run this command. **Make sure all sessions are closed and that you have already taken backups and that you really want to perform the end of day**. Because this procedure is a manual override and will execute the end of day regardless of the state of sessions. (See the section on `MonitoringTools→Checking Session Status` on how to verify that the state of the session is closed).

Login to the primary global server.

Type the command **cd $RUN_DIR** and press <ENTER> key when you are done.

Type the command **`endOfDay force`** and press <ENTER> key when you are done.

Follow the End Of Day procedures for verification stage.

Manual End Of Day Purge

CALL CBOE*Direct* SUPPORT BEFORE YOU RUN THIS COMMAND.

This command is run from the primary global server.

Note Be very careful when you run this command. **Make sure all sessions are closed and that you have already taken backups and you have already done the End Of Day Procedures and that you really want to perform endOfDayPurge**. Because this procedure is a manual override and will execute the end of day regardless of the state of sessions.

Login to the primary global server.

Type the command **cd $RUN_DIR** and press <ENTER> key when you are done.

Type the command **`endOfDayPurge now`** and press <ENTER> key when you are done.

Follow the End Of Day Purge procedures for verification stage.

Verifying if End Of Day was done - checkEndOfDay

This section shows you how to verify if end of day was done on the CBOE*Direct* system. This section will also show you how to verify if end of day was done for a specific date.

Note You can check end of day for a maximum of 7 days back from the current date. **The 'checkEndOfDay' script also displays information if we have updated summaries, open interest and settlement information for the specified date. See msgs below at the end of this section.**

How to verify if End Of Day was done for today

To verify the end of day status for today (i.e. if end of day was done today) follow the following procedure listed below.

Find an xterm logged into the primary Global Server.

Type the command **`cd $RUN_DIR`** and press <ENTER> when you are done

Type the command **`checkEndOfDay`** and press <ENTER> when you are done

See end of section just below for different messages you might see.

How to verify if End Of Day was done for some previous day

To verify the end of day status for a specific day (you can check status for only upto 7 days back) follow the following procedure listed below.

Find an xterm logged into the primary Global Server.

Type the command **`cd $RUN_DIR`** and press <ENTER> when you are done

Type the command **`checkEndOfDay`** MM-DD-YY and press <ENTER> when you are done

Where

MM = Month number, DD = Day number, YY = year number (01 for 2001).

See end of section just below for different messages you might see.

Messages displayed by 'checkEndOfDay' script

If you see the following message it means that **End of Day was successfully completed**

```
-------------------------------------------------------------------------------------------
 END OF DAY COMLETED FOR DATE -> '07-23-01'
 END OF DAY PURGE COMLETED FOR DATE -> '07-23-01'
-------------------------------------------------------------------------------------------
```

If you see the following message it means that **End of Day WAS NOT fully, successfully completed.** This message means End Of Day was done but end of day purge was not done.

```
-------------------------------------------------------------------------------------------
 END OF DAY COMLETED FOR DATE -> '07-23-01'
 END OF DAY PURGE NOT COMLETED FOR DATE -> '07-23-01'
-------------------------------------------------------------------------------------------
```

If you see the following message it means that **you either entered the wrong date OR cleanupServer was not yet executed** (for the specified date) on the GlobalServer you are running the command from **OR** more then 7 days have elapsed (Remember, you cannot check the EOD status for more then 7 days before todays date).

```
 ---------------------------------------------------------------------------------------------
 UNABLE TO DETERMINE 'END OF DAY' STATUS FOR DATE '06-15-01'
 because the log files don't exist for that day.

 Remember we hold onto log files only for 7 days.
-----------------------------------------------------------------------------------------------
```

If you see the following message it means that **End of Day was not done for the specified date**.

```
-------------------------------------------------------------------------------
 END OF DAY WAS NOT PERFORMED FOR DATE --> '06-15-01'
-------------------------------------------------------------------------------
```

If you see the following message it means that **OPEN INTEREST was updated successfully**

```
-------------------------------------------------------------------------------
 OPEN INTEREST UPDATED FOR DATE --> '06-15-01'
-------------------------------------------------------------------------------
```

If you see the following message it means that SUMMARY was updated successfully.

```
-------------------------------------------------------------------------------
SUMMARY UPDATED FOR DATE --> '06-15-01'
-------------------------------------------------------------------------------
```

If you see the following message it means that NOTHING DONE's were sent for that session.

```
-----------------------------------------------------------------------------------------------
NOTHING DONES SENT FOR SESSION 'W_AM1' FOR DATE -> '02-26-02'
-----------------------------------------------------------------------------------------------
```

Manual Membership Downloads

Since the membership adapter gets new membership data every 10 mins, generally there will be no need to run this procedure manually. See Intraday Procedures on how to verify membership downloads.

This command is run from the primary global server.

Note When the command is submitted, the Membership adapter will immediately do another download of membership data. **NOTE:** The membership downloads are incremental in nature (i.e. only the updates since the last download are refreshed).

Login to the primary global server.

Type the command **cd $RUN_DIR** and press <ENTER> key when you are done.

Type the command **`ar MemAdapter refreshMembershipData`** and press <ENTER> key when you are done.

Follow the Intra day Procedures→ Membership Download procedures for verification stage.

COPP Commands

This section explains various commands for messages we can send to SIAC via COPP.

Note To send any COPP command you have to run the program **coppAdmin**. This program is run on the primary global server. All the requests are actually sent to the CoppGlobalAdapter running on the GlobalServer.

Use the following procedure to send a COPP command.

Login to the primary GlobalServer.

Type the command **cd $RUN_DIR** and press <ENTER>.

Type one of the following commands listed below to send the appropriate message(s).

Send Summary for session ONE_MAIN

This command will send summary messages to SIAC.

```
coppAdmin startSummary ONE_MAIN
```

Abort summary dissemination for session ONE_MAIN

This command will stop the summaries that are currently going out to COPP.

```
coppAdmin endSummary ONE_MAIN
```

Send Settlement prices for session ONE_MAIN

This command will send settlement prices to SIAC.

```
coppAdmin startSettlement ONE_MAIN
```

Abort Settlement dissemination for session ONE_MAIN

This command will stop the settlement prices that are currently going out to COPP.

```
coppAdmin stopSettlement ONE_MAIN
```

Send Text Message to SIAC

This command will send a text message to SIAC.

```
coppAdmin textMessage [messageText in double quotes]
```

example : coppAdmin textMessage “This is a test message”

Send Good nigth to SIAC

This command will send good night message to SIAC.

```
coppAdmin goodNight [someText in double quotes]
```

example : coppAdmin goodNight “Good night”

Manual system startup/shutdown

Startup Commands

Use the table to pick the appropriate command line for the host type you are working with.

HOST TYPE	COMMAND
Primary Global Server	startTradeengSystem GC Master
Slave Global Server	startTradeengSystem GC Slave
Primary Business Server	startTradeengSystem BC Master
Slave Business Server	startTradeengSystem BC Slave
Primary Market Data Global Server	startTradeengSystem GC Master
Slave Market Data Global Server	startTradeengSystem GC Slave
Frontend	startTradeengSystem FE Master

Shutdown Commands

Use the table to pick the appropriate command line for the host type you are working with.

HOST TYPE	COMMAND
Primary Global Server	stopTradeengSystem GC Master
Slave Global Server	stopTradeengSystem GC Slave
Primary Business Server	stopTradeengSystem BC Master
Slave Business Server	stopTradeengSystem BC Slave
Primary Market Data Global Server	stopTradeengSystem GC Master
Slave Market Data Global Server	stopTradeengSystem GC Slave
Frontend	stopTradeengSystem FE Master

Manually checking processes

Login to appropriate box.

Type the command chk and press <ENTER>

You will see a list of processes that are currently running on that box.

Please refer to the CBOEDirect configuration guide to see what processes should be running on the box you are logged in on.

Example :
user tradeng1 pid 20317 devsvr5tst1CompassAdapterdevsvr5
user tradeng1 pid 5801 devsvr5tst1CoppAdapterdevsvr5
user tradeng1 pid 19471 devsvr5tst1CoppGlobalAdapterdevsvr5
user tradeng1 pid 6401 devsvr5tst1CtmAdapterdevsvr5
user tradeng1 pid 2584 devsvr5tst1ExtTradeServer1devsvr5

Manual failover

Global Server (GC) Failover

Shutdown all processes on the primary global server
use the command **stopTradeengSystem GC Master.**

Make all processes on the Slave Global Server as master
use the command **switchTradeengSystem GC goMaster**

Market Data Global Server (MDGC) Failover

Shutdown all processes on the primary global server
use the command **stopTradeengSystem GC Master.**

Make all processes on the Slave Global Server as master
use the command **switchTradeengSystem GC goMaster**

Business Server (BC) Failover

Shutdown all processes on the primary business server
use the command **stopTradeengSystem BC Master.**

Make all processes on the Slave Business Server as master
use the command **switchTradeengSystem BC goMaster**

Frontend (FE) Failover

Not applicable – As all processes on all frontends run in master mode.

Failover individual processes

NOTE: Please refer to the CBOEDirect configuration guide to figure out what processes run on which boxes.

Note the name of the process you want to failover.

If it is a TradeServer that you are failing over then you need to stop all external connections on the box on which that trade server is running as Master.

Shutdown the specific process in question that is currently running as Master (use 'chk' to get the 'pid' and then just kill the process).

Login to the backup / slave box and run the following command to make the appropriate process goMaster

ar <processName> goMasterCommand true

Where <processName> is one of the following

On Global Server (GC)

1) IdServer
2) GlobalServer
3) SMSServer
4) CompassAdapter
5) TipsAdapter
6) TpfGlobal
7) CoppGlobal

On Market Data Global Server (MDGC)

8) TipsAdapter
9) PdsAdapter

On Business Server (BC01)

10) TradeServer1
11) ExtTradeServer1
12) CtmAdapter
13) TpfAdapter
14) StatusServer

On Business Server (BC02)

15) TradeServer2
16) CtmAdapter
17) CoppAdapter
18) StatusServer

On Business Server (BC03)

19) HybridTradeServer1
20) CtmAdapter
21) TpfAdapter
22) StatusServer

Monitoring Tools

Command Line

Checking queues

This section shows you how to check if the system is queuing.

The command explained below can be run on the primary GlobalServer(prdgc01a or prdgc01b) or any of the primary business servers(prdbc01a,prdbc01b, prdbc02a,prdbc02b). This command will displays queues that are queuing for the ETH session , W_MAIN session & ONE_MAIN session.

Login to the primary server.

Type the command **`cd $RUN_DIR`**. Press <ENTER> key after you are done.

Type the command **`showQueues`**. Press <ENTER> key after you are done.

You should see the following output on the terminal.

Note This command displays only the queue's that have messages queued in them. It doesn't show all the queues. If you want to see all queues created by the system whether they are queuing or not then type the command **`showQueues –all`** (and then press <ENTER> key when you are done).

You should see the output ***similar*** to the one show below **if the system is not queuing**.

```
DISPLAYING QUEUES FOR W_AM1 on 'devsvr1tst2'
---------------------------------------------------------------
Connected to jdbc:oracle:thin:@localhost:1521:CBOEDIRECT DD000
Found '19' queues.
---------------------------------------------------------------
Since no queue names are displayed here, it means the system is not queuing.


DISPLAYING QUEUES FOR W_MAIN on 'devsvr1tst2'
---------------------------------------------------------------
Connected to jdbc:oracle:thin:@localhost:1521:CBOEDIRECT DD000
Found '35' queues.
---------------------------------------------------------------
Since no queue names are displayed here, it means the system is not queuing.
```

If the system is queuing then you may for example see the following output.

```
DISPLAYING QUEUES FOR ETH SESSION on 'devsvr1tst2'
---------------------------------------------------------------
Connected to jdbc:oracle:thin:@localhost:1521:CBOEDIRECT DD000
Found '19' queues.
---------------------------------------------------------------
0). CommandProcessor.queue.AMZN/nbrQueued(1) sizeOfFreeList(0)
1). CommandProcessor.queue.HU/nbrQueued(2)   sizeOfFreeList(10)
2). CommandProcessor.queue.AA/nbrQueued(10)   sizeOfFreeList(29)
3). CommandProcessor.queue.ABY/nbrQueued(1)  sizeOfFreeList(10)
```

Checking Session States

Login to the primary global server.

Type the command **`cd $RUN_DIR`**. Press <ENTER> key.

Type the command **`showSessionStatus`**. Press <ENTER> key.

You should see the following output on the terminal. (**NOTE:** The StartTime and EndTimes shown in the output are just examples). See the Current System Configuration guide to get the real times.

Note In the field '**Session Status**' shown below you should see the state 'OPEN' after the StartTime for that session has elapsed.

The Business Day tells you which day this session belongs to.

You will also see the status of the current business day. The Status will be either

STARTED – Means the business day has been created.
DEFINED-BUT NOT STARTED – Means business day has not been started.
ENDED – Means business day has ended (and you have done End Of Day). [It doesnot mean that end of day purge has been done only that end of day was done].

```
--------------------------------------------------------------------------------
CURRENT BUSINESS DAY → 11-FEB-02, STATUS = STARTED
--------------------------------------------------------------------------------
Session Name   : W_MAIN [BusinessDay(4/4/2001] StartTime(8:0:0) EndTime(16:0:0)]
Session Status   : OPEN

Session Name   : ONE_MAIN [BusinessDay(4/4/2001] StartTime(8:0:0) EndTime(16:0:0)]
Session Status   : OPEN

Session Name   : Underlying [BusinessDay(4/4/2001] StartTime(0:15:0) EndTime(0:30:0)]
Session Status   : CLOSED

Session Name   : W_AM1 [BusinessDay(4/4/2001] StartTime(8:0:0) EndTime(15:45:0)]
Session Status   : OPEN
```

Querying User Reports (Fills,Cancels,Nothing Dones etc)

This tool lets you query the database for all users order status and quote status messages (which include fills, cancels,nothing dones etc…)

This tool can be used only on the BusinessServer's. You run this tool on the BusinessServer you are interested in.

Login to the primary business server you are interested in.

Type the command **cd $RUN_DIR**. Press <ENTER> key after you are done.

You can type one of the following commands based on what reports you want to see and for either firm or for a user.

To find reports for a specific user.

userReportMain findUserReports <userName> {order|quote} [unacked]

where
<userName> is the user's acronym you are interested in.

<order|quote> displays user's order or quote msgs (only one of these can be selected).

<unacked> is specified will display only unacked reports for the user. If not specified will display all reports for the user.

To find reports for a specific firm.

userReportMain findFirmReports <userName> <firmKey> {order|quote} **[unacked]**

where
<userName> is the user's acronym you are interested in.

<firmKey> is the firm number/Occ Nbr for the firm.

<order|quote> displays user's order or quote msgs (only one of these can be selected).

<unacked> is specified will display only unacked reports for the user. If not specified will display all reports for the user.

To find all users that have registered interest in receiving their reports.

userReportMain findRegisteredUsers [{order|quote}]

where

<order|quote> displays user's registered for order statuses/quote statuses based on what is specified order or quote.

Manual Capture of Trade Reports For Ctm

In case of a connection failure between the CBOEDIRECT CTM Adapter and the CTM system, CBOEDIRECT provides "back door" procedures that provide trade reports to CTM for a specified time period. The "back door" procedures provide both add and delete (bust) reports to CTM.

Note The operator may select between using the FTP "back door" or the tape "back door" procedures. The "back door" procedures are flexible and a number of system defaults may be overridden.

Introduction to `xferReports` (Documentation)

The xferReports script performs a database dump of trade reports for CTM from the default CBOEDIRECT business server routes, or the routes specified by the operator, and transfers that data via FTP to a remote CTM host prepared to process the reports. Alternatively, xferReports will write the dumped trade reports to tape for later reading and processing by CTM.

Default parameters are provided as described below. The operator may override them. In general, this will not be necessary, but the functionality is provided should the need arise.

Usage

This section illustrates the different command line parameters for the `xferReports` program.

How to get more information?

Type **`xferReports -a`** on the primary GlobalServer to display the help reference.

Help usage

Type **`xferReports -h`** on the primary GlobalServer to see help usage.

Command Line Syntax

To get help:

```
-a       - Get help (all other options and arguments are ignored)
-h       - Get usage (all other options and arguments are ignored)
```

To run xferCtmReports:

```
xferCtmReports -z session_name -n [options] [network mode options]
               version unsent start-date [ start-time end-date end-time ]

-z session_name        - session name
version                - Record Format Version (1, 2, or 3)
unsent                 - true if only unsent/unacked reports are to be
                         transferred
start_date             - trade date (YYYYMMDD)
```

Optional arguments:

```
options   - modify operation in some way
      -q : Query only
      -x : Transfer only
      -e : Display program parameters (don't run program)

network mode options   - override defailts
        -r route-list         : Trade Server Routes
        -s data-src-filename  : SBT data (source) file
        -d data-dest-filename : CTM (destination) filename
        -j jcl-src-filename   : JCL source file
        -m jcl-dest-filename  : JCL destination file
        -h ctm-host           : CTM host
        -p ctm-port           : CTM port
        -u ctm-login-user     : CTM user
        -w ctm-login-password : CTM password

start_time -  the time of the start boundary for the time range for which trade
              reports are being dumped from CBOEDIRECT  (must be accompanied by
              end_date and  end_time arguments)

stop_date -   the date of the stop boundary for the time range for which trade
              reports are being  dumped from CBOEDIRECT  (must be accompanied by
              start_time and stop_time arguments)
stop_time -   the time of the stop boundary for the time range for which trade
              reports are being dumped from CBOEDIRECT  (must be accompanied by
              start_time and stop_date arguments).
```

Note Date format: YYYYMMDD
Time format: HH:MM:SS (24 hour clock)

Defaults for xferReports operation

Default Trade Server route list: `devsvr1tst2TradeServe`

FTP Mode Defaults (may be overridden by options, see below)

CTM FTP host:port	- `170.137.235.7:21`
CTM FTP user/password	- `TS230DF/FTPNEWID`
CTM data file	- `RJE.CTM.FTP.SBT.DATA`
JCL source file	- `/tradeengine/CBOEDirect/bin/ctm_eth_jcl.dat`
JCL destination file	- `RJE.CTM.FTP.SBT.JCL`

Note In general, it is not recommended that these defaults be overridden. The CTM team provided these defaults and are expecting that they will be used. However, the default Trade Server route list should be overridden with the desired trade server business routes.

File Transfer Protocol (FTP) “Back Door” Procedure

The FTP “back door” procedure creates a file containing all trade reports generated during a given time period for specified business server routes. It then transfers the data and a file containing a Job Control Language (JCL) command for CTM via FTP to the remote CTM host. The operator specifies the time period and the routes for which he or she desires reports to be generated.

To operate the FTP “back door” procedure, execute the following command on the Unix command line **on the primary Global Server**:

```
$ writeCtmReports W_AM1 -ftp
```

Maintenance Procedures

Symbol Maintenance

Adding new Trading symbols

This operation can be done after end of day and before creating the next business day.

This operation can currently only be performed by either the VSDL download or through the SA GUI.

Removing Trading symbols

This operation can be done after end of day and before creating the next business day.

This operation can currently only be performed by either the VSDL download or through the SA GUI.

All Other Maintenance Functions

Refer to SA GUI User guide for details.

Appendix A – Product Type Code List

Product Type Name	Product Type Code
COMMODITY	1
DEBT	2
EQUITY	3
FUTURE	4
INDEX	5
LINKED_NOTE	6
OPTION	7
UNIT_INVESTMENT_TRUST	8
VOLATILITY_INDEX	9
WARRANT	10
STRATEGY	11

Appendix B – CBOE*Direct* Log Message's for Patrol pop-ups

This section lists the important messages and what they mean. These messages are used to trigger PATROL pop-ups. PATROL will monitor the log files for these listed messages and provide notifications by means of displaying a pop-up with the message in it.

Note Please read the procedures on how to deal with errors. The list here is base line for what messages need to displayed through PATROL pop-ups.

Legends

- `This style means it is patrol search string.`

Directory Location for log file monitoring

GlobalCluster prdgc01a & prdgc01b (GC)

/sbt/prod/tradeeng/run_dir

BusinessCluster prdbc01a & prdbc01b (GC)

/sbt/prod/tradeeng/run_dir

Host/File Name	Message(Search String)	Description
Start Of Day		
Start Session		
GlobalServer.log(GC)	`[Session = W_AM1].` **`Completed event START_SESSION. [Nbr called`**`(7), Nbr completed(7), Nbr exceptions(0), Nbr failures(0)]"`	Indicates that the session has started. **Doesnot mean all servers completed successfully.** You will see this message for `W_AM1` and `W_MAIN` session. Make sure **`Nbr Completed is same as Nbr Called`** and that **`Nbr Exceptions`** and **`Nbr Failures`** both show **`'0's`**. Only if this condition is true has the ***session started successfully***.
GlobalServer.log(GC)	**`Start session failed for session`** : W_AM1	Start session failed because there were errors committing database transaction.
GlobalServer.log(GC)	**`Session started (but not all servers completed)`** : [ACTION(START_SESSION), SESSION (W_AM1)]	This means one of the processes in the CBOEDIRECT system is either down or did not completed successfully.
GlobalServer.log(GC)	**`Error starting session (ALL SERVERS ARE DOWN)`** : [ACTION(START_SESSION), SESSION (W_AM1)]	Means none of the processes are running.
GlobalServer.log(GC)	**`Session W_AM1 could not be started - business day`** (3/15/01) is not started.	Means the business day has not been created for today.

VSDL Download		
GlobalServer.log(GC)	ProductMaintenanceServiceHome:ProductDownloadController>>> **Starting product download from TIPS**	Means the TIPS download is starting.
GlobalServer.log(GC)	ProductMaintenanceServiceHome:ProductDownloadController>>> **TIPS Download complete**	TIPS download has been completed.
GlobalServer.log(GC)	ProductMaintenanceServiceHome:ProductDownloadController>>> **Starting download** of 107 reporting classes from TPF	Starting TPF VSDL Download .
GlobalServer.log(GC)	ProductMaintenanceServiceHome:ProductDownloadController>>> **TPF download complete - making products not received inactive**	TPF VSDL Download is now complete.
GlobalServer.log(GC)	ProductMaintenanceServiceHome:ProductDownloadController>>> **All download processing complete.**	All Post processing after Download is complete.
Intraday Messages		
Intraday Series Add		
TpfGlobal.log(GC)	ControlService/CONTROL-SBT01 [PRIMARY] RECEIVED: **STOCK SPLIT DOWNLOAD COMPLETE FROM TPF**	This means we have received a Stock Split adjustment download from TPF.
Queuing		
CtmAdapter.log(BC)	**Queuing on queue** TpfReportsServiceOutboundQueue/nbrQueued(46), sizeOfFreeList(0), maxQueueDepth(2147483647)	Means we are queuing on some persistent(in database) queues.

Tips,Tpf,Ctm,Copp,Compass Connections		
TpfGlobal.log (GC) TipsAdapter.log (GC) TpfAdapter.log (BC) CtmAdapter.log (BC) CompassAdapter.log(GC) CoppAdapter.log(BC) CoppGlobalAdapter.log(GC)	Connection TpfTagServiceConnection **`disconnected by service`** TpfTagService	The connection has been disconnected and was up before.
	Connection TpfOrderServiceConnection **`disconnected for service`** TpfTagService	The connection has been disconnected and was up before.
End Of Session		
Ending Sessions		
GlobalServer.log(GC)	**`End Of Session processing`** for session(W_AM1) not performed. All products in session are not closed.	Error condition when all products are not closed we cannot start end of session.
	(AUTOMATIC END OF SESSION PROCESSING IS OFF). **`End Of Session not started`**, must be triggered manually : Session(W_AM1)	Means that the session is configured to not automatically end.
	`Error performing End Of Session processing` : Session(W_AM1). Unable to commit transaction.	There was an error performing end of session.
	`END OF SESSION PROCESSING COMPLETE` : `Session(W_AM1)`	Means End of Session has completed.

GlobalServer.log(GC)	**END OF DAY not yet performed** because not all sessions are closed.	Means at the time when the session configured as the last session (W_MAIN in our case) is closed and there are other **open** sessions end of day cannot be performed. **Means we are still not ready for END OF DAY.**

End Of Day		
Ready For End Of Day		
GlobalServer.log(GC)	(AUTOMATIC END OF DAY PROCESSING IS OFF). **End Of Day not started, must be triggered manually**	If you see this message it means that you should now take the complete database backup/export of all clusters and after the database backups you are ready for end of day.
Stock Split Download		
TpfGlobal.log(GC)	ControlService/CONTROL-CBOEDIRECT01 [PRIMARY] RECEIVED: **STOCK SPLIT DOWNLOAD COMPLETE FROM TPF**	This means we have received the final Stock Split adjustment download from TPF.
Stock Split Completed on SBT		
TpfGlobal.log(GC)	RECEIVED: **STOCK SPLIT COMPLETED ON TPF**.	This means that stock split has successfully completed on TPF and CBOEDIRECT will start its end of day processing.
Stock Split Completed on SBT		
GlobalServer.log(GC)	**Price adjustment processing is now complete**. We will now tell TPF and wait for TPF to send us order adjustments. Once the order adjustments have been sent successfully, then END OF DAY PRUGE WILL BEGIN	Means CBOEDIRECT has finished applying prices adjustments and is now waiting for TPF to send adjusted order download.

Order Adjustments		
TpfGlobal.log(GC)	ControlService/CONTROL-CBOEDIRECT 01 [PRIMARY] **RECEIVED: ORDER ADJUSTMENT DOWNLOAD COMPLETE FROM TPF.**	This means the TPF has finished send us order adjustment download. As soon as this completes END OF DAY PURGE will automatically begin.
End Of Day Purge		
GlobalServer.log(GC)	TradingSessionTpfEOBDStrategyImpl:**End Of Day processing is now complete** ...	This means we have completed the End of Day purge and hence the EOD processing.