FineTech CME Gateway

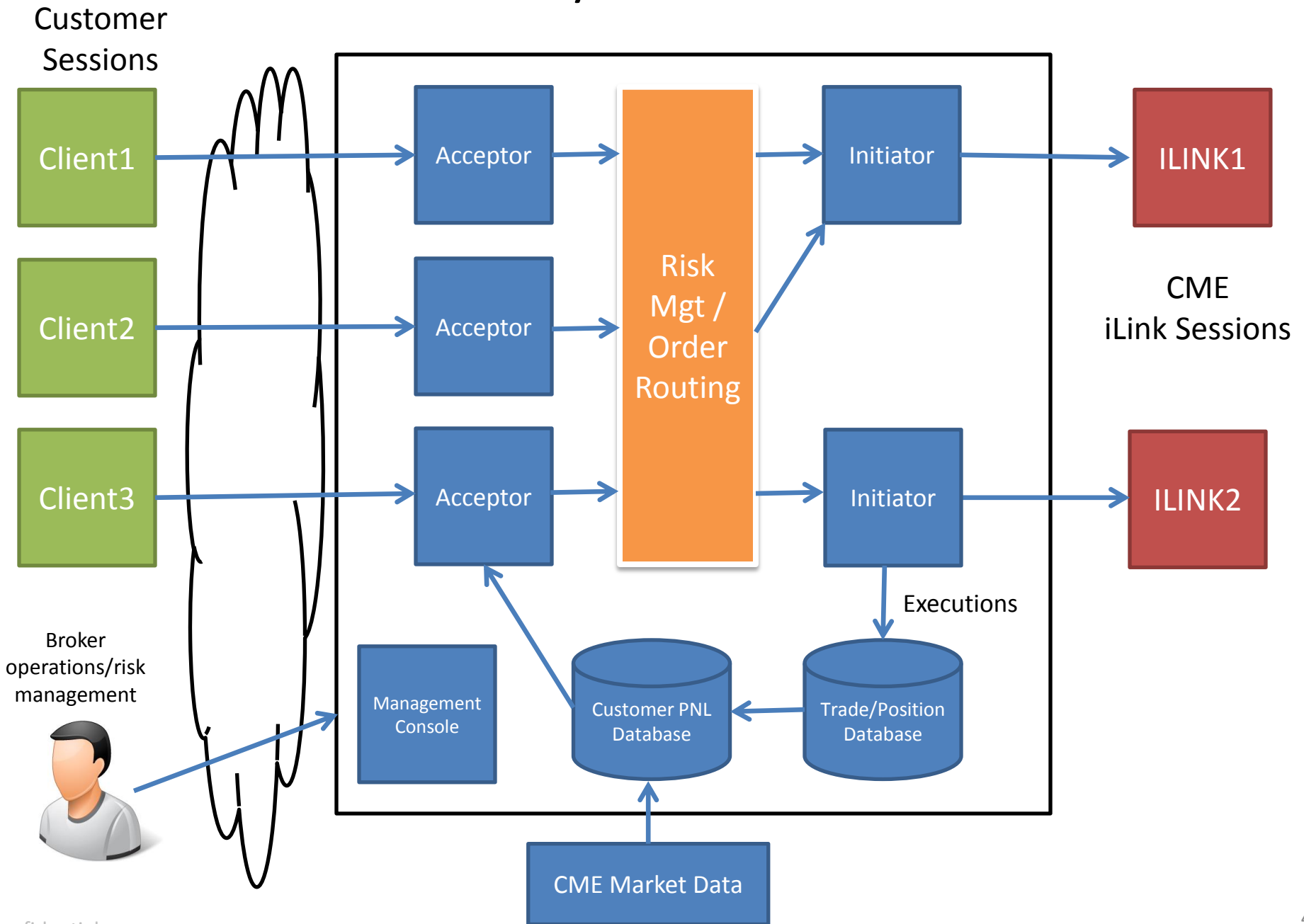Configuration and Risk Management Guide

- The FineTech CME Gateway is aimed at brokers that need a cost effective solution for their customers that need to manage risk at CME but who do not meet the requirements for direct market access (DMA).

- The gateway essentially acts like a "traffic cop".

- All trader orders flow through the gateway which performs risk management functions before releasing them to GLOBEX via an ILINK session.

- The gateway has a web based management GUI

- The gateway can be operated by FineTech as a managed service on behalf of the broker, or can be deployed and managed in house by the broker as required.

Risk Management

- All incoming order flow passes through a risk management component before being released to the exchange

- Risk management includes margin calculation, position limits (max long/short/net) and activity limits (max /day).

- For each account incoming orders are processed sequentially and treated as 'pending'. Incoming orders are assumed filled for margin calculation purposes <u>before</u> they are released to the exchange.

- Thus, if a client erroneously releases numerous duplicate orders to the gateway, as long as this violates margin or contract count limits, they will be rejected by the gateway and not released to CME.
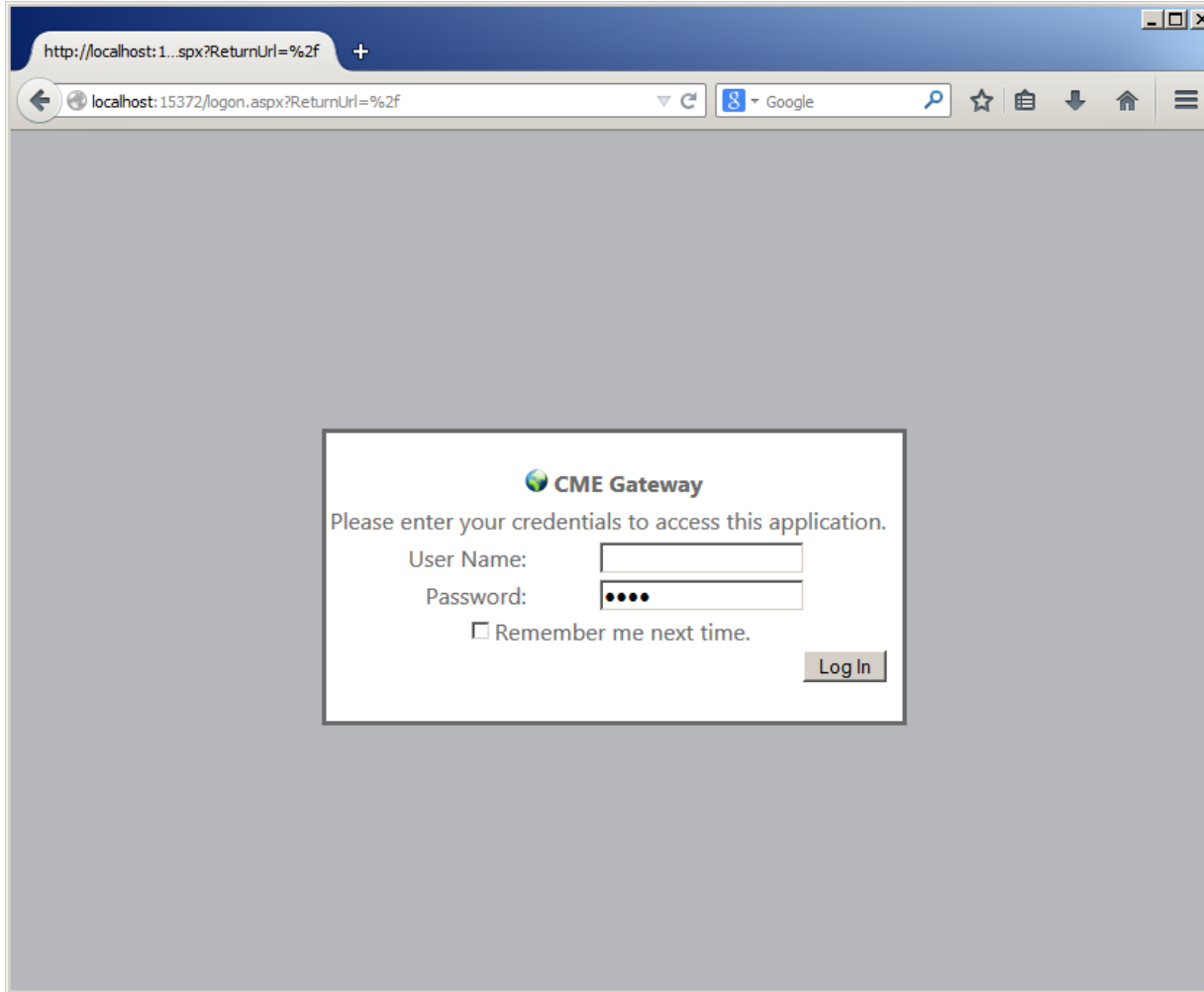
Gateway Architecture

Client1 → **Acceptor** → **Risk Mgt / Order Routing** → **Initiator** → **ILINK1**

Client2 → **Acceptor**

CME
iLink Sessions

Client3 → **Acceptor** → → **Initiator** → **ILINK2**

Broker
operations/risk
management

Management Console

Customer PNL Database

Trade/Position Database

Executions

CME Market Data

Gateway Definitions

Client	A FIX connection from a trader to the Gateway
Initiator	A FIX connection to CME (ILINK connection)
Acceptor	A TCP socket on the gateway server that accepts incoming Client FIX sessions
Account	Each client is linked to an account for risk management purposes. One account can have multiple clients connected to it. Each client is linked to one and only one account.

Gateway Administration

- Navigate to the gateway using a web browser.
- Initially you will need to log in using credentials provided by the administrator.

Home | Gateway | Accounts | Risk | Limits | Positions | Trades | Margin | Clients | Acceptors | Initiators | Web Users | Logout

Broker, Inc. v1.0.0.36 > ADMIN

- All administration functions are selected from the menu

- Different gateway users will see different functions depending on their permissions

- The administration web site is connected directly to the gateway.

Unless explicitly stated otherwise in this document, changes you make take effect immediately.

Gateway Administration > Gateway

Current Status: Normal Operation

Warning: These options affect the entire gateway and all accounts on it

Cancel All Working Orders	Cancel all working orders	All working orders at CME are canceled
Place Gateway Into Liquidation Only Mode	Liquidation Only Mode	Traders can only trade out of existing positions and can't put on new ones
Stop Trading	Stop Trading	Traders can not send new orders or cancel existing ones
Resume Normal Trading	Resume Normal Trading	Normal activity

	Account ID	Description	Trading Permissions
Edit	1000	ABC TRADING INC	FULL
Edit	2000	DEF BROKERAGE	NONE

New Account | Download

- New Account allows a new account to be created
- Download brings down a summary of accounts in a CSV file
- To modify an account profile click the Edit button

Form fields (left panel):

Field	Value
Description	ABC TRADING INC
Trading Permission	Trading Enabled
Margin Adjustment (%)	200
Margin Warning Level (%)	25
Margin Max Level (%)	50
Margin Breach Action	Autoliquidate
Balance	4000
Max Contracts/Day	100
Max Trade Size	100
Max Net Position	100
Max Long Position	100
Max Short Position	100
Contact #1: Name	
Contact #1: Phone	
Contact #1: Email	
Contact #2: Name	
Contact #2: Phone	
Contact #2: Email	
Contact #3: Name	
Contact #3: Phone	
Contact #3: Email	

Buttons: Risk | Limits | Positions | Save | Close

Descriptions (right panel):

Term	Description
Risk	Jump to risk management for this account
Limits	Set trading limits for this account
Positions	Examine positions for this account
Trading Permission	Set trading permission. Options include • Trading Disabled • Liquidation Only • trader can only trade out of existing positions • Trading Enabled
Margin Adjustment	You can charge an account more or less than the standard margin cost per contract. 100% means the same amount; 200% means double, etc.
Margin Warning Level	An automated alert will be triggered when the account's margin usage passes this threshold
Margin Max Level	The maximum amount of margin the account is allowed to use
Margin Breach Action	When the account margin uses reaches or passes the Margin Max Level: • Auto Liquidate • Stop Trading • No Action
Max Contracts / Day	The number of contracts an account is allowed to trade per day
Max Trade Size	Fat finger protection
Max Position	Set limits on positions for the entire account

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Gateway Administration > Risk

Shows risk profile of a single account, both a summary and by contract

Account ID 1000   Description ABC TRADING INC   [Search] ✔

Balance	Open PNL	Closed PNL	Total Funds	Margin Adjustment	Margin Required	Margin Utilization	Margin Warning Level	Margin Max Level	Refresh		Cancel All	Halt	Liquidate
$4,000.00	$0.00	$0.00	$4,000.00	200%	$1,000.00	25%	25%	50%					

Contract	Long Position	Short Position	Net Position	Qty Filled	Qty Pending	Qty Working	Long Filled	Long Pending	Long Working	Short Filled	Short Pending	Short Working	Exposure	Margin	Cost
GCZ4	0	0	0	0	0	5	0	0	5	0	0	0	5	$100.00	$1,000.00

Cancel All	Cancel all working orders for this account
Halt	Halt trading for this account
Liquidate	Halt trading for this account and liquidate all its positions
Refresh	Refresh the screen
Account ID	Click on Account ID to go to the account profile screen
Margin Warning Level	An automated alert will be triggered when the account's margin usage passes this threshold
Margin Max Level	If the account reaches this utilization trading will be stopped and/or positions automatically liquidated
Pending	Pending contracts are trades received at the gateway but not yet sent to CME (but are factored in to exposure calculation)
Working	Contracts working at CME
Filled	Contracts filled
Max Trade Size	Fat finger protection
Max Position	Set limits on positions for the entire account
Exposure	The total number of contracts to be margined. Cost = Margin * Exposure * Margin Adjustment

Gateway Administration > Limits

For an account, list the contracts allowed to be traded and the sizes on each
Limits set at the account level are checked first, and then at the contract level.
The lower out of the account and product limits are the ones that are effective
If a contract is not listed here it cannot be traded.

Account ID `1000`   Description `ABC TRADING INC`   [Search] ✔

Symbol / Sec Desc	Description	Max Contracts/Day	Max Net	Max Long	Max Short	Max Trade Size	Edit	Delete
GCZ4	COMEX 100 GOLD FUTURES	100	100	100	100	100	Edit	Delete
							Insert	

Symbol / Sec Desc	You can specify a contract either by the security description (e.g. GCZ4) or by the symbol (GC). If you use the symbol, all contracts based on that symbol can be traded.
Max Contracts/Day	Maximum number of contracts allowed to be traded per day
Max Net	Maximum net position
Max Long	Maximum long position
Max Short	Maximum short position
Max Trade Size	Fat finger protection
Edit	Change values
Delete	Delete the user's ability to trade this contract
Insert	Insert a new contract (fill in details to the left)

Gateway Administration > Positions

Shows open and closed (top day) positions for an account

| Account ID | 1000 | Description | ABC TRADING INC | Search ✔ |

Trade Date 20140616 ▼ Refresh

Open Positions Download

Side	Qty	Security Desc	Open Price	Curr Price	Open PNL
BUY	10	GCZ4	10050	12764	2714.0

Closed Positions Download

Side	Qty	Security Desc	Open	Close	PNL
SELL	10	GCZ4	11000	10050	950.0
BUY	5	GCZ4	10000	10020	10.0
BUY	5	GCZ4	10000	10010	5.0

Gateway Administration > Trades

Queries the database for raw CME trade information

| CME Comp ID | * ▾ | Client Comp ID | CRT1 ▾ | Account ID | * ▾ | Trade Date | * ▾ | Refresh | Download |

Trades = 113

Initiator	Client	Account	Side	Qty	SecurityDesc	Price	ClOrdID	TransactTime
3U7004N	CRT1	1000	BUY	2	GCG4	12167	12031945430028	20131204-07:51:48.228
3U7004N	CRT1	1000	SELL	4	GCG4	12143	12031945430053	20131204-08:01:28.769
3U7004N	CRT1	1000	SELL	1	GCG4	12157	12031945430072	20131204-08:48:21.523
3U7004N	CRT1	1000	BUY	1	GCG4	12128	12031945430080	20131204-10:13:40.053
3U7004N	CRT1	1000	SELL	1	GCG4	12120	12031945430088	20131204-10:29:04.848
3U7004N	CRT1	1000	BUY	2	GCG4	12113	12031945430104	20131204-10:47:38.044
3U7004N	CRT1	1000	BUY	1	GCG4	12113	12031945430105	20131204-10:47:38.207

The Trades screen allows executed deals
to be viewed and downloaded using a
combination of filters.
- CME Comp ID (Initiator)
- Client Comp ID
- Account
- Trade Date

Click Refresh to reload the display grid.

Gateway Administration > Margin

This screen is where you define the base amount of margin you wish to charge for each contract
If a contract is not defined here, it can't be traded

Broker, Inc. v1.0.0.36 > **ADMIN** > **Margin**

Symbol / Security Description [g] [Search]

Symbol / Sec Desc	Description	Margin / Contract	Edit	Delete
GCZ4	COMEX 100 GOLD FUTURES	100	Edit	Delete
GCZ5	COMEX 100 GOLD FUTURES	200	Edit	Delete
			Insert	

Gateway Administration > Clients

A client is a single incoming client session. Multiple clients can be grouped under the same account.

New Client	Download

	Enabled	Logged In	Acceptor Port	Client CompID	Password	Initiator (CME) CompID	Account	Description			
Edit	Y	N	5000	AAAA	12345	SH10Y0	1000	AAAAAklj	Enable	Disable	Error Log
Edit	Y	N	5000	BBBB	12345	SH10Y0	1000	BBBBB	Enable	Disable	Error Log

New Client	Click New client to create a new one.
Download	Click Download to receive a CSV file of the existing client.
Edit	Click Edit to edit client details
Enabled	If a client session is disabled the client is logged out and cannot log back in
Logged In	Indicates if the client is currently logged in
Client Comp ID	Essentially the client's user ID
Password	The password is specified by the client when logging in
Account	The account linked to the client for risk purposes
Enable	Enable this client
Disable	Disable this client
Error Log	The Error Log button shows reject messages relating to the client

Gateway Administration > Acceptors

An acceptor is the connection point for a client. This is a networking implementation detail.
At least one acceptor must exist. Ensure Windows Firewall (and any other firewall you use) is configured
to permit external connections to each acceptor. You can use IP address filtering if desired, or simply
open the port to all.

New Acceptor	Download

	Port	Enabled	Initialized	Started	Description				
Edit	5000	Y	Y	Y	Primary Acceptor	Enable	Disable	Start	Stop

New Acceptor	Click New Acceptor to create a new one.
Download	Click Download to receive a CSV file of the existing acceptors.
Edit	Click Edit to edit acceptor details
Enabled	If a client session is disabled the client is logged out and cannot log back in
Start/Stop	Start/Stop allow the acceptor to be shut down and restarted intraday
Enable	If an acceptor is disabled it has to be enabled before it will start If an acceptor is enabled it will start automatically when the server starts

Gateway Administration > Initiators

An Initiator is a CME ILINK (FIX) session.   After risk management, the primary function of the gateway is to forward order flow from a client to an ILINK session at GLOBEX.
At least one initiator must exist.

	Enabled	SenderCompID	IP	Port	Password	Initialized	Started	Logged In						
Edit	Y	~~3U700411~~	69.50.112.141	25936	3U7	Y	Y	N	Enable	Disable	Orders	Start	Stop	Error Log
Edit	Y	~~8Q3004N~~	69.50.112.142	42047	8Q3	Y	Y	N	Enable	Disable	Orders	Start	Stop	Error Log
Edit	Y	~~K28004N~~	69.50.112.138	41714	K28	Y	Y	N	Enable	Disable	Orders	Start	Stop	Error Log
Edit	Y	~~P74004N~~	69.50.112.142	42045	P74	Y	Y	N	Enable	Disable	Orders	Start	Stop	Error Log

New Acceptor	Click New Initiator to create a new one.
Download	Click Download to receive a CSV file of the existing initiators.
Edit	Click Edit to edit initiator details
Start/Stop	Start/Stop allow the initiator to be shut down and restarted intraday
Enable	If an initiator is disabled it has to be enabled before it will start If an initiator is enabled it will start automatically when the server starts
Error Log	The Error Log button shows reject messages returned from CME (or sent to it)

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