313 ULTRA-HIGHSPEED MARKET DATA TICKER SYSTEM

The objective of IPRO 313 is to create a high performance data ticker system. Ideally, the data ticker plant has to have a sustained optimal throughput of three million price quotes per second - the current industry state of the art - and minimize with minimal latency while maintain specific constraints.

PROBLEMS

In this day and age the demand for information to be sent over long distances between buyers and sellers during a very short period of time has increased tremendously with the quote volume doubling every year, this leads to problems such as overload of the system as a whole and In more technical terms bandwidth not keeping up with the volume at a particular instance in time and there is high latency.



#msgs from 9:00:00 to 9:29:59

OBJECTIVES

- Explore competitors' solutions & technologies
- Develop a functioning ticker plant system
- Research methods & algorithm to be used
- Improve system performance
- Determine hardware requirements
- Update the technical user manual

- Create a website contain all information regarding this project



ACCOMPLISHMENTS:

-The team has successfully developed a base system capable of processing actual market data as well as handling multiple clients.

-Client can be ran independently or embedded in a webpage.

-Tested hashing algorithms include CRC 32, CRC 32PH, FNV Hash, OneAtATime Hash, SuperFast Hash, Adler, Bob-Jenkins, Alpha num and other widely used hashing algorithms.

SOLUTION

Symbol Bid Price Bid Quantity Ask Price Ask Quantity Last Bid Tick Last Bid Tick <thlast bid="" th="" tick<=""> <thlast bid="" th="" tick<=""></thlast></thlast>	000			Client			
APVVL 8.2 00060	Symbol	Bid Price	Bid Quantity	Ask Price	Ask Quantity	Last Bid Tick	Last Ask Tick
IOWAF 2.41 00021 2.52 00032 - + BWSNW 1.1 00015 1.35 00010 - - - LTOAE 1.35 00297 1.45 00111 - - - - DPJAG 123.45 00011 124.4 00010 -	APVVL	8.2	00146	8.35	00060	-	+
BWVSNW 1.1 00015 1.35 00010	IOWAF	2.41	00021	2.52	00032	-	+
LTGAE 1.35 000297 1.45 00111 = + DPJAG 123.45 00011 124.4 00010 = = IBMJK 62.7 00011 53.2 00043 = + HMEL 14.2 00054 14.7 00021 = + EROPX 1.15 00021 14.45 00011 = + ACEMO 13.8 00021 14.3 00021 = + AGEX 0.055 00057 7.5 00032 = + MCDKK I.55 00577 1.7 00010 = + MCDKK ADD SYMBOL REMOVE SYMBOL + +	BWSNW	1.1	00015	1.35	00010	-	-
DPJAG 123.45 00011 124.4 00010 - - + HBMJK 62.7 00011 63.2 00043 - + HUMEL 14.2 00054 14.7 00021 - + RCPX 1.15 00021 1.45 00011 - + ACEMO 13.8 00021 14.3 00021 - + LQDCZ 2.05 00010 2.3 00210 - + MCDKK 1.55 00877 1.7 00010 - +	LTQAE	1.35	00297	1.45	00171	-	+
BMJK 62.7 00011 63.2 00043 + HUMEL 14.2 00054 14.7 00021 + ERQPX 1.15 00021 14.3 00011 + CEMO 13.8 00021 14.3 00021 + LQDCZ 2.05 00010 2.3 00210 + ALPN 0.55 00035 0.75 00032 + MCDKK I.55 00877 1.7 00010 +	DPJAG	123.45	00011	124.4	00010	-	-
HUMEL 14.2 00054 14.7 00021 = + EROPX 11.15 00021 1.45 00011 = + ACEMO 13.8 00021 1.43 00021 = + LQDCZ 2.05 00010 2.3 00210 = + DAIPN 0.55 00095 0.75 00032 = + MCDKK 1.55 00877 1.7 00010 = + MCDKK ADD SYMBOL	IBMJK	62.7	00011	63.2	00043	-	+
ERQPX 1.15 00021 1.45 00011 = + ACEMO 13.8 00021 14.3 00021 = + LDDCZ 2.05 00010 2.3 00210 = + DAIPN 0.55 00095 0.75 00032 = + MCDKK 1.55 00577 1.7 0010 = + MCDKK ADD SYMBOL	HUMEL	14.2	00054	14.7	00021	-	+
ACEMO 13.8 00021 14.3 00021 = + LDDCZ 2.05 00010 2.3 00210 = + DAIPN 0.55 00095 0.75 00032 = + MCDKK 1.55 00877 1.7 00010 - + MCDKK ADD SYMBOL REMOVE SYMBOL	ERQPX	1.15	00021	1.45	00011	-	+
LQDCZ 2.05 00010 2.3 00210 = + DAIPN 0.55 00095 0.75 00032 = + MCDKK 1.55 00877 1.7 00010 - + MCDKK ADD SYMBOL REMOVE SYMBOL	ACEMO	13.8	00021	14.3	00021	-	+
DAIPN 0.55 00095 0.75 00032 = + MCDKK 1.55 00877 1.7 00010 - + MCDKK ADD SYMBOL REMOVE SYMBOL REMOVE SYMBOL REMOVE SYMBOL REMOVE SYMBOL	LQDCZ	2.05	00010	2.3	00210	-	+
MCDKK 1.55 00877 1.7 00010 • •	DAIPN	0.55	00095	0.75	00032	-	+
MCDKK (ADD SYMBOL) (REMOVE SYMBOL)	MCDKK	1.55	00877	1.7	00010	-	+
Connect to Server IP: localhost (Connect)	MCDKK Connect t	o Server I	ADD SYMBOI	t	Connect	REMOVE	SYMBOL

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