colt

Expanding your Asia-Pacific trading strategy

Supported by Colt Capital Markets

Making your move into Asia Pacific

Growth in Asia-Pacific financial markets looks set to continue and new opportunities are emerging across the region. If your firm is considering adding Asia Pacific to its trading strategy, or if you're already there and want to expand your reach, Colt can help.

Colt has established our Asian Capital Markets footprint since 2012. Today, tier 1 sell-side institutions, buy-side participants, technology vendors and international exchanges rely on Colt's capabilities, experience and ultra-low latency network to connect to a wide financial ecosystem across multiple asset classes and geographies.

Why Colt?

Time-to-market, performance, and connectivity to key trade lifecycle partners and liquidity venues across multiple asset classes are top priorities of our customers. That's why the solutions we provide — based on our colocation, connectivity, ultra-low latency and market data services — are designed with these in mind.

As an end-to-end solution provider, Colt offers all components for a smooth and fast deployment of vital trading infrastructure. Colt Exchange Colocation and Proximity Hosting services are offered at more than 50 key market venues and third-party proximity data centres in Europe, Asia and North America, across asset classes including equities, derivatives, commodities and FX.

In Asia-Pacific there are aspects to consider besides infrastructure before you get up and running in the region. It's why our solutions let you take advantage of the expertise of our teams on the ground to get a confident head start.

Language and culture.
To do business in many parts of Asia you need to speak the language of the country and understand the culture. Local Colt teams have the language skills and cultural insight to help smooth your path, while communicating with you in your own language.

Laws and regulations.
Our familiarity with local legal and regulatory requirements, and their ability to act on your behalf, can help accelerate what may otherwise be a lengthy or complex process to set up your business or register with an exchange. If you prefer, we can simply lease you a complete infrastructure solution so that you can start trading immediately.

Logistical support.
We can simplify deployment of your own infrastructure by sourcing hardware from trusted suppliers, handling installation in our exchange-based and other colocation facilities on your behalf.

Local provider relationships.
We have long-term relationships with local exchanges, data centre providers and network operators, so you don't have to establish them yourself. You can rely on us as your one-stop shop to procure and manage all the services needed as part of your solution.

Local market awareness.
Benefit from our in-country teams' extensive knowledge and awareness of the local capital markets.

Broker neutral.
Colt is the only broker-neutral provider that covers the following JPX connectivity services:

1. Managed/Hosting Services for JPX
2. Remote Hands
3. Exchange Market Data
4. Consolidated Market Data
5. Dedicated Line (arrownet-Global)
6. Extranet (arrownet-Global)
7. SGX Direct
8. Chicago Direct
9. Time Synchronization
10. Latency Monitoring

Our regional coverage
Colt is one of the biggest providers of JPX co-location space and a preferred JPX vendor. To our strong and established presence in Japan, Hong Kong, Singapore and Australia, we've added capabilities and expertise in increasingly popular locations, such as South Korea and Taiwan. We continue to expand our coverage in the region to ensure we're always ready to support you in profitable new markets.

"Colt is one of the most significant members of this ecosystem and covers wide range of services in our co-location. We believe that Colt will be able to meet your expectation based on its notable experience in implementing many useful solutions"

**Tagaya Akira,
Executive Officer, OSE/JPX**

Japan summary

🇯🇵 **Time zone:** GMT +9
Currency: Japanese yen (¥)

- Japan Exchange Group (JPX) including Tokyo Stock Exchange (TSE) ,Osaka Securities Exchange (OSE) and Tokyo Commodity Exchange (TOCOM) colocation and proximity TDC1 - including market data
- Proximity hosting in TY3 – Colt's FX Liquidity Access service allows customers to connect quickly and easily to the Tokyo FX markets
- Present in CC1, CC2 Premium colo, and JPX
- Arrownet Global provider
- Expand on proximity offering from single server (plug and trade) to multitrack large footprint
- CBOE Japan
- SBI Japannext
- Tokyo (Greater Tokyo) and Osaka metro network
- Tokyo-Osaka national network
- 70+ data centres and 2,800+ retail buildings connected

Colt and JPX have a long-standing relationship that dates back to 2003. Their partnership has continued to develop over the past decade, most recently with the launch of JPX-Chicago Co-Location Direct. Colt is one of the few official partner carriers of the JPX-Chicago Co-Location Direct, a service that caters to the financial services industry, especially buy-side participants including HFT firms and other electronic traders.

Substantially reduced latency between Tokyo to London financial centres, to less than 159 milliseconds.

Singapore summary

🇸🇬 **Time zone:** GMT +8
Currency: SGD

- SGX (Singapore Exchange) Co-Location Service. Colt offers firms that want to trade SGX in colo a choice of shared and dedicated racks. We've selected SGX Tier 1 colocation to give clients the lowest possible latency connections to the SGX trading and market data engines. The advanced SGX colo environment features state-of-the-art security and environmental monitoring systems to safeguard your company's assets, and fault-tolerant infrastructure to support high availability of your trading systems.
- Proximity hosting in Equinix SG1 – Colt's FX Liquidity Access service allows customers to connect quickly and easily to the Singapore FX markets
- SGX market data feeds. Via Colt PrizmNet we provide low-latency, real-time SGX price data for both the derivatives (futures and options) and securities markets — DMDF and SMDF respectively.
- SGX Market Connectivity. We offer Colt PrizmNet customers connectivity into the SGX derivatives and securities market via:

- SGX Co-Location, hosted in the same data centre as SGX trading and market data engines
- SGX Liquidity Hubs, which provide offshore market participants with access to SGX trading and market data engines via PoPs in Hong Kong and Chicago
- Direct connection from overseas into SGX
- Dedicated Gateway Service

"Colt has more than a decade-long partnership with SGX and has been aligning its solutions to complement SGX's products and services launched over the years, facilitating international customers' access to our markets. Being one of the first service providers to join the SGX Co-Location ecosystem, Colt has been and will continue to be a valuable partner."

Ng Kin Yee, Managing Director, Data, Connectivity & Indices, SGX

Hong Kong summary

Time zone: GMT +8
Currency: Hong Kong Dollar (HK$)

- Hong Kong Exchange (HKEX) Equities and Derivatives exchange colocation and proximity hosting in HK1 including market data

- Colt Capital Markets have successfully deployed next generation ultra-low latency, high-precision Arista 7130 Layer 1 switches (Formally Metamako Metamux) within the Hong Kong Stock Exchange to further enhance their OMD-C & OMD-D Full Tick multicast market data offering.

- This multi-tenanted switching environment allows Colt's clients to experience 5 nanoseconds switching without the need to invest in or manage Layer 1 switches within their environment themselves.

- Hong Kong metro network covering majority of business hubs and 12 data centres

- Market data from seven exchanges in Mainland China is available via Colt's facility in the Hong Kong Stock Exchange (HKEX) colocation environment.

Australia summary

Time zone in Sydney: UTC+10;
Summer time: UTC+11
Currency: Australian dollar ($)

- Australia Securities Exchange (ASX) Equities and Derivatives exchange colocation and proximity Equinix Sydney including market data

- Ultra-low latency service connecting the Australia Securities Exchange (ASX) and the Chicago Mercantile Exchange (CME)

- CBOE Australia Exchange colocation and proximity hosting ALC Artarmon including market data

- Extending its presence in the Asia Pacific region by bringing its Colt IQ Network to Australia.

- Colt has a presence in the ASX colocation datacentre, Equinix SY4, Global Switch and NextDC S1 with international network connectivity to Singapore and Tokyo

South Korea summary

Time zone: GMT +9
Currency: KRW

Korea Exchange (KRX), Seoul and Busan: securities and derivatives

Why trade in South Korea?

- Fourth largest economy in Asia Pacific
- A highly volatile trading environment enabling high profits
- Rapid growth in derivatives trading on KRX; KOSPI 200 is one of the world's most liquid and heavily traded contracts
- USD/KRW is the most liquid FX trading pair in developed Asia Pacific
- KRW has the 3rd highest NDF volumes in developed Asia Pacific after CNH and INR
- Colt has been the dominant broker-neutral provider at the Busan Derivatives Data Center and the KT Yeouido Data Center (equity proximity hosting) for the past 7 years

Colt in South Korea
Colt offers proximity hosting at the Koscom data centre in Busan and the Korea Telecom (KT) Yeouido data centre in Seoul. Working with Koscom, we provide ultra-low latency connectivity between Korea and the global markets, Korea Exchange Equities (KT Yeouido data center) and Derivatives (Koscom Busan Derivatives Data Centre) proximity hosting.
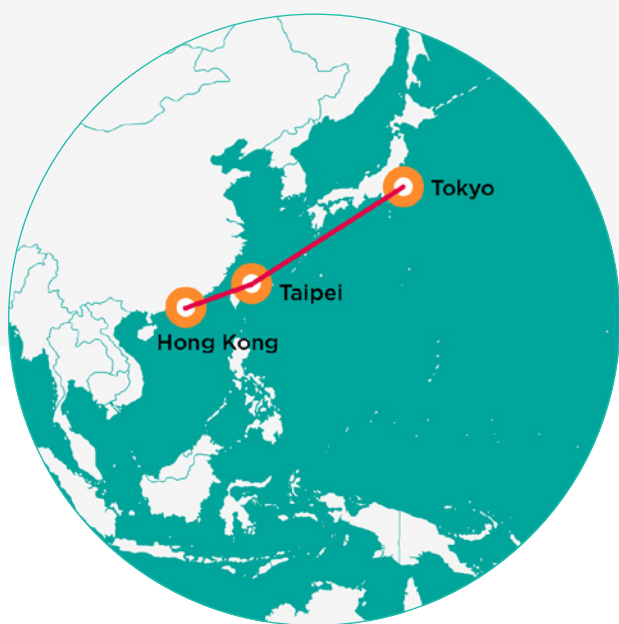
Taiwan summary

Time zone: GMT +8
Currency: NT$

Taiwan Stock Exchange (TWSE), Taipei: Fully automated trading systems for a range of equities and Exchange-Traded Fund (ETF) products, including full tick data

Taipei Exchange (TPEX), Taipei:
Fully automated trading systems for a range of ETF products

Taiwan Futures Exchange (TAIFEX), Taipei:
100% electronic trading marketplace for futures and options on major Taiwan stock indices, equity options and more

Taiwan BQ DC – HKEX
- Estimated latency: RTD 14ms
- SLA latency: RTD 15ms

Taiwan BQ DC – @Tokyo CC2
- Estimated latency: RTD 30ms
- SLA latency: RTD 31ms

Why trade in Taiwan?
- Seventh largest economy in Asia
- Major player in world's information and communication technology industry and major supplier of goods across the industrial spectrum

Colt in Taiwan
Colt proximity hosting is available at TWSE, TPEX and TAIFEX. Colt offers the lowest-latency circuits between Taiwan, HKEX and Tokyo. In addition, Colt also has PrizmNet capability offering access to capital market content providers, including market data from all three of the Taiwanese exchanges delivered through strategic PoP's globally.

China summary

Time zone: GMT +8
Currency: Renminbi (RMB)

Colt in China
Colt provides comprehensive market data coverage for 7 exchanges in Mainland China via Hong Kong:

- **Shanghai Stock Exchange (SSE)**
- **Shenzhen Stock Exchange (SZSE)**
- **Dalian Commodity Exchange (DCE)**
- **Zhengzhou Commodity Exchange (ZCE)**
- **Shanghai Futures Exchange (SHFE)**
- **China Financial Futures Exchange (CFFEX)**
- **Shanghai International Energy Exchange (INE)**

All market data is available via Colt's facility in the Hong Kong Stock Exchange (HKEX) colocation environment.

DCE - Dalian Commodity Exchange

ZCE - Zhengzhou Commodity Exchange

SSE - Shanghai Stock Exchange

CFFEX - China Financial Futures Exchange

SHFE - Shanghai Futures Exchange

SZSE - Shenzhen Stock Exchange

INE - Shanghai International Energy Exchange

Thailand summary

Time zone: GMT +7
Currency: Thai Bhat (THB)

Colt in Thailand

- Colt provides ultra low latency networks to Thailand, between the Stock Exchange of Thailand (SET) to the Hong Kong Stock Exchange (HKEX); and between SET to the Singapore Stock Exchange (SGX).
- Both raw and normalized market data offering for Stock Exchange of Thailand (SET) and Thailand Futures Exchange (TFEX).
- We also offer managed colocation and hosting services in SET and TFEX.

Malaysia summary

Time zone: GMT +8
Currency: Malaysian Ringgit (MYR)

Bursa Malaysia:

- Colt is a market data distributor for Bursa Malaysia equities feed with 10 market depths. The raw native feed will be delivered via diverse links between Bursa Malaysia market data platform in colocation to Colt PrizmNet network, where you can consume the feed anywhere from PrizmNet.

India summary

Time zone: GMT +5:30

NSE IFSC (NSE International Exchange):

- Leveraging on Colt PrizmNet extensive global fiber network, Colt is able to deliver the NSE IFSC market data from the matching engine in Gujarat International Finance Tech City (GIFT City) to clients located in other global exchange colocation and data centers worldwide.

  This landmark partnership enables international trading firms across Asia, Europe and the US to access Indian market data via Colt's distributorship network.

The foundations for Colt capital markets solutions

Whether you need a physical presence in Asia or want to trade remotely, we'll build the solution that's right for you — technically and commercially — and back it up with SLAs you can count on and 24/7 support. Your solution will be based on our capital market portfolio offerings combined with any third-party capabilities needed to build out your specific project.

Exchange colocation

With access to the key Asian market venues, Colt exchange colocation and proximity hosting services will save time and money while improving trading speed and resilience. Managed services, including remote hands, cross connects, capacity planning and reporting, are also available.

Ultra-low latency network services

Designed for the most demanding high-frequency trading needs of buy- and sell-side firms, our ultra-low latency network services are built on high-speed fibre links, using the smallest possible number of media converters, hops and network devices. Our metro, regional and international routes connect you to the major Asian venues — including JPX, HKEX and SGX — enabling you to better deliver on your multi-asset strategies, deal with shorter opportunity cycles or tighter spreads, and pull ahead of the competition.

Market data

We deliver both raw and normalised feeds at consistently low latencies, even during periods of volatility. Our coverage of Asian feeds is extensive, and you can choose from different methods of delivery:

- ⊙ Direct feeds — raw data for those colocated in specific market venues

- ⊙ Software-based normalised feeds via the MarketPrizm API — no upfront or hardware costs, with everything managed by our capital markets team

- ⊙ Hardware-based accelerated feed service — using FPGA technology and a user-friendly API, with an opex-based shared-service model (no upfront hardware costs)

- ⊙ Historical data - raw, Tick data, full depth, same market sequence. Time-stamped in Co-lo (using NTP and eventually PTP). Captured in co-location

Market Monitoring Solution (MMS) portal

Colt's acquisition of trading infrastructure services provider MarketPrizm in 2011 strengthened our capability to provide market access solutions globally. A development team based in Hong Kong and highly-skilled in building market-data normalisation software was inherited by Colt as part of the MarketPrizm acquisition. Alongside feed-handler components and APIs for Colt's normalised market data service, Colt's HK software team have also developed a web portal that is used by Colt for real-time monitoring of market data feeds (raw and normalised).

This portal is used to monitor bandwidth utilisation (at 1s, 10ms and 1ms granularity), message rates, dropped packets A/B Feed latency deltas (microseconds) and can be used to produce daily reports on each.

Dedicated connectivity

Establish secure, low-latency connections directly with clients, partners, venues or the cloud using managed network services over the Colt IQ Network. We wholly own and continually invest in this extensive and resilient software-defined network (SDN), and our metro, regional and international routes connect you to Asia's key financial centres and beyond — quickly and cost-effectively.

Colt PrizmNet

A single physical connection to the Colt PrizmNet financial extranet gives you immediate access — with deterministic latency — to a global capital markets ecosystem of exchanges, venues, providers of trading and regulatory solutions, and other market participants and service providers (including data feeds). With an advanced portal giving you full control of your services, it's a fast, cost-effective way to extend your reach and capabilities.

The Colt PrizmNet community in the cloud

By connecting to Colt PrizmNet, market participants can also interconnect with an entire community of leading Cloud Service Providers like AWS, Microsoft Azure, Google Cloud and IBM Cloud.

This includes but not limited to real-time and historical data from exchanges and market data vendors, as well as cloud based software vendors and fintechs. This capability is critical to running complex risk analysis with grid computing, building trading strategies and models with machine learning, and combining analytics with key trading data to meet regulatory reporting requirements and the capacity to enable blockchain as a service.

PrizmNet Portal – Bandwidth Monitoring

Colt's customer-facing PrizmNet portal provides our customers with real-time reporting on the services they consume via PrizmNet. This also includes bandwidth utilisation alongside jitter, dropped packets, latency and data delivery rates.
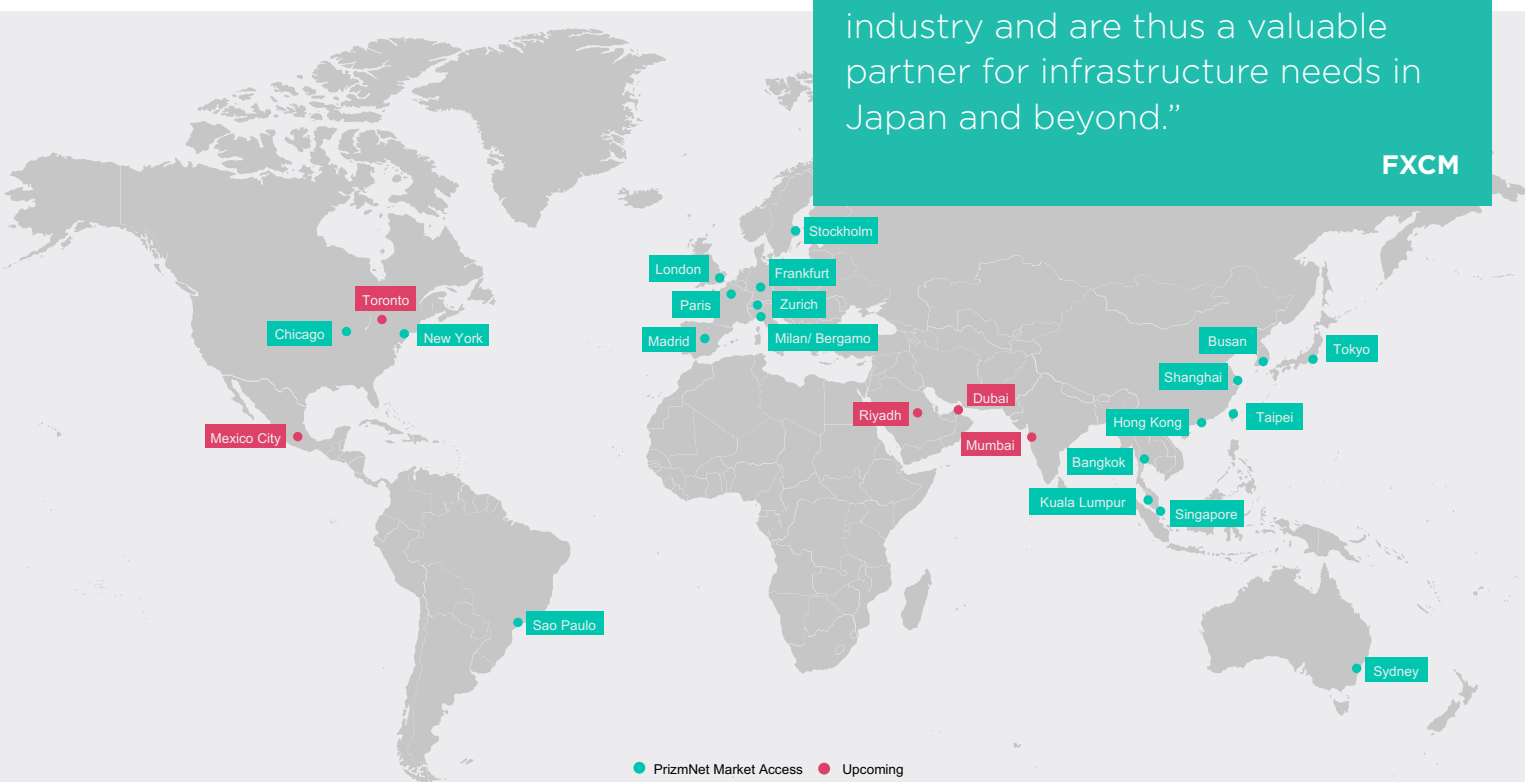
Optimising our network

Colt continues to invest in its suite of Capital Markets solutions and underlying network, ensuring it remains equipped to meet the demands of a market where latency and performance are crucial.

It has recently invested in the deployment of ultra-low latency, high-precision Arista 7130 Layer 1 switches(formerly Metamako Metamux) at a key exchange venue and is capable to introduce it at other MarketPrizm locations globally.

These said next-generation switches will allow Colt customers to experience the lowest possible latency to the market switching without the need to invest in or manage Layer 1 switches themselves, ensuring network performance optimised to meet the demands of High Frequency Trading (HFT) solutions and beyond.

"Colt's engineers have a deep understanding of the financial industry and are thus a valuable partner for infrastructure needs in Japan and beyond."

FXCM

Stockholm
London
Frankfurt
Paris
Zurich
Toronto
Madrid
Milan/ Bergamo
Chicago
New York
Busan
Tokyo
Shanghai
Dubai
Riyadh
Taipei
Mexico City
Hong Kong
Mumbai
Bangkok
Kuala Lumpur
Singapore
Sao Paulo
Sydney

● PrizmNet Market Access ● Upcoming

Take advantage of the Colt difference

Unlike many global service providers serving the Asia-Pacific capital markets, we combine connectivity over a wholly owned global network with market-specific solutions and ongoing investment in low-latency routes in established and emerging regional financial hubs.

Beyond providing the infrastructure you need, we'll accelerate and simplify your entry into your chosen markets by applying our global and local knowledge and expertise.

Contact us to find out how our Asia-Pacific capital markets specialists can create the right solution to support your ambitions in this dynamic region.

Colt in Asia at a Glance

27+ Years experience supporting financial firms

20+ market data feeds

15+ exchange colocation venues across Asia and Pacific region

10,000 market participants

106+ key data centres, clouds and carrier hotels connected in APAC

7+ cities in APAC with Colt network connections

2700+ buildings directly connected in Asia

50+ Capital Markets employees in Asia

Powered by
colt IQ Network

For more information visit
www.colt.net/solutions/capital-markets

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