

The lowest-latency connection
to JSE markets

JSE

MARKET DATA

Colocation

www.jse.co.za



Johannesburg
Stock Exchange

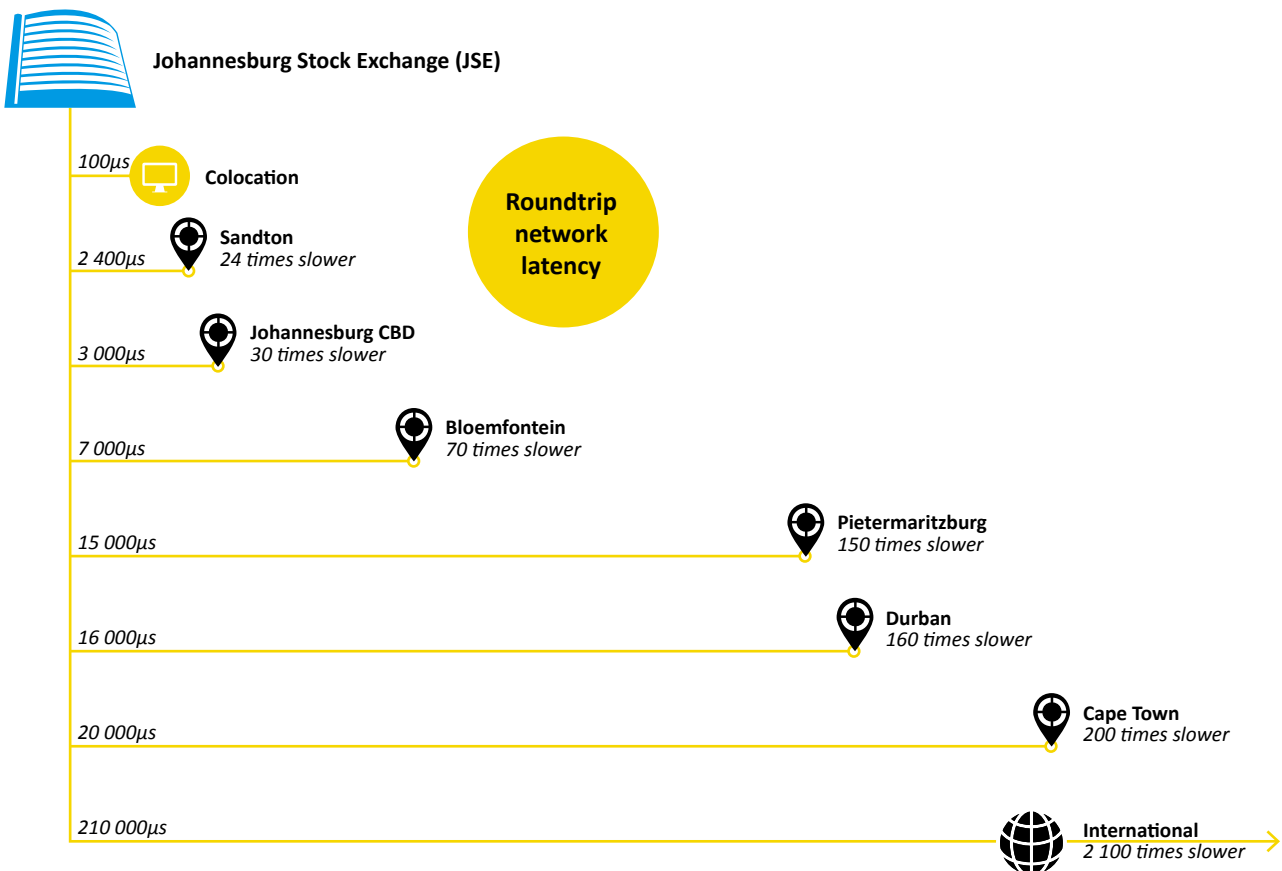
The JSE Colocation facility provides the lowest-latency connection to JSE markets, allowing customers to host their infrastructure in the same vicinity as the infrastructure that drives the markets at the JSE. This will enable low latency trading strategies through high speed trading and market data access.

Why Colocation

Hosting infrastructure in the Colocation facility allows for the fastest access to the JSE markets with a latency of approximately 100 microseconds compared to the existing 2400 microseconds for the surrounding Sandton area, an astounding 24 times faster.

Estimated Network Latency Measurement

The diagram below illustrates the roundtrip network latency in microseconds (μs) between the Colocation network switch and the relevant trading/market data gateway(s)/proxy(ies). Please note that the latency from the trading engines is not included.



Benefits

Latency advantage

- ▶ Fastest Trading and Market data access for all JSE markets

New trading strategies

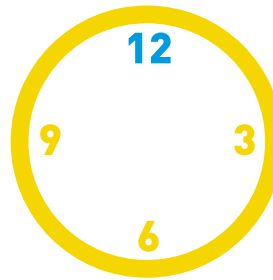
- ▶ Enabler of low latency trading strategies
- ▶ Potential execution probability improvement
- ▶ Enhanced response to market movement

Cost saving

- ▶ Reduce bandwidth requirements between Colocation customers and JSE

Risk mitigation

- ▶ Reduced dependence on telecommunications service providers
- ▶ Resilient infrastructure throughout the environment
- ▶ Sophisticated JSE data centre designed to Tier 3 standards



Service Specification (Refer to JSE Price List for Service Fees)	Service Type	JSE Markets Applicable
1 Hosting Unit (choice of 3kW or 5kW) , which is inclusive of:	Primary Service	All JSE Markets
▶ Equity Market trading and information connectivity > 2 x 10 Gigabits per second fiber trading connectivity > 2 x 10 Gigabits per second fiber market data connectivity	Primary Service	Equity Market
▶ All other JSE Markets trading and information connectivity > 2 x 10 Gigabits per second fiber trading and market data connectivity	Primary Service	Derivative Markets
▶ Remote management connectivity from Access Network to Colocation > 2 x 1 Gigabits per second fiber customer management connectivity	Primary Service	All JSE Markets
▶ Network latency monitoring	Primary Service	Equity Market
2 Power		
▶ The Services Fee will be as per the JSE Price List which includes a component that is a pass through expense and this fee shall be subject to any revised charges as notified by the Municipality of the City of Johannesburg, National Energy Regulator of South Africa or any other authorised body from time to time as applicable to the JSE Premises.	Associated Service	All JSE Markets
3 Remote Hands Support		
▶ Available on a first come first served basis	Associated Service	All JSE Markets
4 Remote Management Connectivity through the JSE London PoP to Colocation	Associated Service	All JSE Markets
5 Inter – Connect		
▶ A connection between devices within a Colocation customer Hosting Unit or to an adjacent Hosting Unit owned by the same Colocation customer.	Secondary Product	All JSE Markets
6 Cross Connect (s)		
▶ A connection between multiple Hosting Units across multiple customers or a connection between multiple Hosting Units nonadjacent or not in the same row to each other for the same customer.	Secondary Product	All JSE Markets
7 Additional network latency monitoring		
▶ Latency monitoring from the Hosting Unit to the Colocation network switch can be performed for a limited period of time upon request at an additional fee.	Secondary Product	All JSE Markets
8 Time Sync Service		
▶ Time Synchronisation will be offered via Precision Time Protocol (PTP).	Secondary Product	All JSE Markets
9 Additional Ports		
▶ A customer can request and pay for additional ports subject to availability. If the JSE does not have any ports available, there will be a lead time for the JSE to purchase the relevant infrastructure.	Secondary Product	All JSE Markets

Colocation Facts

- ▶ Colocation provides the fastest access to all JSE markets.
- ▶ Average round-trip Colocation network latency is no more than 100 microseconds over a calendar month on business days during trading hours. The JSE will measure, monitor and report on Colocation network latency and provide this information to Colocation customers.
- ▶ Hosting Units are allocated on a first come first served basis within a limited capacity constraint in the Colocation facility. It is important for customers to note that once the available Hosting Units in the Colocation facility have been rented by customers, there will be NO further opportunity for any additional Hosting Units to be made available.
- ▶ All cables between the Hosting Units and the Colocation network switches are of equal length irrespective of the Hosting Unit position within the Colocation facility.
- ▶ Sub-letting is allowed by JSE Members to their clients; Accredited Shared infrastructure Providers (SIPs) to JSE Members and Information Subscribers to their clients provided the Information Subscriber is an Accredited SIP.
- ▶ 24/7 Colocation facility environment monitoring is performed by the JSE.
- ▶ The JSE provides a facility within the JSE primary data centre which enables telecommunication service providers to make their telecommunication services available to customers. This facility is known as the Meet Me Room. Connectivity from the Colocation facility to the Meet Me Room is facilitated as required via Cross Connects.
- ▶ Separate fees are applicable to other JSE services such as those related to trading, market data, JSE London PoP connectivity, etc. These fees are detailed in the JSE Price List.

For additional information contact:

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Market Data

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