QUANTITATIVE ANALYTICS

REFINITIV® QUANTITATIVE ANALYTICS

Cloud delivery data for quantitative analysis – Frequently Asked Questions (FAQs)

What is Refinitiv® Quantitative Analytics?

Refinitiv Quantitative Analytics provides access to a huge range of content ready to use "out of the box" for quantitative analysis, together with the tools to integrate your own proprietary data. This gives you direct access to best-in-class content from Refinitiv and other leading vendors, including S&P, MSCI and Russell. Freed from the burden of preparing data, analysts can spend more time developing and testing differentiated ideas, optimizing portfolios and managing risk.

And with Refinitiv Quantitative Analytics now available in the cloud, asset managers and hedge funds can avoid capital lock-in, eliminate database administration and get access to data for new quant initiatives, fast.

What are Refinitiv's timelines for adding more data into the solution?

We currently have near content parity with Refinitiv Quantitative Analytics.

What Refinitiv Quantitative Analytics data sets can I access in the cloud now?

Refinitiv Quantitative Analytics core database:

- Security Master and Mapping
- Special Dates

Refinitiv Quantitative Analytics content highlights:

- Refinitiv® Datastream® Pricing (Equity and Index)
- Refinitiv® I/B/E/S® V2: Estimates, Broker and Analyst
- · I/B/E/S Daily Means, Guidance, Global Aggregates

- Refinitiv® Worldscope Fundamentals
- Worldscope PIT
- Datastream Index Constituents and Weights (ICW)
- Refinitiv[®] StarMine[®] Models
- The Refinitiv Business Classifications (TRBC)
- RDC (RICs)
- PermID[®]
- MSCI Indexes
- Datastream Economics
- Ownership V2
- Refinitiv® Financials + PIT
- IDC pricing
- · S&P index constituents
- Deals
- S&P GICS
- FLEJV
- ESG
- Compustat
- Short interest (NYSE®, NASDAQ)

Are all the features offered in the deployed version of Refinitiv Quantitative Analytics available in the cloud version?

Yes. You get all the functional capabilities of Refinitiv Quantitative Analytics: symbology mapping and prop data mapping.

The change tracking and compression features are also available in the cloud.

Change tracking is an equivalent solution to change table available in the Refinitiv Quantitative Analytics deployed version and will require enablement on tables where clients wish to track changes.

SQL Server 2017 and Azure SQL Database support row and page compression for rowstore tables and indexes, and support columnstore and columnstore archival compression for columnstore tables and indexes. Page compression in Refinitiv Quantitative Analytics in the cloud could now save up to 45% of database storage capacity, giving you space for more data sets. Compression does not impact functionality, in general.

Will this cloud version change how we discover, purchase and pay for data?

No. It's the same order process as for the deployed version of Refinitiv Quantitative Analytics – only the delivery mechanism is different.

There is additional billing for the cloud delivery service.



Overall, what delivery options exist for Refinitiv Quantitative Analytics?

There are three delivery options: Deployed, Cloud (Microsoft Azure*) and Hosted Cloud (within your preferred cloud provider).

Deployed

Refinitiv Quantitative Analytics can be deployed on premise within your own server room, ideally on a dedicated system. It requires direct Internet or proxy access via HTTP or FTP. Refinitiv Quantitative Analytics is available as a Microsoft SQL Server or Oracle database. Please refer to the Refinitiv Quantitative Analytics Technical Specifications for more details.

Cloud (Microsoft Azure)

Refinitiv Quantitative Analytics in the cloud is a cloud-based dedicated database instance using Azure SQL Database Managed Instance, all contracted through Refinitiv. It uses the same schema and entitlements system as the deployed version of Refinitiv Quantitative Analytics. However, replication services replace existing tools, including the Communicator and SmartLoader. Server maintenance is shifted to Microsoft (operating system, SQL) as part of their Platform as a Service (PaaS) offering. Refinitiv Quantitative Analytics in the cloud is accessible via public Internet; it requires a fixed IP address.

Hosted Cloud

Hosted Refinitiv Quantitative Analytics is deployed within your preferred cloud provider. It uses the same tools as deployed, on-premise Refinitiv Quantitative Analytics, including Communicator and SmartLoader. Server maintenance needs to be provided through your contract with your cloud provider, not Refinitiv. Hosted Refinitiv Quantitative Analytics uses the same schema and entitlements system as deployed Refinitiv Quantitative Analytics.

What is prompting Refinitiv's embrace of cloud technology for Refinitiv Quantitative Analytics?

Our customers are increasingly asking for access to Refinitiv data in the public cloud.

Why was Microsoft Azure chosen for Refinitiv Quantitative Analytics in the cloud?

Since Refinitiv Quantitative Analytics was already available in Microsoft SQL, and using its tools, Microsoft's Azure SQL Database Managed Instance infrastructure and replication services were a natural fit.

What are the benefits of having cloud delivery (Microsoft Azure) over deployed installation?

With the cloud solution, the model is simplified across the board:

- You will no longer be responsible for maintenance (servers, MS SQL, database performance)
- · Rapid onboarding

- · Adding or removing content requires very little downtime
- Potentially reduces your total cost of ownership
- Scalable to meet your performance requirements
- Use virtual machines on your side of the firewall
- Changing performance capabilities requires very little downtime

Refinitiv deals with database management and the continuous updating of content in the Refinitiv Quantitative Analytics database 24/7, ensuring system availability and resilience and removing your admin burden. Scaling up capabilities is quick and painless.

High availability ensures a replica will become active in 30 seconds if the primary replica goes down.

Further, you avoid the capital lock-in associated with deployed quantitative data solutions. With a cloud quantitative solution from Refinitiv and Microsoft Azure, you pay for what you need right now. Our cloud offering releases capital tied up in infrastructure and saves operating costs by transferring data hosting to a trusted provider.

What are the technical specifications of Refinitiv Quantitative Analytics in the cloud?

Refinitiv Quantitative Analytics in the cloud is a dedicated Azure SQL Database Managed Instance utilizing Microsoft's PaaS. It accesses the same database as Refinitiv Quantitative Analytics and has the same schema. Updates are delivered via transactional replication, which also enforces entitlements. There is an initial database snapshot followed by regular updates. Once updates are available from the source, they will be streamed in near real time to the Refinitiv Quantitative Analytics in the cloud instance. We have production environments available in two Azure regions: East US 2 and West Europe. Clients can choose which region best suits their needs.

Is the Refinitiv Quantitative Analytics in the cloud database secure?

Yes. Refinitiv controls access to the Refinitiv Quantitative Analytics in the cloud instance by allowing only the IP addresses provided by you. In addition, each user will have a log-in and password. Data is protected in transit via the requirement of a secure connection (by enabling a security parameter in the connection string). Data is also protected at rest via Transparent Data Encryption.

Can I be confident in the security of my proprietary data within Azure?

With Azure SQL, Database Managed Instance customers can collocate their proprietary data with the Refinitiv-sourced content. Clients have the ability to build and maintain their own databases for custom data. They are considered the DBA of this database within the instance, and will be able to make use of encryption if they desire.

What is the Refinitiv Quantitative Analytics in the cloud price structure?

There are three components to Refinitiv Quantitative Analytics in the cloud pricing: storage, performance and egress.

Storage: Refinitiv Quantitative Analytics in the cloud includes 3TB of storage with the ability to add blocks of 1TB to meet your requirements, up to the current limit of 8TB.

Performance: there are three tiers of service with different levels of compute power. Tiers 1–3 each include more compute power than the lower tier.

Egress: this is the amount of data pulled out of Microsoft Azure or moved between Azure regions. Egress levels will be monitored per client by the Refinitiv Quantitative Analytics Compliance team. Refinitiv may bill for egress overage beyond contracted amounts.

How can I get trial access to Refinitiv Quantitative Analytics in the cloud?

Refinitiv offers shared Refinitiv Quantitative Analytics in the cloud instances with current and historical Refinitiv data. For properly licensed customers, we can provide an instance that includes Refinitiv data and third-party identifiers. You will receive log-ins to access Refinitiv Quantitative Analytics in the cloud for a defined period of time. The commencement of a trial requires a signed QA Hosted Cloud Trial Agreement. You will need to provide a fixed IP address or a range to the Refinitiv Quantitative Analytics Compliance team and open specific ports to access the trial instance of Refinitiv Quantitative Analytics in the cloud.

Are you requiring existing deployed Refinitiv Quantitative Analytics customers to migrate to the cloud?

No. At this time we are not requiring customers to migrate to the cloud. However, if you decide to migrate from deployed Refinitiv Quantitative Analytics to Refinitiv Quantitative Analytics in the cloud, we will support your transition.

What is the average installation time, and what is the disruption time for customers? How will the installation process be changed once Refinitiv Quantitative Analytics in the cloud is contracted?

The Refinitiv Quantitative Analytics Compliance team will launch the build process from their licensing system once entitlements are confirmed. This will generate a new URL (the server name to use in the SQL Server management studio) and initiate the creation of a new client Refinitiv Quantitative Analytics instance from the nearest replication master. The client instance is typically available within 24–48 hours. Compliance will also need to white-list the IPs of the individual users. The Refinitiv Quantitative Analytics Technical team will thereafter assist to ensure connectivity. A compliance document will outline the steps taken by each party.

Do I need a separate SQL license?

No. The cost of an SQL license is included.

In the cloud, do I need to reserve excess storage like in the deployed version?

No. The contracted service tier is recommended based on entitlements and what content sets a client is registered to. It will not be possible to change the tiers for seasonal use. However, a client can permanently upgrade their contract to match the increased performance they demand during peak usage times.

Is there any maintenance I need to perform on the Refinitiv Quantitative Analytics in the cloud instance?

No. This is all performed by Refinitiv and Microsoft.

If I want to utilize an analytics server alongside, do I need to contract separately with Microsoft?

Refinitiv Quantitative Analytics in the cloud Managed Instance (QAC-MI) supports multiple databases, so an analytics database can be collocated with the Refinitiv-sourced databases. In order to run third-party software you may be required to host a separate virtual machine to support third-party applications.

Is Oracle supported in Refinitiv Quantitative Analytics in the cloud?

No. Refinitiv Quantitative Analytics in the cloud uses the Azure (Microsoft Azure SQL Database Managed Instance) platform software, so Oracle is not supported. Oracle is only available for the Refinitiv Quantitative Analytics deployed version.

How is my database monitored?

An application will monitor all instances of Refinitiv Quantitative Analytics in the cloud. Refinitiv Quantitative Analytics in the cloud instances (out of disk space, exceedingly high DTU utilization, update latency, etc.) will be seen by a 24/7 internal application support team for troubleshooting. If necessary, you will be contacted by the Refinitiv Technical Support team for resolution.

Which data centers do we support for Managed Instance?

QAC-MI will be supported in East US 2 and West Europe.

Do SFTP or secure connection options exist?

Neither SFTP nor secure connection is supported for Refinitiv Quantitative Analytics in the cloud.

We require clients to turn on "encrypt connection" when using Management Studio or within their connection strings. This will encrypt the data in transit.

Clients connect to QAC-MI via public Internet (i.e., public endpoint), but there are access controls applied by Refinitiv. QAC-MI is deployed on an Azure virtual network in our tenant, so only white-listed external IP addresses will have access to the instance.

What performance tiers are available for QAC-MI?

There are three available performance tiers:

Tier	vCore	Memory (GB)	Default storage
QA Cloud Microsoft Managed Instance Tier 1	8	40.8	3ТВ
QA Cloud Microsoft Managed Instance Tier 2	16	81.6	3ТВ
QA Cloud Microsoft Managed Instance Tier 3	24	122.4	3TB

All Managed Instance Tiers are Gen5 Logical CPUs: Intel E5-2673 v4 (Broadwell) 2.3-GHz processors, fast NVMe SSD, hyper-threaded logical core.

What is the maximum storage size for Managed Instance?

QAC-MI supports instances up to 8TB, which includes all databases within the instance. The Refinitiv commercials default to 3TB instances, and clients can purchase additional storage blocks (1TB) to meet their specific needs up to the limit.

What users' rights will customers get?

The following user groups are available for QAC-MI. Clients will be able to define the role of each user; there is no limit on numbers in each group.

Database-level permissions

QAC_User

Users assigned to this role have permission to connect to the database and select data from the base tables and user-defined views, as well as to execute user-defined custom-stored procedures and functions. However, users do not have the right to create or make changes to the database objects. Users are granted VIEW DATABASE STATE and SHOWPLAN rights, meaning they can query basic database state and execution plan information.

QAC_Power_User

This role has more permissions than the QAC_User role. Users assigned to this role have the permission to create, drop and modify the following list of objects: 1) indexes, 2) views, 3) stored procedures, 4) functions and 5) statistics in the dbo and prc schema used by QAC-MI. In addition, this role is granted VIEW CHANGE TRACKING rights, meaning users can run functionalities related to the change tracking feature.

Server-level permissions

QAC_Server_Power_User

Managed Instance supports multiple databases, meaning clients can create and manage their own proprietary data. This requires server-level permissions beyond the roles defined above. As such, any QAC_Power_User will also have the following permissions assigned:

- VIEW SERVER STATE: the ability to guery and view server-level information via Dynamic Management Views or related stored procedures
- CREATE DATABASE: the ability of a client to create their own user databases in QAC-MI. The user account creating the client database will be the default database owner, having all the rights to the database, and will assume the role of the database administrator for all client databases going forward

What are the additional functionalities of QAC-MI?

- Increased storage capabilities (8TB max)
- Multiple database support
- Collocating client's proprietary data and processes
- Near 100% compatibility with SQL Server on premise
- SQL Server Agent access
- Ability to change data capture rights

A full feature comparison is available from Microsoft: https://docs.microsoft.com/en-us/azure/azure-sql/database/ features-comparison

Refinitiv is one of the world's largest providers of financial markets data and infrastructure, serving over 40,000 institutions in approximately 190 countries. It provides leading data and insights, trading platforms, and open data and technology platforms that connect a thriving global financial markets community – driving performance in trading, investment, wealth management, regulatory compliance, market data management, enterprise risk and fighting financial crime.

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