

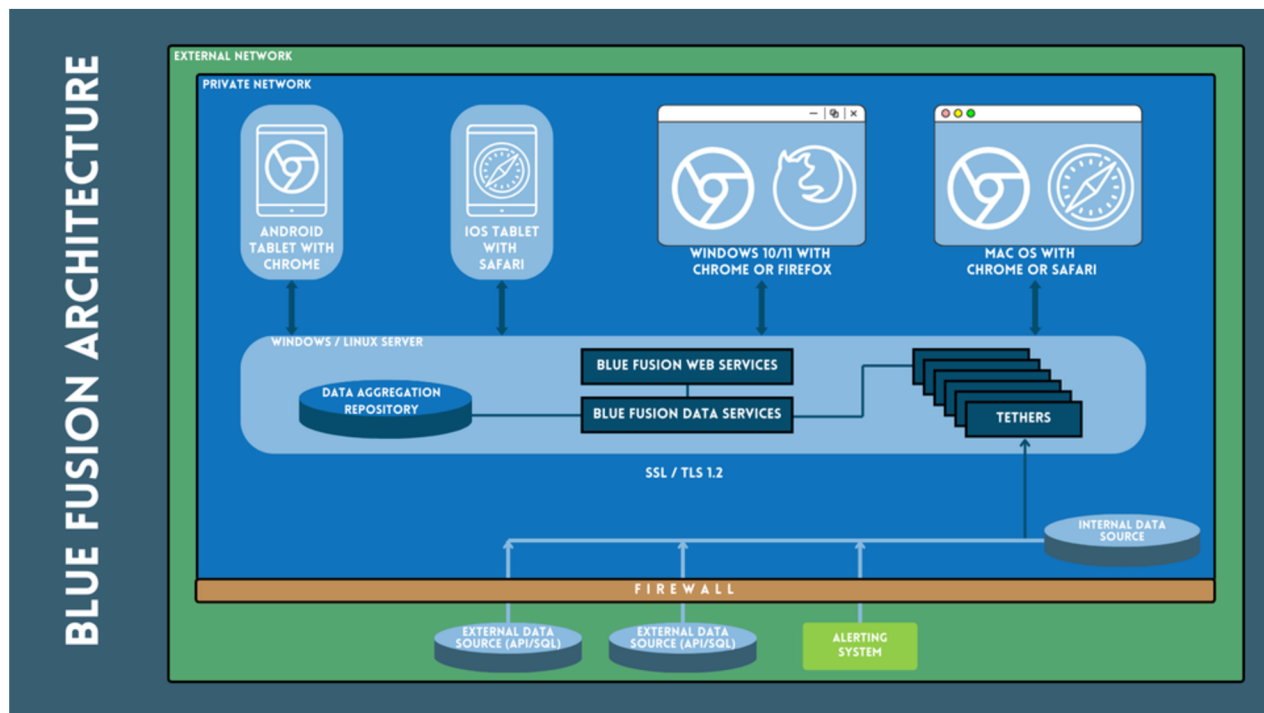
ARCHITECTURE & TECHNICAL REQUIREMENTS

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Blue Fusion is a federated search solution designed to help analysts collect and discover new information from existing data sources or alerting systems. With its intuitive web-based user interface (UI), analysts focus less time manually gathering data, and more time examining it. The logical architecture and physical architecture of Blue Fusion allow for the solution to be scaled out both horizontally and vertically.

LOGICAL ARCHITECTURE

The logical architecture defines the components of Blue Fusion and how they interact with each other. In every deployment of Blue Fusion, the logical architecture maps to a physical architecture, where the components are installed using a single server installer.



DATA TETHERS

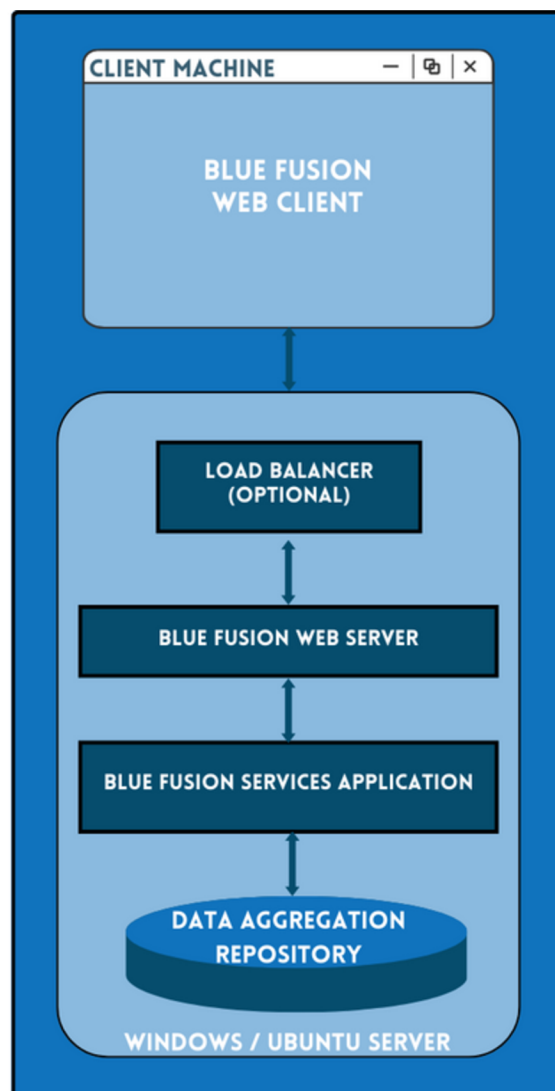
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LOGICAL ARCHITECTURE

Blue Fusion consists of two separate components to operate: a client and a server.

The client refers to any instance of Blue Fusion accessed through a thin web client such as Chrome, Firefox, Opera, or Edge. This can be on a separate machine or wherever the Blue Fusion server resides.

The server component of Blue Fusion can reside in a separate physical environment but must be readily available for the clients to connect. As a result, the proper network configuration must be in place to allow clients to connect to the Blue Fusion Web Server.



Because the Blue Fusion server components do not require a large footprint, all components reside in the same physical environment and must be installed on Windows 2012+ or Ubuntu 22.0.4+ operating systems.

SYSTEM PERFORMANCE & SCALABILITY CONSIDERATIONS

Performance and availability requirements will also determine physical components for Blue Fusion, such as Hard Disk Drive size, CPU, RAM, and load balancers, if necessary. It is recommended to have a minimum of 100GB for Blue Fusion storage, but users may choose to attach higher quality images or other documents during data ingestion, which may affect the storage requirements. In other words, depending on the number of files per user, the HDD size requirement could increase exponentially. Furthermore, a higher number of users requires higher processing power (CPU and RAM) and availability standards (load balancer, i.e. NGINX) to accommodate all operational and administrative tasks.

MINIMUM SYSTEM REQUIREMENTS

Client Side [Desktop, Laptop, Workstations]:

- Windows 10 or higher
- Minimum 16GB of RAM
- Disk Space - minimum 1GB for install
- Web Browser (Chrome or Firefox recommended)
- Network connection to Blue Fusion Server

Server Side:

- OS Minimum of Windows Server 2012 or Ubuntu 22.0.4
- Administrator Privileges for install
- Minimum: 2 GHz x86-64 dual-core processor
- Minimum 32GB of RAM
- Disk Space - minimum of 1GB for install
- Firewall accessibility

TRACKING DATA STORAGE REQUIREMENTS

The importance of dependable storage for a high-performing application, such as Blue Fusion, requires mindful monitoring. To ensure optimal performance, it is crucial that your administrator teams regularly monitor the system and address any potential issues swiftly. A rule of thumb to understand your data needs is to determine the number of users that will be operating in Blue Fusion.

On average, a single active user's storage requirements can be summarized to approximately 1.5GB weekly. However, this is considering a high-usage system and is determined using the following metrics.

SINGLE USER METRICS

- Blue Fusion administrative configuration/settings require approximately 10-20MB per year.
- Blue Fusion queries have a default request limit of 5MB per query - this is closely equivalent to 1,000 uncompressed pages of text data. This limit can be configured but users are encouraged to refine their searches to yield smaller and preferable results.
- Query results are persisted for a period of 7 days for historical reference before they are permanently removed.
- Users may choose to create Recurring Queries in which case a maximum of 5MB of data will be persisted until all assigned users have viewed the results.
- Blue Fusion data import/upload storage is determined by the size of the file(s) times 2 (an original copy is persisted for data provenance), and the number of linked items created from the data.
- As a reference, a 1MB CSV file (~200 pages of data) with a maximum of 3 entities and 2 links (1 property each) ratio, would generate approximately 3MB of data in Blue Fusion.

With these considerations in mind, if a user were to create 20 recurring queries daily and all of them returned results daily, that would amount to 700MB of "unviewed data" per week in addition to the previous day's historical data (+100MB), for a total of 800MB. Multiplying these values by 52 weeks, one user could average 41,600MB (41.6GB) a year if they simply set up queries to run and did not view them. These metrics should be, as a result, much lower if the user is active in the platform.

Furthermore, if file imports are considered, Blue Fusion limits data imports to 20MB per file. Importing 5 files daily at 20MB each, with an item ratio of 3 to 2 (entities/links), would yield approximately 300MB a day or 109.2GB a year (300MB x 7days x 52 weeks). It is also worth noting that when working with larger data sets, a Blue Fusion connector is typically recommended.

As a result of these calculations, it is estimated that one user would require a minimum of 75GB of server storage a year, or 1.5GB weekly, with an average sum of saved queries to data imports on the system. It is also important to note that given the Blue Fusion architecture described above, vertical and horizontal scalability is possible. This means that Blue Fusion's filesystem and datastore can allow for additional data partitions and/or separate servers to be configured to handle larger data loads post-initial installation.