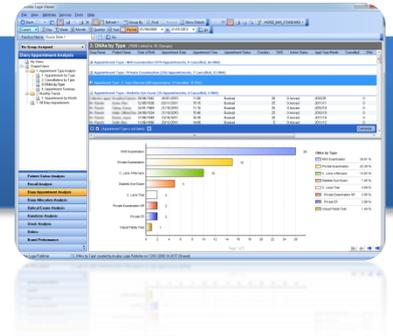


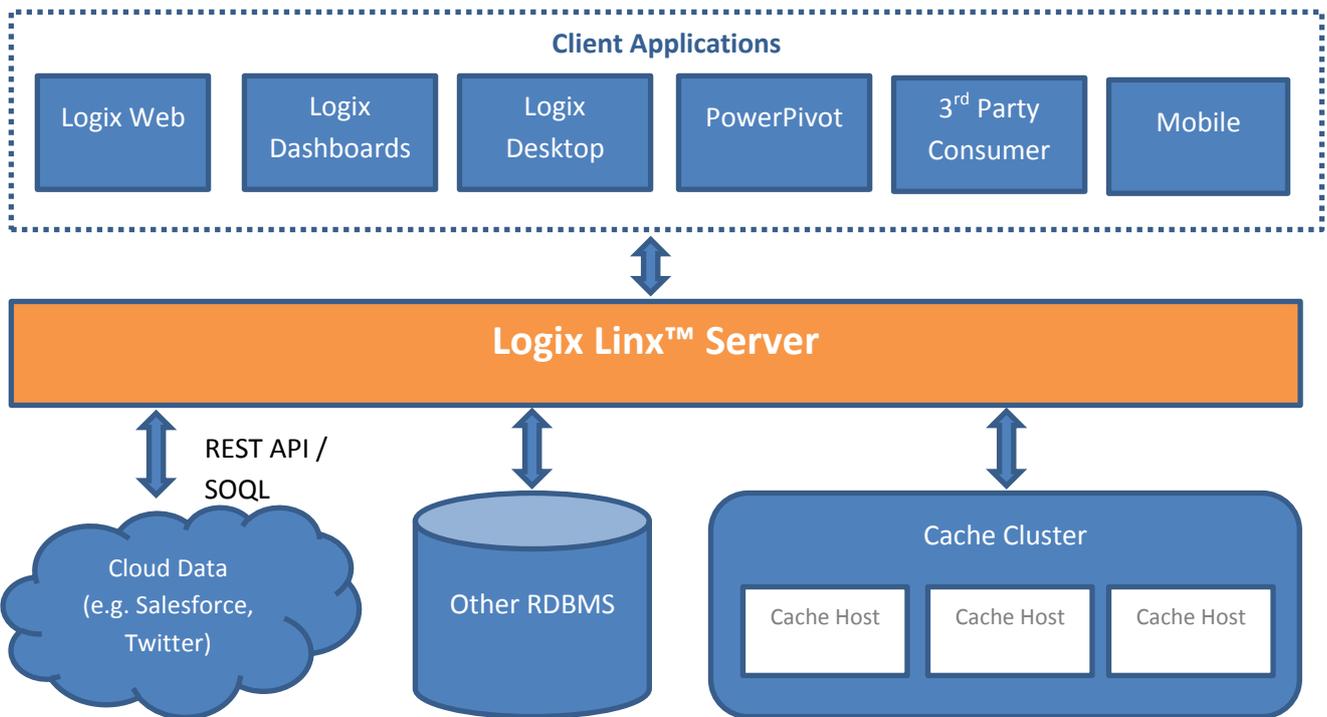
Logix Linx™ Datasheet

Caching Architecture



Introduction

Logix Linx Server technology enables the retrieval and combination of data from multiple data sources which can then be stored in a highly available high performance cache for fast data retrieval.



Note: The Cache Cluster may consist of 1.N Cache Hosts.

Logix Linx

Logix Linx is a REST based Web Service which transmits Data using JSON which is a lightweight data interchange format over the HTTP protocol. Linx runs as an IIS website.

Requests are secured based upon the OAUTH authorization protocol which sits on top of the Logix systems own in built authentication model.

The Logix Linx server will execute queries from the desired data source and combine this data with data from other data sources if required, it will then allow the output data to be stored in a cache host server.

Based upon a configuration setting Linx will compress and store data in the Logix Cache for fast data retrieval.

Logix Cache

The Logix Cache is built upon the Microsoft App Fabric Caching technology that may be deployed to Windows Server or Windows Azure for cloud based deployments.

Microsoft Server App Fabric is as a windows service, while Azure App Fabric is a cloud based service that runs as part of Microsoft's Windows Azure platform.

Windows server AppFabric can be deployed to a single server or to a cluster of servers. Servers can be added and removed to the cluster to meet memory and data sizing requirements without any downtime to the Caching service. Ease of scalability is one of the main benefits of App Fabric

Logix Cache Compression Benchmark

Scenario: Read from a table containing 250,000 records with 100 columns from a SQL Server Database table. Each record has a maximum space allocation of 54Kb.

The test was performed on a machine running Windows 7 with 4GB of Ram.

Records	Uncompressed Size(bytes)	Compressed Size(bytes)
1000	4,215,819	560,388
5000	20,967,139	2,779,310
20000	83,736,484	11,099,017
50000	209,008,085	27,688,720
100000	418,669,148	55,470,262
250000	1,092,726,476	139,896,832

Average Compression Ratio: 86.82%

Cache Scheduling

Objects that are to be cached are assigned a TimeToLive (TTL) value by the user. Logix contains a scheduling application that once an object's TTL expires ensures the object and any views based on this object will have their data refreshed from their underlying data source.

Cache Query Mechanism

Logix Linx provides a mechanism to allow queries to be made against cached data. This feature allows the caching of generalised datasets and the querying for more specific requirements.

The Linx in memory query syntax is based upon Dynamic Linq which is part of the Microsoft.Net framework.

Dashboard Data Retrieval

Logix Linx provides an interface for dashboard or data presentation client technologies to query and retrieve only the exact data required to produce a visual dashboard or other component.

Traditionally applications would return an entire dataset to a client user interface which then produces summary statistics to render a chart. The volume of the data transmitted can very quickly grow quite large.

The Linx approach is that the client will request just the information required to render a chart.

E.g. In a scenario where a dashboard is to display a chart which shows the number of customers by region for a company that has 100,000 customers. The client will request the Linx server to summarize the customer data by region and just return the summary results. Internally the Linx server will generate a dynamic Linq query to produce the output dataset.

The resultant data will then be returned to the client in JSON format. Since the Linx server has performed the intelligence required the size of the resultant data will be tiny, making for speedy transmission and consumption by the client.

Benefits

- Once data is present in-memory, users have lightning fast access to it at speeds that are orders of magnitude faster than relational database access.
- Each Logix Object's TimeToLive (TTL) value means that Logix can support the type of refresh rates demanded by today's business managers for their most essential information without placing a heavy load on the underlying business systems.
- Linx decides the optimal approach to creating KPIs, stores it and generates the data required to support it. No need to build ETL to support new dimensions or measures as would be required in traditional deterministic Data Warehouse modelling.
- Multi-Source Queries allows the creation of new datasets by combining data from different modules or from multiple, separate business systems. The results to the separate queries are linked using common keys and the joined dataset is stored in-memory and therefore there is no need to implement ETL (Extract, Load, Transform) routines.
- The high-availability option replicates cached data, letting a secondary copy still be accessed if the primary copy is unavailable.
- The cost of ownership is considerably reduced as the requirement to build and maintain expensive ETL is removed.

About Nathean Technologies

We are passionate about Agile Business Intelligence and have been delivering innovative data analysis and reporting solutions to customers since 2001. We want people to make better business decisions by getting access to their own data with little or no training. We are focused on simplicity, enabling users at every level in an organisation – irrespective of ability – to easily ask questions of data and get the answers they need in an instant.

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