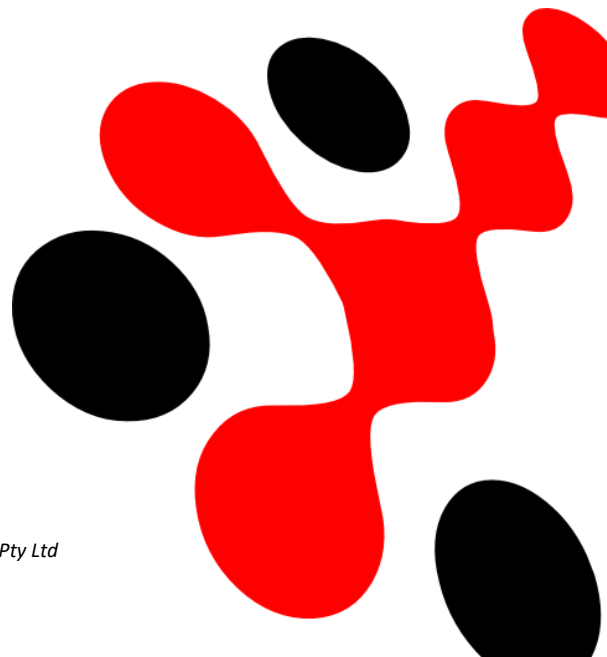


# Weave Integration Concepts

December 2020



## WEAVE SYSTEMS INTEGRATION

Weave provides integration capabilities from the application (browser) and server sides.

The Weave server provides three Integration Engines - map engine, spatial engine and data engine - that allow rapid integration of disparate data from multiple enterprise systems (internal and external). In addition, the Weave Server makes use of the Apache Camel Integration framework for developing complex system integrations based on widely used Enterprise Integration Patterns (EIPs).

Third party application integration is carried out using Cohga's Weave Hub technology, which allows for two-way interaction between Weave clients and local enterprise solution clients such as Infor Pathway, HP TRIM, etc.

Weave also has an API to allow other applications to tightly integrate with and make use of the capabilities of Weave.

## WEAVE INTEGRATION CONCEPTS

Weave provides five levels of integration:

1. Integration Engines – direct integration;
2. Integration Framework – complex integration;
3. Application to Application Integration;
4. Application Programming Interface (API);
5. Tight Database Trigger Integration.

## INTEGRATION ENGINES

The Weave server contains three Integration Engines that allow rapid integration of disparate data, these are map engine, spatial engine and data engine. These integration engines allow system administrators to configure direct connections with a range of spatial and textual data bases and data sources, and are the main type of integration used in Weave solutions.

A map engine is an interface between Weave and map data sources. It is used to communicate with the underlying mapping interfaces supported by the organisation's mapping software. A map engine asks the mapping software to generate a map of a particular size (in pixels), at a particular location (in metres, feet, degrees, etc.) and certain Map Layers turned on. Weave may use one, or multiple Map Engines concurrently.

A spatial engine provides access to a service that can perform spatial operations, such as determining what entities fall within a polygon, but it also provides a spatial perspective to the entities that the system will use. For example, providing details about the coordinate

reference system that the entity is stored in. This will generally be something like ArcSDE, Oracle Spatial, Shapefiles or WFS, and usually at least one will be defined.

A data engine provides the interface between Weave and data sources, it allows Weave to use SQL to query the database for information. To achieve this level of integration the data model of the target application needs to be accessible by Weave. The Entity Relationship (ER) diagram needs to be available and a good understanding of the data within. Weave uses JDBC, a standard Java database API, to interact with databases. Once a connection is established the data is available for searching and reporting within Weave. Creating basic forms and searches directly into mission critical corporate databases, reduces the need for query/view user licensing to achieve quick data visualisation and map integration. Direct data access is available to all ODBC and JDBC data bases.

## INTEGRATION FRAMEWORK

The Weave Integration Framework (Apache Camel) is a Java framework that lets you implement standard enterprise integration patterns in a few lines of code. With a concise but sophisticated domain-specific language (DSL) you can snap integration logic into your Weave application, Lego-style, using Java, XML, or Scala. The Weave Integration Framework supports all common transports including HTTP, REST, JMS, and Web Services.

## APPLICATION TO APPLICATION INTEGRATION

Mission critical corporate applications are full-featured systems that cannot be replaced or substituted without reinventing the wheel. With the use of Weave Hub, a technology developed by Cohga, a Weave browser can be controlled from a Windows application and vice-versa.

Weave Hub allows the administrator to reference the Corporate Application and describe the relevant screens within the application that need to be integrated with a map.

## WEAVE REST API

The Weave REST API provides an HTTP API to access services provided by Weave. All services exposed by the REST API are accessible through a hierarchy of web resources. The Weave REST API provides Integration capabilities to custom 3rd party User Interfaces such as Other websites, Mobile applications, Content Management Systems, Smart City Systems, etc.

## TIGHT DATABASE TRIGGER INTEGRATION

Advanced integrations between Weave and other Corporate Applications are often required and Cohga uses data base triggers to keep these data sets synchronized. While triggers are not a specific capability of Weave they are a data management tool used judiciously by Cohga to ensure the best potential integration solution is provided to our clients.

### ***Cohga Pty Ltd***

*Cohga is an Australian company with a focus on the development of IT products and the provision of associated professional services.*

*Our philosophy is to use Open, State of the Art and vendor-independent technology to create products and solutions that exceed client expectations. Being independent of any specific software vendor or product, the Cohga team can advise you which solution will best enhance and promote your business. We continuously monitor the market for the emergence of new technologies in order to offer our customers the best possible choices.*

*Cohga will help your organisation take advantage of the capabilities of modern software. Our team is experienced in the development of IT solutions, from the establishment of system requirements through to testing and commissioning as well as post-implementation support.*

Contact us for more information at [info@cohga.com](mailto:info@cohga.com) and visit our website at <http://www.cohga.com>