

The image features a minimalist design with three blue circles of varying sizes, each composed of concentric rings in different shades of blue. These circles are arranged in a vertical line, with the largest at the top, a medium one in the middle, and a large one at the bottom right. Two thin, light blue lines intersect at the top left and extend diagonally across the page, framing the circles. The overall aesthetic is clean and modern.

OmniConnect

Intrasoft International
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1. Introduction

The modern contact center has evolved in many areas during the last few years. It has been transformed from a simple telephony – based business unit with limited organization and responsibilities to the complete interface of an enterprise with its customers, suppliers and other stakeholders.

To achieve this goal, modern contact centers expand in two distinct ways: on the one hand they improve their front end by adding additional communication channels to the contact center, from classic fax and email to brand new channels such as video and social media; on the other hand they improve their back end by incorporating the usage of the back end systems of the enterprise into their business. These two types of systems greatly enhance aspects of the enterprise such as quality customer support, telesales and other outward business activities.

This tremendous expansion of the contact center business has given rise to the need to integrate these platforms in an effort to reduce repetitive tasks and streamline the procedures their personnel have to follow. Thus, all modern contact center vendors provide APIs that allow their functionality to be integrated into other applications, in order to help enterprises to focus their operations into a single user interface.

Aspect Unified IP is an IT – ready contact center software platform specialized in solving the challenges modern contact centers face. It is a platform focused on a unified approach, combining multiple communication channels and incorporating additional complementary functionalities into a single software suite. Aspect’s mentality is to avoid using software silos with overlapping functionality and makes a consistent effort to provide its customers comprehensive and customizable solutions.

Based on its long – term experience in delivering high quality software solutions, Intrasoft International, a business partner of Aspect for many years, has developed OmniConnect, a software platform which greatly accelerates the integration of Aspect Unified IP functionality into business applications. Using OmniConnect allows an enterprise’s agents to use every single feature of Aspect Unified IP from within their CRM application.

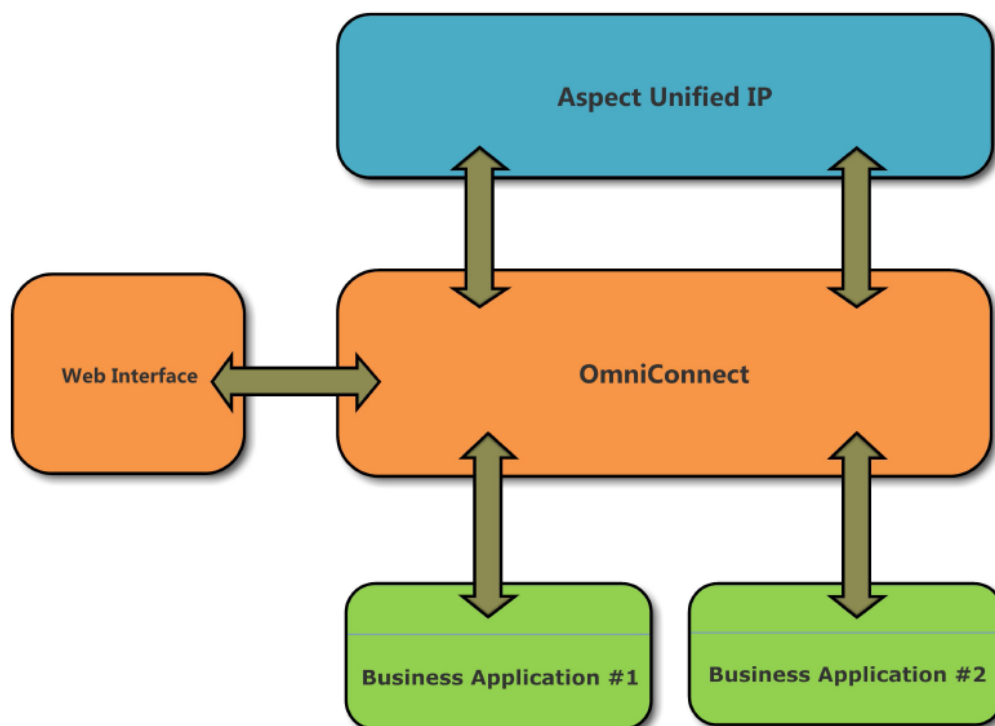
Using OmniConnect yields significant benefits for an enterprise using Aspect Unified IP and CRM systems:

- Greatly reduced development time during integration.
- Avoid pitfalls that may arise during integration, as OmniConnect already handles these exceptions internally.
- Connect a multitude of business applications with a single integration mechanism.
- Avoid changing the integration when Aspect Unified IP gets upgraded to a newer version.
- Ensure its services are always on by using the high availability and load balancing features.

2. General Description

OmniConnect is a product, developed by Intrasoft International that allows an enterprise to incorporate Aspect Unified IP advanced contact center capabilities in any branded or own developed CRM applications. Using OmniConnect, the functionality of Aspect Unified IP can be integrated in the CRM client of the enterprise, allowing agents to control an entire interaction from a single interface.

Many enterprises utilize more than one CRM/business applications depending on the needs of various business units. OmniConnect can support multiple instances of a business application or even different business applications.



Picture 1: OmniConnect overview

OmniConnect is a modular solution based on open architectures. Its modular nature allows it to be easily expandable and customizable.

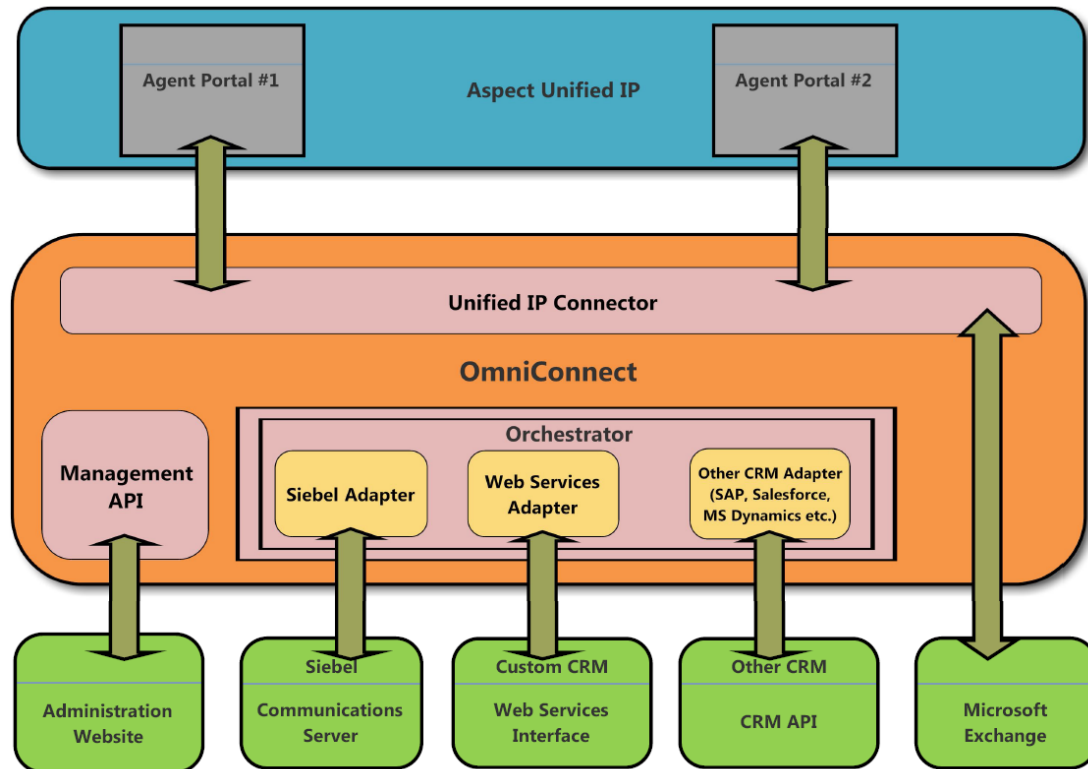
The integration adapters for CRM applications are offered "out-of-the-box". Other adapters can be quickly developed based on the APIs of each CRM, while the integration with Aspect side and the user interface/management features remain the same.

OmniConnect supports a high available configuration and ships with an integrated load balancer.

3. Architecture

OmniConnect is a modular software component based on Oracle Java Enterprise Edition version 7. The enterprise may have an application server of their choice to deploy OmniConnect. Therefore, it can reside on any operating system that offers support for Java EE 7, as long as the selected application server supports it.

The high level architecture of OmniConnect is presented on Picture 1 below:



Picture 2: Aspect CRM connector by Intrasoft International Architecture

OmniConnect consists of at least one middleware server. The middleware server(s) are responsible for handling communication with Aspect Unified IP, communication with the CRM itself, as well as with other systems that may be required.

The middleware server consists of three distinct components:

- **UIP Connector:** This component handles all communication with Aspect Unified IP. Most of the interactions take place between the Middleware Server and Agent Portals, however are Aspect Unified IP sub – systems are also used. A sub – component of Aspect Interface is responsible for the communication with Microsoft Exchange to provide the email – related functionality. Communication with Unified IP is achieved through the Aspect provided Agent API.
- **Orchestrator:** This component handles communication with the CRM. For each different CRM system, a different adapter has to be created. This is the only part of the Middleware server software that has to be modified when integrating with a

new CRM. The orchestrator is initialized upon completion of middleware deployment and is responsible for managing all the adapters. Each adapter implements an interface which is used by the orchestrator to:

- Retrieve important information from the business application.
- Obtain the state of each adapter.
- Retrieve a list of the agents connected.
- Send messages to agents through middleware UI.
- Start/stop adapter servicing requests.
- Logout agents if necessary.

An additional role of the orchestrator is to provide information to the load balancer in order to support load balancing and high availability features.

- Management API: This component allows users to control OmniConnect through a convenient web – based interface. The administration web site allows users to check the state of each adapter, check and modify the state of logged in agents and retrieve statistical data. The user may also send notification messages to the logged – in agents. The management API uses web services.

Each middleware server can be connected with any version of Aspect Unified IP 7.0 or higher. Currently supported CRMs are Oracle Siebel 8.1 or higher and any custom CRM that can consume Web Services. Due to the open architecture used, new adapters can be created easily, for CRMs that provide their specific APIs.

Depending on system capacity and required resilience, the solution may utilize load balancers. Load balancing is described in more detail in section 5.3.

4. Functionality

4.1.Streamlined agent environment

Using OmniConnect allows an enterprise to create a streamlined environment for its agents, offering significant efficiency and productivity enhancements to their day – to –day operations. OmniConnect provides the following capabilities:

- Synchronized call control within the CRM application: OmniConnect provides the CRM application with information (data, events etc.) coming from Aspect Unified IP. Additionally, it allows the CRM application user to execute call control commands on the Unified IP system, using a single application.
- OmniConnect allows integrating screen pop – ups to the CRM application: When an inbound or outbound interaction takes place (either a traditional phone call or an alternative media interaction such as chat/email etc.), a screen pop – up takes place, populated with the customer data. Customer data can be retrieved by querying against call data (ANI etc.), customer provided information (through e.g. an IVR) or other known information.
- OmniConnect allows integrated user management: Aspect Unified IP integrates with Active Directory. Thus, any business application using the same authentication mechanism can use the same credentials, eliminating the need for each user to remember and manage multiple usernames and passwords.

The benefits described above, help reduce the steps each agent has to take to handle an interaction; additionally, in a mixed environment where each agent can be assigned to a variety of services, interaction channels etc, this integration allows the agents to be focused on each individual task eliminating possible mistakes.

4.2.Contact Center actions supported

OmniConnect uses Aspect provided APIs to expose available functionality to external applications. It focuses on the functionality useful to the agents.

OmniConnect currently allows the agents to:

- Place and receive calls.
- Interact with clients via chat.
- Receive emails from clients and reply to them.
- Listen to their voice mail.
- Interact with the system’s recording capabilities:
 - Search and listen to recordings.
 - Start, stop, pause or resume a recording on demand.

Customers may use OmniConnect to embed in their CRM buttons that allow an agent to:

- Authenticate (login & logout): The authentication mechanism uses Active Directory, same as Aspect Unified IP. When the user is logged in, the Login button is replaced with Logout.
- Accept/Reject a call.
- Place a manual call.
- Put a call on hold.
- Resume call.
- Transfer a call: The call can be transferred to another agent, service or phone number. There are two modes of call transfer:
 - Consultation call: The call is being placed on hold; then the agent calls the target party for the transfer to confirm their availability; finally the call is resumed and the transfer takes place.
 - Blind transfer: The call is being transferred without consulting. This may result in the caller being placed in a queue.

In both call transfer modes, customer data is transferred.

- Create a conference call. The conference call may be created with a specific agent or supervisor directly or with an available user within a service.
- Handle call recording settings manually.
- Manual call recording functionality:
 - Manually record a call: the agent may select at any time to record the current interaction.
 - Pause/Resume or Stop a recording.
 - Search for a recorded call.
 - Playback recorded calls.
- DTMF Support: This allows sending DTMF digits.
- Chat functionality (The agent may communicate with a client using the Chat Services exposed by Aspect Unified IP).
- Process an email. The agent may receive an email automatically and respond to it or forward to a subject matter expert. Alternatively, the agent may claim the email from the Aspect Unified IP system.

It should be noted that agents should be configured within the Aspect Unified IP system to have the permission to use some of these functionalities (e.g. reject an inbound call or place a call on hold). In case of a conflict in permissions, the Aspect side configuration will take place.

In terms of recording functionality, Aspect Unified IP embedded recording is fully supported. In addition, Aspect Quality Management (AQM) recording system can also be used in a similar manner.

5. Non - Functional Specifications

5.1.Logging

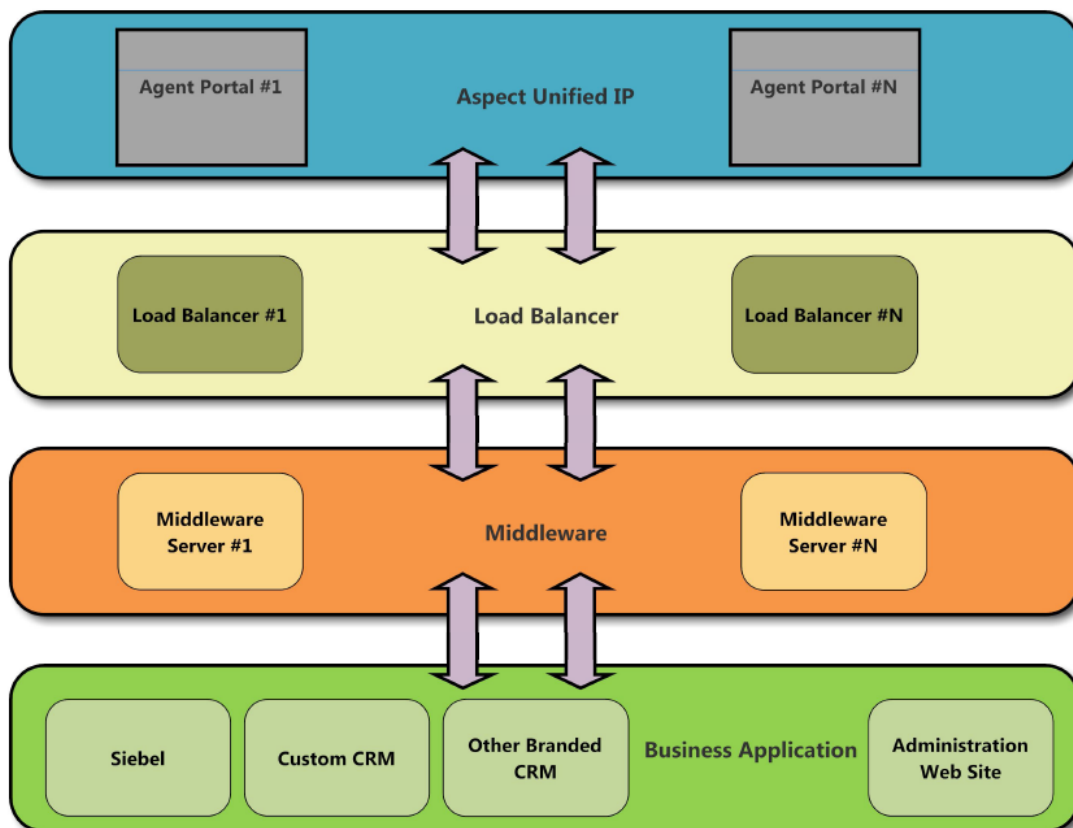
OmniConnect includes a separate logging mechanism for troubleshooting purposes. The logging mechanism is based on Apache Log4j. Logs can be stored either in text files or in a database. The logging mechanism offers 6 separate log levels and is fully configurable.

5.2.Expandability

OmniConnect can be easily expanded in terms of capacity by adding additional hardware. Hardware limits depend on number of agents as well as the load of information passed through to the agents.

5.3.Load Balancing

OmniConnect supports load balancing with an integrated module, included in the solution. The load balancer can handle the available requests in two steps, depending whether there are multiple middleware servers and/or Aspect Unified IP agent portals.



Picture 3: Load Balancing architecture

When a request comes to the load balancer from the CRM, one of the available middleware servers is selected to handle it. The load balancer will get, from each middleware server, information about how many agents it currently handles. It will then select the middleware server with the lowest amount of currently served users to proceed.

When a login request reaches the middleware server, a query to the agent portals shows which one has the lowest load at the moment. The middleware server will then connect the agent to the portal with the lowest amount of currently logged in users.

The solution includes two load balancers to protect against load balancer failure.

5.4.High Availability

OmniConnect is designed to work in a high available environment, should this be a requirement of the enterprise. The most critical points of failure use redundant components:

- Aspect Unified IP agent portals typically come in a redundant configuration. If one of the portals fails for any reason or the portal fails to respond due to e.g. a network problem, the middleware server disables all available commands to the agent and requests him to login again. The login process will search for an active agent portal and allow him to continue working with minimal impact.
- The middleware server is available in a redundant configuration with load balancing, as described in the previous section. In case of a complete failure of a middleware server, the load balancer will redirect all requests to the remaining active servers.
- The load balancers themselves come in a redundant pair, which safeguards against load balancer failure.