Connectors (CENTRi™) Overview

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UPM 25.x

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Contents

Connectors – Introduction

ZINFI's Connectors (Centralized Interconnect - CENTRi™) integration engine is the core driver for the processing of workflows and approval flows created with UPM's dynamic workflow engine, Workflows (Workflow™). Connectors provide a cross-platform workflow server and a cross-platform back end for easily and flexibly managing, designing, and tracking workflows. Connectors are based on modern architectures orchestrating stateless and internal/external functions, such as APIs, SSO, and OAuth. Utilizing these functions or services, Connectors provides a way to implement complex end-to-end business capabilities, which often stretch across multiple platforms and web services. Connectors are the perfect backend fit for Workflow's operation.

Connectors are a key component of UPM's workflow technology and typically use the database server and web services. They manage and monitor activities in a workflow, such as the processing and approval of a deal, and determine which new activity to execute concerning the defined processes or workflows. Activities may be anything from converting a prospect or sending a reminder e-mail to a sales rep about a prospect to escalating overdue items. Connectors operate as an orchestration engine in many ways, facilitating the flow of information, tasks, and events.

Communication Pattern

There are two basic communication patterns for Connectors/CENTRi:

Push: The Workflow created through Workflow actively calls a service via Connectors. It could be a Java invocation, REST, or SOAP web service call. Sending a message to a queue is also an example of an active push from Connectors.

Pull: A service or an intermediary connector requests work from Connectors, reversing the communication direction.

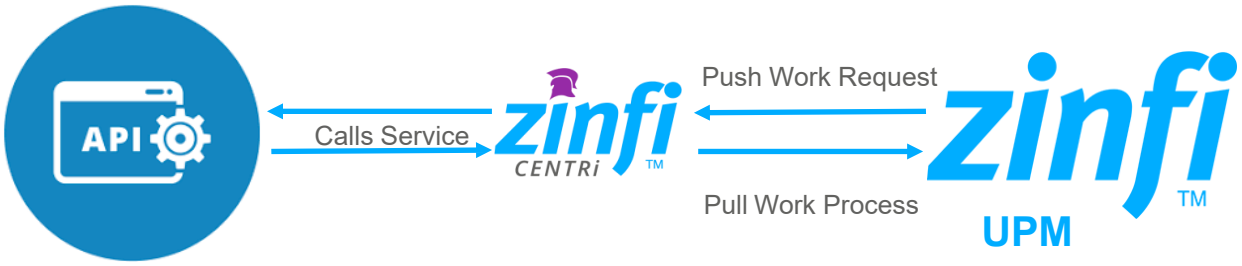


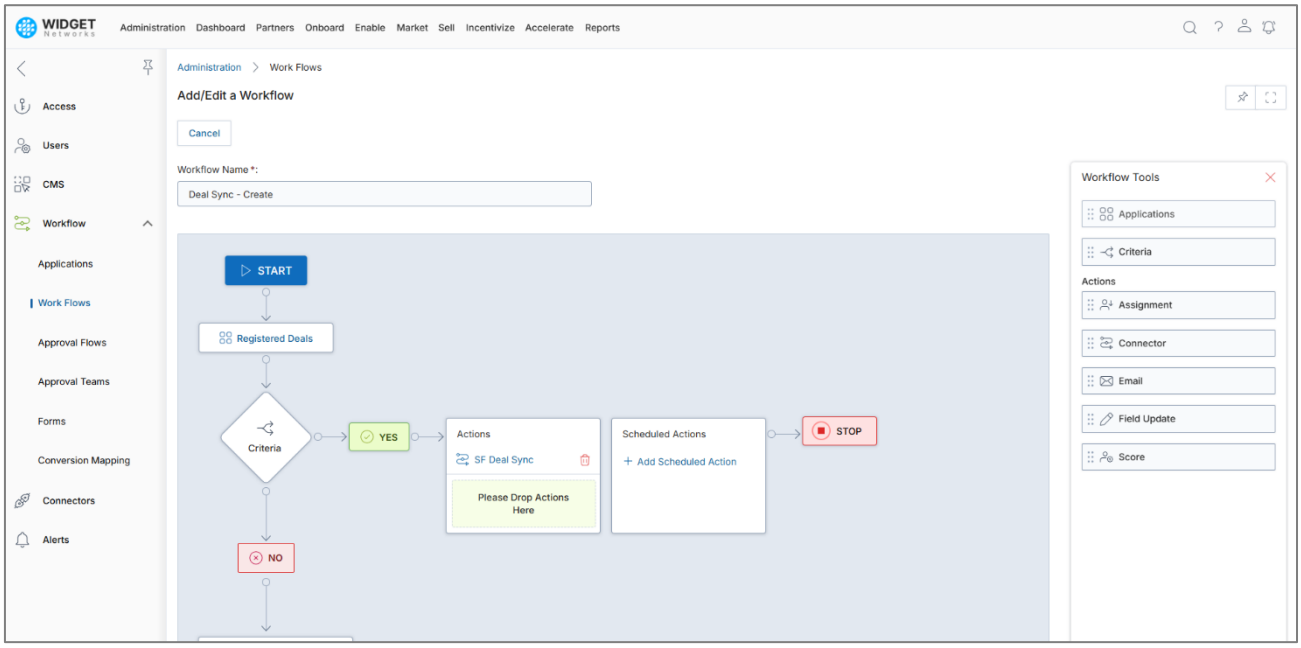
Figure 1: Connectors Communication Patterns

Workflow-Based Record Sync

Workflow-based record sync across all configured and integrated third-party platforms is available with the latest Connectors version 3 launch of the ZINFI UPM platform. Support for automated and custom data synchronization in a defined time or period is integrated with Connectors's backend Workflow Engine. Data sync algorithms can be easily created and configured through workflows to process workflow-based record synchronizations

Using ZINFI UPM's Workflow, we can easily edit criteria-based workflows and utilize actions to enable Synchronization Actions. For example, we have a registered deals workflow based on conditions such as Sales Stage and triggering value as '10 - Closed Won'. We can add additional attributes or criteria - the rule criteria, for example, we setup a criterion 'Amount is greater than 2000' and Save the workflow. Once the workflow and the criterion for the Action is defined, we can add 'Synchronization Actions' like 'Deal Sync with the salesforce connector' (these actions are preconfigured with the respective platform – Salesforce Connector at Connectors). Such record sync based on custom workflow criteria can be configured and processed for any third-party platform integrated with ZINFI UPM through connectors. We can simply drag the connector action from the Tools panel into the workflow and provide a name based on the connectors.

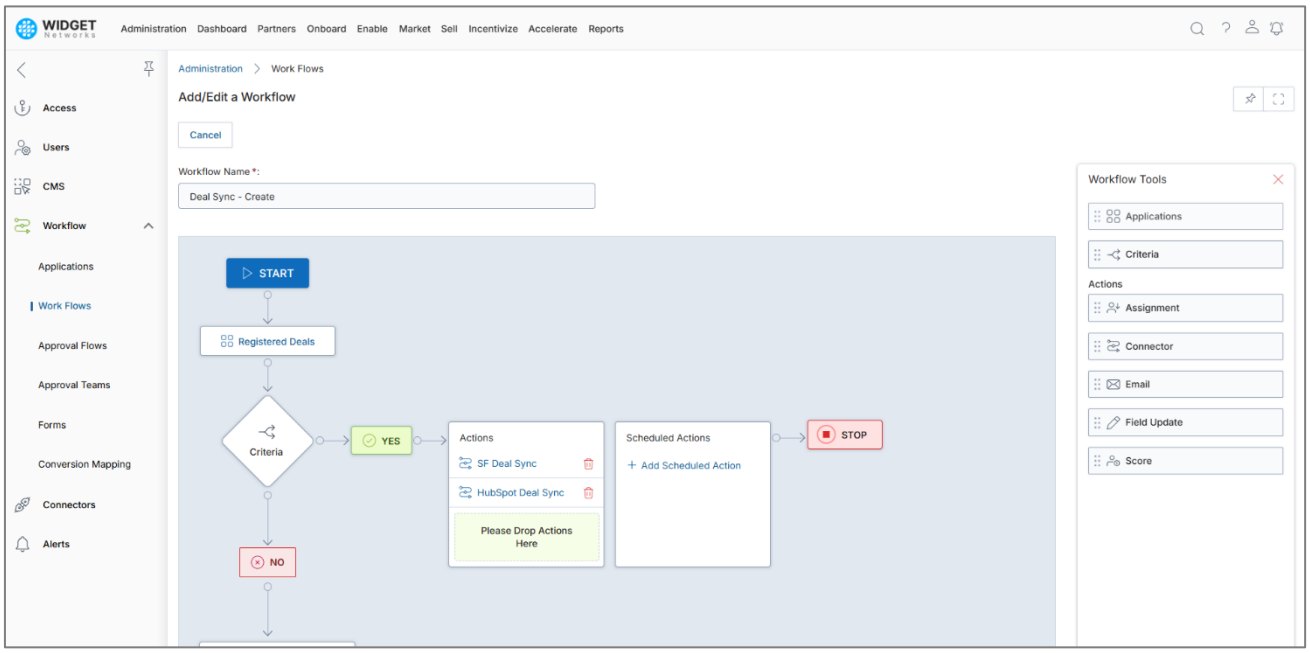
For example, suppose we want to sync Deal based on the workflow criteria to Salesforce. In that case, we will name it 'SF Deal Sync' and choose the Salesforce API connector (configured at Connectors) for the data push and pull operations between HubSpot and ZINFI.

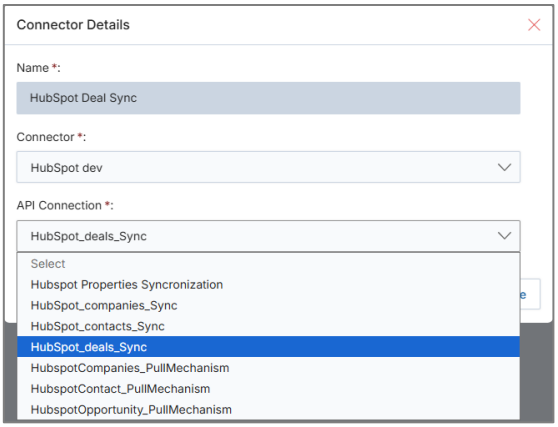


Simultaneous Record Sync to Salesforce and HubSpot

The updated feature incorporated at Connectors allows you to sync a single data or record set to multiple third-party platform instances from the ZINFI UPM, viz. Sync Lead X to both Salesforce and HubSpot. For such data synchronizations, we need to properly map Entities, viz. Deals at UPM with Opportunities at HubSpot, and their respective attributes between the two systems.

For the above example, we can utilize the Opportunity Sync mapper or the HubSpot API connection and save the workflow (defined above) to simultaneously sync the deal to HubSpot and Salesforce. Based on the integrations that we have configured at Connectors; we can add as many connectors as we want. Based on our selection of the connector, the relevant API connections and respective actions can be added to the workflow.





Advantages

- Flows do not need to possess information on concrete endpoints
- The called service defines the scaling itself, depending on how many tasks it consumes and how fast
- The called service can be implemented in any language and requested/responded to via REST API
- The core flow can concentrate on the coordination of the workflow and does not have to handle integration logic and protocols
- Transaction boundaries are enforced in a way which is natural for distributed systems and integral to our aSaaS platform, thereby making the whole system more flexible to adapt to future technologies

Base Operations

Connectors comprises the following core functions:

- Validation of the current task status: Checks validity of executing the task, given current status
- Validation of the authority of users: Checks whether the current user is permitted to execute the task or not
- Execution of the work or task: After completing the previous two steps, Connectors executes the task,and if the execution successfully completes, it returns a success response; if not, it reports the error

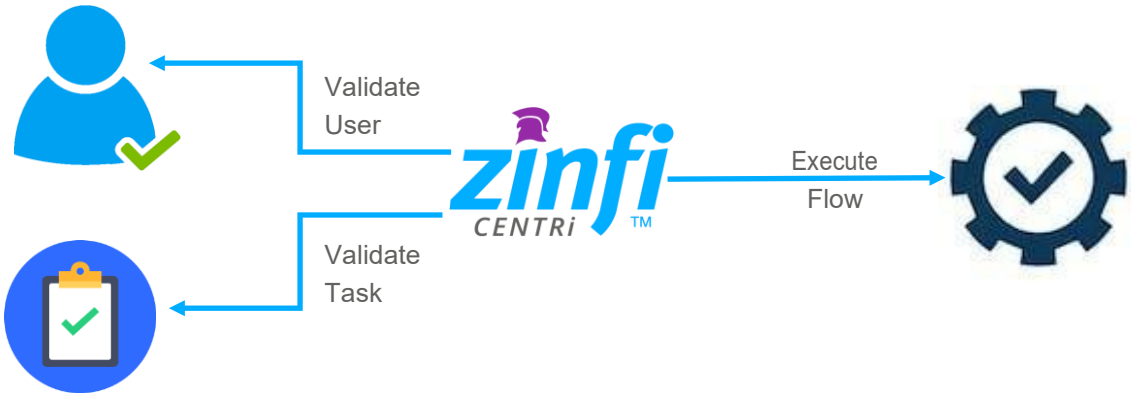


Figure 2: Connectors Base Operations

Connectors are a primary tool for task allocation. For example, in business process management, Connectors allocate auto-tasks or tasks according to flows created via Workflow to different executors while communicating data among participants. UPM's Connectors is designed to execute any arbitrary sequence of steps defined by theprocess or custom flow.

API Repository

Extensive APIs for Your Marketing Data

With Connectors, you gain access to our extensive library of marketing APIs, popular databases, cloudstorage platforms, and big data environments. Simply select your platform connector to automate your data integration directly, updating at the interval of your choice.

Our APIs cover the full spectrum of the mar-tech and ad-tech ecosystem (see Figure 3), so you can connect tojust about any data source—marketing automation systems, ERPs, SSO, eSign, data feeds, CRMs, email, and more—all in one place, quickly and easily.

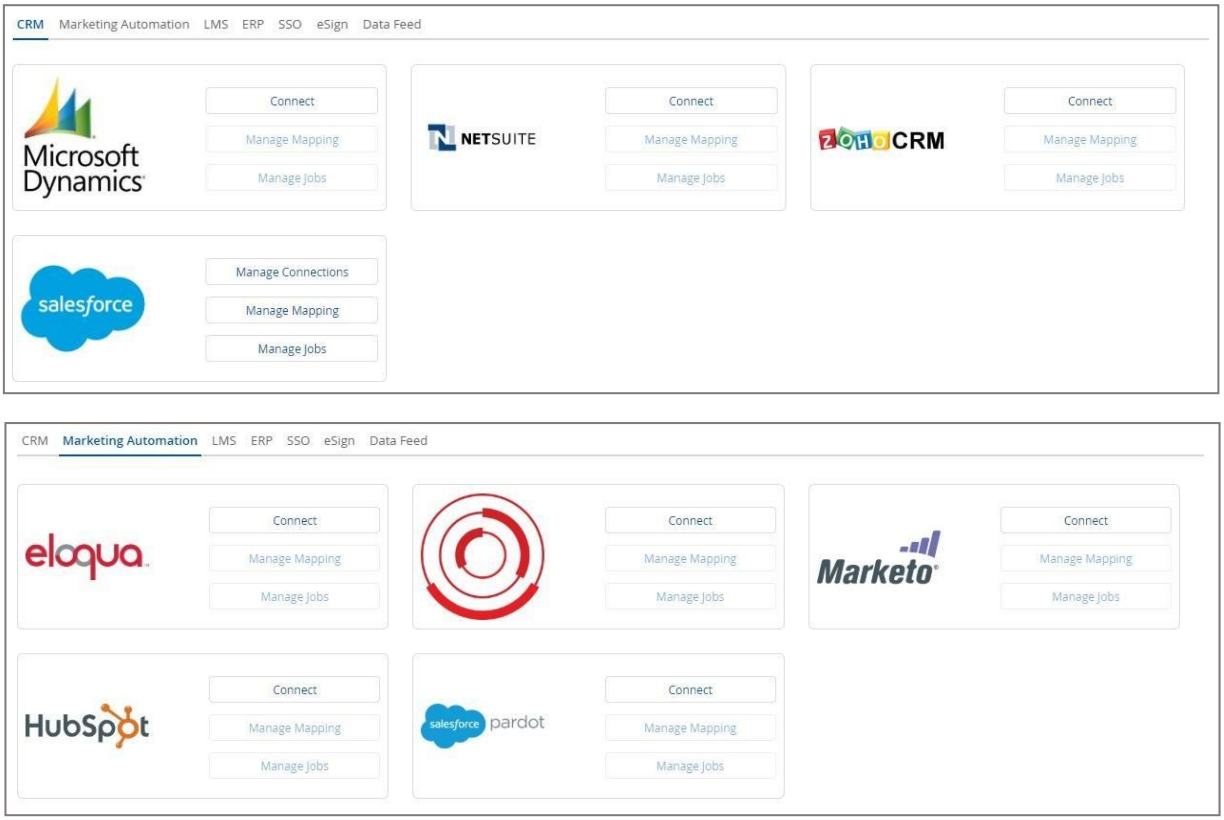


Figure 3: Integrators in a Nutshell

OOTB Integrations

MS Dynamics Integration

ZINFI UPM's Connectors provide an OOTB bidirectional integration solution between ZINFI's Unified Channel Management (UPM) platform and MS Dynamics CRM (CRM) through the MS Dynamics API. This solution allows channel managers, partners, and users to sync records between the two systems. With the integration, users no longer need to enter identical records in both systems. Channel managers can monitor partner activities from MS Dynamics without purchasing a license for each partner.

The solution enables easy and efficient synchronization of leads, contacts, accounts, and opportunities between ZINFI UPM and MS Dynamics, as shown in the table below:

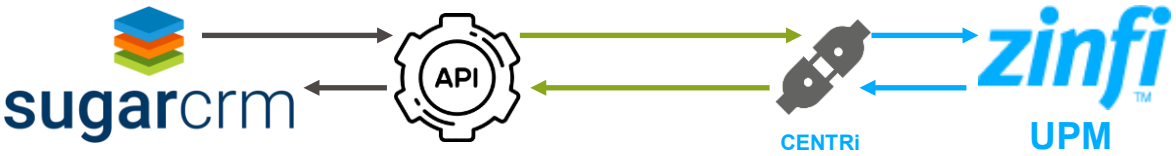
ZINFI UPM Module	MS Dynamics Module
Prospects	Leads
Contacts	Contacts
Accounts	Accounts
Opportunities	Opportunities
Registered Deal	Registered Deal.

We may also edit the data values in the MS Dynamics instance so that they sync back to ZINFI UPM.

Sugar CRM Integration

ZINFI UPM's Connectors platform comes with a seamless integration to Sugar CRM. With the integrated platform, your organization can efficiently sync Accounts, Contacts and Opportunities between the two platforms. Sugar CRM and ZINFI UPM integration work for both platforms to communicate and sync on the end customer accounts, contacts, and opportunities modules to push and pull data between these two platforms via the defined connectors, workflows, and entity-attribute mappers configured in the system.

UPM's Connectors offers you a convenient and easy way to integrate SugarCRM with no coding.



Limitless AI-Powered Data Integration

Marketing data is always changing. With more than 5,000 marketing tools in the marketplace, you need the flexibility to connect to any data source instantly. ZINFI Connectors answers the challenge, going beyond APIs into limitless integration.

Using machine learning intelligence to analyze data files, ZINFI Connectors can automate data cleansing and data model mapping—crucial steps that require advanced manual skillsets. Like a good assistant, it finishes the job based on the flow that schedules ongoing data updates via email, SFTP and more. With ZINFI Connectors, you're ready to integrate any data at a moment's notice (see Figure 4).

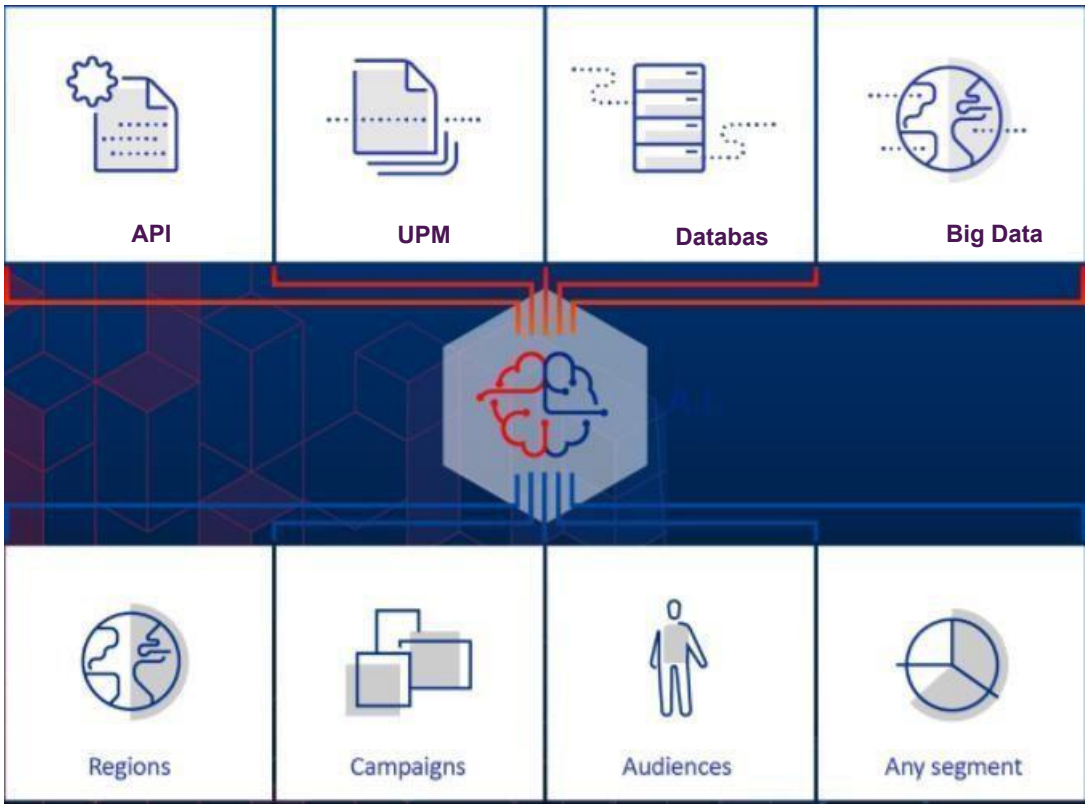


Figure 4: Connectors Connecting Sources

Manage Integrations

Connectors' Integrations Management section (see Figure 5 below) provides an integrated approach to managing external connections, which can be configured for the successful operation of various processes and workflows.

Each platform—such as Salesforce, HubSpot, Sugar CRM and Microsoft Dynamics—can be integrated with a collection of functionalities as defined below:

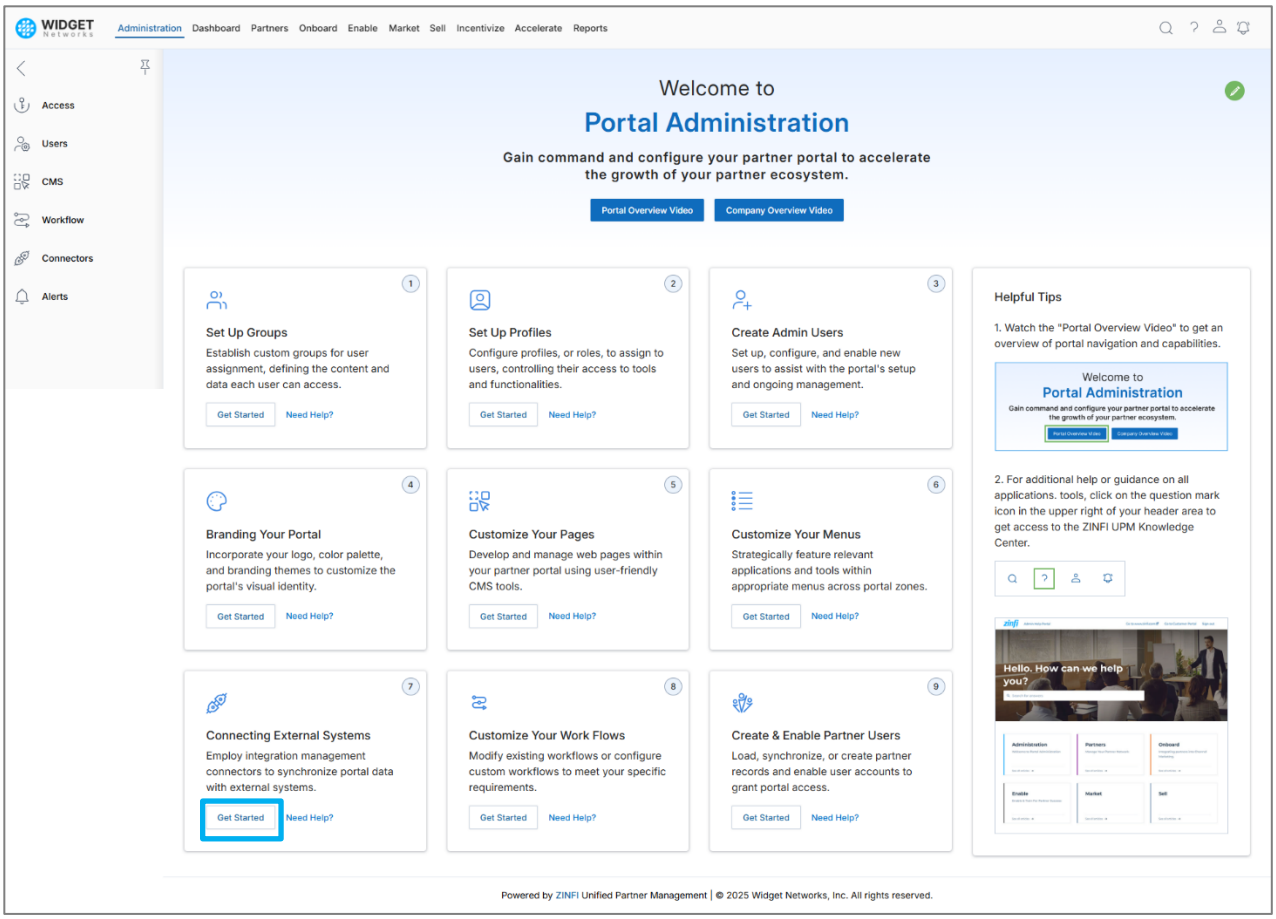


Figure 5: Accessing Connectors

1. Once you click on **Integration Management** (highlighted menu item in the left panel) or **Connecting to External Systems** (highlighted in the Administration Zone as Get started), you will land in the Connectors module.
2. This directory will show you the various categories of API Connectors available for you to connect to and manage your mapping with systems viz.:
    a. CRMs
    b. Marketing Automations
    c. LMS
    d. ERPs
    e. SSO

Manage Connections

Through advanced technologies such as SSO and OAuth, you are automatically redirected to the portal and asked to provide log-in credentials. Upon successful log-in, the access token is sent back to Connectors for successive calls to access resources from the platform.

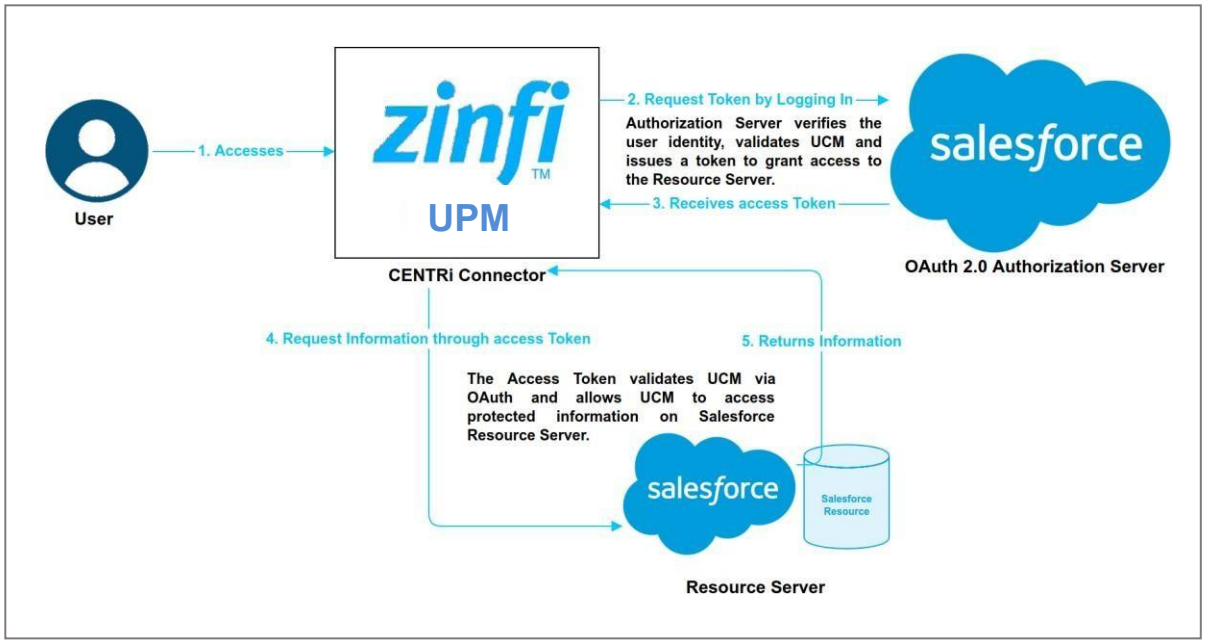


Figure 6: Connecting Platform (Salesforce)

The process flow in Figure 6 works as follows: The user (a channel partner or channel marketing manager) accesses the ZINFI connector (Connectors) and requests the OAuth token from Salesforce. Salesforce requestsuser credentials for a successful validation of the user. Upon successful validation/verification of the user, Salesforce provides the access token, which ZINFI UPM uses to access Salesforce resources further.

Manage Mappings

Data mapping, in its simplest form, involves mapping source data fields to their related target data fields. For example, let's say the value populating source data field A needs to go into the target data field X. CONNECTORS's mapping manager simplifies that data synchronization and can do so across several platforms.

For example, Salesforce.com has a data object called Leads, and its schema consists of fields, attributes, enumerations, data integrity, and dependency rules with other data objects. If we need to add or update a new data record from UPM in the Accounts data object, then we must create a data map that converts incoming Salesforce Accounts data to ZINFI UPM Prospects format.

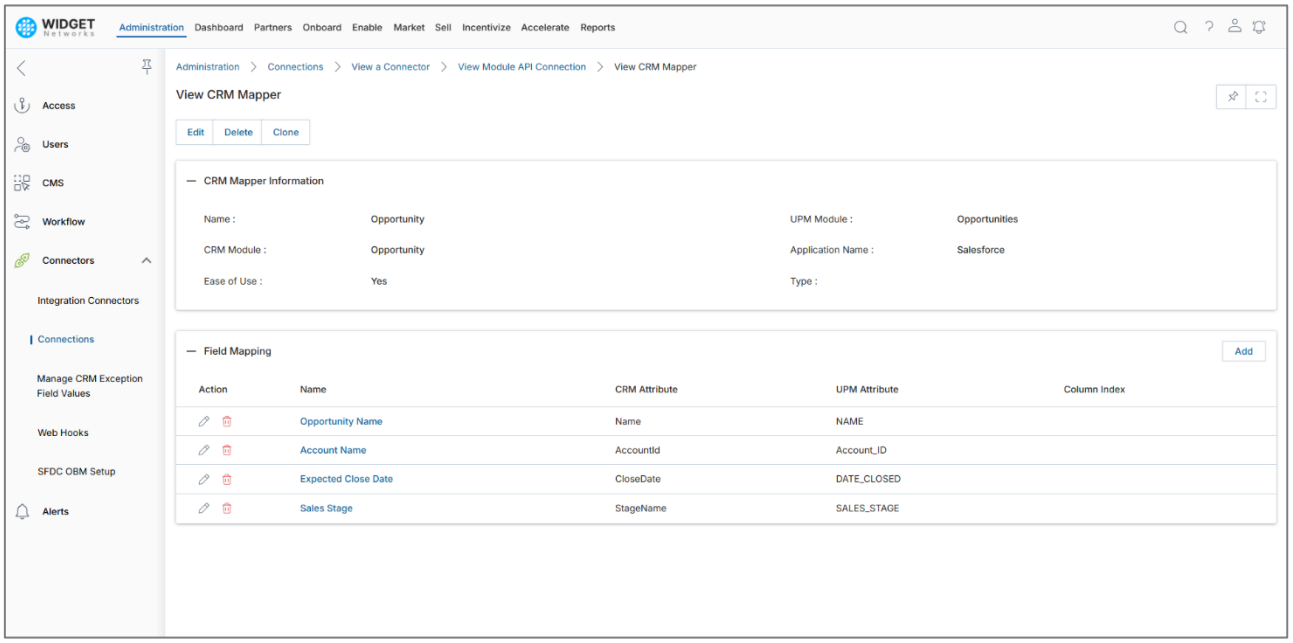


Figure 7: Data Mapping Manager

Utilizing Connectors's Mappings Manager (see Figure 7 above), data mappings can be profiled, saved, edited and deleted for future reference and for easy processing of flows. An example of a mapping profile is presented in Figure 8 (below) and consists of the following:

- Mapper information
- Mapper details
- Mapper assignment history

Mapping profiles can be easily edited, deleted, assigned to and duplicated as necessary.

Manage Jobs

Flows created through Workflow consist of sub-jobs respective to API interactions which are logged and are related to a specific connection or a set of specific connections. The Manage Jobs section of CONNECTORS provides an interface to view API Log Status associated with the specific type of connection. In Figure 8, workflows created through Workflow requiring access to a specific platform, such as Salesforce, and subsequently associated can be viewed and edited.

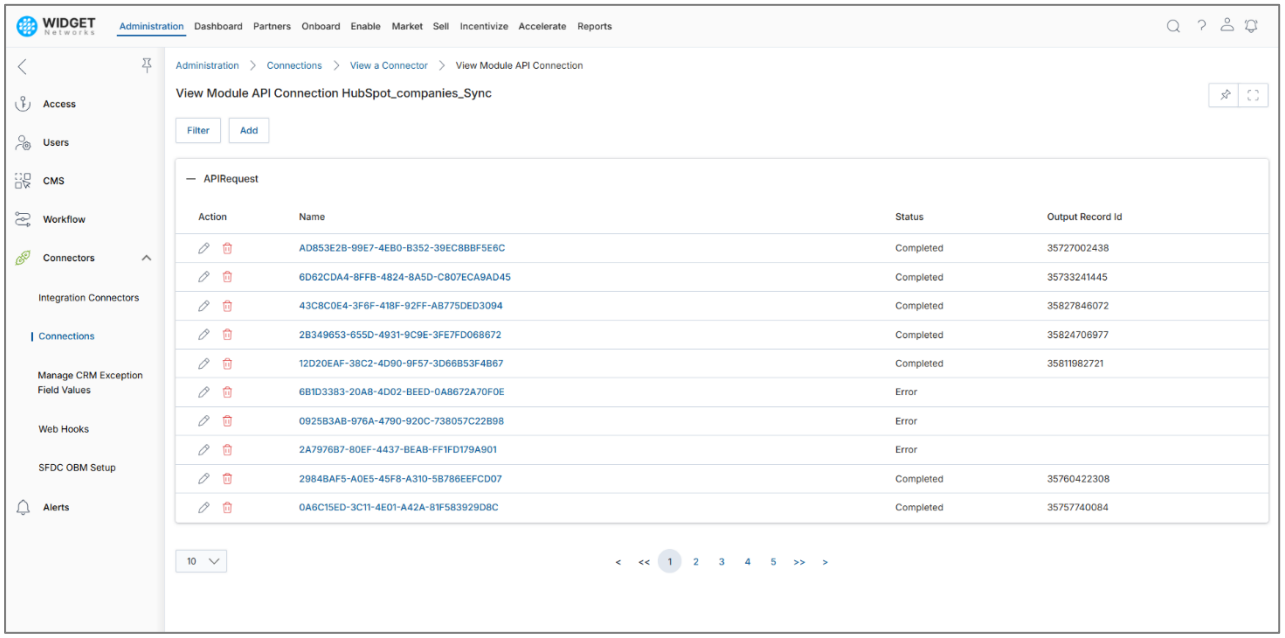


Figure 8: Associated Jobs to a specific Connection

SFDC Rapid Installer

UPM's latest offering, the SFDC Rapid Installer, allows you to instantly connect with Salesforce to automate your work and supercharge your productivity. The SFDC Rapid Installer uses proxy objects instead of actual component attributes to connect to Salesforce. Interactions with a proxy object are identical to interactions with the actual object. The proxy objects act as middleware between UPM and Salesforce, providing the following advantages:

- Permission to directly access Salesforce records is not needed.
- When data is updated via the middleware with proxy objects, synchronization between the two platforms is more stable.
- Rule sets can be added on between the middleware and Salesforce.
- Salesforce reports can be generated from the proxy objects, eliminating the need for the user to log in to UPM to generate similar reports.

SFDC CRM Mapper

UPM's revamped CRM Mapper for SFDC Rapid Installer is equipped with standard Salesforce proxy object mappers (highlighted in the figure below) to initiate the process and can be edited according to the business process requirements. Behind the scenes, UPM objects are mapped to proxy objects so that the respective controller handles sharing rules, field-level security, and other data accessibility concerns. The use of remote objects involves two separate functions:

- Access definitions with proxy object components.
- Access data using the proxy objects made available by the definitions to create, retrieve, update, and delete operations on your data.

API Log Status

UPM's SFDC Rapid Installer operates on REST API, providing a powerful, convenient and simple web services API for interacting with Salesforce. The REST API uses the same underlying data model and standard objects as those used in SOAP API. With the addition of the SFDC Rapid Installer, UPM is now integrated with a state-of-the-art API log status viewer, which provides a 360-degree view of the API interactions in the following contexts:

- A list of API requests, the respective API ID generated at UPM, the module name, status and output record ID
- A detailed view of the API request that includes the response code and description, along with the module API connection
- Further details revealing the actual request data and response data

The API Log Status Viewer is a valuable tool for engineering teams to understand the actual processing activities being conducted behind the scenes, and to quickly view and debug synchronization errors.

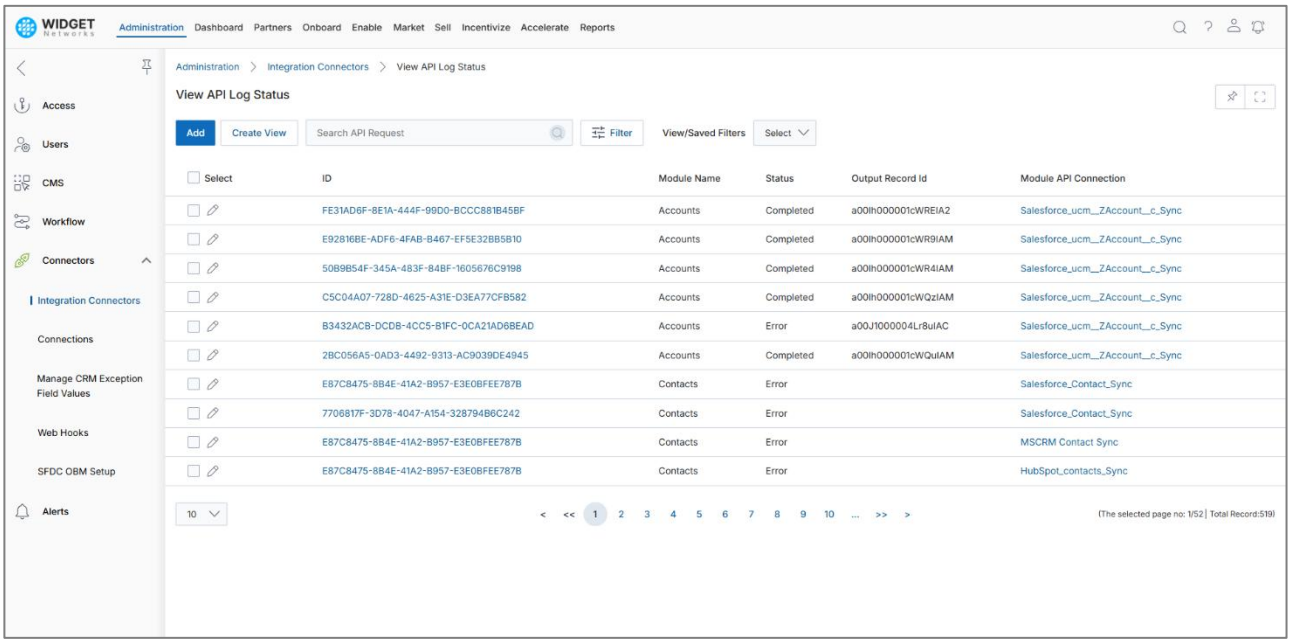


Figure 9: UPM SFDC Rapid Installer-API Log Status Viewer

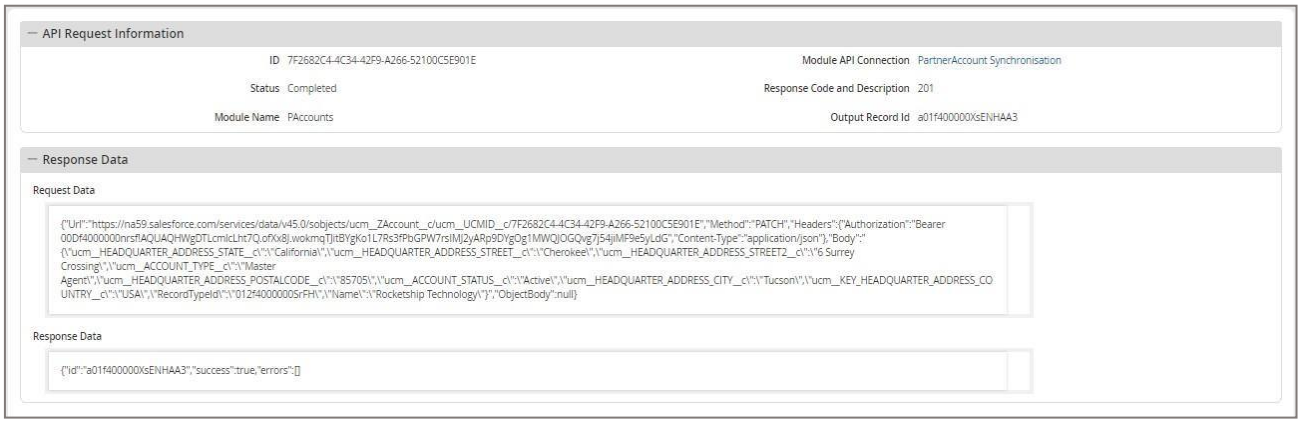


Figure 10: UPM SFDC Rapid Installer-API Request Information Detail View

WebHooks

UPM WebHooks offer an advanced, web-oriented method for UPM servers to receive notifications from other platform servers, such as Salesforce. For instance, when an event happens on a server like Salesforce.com, UPM can receive the event via a web request. Salesforce already has a built-in function to handle events called Triggers, which run on Salesforce via Apex code. However, we can receive these events at UPM for extendible operations to increase the scalability of the business process.

It's easy to connect Salesforce + WebHooks using UPM WebHooks. Absolutely no coding experience is required. WebHooks can be effectively used to trigger workflows automatically when a specified event occurs

on any of the platforms. For example, workflow rules can be set up to automatically send an email to you whenever a new lead is entered into the system.

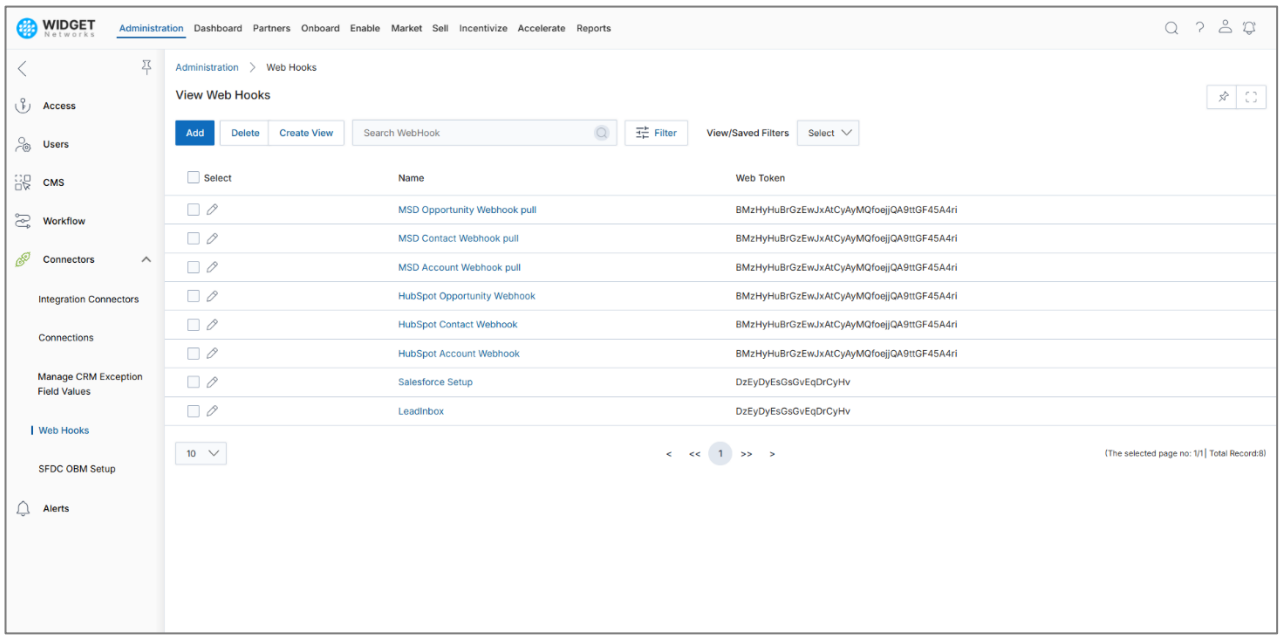


Figure 11: WebHook List View

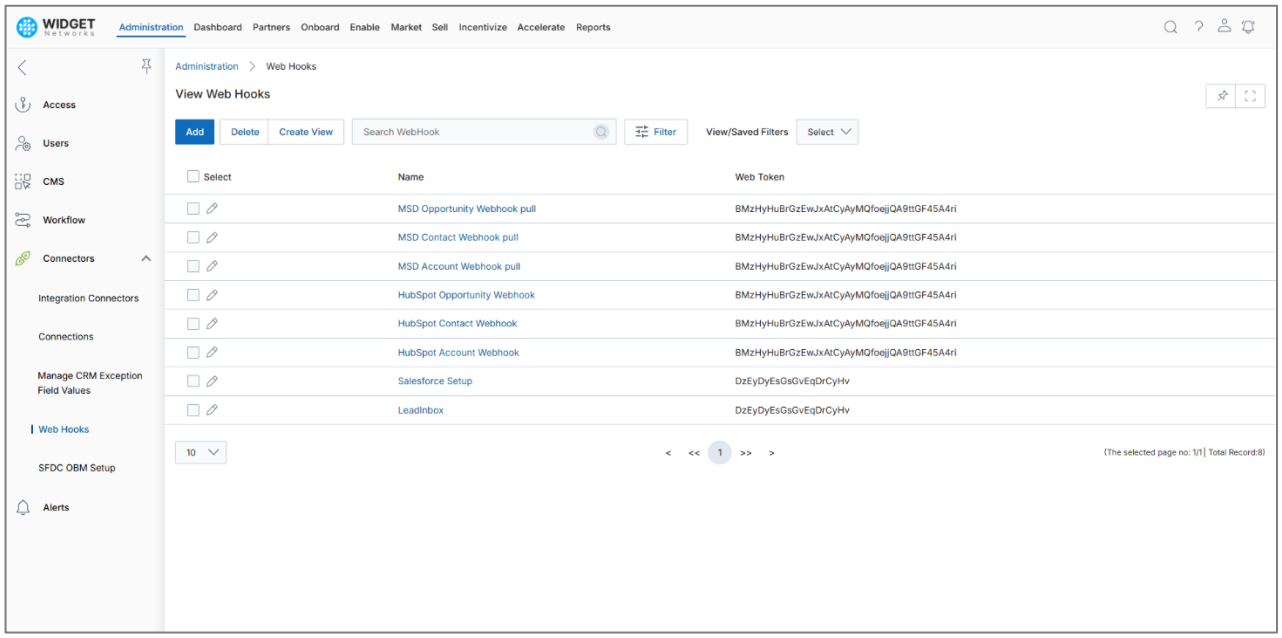


Figure 12: WebHook Detail View

The detailed view of a UPM webhook identifies the web token, the procedure, what the webhook is used for, the assigned user and client IP information. A more detailed webhook log is also provided as an extended debugger and webhook viewer. This log displays the status of the webhook and the web token, along with any message text or error messages.

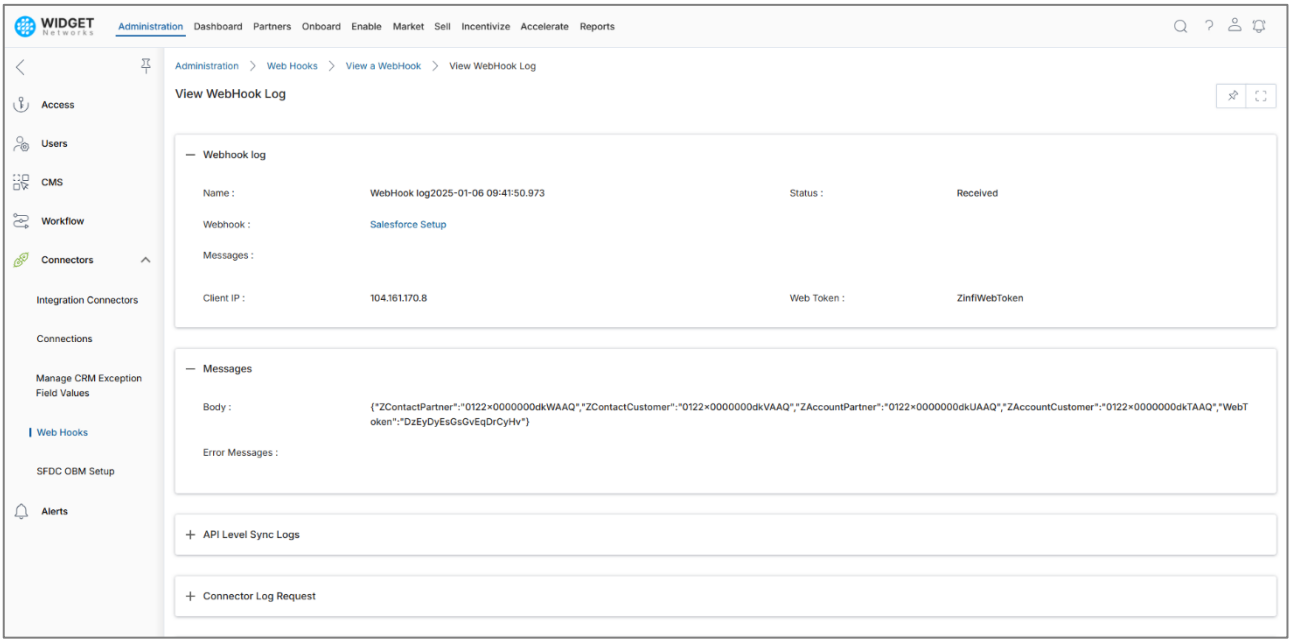


Figure 13: WebHook Log Detail View

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Processing Architecture

Connectors is a resource engine built on high-performance, scalable data storage able to ingest data in any shape or form (see Figure 15 below). Data can be easily integrated, transformed, aggregated or visualized in an easy-to-use graphical user interface.

Connectors's integrated job scheduler can automate routine data operations via Workflow so data analysts no longer have to manually extract and process the data. Openness is the key concept driving ZINFI Connectors; the platform can easily process data from almost any online, cloud or web service.

Figure 15: Connectors Possibilities

ZINFI's Connectors supports data from third-party CRMs (Salesforce, SAP, Microsoft Dynamics, etc.) and various marketing platforms (Google Analytics, Facebook, Twitter, etc.) via native data connectors with a dedicated graphical user interface. Connectors also connects to popular marketing automation platforms (Marketo, Eloqua,etc.), as well as any other web application with defined interfaces.

Connectors connectors support automated data synchronization in a defined time or period. In addition to being synchronized, data can also be incrementally stored with each iteration. Using Connectors, your organization can make any data set accessible by third-party services, enabling you to connect your own CRM to marketing automation, point-of-sales and other third-party systems. In addition, Connectors's data explorer capabilities can help your organization gain a better understanding of your data at any point and simplify various system operations.

Extending Workflow

Connectors's semantic layer extends UPM's Workflow, allowing marketers to customize their data model and business logic in real time across KPIs, calculations and classifications. Semantic layers in traditional platforms require complex technical skillsets, but Connectors puts the power in the hands of the customers and partners who know their business best.

Connectors is the driving engine of Workflow, processing scheduled actions or jobs, and acting as a control gatefor incoming and outgoing connections to other platforms.

Features

Universal Data Connectors

Data from popular services such as Google Analytics, Facebook, Twitter, Instagram, YouTube and LinkedIn is supported via native connectors with a dedicated graphical user interface. Other services can be supported via generic JSON and XML API connectors.

Automated Data Sync and Collection

Data connectors support automated data synchronization in a defined time period. In addition to synchronization, data can also be incrementally stored upon each iteration.

REST API

With Connectors, any data set can be made accessible via REST API and used by a third-party service. Connectto any CRM or platform to enjoy seamless integration.

Data Explorer

Our integrated data explorer helps you get a better understanding of your data at any point. To simplify system operation as much as possible, various operations such as API endpoint, dashboard widgets and automated data delivery definition can be performed directly within the data explorer.

Data Structures

One or multiple data sources can be orchestrated into a data structure similar to traditional SQL joins. This allows further data transformations, such as currency conversions, data concatenations or formula definitions.

Process Flow

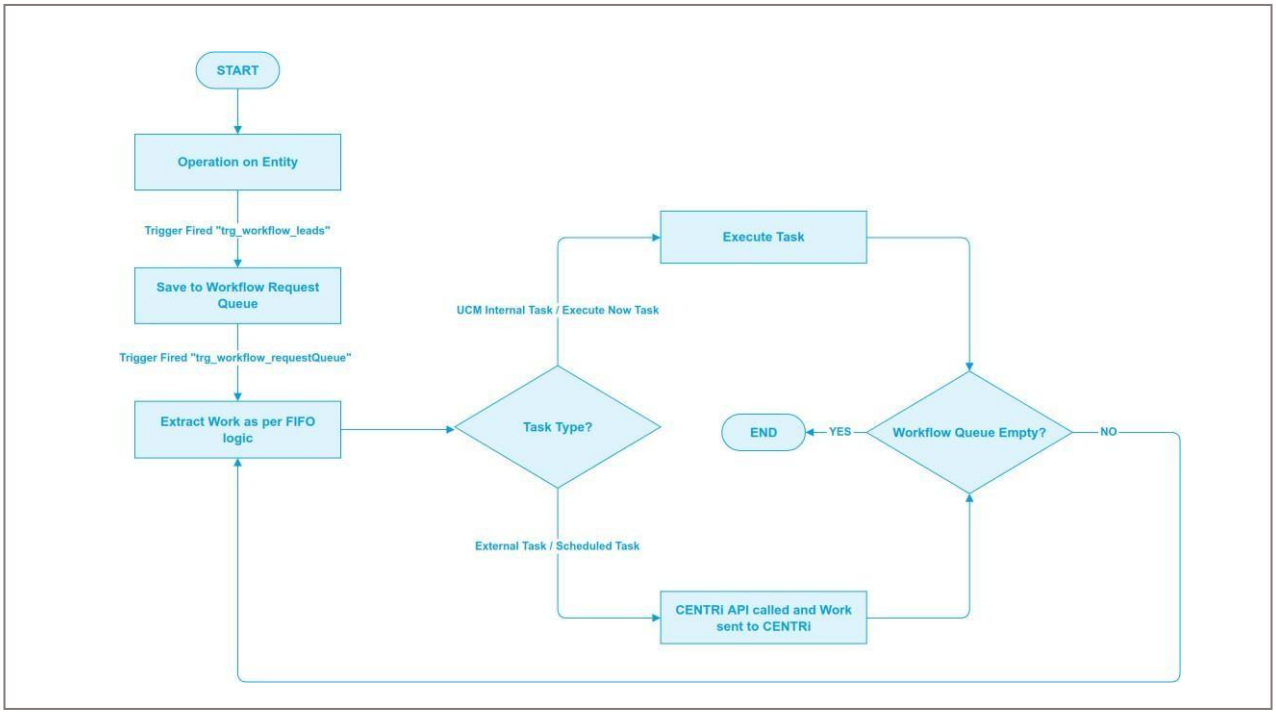


Figure 16: Connectors Process Flow Architecture

Algorithm

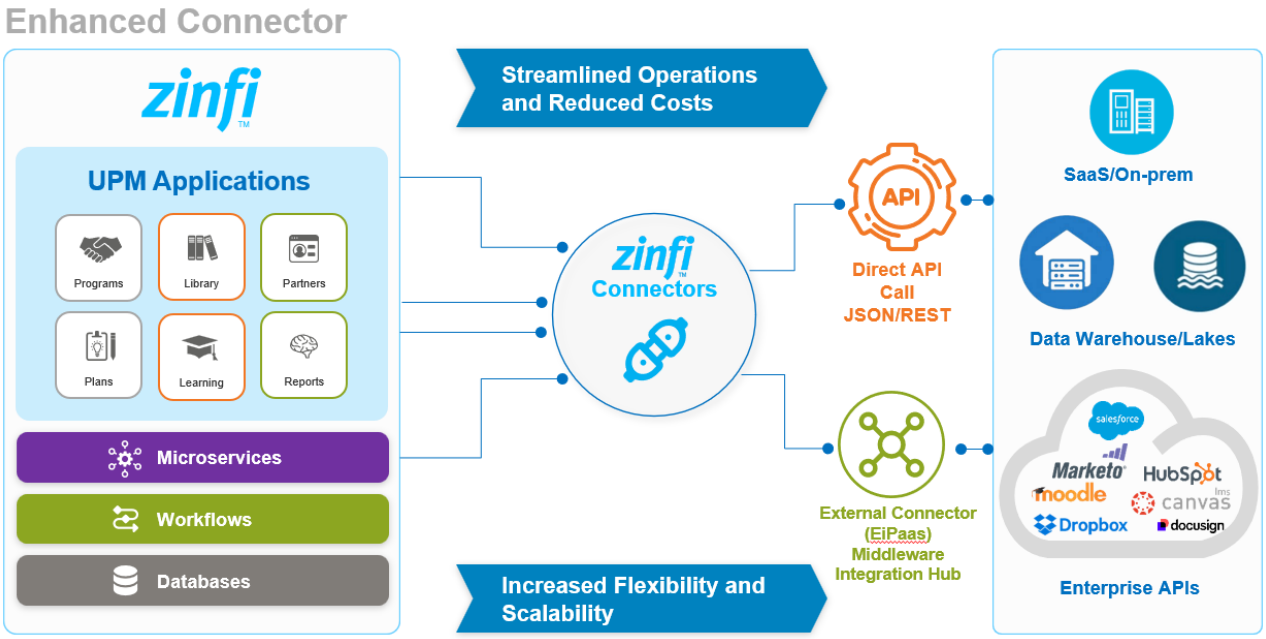
- To demonstrate the Connectors algorithm, let's take the example of a workflow customized to update the leads table. When we update or add data to the leads table, "trg_workflow_leads" is triggered. A check is done to confirm if there is a workflow defined for this specific table and if the user exists in the associated group. If there is a specified workflow for this table, then the inserted or updated rows arechecked and the workflow criteria are validated.

- If the criteria match, the records are saved to the "WorkFlowRequestQueue" table along with the record ID and workflow ID.

- When data is inserted to the "WorkFlowRequestQueue" table, "trg_workflow_requestQueue" is triggered to process each workflow. First, it finds all tasks associated with the workflow from the association table "WorkflowTask." Then, the process iterates through all tasks and checks whether the task mode is "Scheduled" or "Execute Now." If the task is "Scheduled" or the task type is "Email," it calls an API through Connectors and saves the record at Connectors endpoint. If the task is "Execute Now," the task is executed immediately.

- Conceptually, to call the API from SQL Server there is a CLR function written as "ApiPost", which posts the JSON data to API. JSON data is normally prepared in the trigger.

Future Architecture



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