



Act! Premium Web API

Deployment Best Practices for Act! Marketing Automation

- 2 | Introduction
- 3 | Why use the API?
- 4 | Act! Premium or Act! Premium for Web (APFW)
- 6 | When is Act! Connect Link needed?
- 7 | Why are server certificates necessary?
- 8 | General API best practices
- 9 | Creating App Pools and Virtual Directories with Act! Premium for Web
- 11 | Deployment Scenarios
- 13 | Troubleshooting

Introduction

What is an API?

An API (Application Programming Interface) is a set of functions designed for interoperability between two distinct pieces of software.

Web APIs operate as a means of communication via HTTP typically in standard formats (JSON or XML). The implementation is most obvious on Insight and the Opportunity Pipeline views. These pages send and receive all data through the Act! Premium Web API (referred to as 'the API' for the rest of this document).

The API is a standardized interface which can be used by other applications, integrations, plugins, third-party components, and within Act! for additional functionality not present through the SDK.

It is documented in the `act.web.api` web page (in Act! Premium for Web installs). This page explains the endpoints, structures, and examples on all publicly available features in the API as well as filters (OData) which can be applied to queries.

The API provides a standardized format to all UI components in the same way. All platforms support web browsers; by using a display mechanism and data source which can be utilized by the same set of controls, subsystems, and codebase across all platforms, the functionality can be better ensured across all systems.

The Insight, Companion (mobile app), Pipeline, and Act! Marketing Automation (AMA) views are web browser controls which load a specific website with certain parameters. These parameters come from the API.

Why use the API?

Consistency.

Act! Premium or Act! Premium for Web (APFW)

For single users or small offices with small databases and very little API traffic, Act! Premium (“the application”) would be a good choice. It incurs little operational overhead and is very simple to deploy.

For active subscribers, we provide Act! Connect Link which can provide an externally accessible endpoint for the API so AMA and mobile app can be used in conjunction with on-premise software. As the requirements for larger teams grows, database and API performance requirements will naturally increase.

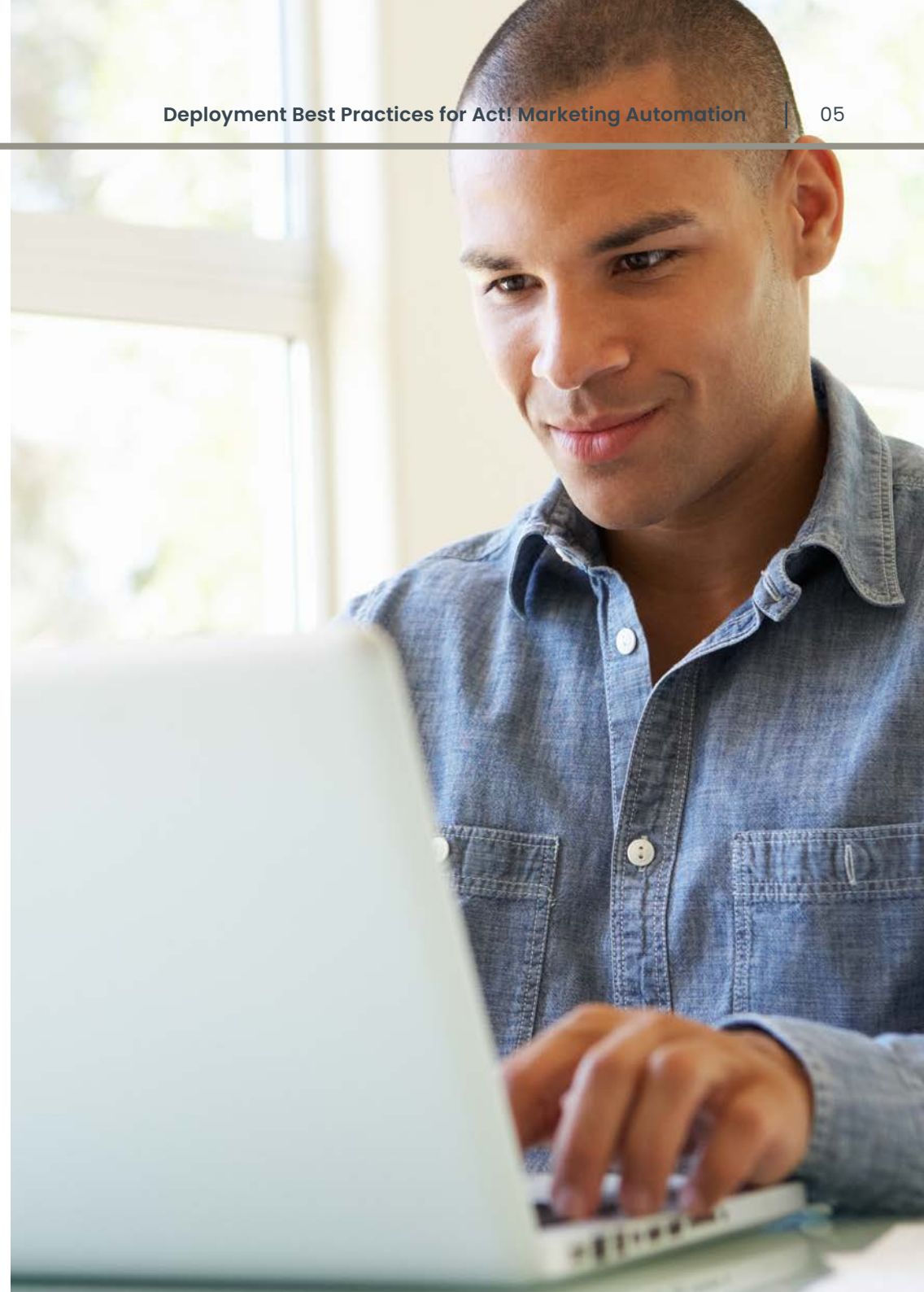
Act! Premium makes use of the Act! Web API Host service which runs on the local machines.

This service is used to provide the API endpoints for the various internal features within the application without needing to install third party components. It is important to note that this does not provide a way for AMA, the mobile app, or Contact Link to communicate to the database unless Act! Connect Link is installed. If the computer has Windows Internet Information Services (IIS) or another web hosting system installed and running on port 80, the API will not be able to function.

Act! Premium or Act! Premium for Web (APFW)

(continued)

Act! Premium for Web runs the API inside of IIS. As the technology stack for IIS can deal with larger volumes of traffic and can be set as a direct access point to the system, performance will be significantly better in this scenario. It is recommended that any externally accessible web servers are provided with a valid certificate (not self-signed) with unencrypted traffic disabled as a *general best practice*. The remainder of this document assumes that any web deployment will have an externally valid server certificate. A valid certificate is **required** for AMA, Zapier, or Companion. Anyone looking to deploy to larger teams or teams that will make extensive use of these external components should consider a deployment via APFW: self-hosted, Act! Premium hosting partner, or Act! Premium Cloud.



In smaller deployment scenarios when the use of Companion, AMA, or third party web integrations (e.g. Zapier) is desired without the need to run APFW with a valid certificate, then Act! Connect Link will be sufficient. This scenario should follow the same best practices for the API as outlined below.

Act! Connect Link is **not** recommended to run with an APFW install. The correct approach for APFW is to have a valid certificate installed on the server.

When is Act! Connect Link needed?

Why are server certificates necessary?

Server certificates provide the only means by which two computer systems can validate the identity of each other.

Within the HTTPS protocol, the client (the machine which is accessing the service) requires the server (the machine providing the service) to provide a certificate. These certificates are issued by a trusted authority (called a Certificate Authority or CA). The certificates which identify the CA are preinstalled in the system in a root certificate store with many being installed by default on Windows.

The only way computers can reliably identify each other is via cryptographic signature. These certificates provide a chain of trust between one machine and another.

In the case of Act! Premium, this should be the **‘publisher’** database. This minimizes the chance of database collisions and prevents different integrations from modifying records in two different ways. Remote databases do have their own API endpoint for Insight, KPI, and Pipeline views, but this is working directly on the database. External records should always go to or from the primary database.

It is recommended that hosting partners or large self-hosted customers running APFW (>25 users) run multiple app pools and virtual directories for any logical groups (e.g. each customer for hosting partners, divisions with different databases for self-hosted customers). Additionally, machine resources should be scaled according to load. Virtualized servers with solid-state storage are the easiest to manage and should be considered for any large-scale deployments. Using APFW with a valid server certificate will be significantly faster than using Act! Connect Link.

General API best practices

When integrating multiple systems, data integrity is vital; this is no different when using the API. In order to maintain data integrity, only one system should be used as a system-of-record.

Creating App Pools and Virtual Directories with Act! Premium for Web

All application pools should be configured with “Identity” as “NetworkService” and “Enable 32-Bit Applications” as “true”.

1

Create an APFW app pool and virtual directory as documented in [KB 14868](#).

- a. Give this app pool and virtual directory a name like Customer or Division
 - i. (e.g. “Sales” or “WeSellThingsInc”)
- b. Create a PadFiles folder and admin.xml for this virtual directory in the file folder.
 - i. Set this web.config value:
 - ii. `<add key="Act.Web.PadFileFolder" value="<DirectoryName>/PadFiles"/>`

2

Create an API app pool and virtual directory.

- a. In Windows Explorer, copy the act.web.api folder and rename it ‘API-<name>’
- b. In IIS, create a new application pool (use ‘<VirtualDirectory>-API’)
 - i. (e.g. “Sales-API” or “WeSellThingsInc-API”)

Creating App Pools and Virtual Directories with Act! Premium for Web

(continued)

- c. Add the application using the API-<name> app pool created in 2a
- d. Regenerate the bearer key for the API
 - i. Blank out the bearer key in the web.config in the new API folder
 - ii. Run “regeneratebearerkey.exe -l “<path to api web.config>”
 - iii. Only do this the **first** time you set up a customer’s app pool and virtual directory, after that, please copy from the customer web.config
- e. In the web.config file of the APFW custom directory, set the WebAPIBaseURL to the path you created in step 2a (e.g. https://<server>/API-Sales/).
- f. Specify the location of the Admin.xml for this virtual directory in the web.config of the API virtual directory
- g. Specify the VirtualDirectory value for the custom APFW directory, created in step 1a, in the web.config for the API virtual directory.

Single-user/single computer

By far the least complex deployment scenario.

1. Install Act! Premium
2. Install Act! Connect Link
3. Open AMA

Shared database multi-computer

1. Install Act! Premium
2. Install Act! Connect Link on the publisher database computer ONLY.
3. Open AMA on the publisher database.

Remote databases

1. Install Act! Premium on all endpoints
2. Install Act! Connect Link on the publisher database computer ONLY
3. Open AMA on the publisher database.
4. Create remote databases.
5. Do not modify the machine name in Network Sync

Deployment Scenarios

Act! Premium

Deployment Scenarios

Act! Premium for Web

Multi-tenant hosted environments

1. Per-customer app pools and virtual directories for APFW and act.web.api.
2. All remote databases should be on update 5
3. APCAPIURL and Upward_API_Streamer (HTTPS) should be set in the <database>.dbo.tbl_preference
4. Do not modify the machine name in Network Sync

Self-Hosted private environments (externally accessible over HTTPS)

1. In APFW, access via the externally accessible URL (https only)
2. For the Windows client, create a value for “Upward_API_Streamer” in the act.exe.config

Self-Hosted private environments (not externally accessible over HTTPS)

1. Install Act! Connect Link
2. Log into Act! and open AMA.

Act! Premium Cloud

1. Ensure all remote databases have update 5

These are the most common error pages:

1. Invalid JWT

This is caused when the AMA view is unable to get a token from the URL resolved to from the view manager. Technical information about this flow can be found below.

2. Non-provisioned view (no account page)

Cause 1: This page will be redirected to when the serial number cannot be linked to a customer account at the server URL specified. This may occur when the account is purchased by one regional office and is being used by another regional office.

Example: A branch office located in Europe with a UK installation of Act! is using the same AMA and Act! subscription serial purchased through US channels. The application config can be overridden to point to the correct server.

Cause 2: An error occurred during the provisioning of the account. Please report this to the sales team.

Troubleshooting

Error pages

Troubleshooting

JWT troubleshooting

1. Ensure all remote clients are running update 5 or later.
2. Any remote clients should not have Act! Connect Link installed.
3. Remove any 'Upward_API_Streamer' or 'Upward_API_Streamer <sync*' values in the publisher database either with SQL Management Studio or a batch file.
4. Open AMA from the Publisher database.
5. This should set the Upward_API_Streamer value to the correct one.
6. The machine name inside of 'Tools > Synchronization Panel > Manage Connection Information > Network (inside a firewall)' contains the actual machine name of the publisher database.

Important!

If a remote client is still on update 4 or earlier, they will sync incorrect values back up the server and break the AMA view for all users! Update the clients and sync them before you update the values.

Note: If you are seeing the offline page, make sure the computer can ping "google.com".

1. If Subscription
 - a. Get AMA URL
 - i. Get serial number
 - ii. Get AMA server path
 - iii. Get API URL
 1. App config for Upward_API_Streamer
 - a. Expects local database at this URL
 2. Database value for APCAPIURL
 - a. Expects publisher database at this URL
 3. Database value for Upward_API_Streamer
 - a. Expects publisher database at this URL
 4. Check for endpoint file (Act! Connect Link installed)
 - a. Expects local database at this URL
 5. Get API from API manager (used for Insight functionality)
 - a. Expects local database at this URL
 - iv. Get token from API URL
 1. Login
 2. Return token
 - v. Log in to AMA and pass query string

Troubleshooting

Logic for API endpoint resolution



What is Act!?

Purpose-built for small businesses, Act! combines proven CRM with powerful Marketing Automation, providing you with the ultimate toolset to drive business growth.

Growth made easy.

CRM & Marketing Automation built for small business success.

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