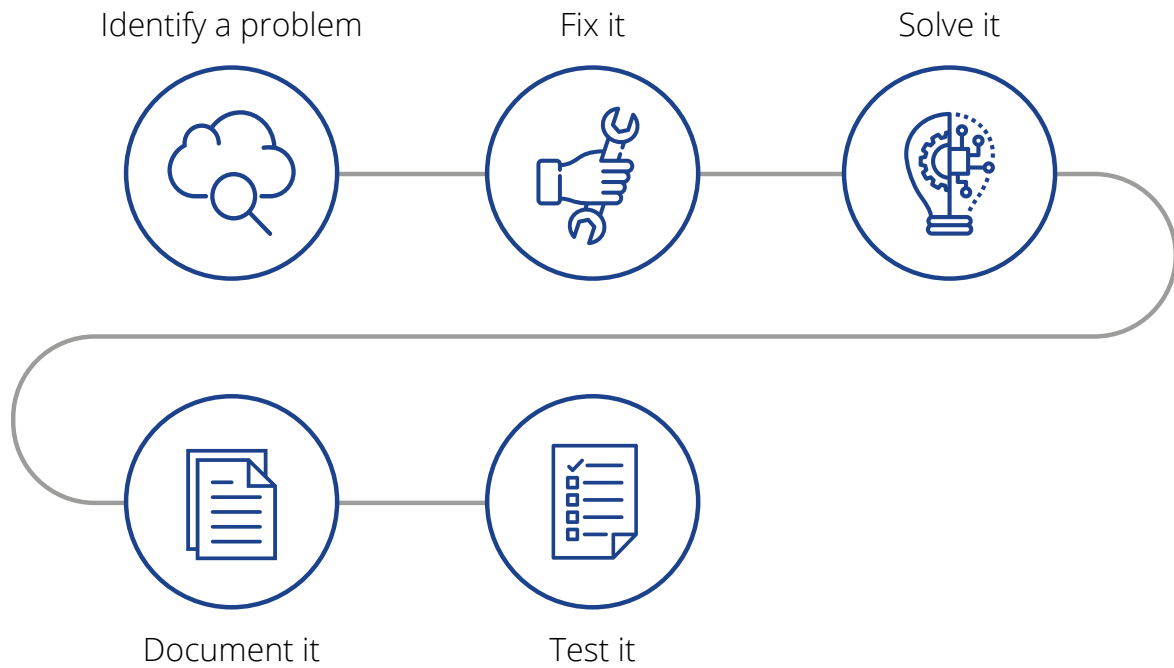# Figaf

Improve your SAP PI/PO and Cloud Integration development and testing

Automate your integration development

Solution Overview

The goal of Figaf IRT is to make it faster to do anything with the SAP Integration both **from SAP Process Integration(PI) /Process Orchestration (PO)** or from the newer **SAP Cloud Platform Integration (CPI aka HCI)**. Figaf IRT enables you to support the development process in a way that has not been possible before, and makes it much faster to:

Identify a problem

Fix it

Solve it

Document it

Test it

Figaf IRT began as a tool for testing SAP PI, but has expanded to support the full development process.

Figaf IRT can help in the following areas

Support

Development Tracking

Testing

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Solution Overview

SAP customers often face big challenges with their integration processes. Figaf IRT can help solve. With Figaf IRT, the developer is:

- Able to test the full system after an upgrade/patching to ensure nothing else is malfunctioning. New features and bug fixes are delivered over time to the **SAP PI/PO platform requiring upgrades** to get them. One must test the **full system to ensure that nothing vital is impacted** due to the way you are using some of the features. This testing can either be a challenging set of tasks that take a lot of time or sometimes just involves samples on some scenarios. A failure in just one interface can have a huge impact on the business, so you need to have a full set of test data and be able to execute it.

- Able to do **regression tests** when an interface is changed either for support purposes or because of a new requirement. In most case you will just perform a simple test to see that it work with the new requirement, without running a full regression test to ensure that it does not any side impacts. If the new developer does not know the full scenario it could lead to big problems.

- Able to **document what was changed** to solve a Change Request. Often, people would only state the overall goal and not be specific about what was changed. It is important to have trust that everything required is transported correctly.

- Able to see **what was changed for a communication channel** between different versions. IRT allows you to quickly identify the changes that previously required a lot of work to understand.

- Able to identify **which support incidents are new alerts**, and which have been seen and solved before. Without IRT, there is no easy way to organize the alerts in such a way that makes sense to process.

Figaf IRT can help solve issues faster, so your developers can focus on solving business needs.

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Architecture

IRT is a Java-based application which contains its own database and webserver. This platform is especially useful for small deployment and PoC where users want to run IRT on a laptop. IRT is only one jar file that need to be run. For enterprise-grade support, IRT supports a large number of databases and can be deployed in cluster.

IRT can connect to multiple PI systems and cloud instances.
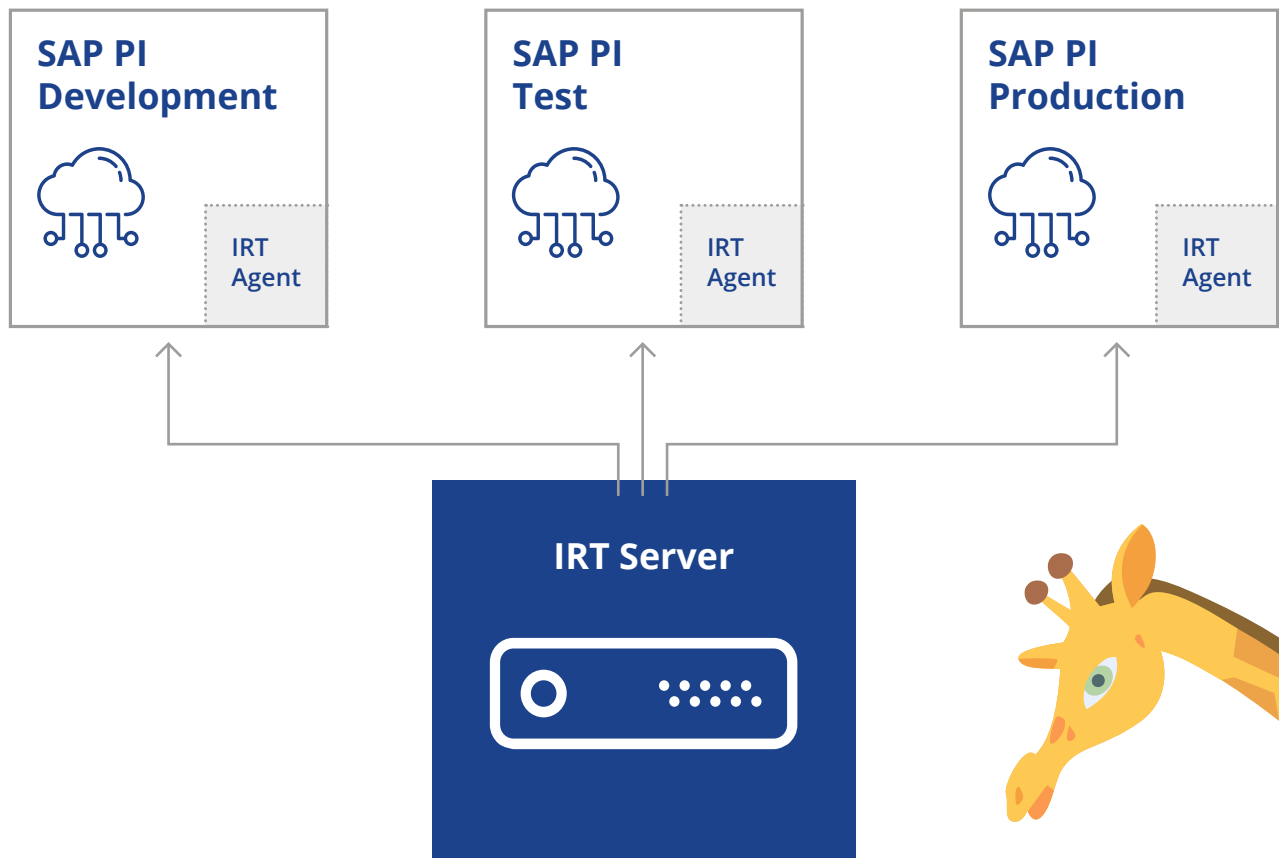
Requirements

- The PI system must be SAP PI/PO 7.31, 7.4 or 7.5

- If you want to use the non-invasive collection, you must have implemented the note 2437778 released april 2017.

- Otherwise you must install the IRT component on the PI system. The IRT component contains a SAP PI module, a JMS queue, and some webservices to make recording of messages a lot more efficient.

- For performance reasons, it would be useful if IRT was placed with a good network connection to the PI systems and not over a VPN. A good CPU and 3 GB of free memory are optimal.

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Testing

Figaf's IRT tool is set up as a way to have a standalone and independent system in which to create and manage your SAP Test cases.

The approach is "Record/Replay," which means that the system will download a set of test cases with an input and corresponding output message. IRT is programmed to expect an output message whenever an input message has been sent, and it expects the original and new output message to be identical. Record/Replay is different from normal workflow/Scripting-based testing that requires the developer to program 'send this file, then download this response."

Because there will be fields that change,like timestamps and transaction numbers, IRT makes it easy to specify that they should not be included in the comparison.

Why Testing?

Testing is an important but time-consuming part of the software lifecycle and IRT streamlines the testing process. IRT can help with testing in the following ways:

System Upgrade/ Patching

IRT runs a full set of test data faster than less complex testing normally takes. This allows you to add all the patches that you need instead of waiting for new releases.

Testing Interface Changes

It is important to ensure that a bug fix doesn't break any other part of the system, and IRT makes it easy to test for these breaks. Simply select the interface and run all the required tests. The Ticket included in the IRT application will improve some of the coordination.

Ensuring Object Transportation

IRT allows you to run the test case and ensure that all objects have been transported.

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Getting Test Data

There are a number of different ways IRT can access the data to create test cases:

Standard logging

using SAP building logging tool, no installation required.

- Download from the PI monitor logs. If you are logging the input and output message in your PI system, IRT can use a standard web service to download the messages.
- Add the standard logging module, allowing you to test what is covered by modules. For more complicated scenarios, this is the way to go.
- For both types of standard logging, it is possible to create scenarios either by looking at the previous message in history or by looking for the incoming messages process..
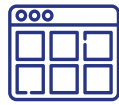
IRT modules

Install a small module on your SAP PI/PO system that allows the IRT server to fetch messages from your SAP system in the most efficient way.

SAP Cloud Platform Integration

allows you to set an Iflow into trace mode for ten minutes. IRT will then be able to look at the log for the next 10 minutes and download payloads at all stages.

Manual Upload

Create test cases by uploading files manually. Create a zip file with the messages and then a manifest file that describes the files.

Types of Testing

IRT can be used a number of different ways for testing:

Regression testing

IRT will trigger the same message into the PI system as was processed normally. You have an option to choose if you want the same modules as are on the original sender.

Baseline testing

IRT will passively monitor the transaction and only look at the received messages comparing them with the already downloaded messages. This approach works if you have integration with other testing solutions like HPE UFT or ALM.

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Comparison

Document comparison is a crucial part of the way IRT tests. The tool is designed to assume it should get the output document. IRT is able to compare different document types and display the differences in an easy-to-understand way. If there are known difference such as timestamps or message IDs, it's easy to configure IRT to ignore those elements with a click. IRT will then suggest an xpath or other pattern to ignore the element.
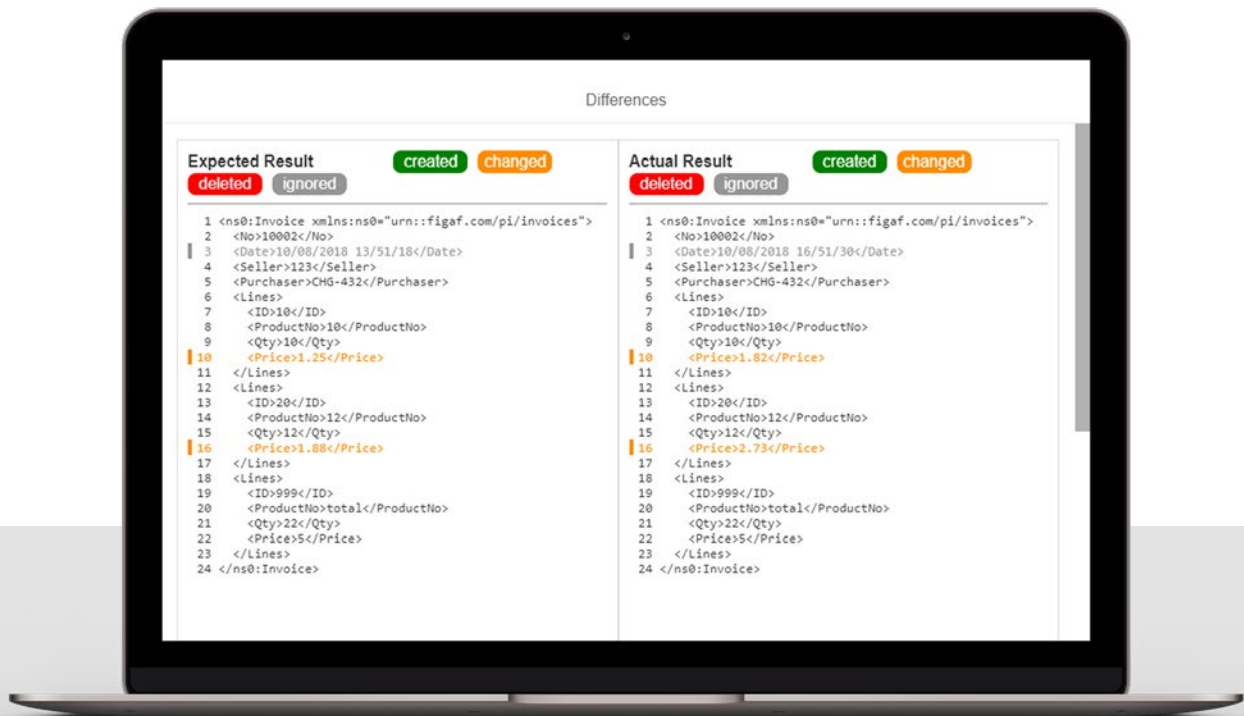
IRT supports the following comparison types:

XML   **JSON**   **Text**

EDIFACT   **X12**
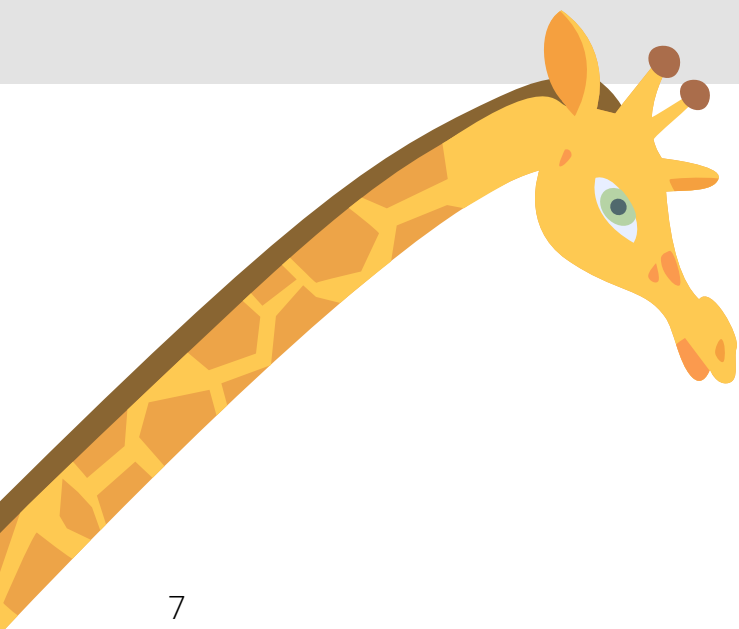
Support Tool

SAP PI/PO is will create a large number of alerts for problems that are created on the SAP PO system. Ensuring you are not disrupting the business process is crucial to solving these issues quickly.. In many organizations, all the alerts are sent to one inbox or another tool, and the developer has to sort them out.

The biggest challenge is to be able to filter out the known errors and be able to react quickly when a new error occurs. The main reason we created the Support Tool is so that we can have one place where all the problems are organized - instead of some inbox flooded with unsorted messages.

Why you need a tool for supporting

Most organizations receive lots of error messages, and it can be difficult determining which problems to v first. You need a tool that allows you to process the new alerts and remember how to deal with the older alerts. Figaf IRT Support is an easy way to categorize the alerts and document how to resolve them.

Although you will often try to document your approach to resolving issues in an interface, it can be challenging for those who have not worked on that particular issue in the past. IRT Support is a way to recognize recurring problems and document the solutions all in one convenient place.
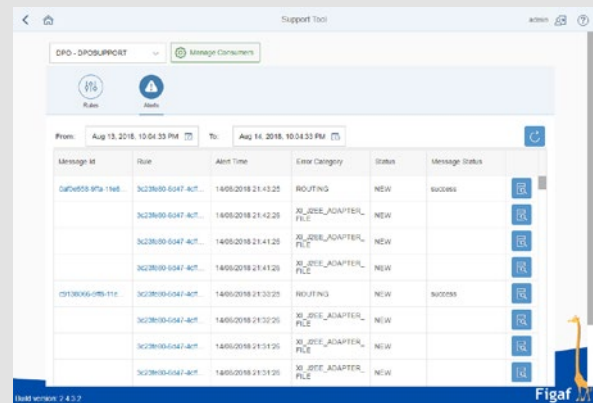
How IRT Support works

In SAP PI/PO you set up the system to send all alerts to one subscriber. The IRT system listens for alerts to this subscriber and downloads the content of the alert together with a payload of the message. With this information all in one place, it is much easier to identify the error. Each alert, corresponding payload, and metadata will get saved in a log entry.

IRT Support will then run the alert through the list of already predefined alerts figuring out how to deal with the specific alert. Once it finds a rule that corresponds to the error, it has the option to choose one of several automatic tasks:
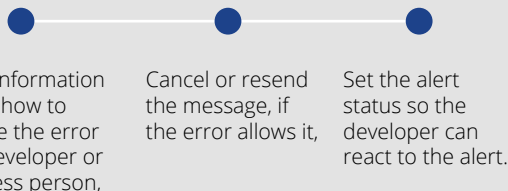
If it is some new alert type, you can easily set up a new rule to handle it. This list of rules would provide information on all the alerts you have gotten, making it much easier to support the system with future error resolution. .

The support incidents can also be linked with the Ticket mentioned in the development system, so you can track the reason for why you needed to do the development.

- Send information about how to resolve the error to a developer or business person,
- Cancel or resend the message, if the error allows it,
- Set the alert status so the developer can react to the alert.

Development process

The SAP PI/PO/CPI development process has not been optimized for a long period of time. There are many manual tasks that take a long time to document, are error prone, and make it difficult to see why something was changed.

Change Tracking Tool (CTT)

The Change Tracking Tool is a tool that downloads all SAP PI/CPI objects both form development objects like mapping but also runtime components like channels and ICO/IFlows.

This allows Figaf IRT to understand all the object and versions, so you can see differences between each version to track changes between two versions in a Communication Channel or a message mapping.

Ticket

A ticket is a place where you can keep track of what is being developed. It can be your **Service Request (SR)** or a **Request For Change**, depending on what development module you are following. You use your existing support tool like Jira, ServiceNow or Solman to create the SR in. In Figaf Ticket, you will then **create a ticket** with the same name and you can link from your existing tool to the Figaf tool.

In the ticket, you can then **link to the different objects that have been changed** from the CTT. This allows you to easily document which objects you have updated to solve one Ticket/SCR.

IRT understands the connections between your objects, so if you change a message mapping it is able to **calculate which ICOs are affected by this change**. This makes regression testing better because it can look up all the needed test cases from your test directory and run them. You can then instantly see if everything is executed as it should be.

This direct link from a change in the repository to running a test is what makes the tool so unique and gives users an idea about how they can improve the processing.

DevOps

The Developer Operations integration is one that integrates developers and operations departments. One of the concepts here is that everybody should be able to work on all codes and deploy them. With the Figaf IRT tool, you have the option since you have an easy way to test what is being changed at any given time.

We are currently working on developing a Continuous Integration (CI) that will test all affected integration each time a transport is imported. We will need some customer input on how we can best achieve it. The CI should be fairly simple to implement because we have all the required component. The missing part is more the business process involved in it.

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