



Unemployment Benefits Solution

Management Summary & Technical Overview

Version 1



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Management Summary

By law, an out-of-work individual should only receive unemployment benefits from a single state. The Unemployment Information Interstate Connection Network (UI-ICON) is a national organization that allows for this check. The business requirement for this project was to provide a connection from a State's legacy mainframe application to UI-ICON when the legacy mainframe did not support UI-ICON's communication technology.

Backstory

- Unemployment benefits are provided by the State.
- It is illegal for an applicant to receive unemployment benefits from more than one state at the same time.
- The UI-ICON, located in Florida, serves as a message switch for information about unemployment benefits applicants and the state in which the applicant is enrolled.
- Many States, upon receiving an unemployment benefits application, send pertinent information to UI-ICON to verify with other States that the individual is not already receiving unemployment benefits assistance.
- The State's front-end software that communicated with UI-ICON was out of compliance. It provided the above functionality but was running on unsupported software.
- The back-end software, running on a legacy mainframe, had no compliance issues.

Business Objective

- Ensure that unemployment benefits applicants are not already receiving unemployment benefits from other states

Functional Requirements

- Ensure that the front-end system that communicates with UI-ICON is in compliance with IT best practices
- Ensure that the new system provides better or the same response time as the existing system
- Ensure that the new system functions with the existing site's UI-ICON testing tools

Technical Requirements

- Communicate with UI-ICON using UI-ICON-defined Web Services protocol
- Communicate with Unisys MCP Server using proprietary CCF-TCP protocol
- Ensure no messages are lost in transit.
- Require no changes to the back-end legacy mainframe application
- Replace the current out-of-compliance front-end environment with a system that utilizes:
 - Windows Server® 2008 R2
 - Development via Visual Studio® 2010
 - Development language of C++
- Eliminate the dependency on the current SQL database in order to reduce complexity
- Support separate production and test virtual machine (VM) environments

Outcome

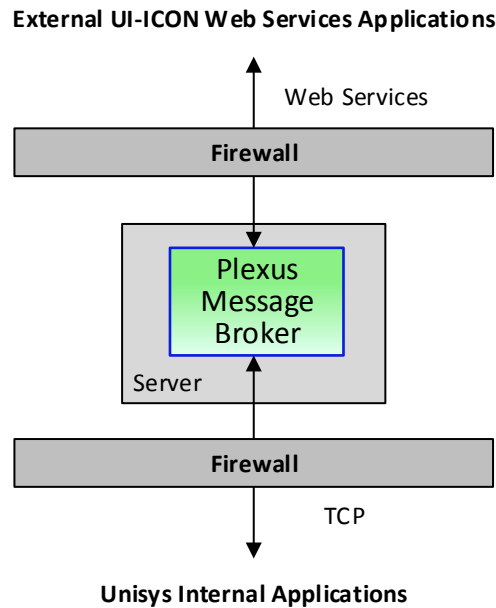
By the development of several Filters, the Plexus Message Broker was enhanced to replicate the communication with the back-end legacy mainframe such that no changes to the legacy mainframe applications were necessary. Communication to UI-ICON over a proprietary protocol was also implemented. The Plexus Broker was then configured to run both in the production and test environments.

Technical Overview

This Plexus Message Broker solution features the following technology: Microsoft® MSMQ messaging, legacy system interface, and message translation. This solution’s site and Plexus Message Broker configurations touch on these features below.

Site Configuration

As illustrated below, this site maintains a single physical server that contains a single instance of the Plexus Message Broker. The site also maintains a hot standby physical server.



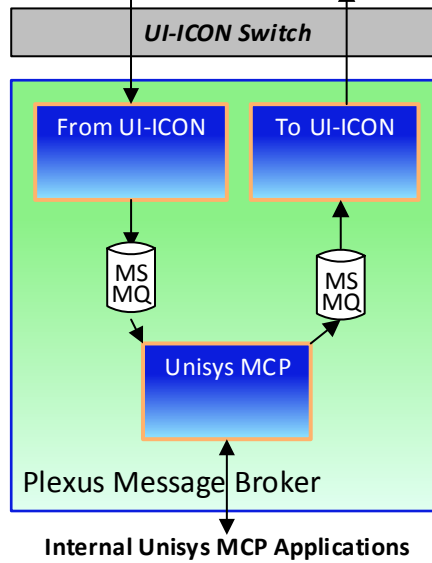
As with all Plexus Message Broker installations, adding physical servers, increasing Plexus Message Brokers instances per physical server, or transitioning to run the Plexus Message Broker in a VM environment is only a matter of installation and configuration. No other Plexus Message Broker modifications are necessary. Resources are typically added for performance reasons, local redundancy reasons, or both.

At this particular site, the response time for UI-ICON transactions is not critical. The UI-ICON service can be down for a fairly long time without serious impact to business. Hence, this very simple configuration is suitable.

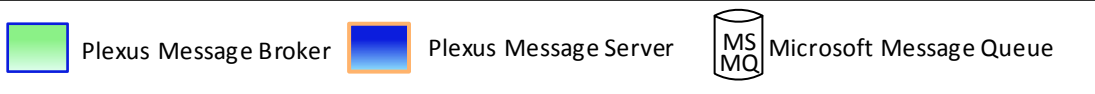
Plexus Message Broker Configuration

As illustrated below, this Plexus Message Broker uses three message servers: one from the UI-ICON, one to the UI-ICON, and one to/from the legacy system. The former two have Web Services filters and are implemented separately for a less complicated and less risky implementation. The single Unisys MCP Message Server maintains multiple TCP connections with the Unisys System and also manages both the inbound and outbound MSMQ queues.

External UI-ICON Web Services Applications



Legend

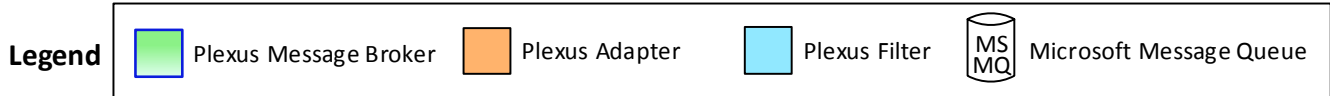
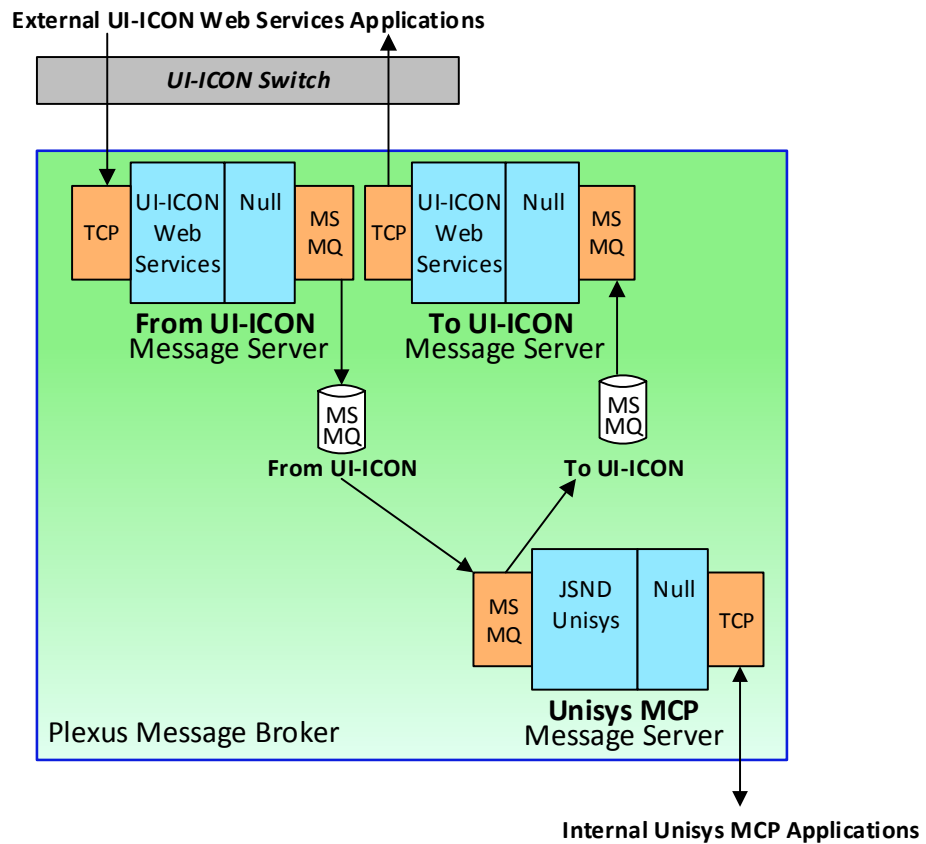


Plexus Message Server Functions

Message Server	Function
From UI-ICON	Receives Web Services call; unwraps the message; converts the character set to EBCDIC; inserts the message into ToUnisys MSMQ queue
To UI-ICON	Removes a message from the FromUnisys MSMQ queue; unwraps the message; converts the message to ASCII; wraps the message and insert it into the ToUIICON queue.
Unisys MCP	Receives a message from the FromUIICON queue; unwraps the message; sends it to the Unisys MCP Message Server via one of two persistent TCP sessions that are maintained with the Unisys MCP server Receives a response from the MCP server over one of the two TCP sessions; wraps the response in a MSMQ format; inserts message into the ToUIICON queue

Plexus Message Server Details

The following figure drills down into the configuration of the Plexus Message Broker; in particular it provides insight into the Adapters and Filters used by each Plexus Message Server in this solution.



Adapters

Adapter	Description
TCP Adapter	Provides TCP connectivity services
MSMQ Adapter	An Adapter that receives and sends messages to Microsoft® messaging queues

Filters

Filter	Description
UI-ICON Web Services	Wraps/unwraps messages in UI-ICON SOAP headers
Null	A placeholder for a Filter
JSND Unisys	Provide Unisys proprietary communication protocol services that run on top of TCP