



Misys Midas Plus Release 1.4

The use of Application Program Interfaces (APIs) to create an effective IT integration strategy

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Introduction

Faced with constantly changing business conditions, banks and other financial institutions are placing more pressure and demands on their IT infrastructures. As a result, banks and their IT vendors are seeking to create more responsive, more agile IT environments.

A key component of this approach relies on the flexibility and integration capabilities of individual technology solutions. Today, software applications must integrate effectively with other disparate IT systems typically found within a bank.

Misys Midas Plus has traditionally provided extremely strong integration capabilities through robust tools, such as Message Manager, and a large number of application program interfaces (APIs). APIs are designed to facilitate the integration of Midas Plus with other applications or information sources.

Midas Plus Release 1.4 introduces a number of new APIs. This document describes these APIs and how they might be used, so that banks can maximise the integration capabilities of Midas Plus.

Description of APIs

An API is a documented, pre-defined interface that enables specific information to be received into the Midas Plus system in a secure and controlled manner, without any need to change the Midas Plus program code. APIs are essential for linking other applications to Midas Plus efficiently and securely.

Generally, each API relates to a single input function within Midas Plus. Misys has created a wide range of APIs relating to many input functions within Midas Plus, and new APIs are being added continually to the system with each release.

In effect, inputting information electronically through an API has exactly the same effect as inputting information using a keyboard or mouse. The information is fully validated by Midas Plus, and the database is updated in a controlled and secure way.

If the electronic information contains errors, either the originating application can be informed so required corrections can be made there, or the transaction is written to a repair queue in Midas Plus where it can be corrected by a user. Either way, the use of the API makes it impossible for invalid data to be accepted by Midas Plus.

SOAP v WebSphere MQ

There are two mechanisms used for APIs in Midas Plus, and each mechanism has its own uses and benefits, as described below. Whichever mechanism is used, the end result is the same: another application can update the Midas Plus database in a secure and controlled manner as though it were using the Midas Plus menu item.

SOAP APIs (Interactive or Synchronous APIs)

SOAP is a mechanism by which two computer applications can talk to each other in a conversational manner, similar to a telephone call.

Using this method, another application can call an input function in Midas Plus with the purpose of inputting information. Midas Plus responds immediately with the results of data validation, and if the data is valid, the database is updated immediately. If the data is not valid, then Midas Plus will either respond with the relevant errors for the calling application to correct, or will write the input to a 'repair queue' where a Midas Plus user can correct the information manually.

The principal advantage of this method is that the calling application receives the answer immediately, and can therefore give a rapid response to a user (and thus potentially to the end customer). It is, therefore, suitable not only for inputting data, but also for validating data or requesting information.

By its very nature, this type of API will receive and answer individual requests, and may therefore not be suited in situations where there are a significant number of requests to be answered.

Typical uses of SOAP APIs are as follows:

1. A dealing room system is used by a bank to track positions and market prices, and to provide initial input of dealing room transactions. A deal with a counterparty input in the dealing room can be validated immediately against the limits held in Midas Plus using a SOAP API, and when the deal is confirmed, the SOAP API can update the Midas Plus database immediately. This could trigger the generation of confirmations and other messages without need for further manual intervention. This efficiency of processing is especially useful near cut-off times when deals have to be validated and processed as rapidly as possible.
2. A bank provides internet access to its customers with a specialised application. A customer wants to check the balance of an account before making a transfer. The internet application can call the SOAP API and receive the real-time balance immediately thus enabling the customer to make the correct decision.

WebSphere MQ-Enabled Messaging APIs (Asynchronous APIs)

IBM's WebSphere MQ, which has replaced IBM's MQ Series product, provides a message-based transport mechanism that guarantees that a particular message will be received, but not necessarily when it will be received. This is similar to a postal service.

Using this method, one application can send a message to another application in the certainty that the other application will receive it. In the case of Midas Plus APIs that are WebSphere MQ-enabled, message received are placed in a queue and then processed in the order in which they were received.

If a message contains an error, it can be placed on a repair queue for manual intervention, or it can be returned to the application that sent it.

This type of API is suitable for transactions where an immediate response is not required but guaranteed delivery is required, and for situations where a large number of messages need to be sent.

Typical uses of WebSphere MQ-enabled messaging APIs are as follows:

1. The dealing room system used by the bank also provides support for global limits, and can validate the deal fully. In this case bank requires a high level of straight through processing for large volumes of transactions. MQ Series would provide the most efficient and secure method, minimising any potential manual intervention.
2. A bank has a central department that maintains counterparty and customer information globally by using a specialised customer management application. Customer information is distributed to multiple back-office processing systems when it is added or changed. By using WebSphere MQ to do this, customer information can be queued until it can be processed, so the customer administration department can be sure that customer information will be delivered to each back-office system even if a back office is closed because of time zone differences or local holidays.

Uses of Different Types of APIs

The different types of APIs available in Midas Plus Release 1.4 are listed in the sections below, by type of input function.

Treasury and Capital Markets Transaction APIs

These transaction APIs are typically used by trading systems to send money market, foreign exchange, and securities transactions to Midas Plus after they have been contracted with the counterparty. These APIs enable a very high rate of straight-through processing in a trading type of environment.

API	SOAP	WebSphere MQ
Money Market Loans and Deposits	✓	✓
Money Market Deal Amendments	✓	✓
Foreign Exchange Deals	✓	✓
Negotiable Assets Purchased	✓	✓
Negotiable Assets Sold	✓	✓
Forward Rate Agreements	✓	✓
Exchange Traded Futures and Options Trades	✓	✓
Single and Cross currency Interest Rate Swaps	✓	✓
Caps, Collars and Floors	✓	✓
Internal Funding Deals	✓	✓
Internal Contracts (Arbitrage)	✓	✓
Currency OTC Contracts	✓	✓
Non-Currency OTC Contracts	✓	✓
Securities Trades	✓	✓
Securities Walk In/Walk Out Depot Movement		✓
Repo Agreements		✓
Securities Buy Back/Sell Back Agreements		✓
Securities Depot Movements	✓	✓

Lending Transaction APIs

These transaction APIs are typically used by loan-application systems to send facilities and loans to Midas Plus after they have been agreed with the customer. Again, these APIs enable a very high rate of straight-through processing in a bank's lending operations.

API	SOAP	Websphere MQ
Customer Lending Loans	✓	✓
Customer Lending Loan Amendments	✓	✓
Customer Lending Loan Rollovers	✓	✓
Customer Lending Manual Repayments	✓	✓
Customer Lending Fees	✓	✓
Customer Lending Facilities	✓	✓
Customer Lending Facility Amendments	✓	✓
Customer Lending Fee Settlements	✓	
Customer Lending Loan Repayment Schedule	✓	

Customer Information APIs

These APIs are typically used by customer administration systems to create and update customer information in Midas Plus, thus reducing the amount of manual inputs, and ensuring that this information is coordinated across different applications.

API	SOAP	WebSphere MQ
Customer Details	✓	✓
Customer Alternate Names and Addresses		✓
Customer Withholding Tax Details		✓
Securities Customer Details		✓

Payment Transactions APIs

These transaction APIs may be used in different situations. Firstly, they may be used to receive incoming transactions from payment systems, for example, SWIFT, in order to provide a high degree of straight-through processing in this potentially high-volume environment. They may also be used to receive payment requests from customers, for example, from an e-banking application.

API	SOAP	WebSphere MQ
CLS Pay-in Schedules	✓	
FT Outgoing Payments	✓	✓
FT incoming Payments	✓	✓
Request for Transfer	✓	
Customer Credit	✓	

Market Data APIs

These APIs are designed to be used to receive market data from external vendors or front-office applications, thus reducing the amount of manual input required for these functions.

API	SOAP	WebSphere MQ
Base Rates	✓	✓
Spot Exchange Rates	✓	✓
Securities Prices	✓	✓
Securities Diary	✓	
Securities Details	✓	
Security Prices	✓	✓

General Purpose APIs

These APIs are designed to be used in different situations for general interfaces to Midas Plus, primarily at an accounting level. In particular, these could be used by applications that process transactions that cannot be processed by Midas Plus (in this instance, the transaction APIs are not suitable).

API	SOAP	WebSphere MQ
Account Postings (Batch Journal Input)	✓	
Journal Entry	✓	
Account Opening	✓	✓

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