Changepoint 2020
19.00.121.000 Integration Framework Update Release Notes

Release date

June 2, 2020

Enhancements

Replace Microsoft Service Bus message broker with RabbitMQ Service for Export Publishing, Integration Framework, and Salesforce.com integrations.

Changes to the product architecture and technology matrix

Yes

Technical details

See the "Message Broker Replacement Overview" section, below.

Installing the patch manually

Note: This update has a dependency on General patch 19.00.119.000, which must be installed before installing this update.

1. Ensure that general patch 19.00.119.000 has been installed.

2. Stop the following services:

   a) Changepoint Communication Dispatcher Service

   b) Changepoint DataMapper Service

   c) Changepoint Export Publishing Service

3. Create backup copies of the following files:

   a) Adapter.xml file in the Changepoint Communication Dispatcher Service\configuration folder

   b) Transformation files in the Changepoint Data Mapper Service\Configuration folder

4. Uninstall the services using the Windows Control Panel:

   a) Changepoint Communication Dispatcher Service

   b) Changepoint DataMapper Service

   c) Changepoint Export Publishing Service

5. Run Remove-SBHost from PowerShell using Administrator right.

6. Uninstall the Microsoft Service Bus from Windows Control Panel.

7. Open SQL Management Studio with sufficient permissions, and remove the databases associated with Service Bus:

   - SbGatewayDatabase

   - SbManagementDB

   - SBMessageContainer01

   - SBMessageContainer02

   - SBMessageContainer03

8. Install RabbitMQ service and configure RabbitMQ clients by following the instructions in the "Message Broker Replacement Overview**"** section, below.

9. Install the following services from the patch package:

   a) Changepoint Communication Dispatcher Service

   b) Changepoint DataMapper Service

   c) Changepoint Export Publishing Service

10. For the Changepoint Communication Dispatcher service, copy the Adapter.xml file from the backup configuration file, and paste it to the `Changepoint Communication Dispatcher Service\configuration` folder

11. For the Changepoint DataMapper service:

    a) Delete the `history` folder under the `Archive` and the `Data` folder.

    b) Copy the transformation files from the backup configuration and paste them to the `Changepoint Data Mapper Service\Configuration` folder.

12. For the Changepoint Export Publishing service, use the `LoginSettings.exe` utility to configure the database connection for it.

13. For each service, open the configuration files, and replace the hostname value with the FQDN of the machine running the RabbitMQ service, as follows:

```
<!-- Message Broker specific app settings for messaging connections ->
<add key="MessageBroker.HostName" value="amqps://hostname"/>
```

14. Open `Enterprise\Web.config` file, and replace the hostname value with the FQDN of the machine running the RabbitMQ service, as follows, and update the key value for OutboundQueue to make it identical with the name used in Adapter.xml file, if the default name **queue.datamapper** was not used.

```
<!-- Message Broker specific app settings for messaging connections ->
<add key="MessageBroker.HostName" value="amqps://hostname"/>

<add key="OutboundQueue" value="queue.datamapper" />
```

15. Start the RabbitMQ service if it is not started.

16. Start the following services:

    a) Changepoint Communication Dispatcher Service

    b) Changepoint DataMapper Service

    c) Changepoint Export Publishing Service

17. Open SQL Management Studio and execute `1900121000.sql` against the Changepoint database.

Caveats and notes

Dependencies and overrides

The following patches must be applied prior to this patch in the specified order:

	Patch
1	19.00.119.000

The following release patches will be overwritten by this patch:

None.

New or changed files

	Website files
1	Changepoint DataMapper Service Installer
2	Communication Dispatcher Service Installer
3	Export Publishing Service Installer

Changepoint Product Extensions

Product extensions include any code that has been added, modified or customized in any way. It is strongly recommended that customers who deploy Changepoint product extensions in their Staging, Test/QA or Production Environments, review the list of files in the "**New or Changed Files**" section of this patch, to assess whether there is any impact.

Changepoint Customer Enablement should be contacted prior to applying this patch if any of the code associated with the product extension is deemed to be at risk. Failure to do so may result in the files being overwritten or deleted and the extended functionality failing.

Message Broker Replacement Overview

The purpose of this section is to highlight the configuration touch points associated with the RabbitMQ message broker. The message broker architecture consists of a message broker service (RabbitMQ) and message broker clients (Export Publishing Service, Data Mapper Service, Communication Dispatcher Service, and so on). Secure communications between the message broker server and client is achieved using transport layer security (TLS).

RabbitMQ Assets

TLS Considerations

RabbitMQ communications are secured through TLS1.1 or TLS1.2. To achieve secure communications through RabbitMQ, certificates must be used for both server and client. A set of self-signed certificates has been created to facilitate secure communications.

You can use these certificates as is or replace them with your own custom certificates. As an added benefit, the client certificate is also used for client authentication, which eliminates the need for connections using username/password pairs.

Certificates are in the `\RabbitMQ` folder.

- ca_certificate.pem – Certificate Authority (CA) bundle
- server_certificate.pem – Server certificate (CN=MessageBrokerServer)
- server_key.pem – Server private key
- client_key.p12 - Client certificate (CN=MessageBrokerClient)

The ca_certificate.pem, server_certificate.pem, and server_key.pem certificates must be installed on the machine designated to run the RabbitMQ service.

The client_key.p12 certificate must be installed on each machine that runs the integration services (Export Publishing Service, Communication Dispatcher Service, DataMapper Service) and the Changepoint website (for the Resend Export functionality to work).

RabbitMQ Changepoint Configuration

A default RabbitMQ configuration file that enables TLS support can be found in the patch under /RabbitMQ.

rabbitmq.conf

```
listeners.ssl.default               = 5671

ssl_options.cacertfile              = C:\\RabbitMQ\\ca_certificate.pem

ssl_options.certfile                = C:\\RabbitMQ\\server_certificate.pem

ssl_options.keyfile                 = C:\\RabbitMQ\\server_key.pem

ssl_options.verify                  = verify_peer

ssl_options.fail_if_no_peer_cert    = true

ssl_options.versions.1              = tlsv1.2

ssl_options.versions.2              = tlsv1.1

auth_mechanisms.1                   = PLAIN

auth_mechanisms.2                   = AMQPLAIN

auth_mechanisms.3                   = EXTERNAL
```

The rabbitmq.conf file supplements the default RabbitMQ configuration by enabling TLS support and certificate authentication support.

This configuration assumes that the ca_certificate.pem, server_certificate.pem and server_key.pem certificates are copied to `C:\RabbitMQ`. This folder name and location is arbitrary. These files can be placed anywhere on the local disk provided that the configuration is updated to reflect this. Please note the double slash \\ within the path argument because it is required.

Installing RabbitMQ for Changepoint

See the "Installing the RabbitMQ Service" section in the Changepoint 2020 Integration Framework Reference Guide".