

IBM Cúram Social Program Management  
Version 7.0.1

*Cúram Evidence Broker Guide*



**Note**

Before using this information and the product it supports, read the information in “Notices” on page 23

**Revised: June 2014**

This edition applies to IBM Cúram Social Program Management v6.0.5.5 and to all subsequent releases unless otherwise indicated in new editions.

Licensed Materials - Property of IBM.

© **Copyright IBM Corporation 2012, 2017.**

US Government Users Restricted Rights – Use, duplication or disclosure restricted by GSA ADP Schedule Contract with IBM Corp.

© Cúram Software Limited. 2011. All rights reserved.

---

# Contents

<b>Figures</b> . . . . .	<b>v</b>
--------------------------	----------

<b>Tables</b> . . . . .	<b>vii</b>
-------------------------	------------

<b>Cúram Evidence Broker overview.</b> . . . .	<b>1</b>
--	----------

Evidence Sharing and the Evidence Broker . . . . .	1
What Is Evidence Sharing? . . . . .	1
What Is the Evidence Broker?. . . . .	1
Identical Versus Non-Identical Evidence . . . . .	2
How Does the Evidence Broker Work?. . . . .	2
Broadcasting Evidence from Source to Target . . . . .	3
Comparing Evidence . . . . .	4
Evidence Broker Configuration . . . . .	5
Manually Resolving Incoming Evidence . . . . .	5
Support for Customizing Default Behavior . . . . .	6
Configuring the Evidence Broker . . . . .	7
Enabling Evidence Broker Functions . . . . .	7
Setting Up Evidence Sharing . . . . .	7
Configuring Evidence Sharing Between Case Types. . . . .	7
Selecting Source and Target . . . . .	8
Specifying Amount of Information to be Shared . . . . .	8
Automatically Accepting Shared Evidence . . . . .	8
Automatically Activating Shared Evidence . . . . .	9
Sharing Verification Items . . . . .	9
Configuring Evidence Sharing to a Person or Prospect Person Record . . . . .	10

Configuring Evidence Sharing for Non-Identical Evidence Types . . . . .	10
Using the Evidence Broker . . . . .	11
Using the In Edit Workspace to Manage Evidence . . . . .	11
Processing Shared Evidence . . . . .	11
Notifying Users of Evidence Available for Sharing. . . . .	12
Comparing Source Evidence to Target Evidence . . . . .	12
Accepting or Rejecting Identical Evidence . . . . .	14
Evidence Configured for Automatic Acceptance . . . . .	15
Dismissing Non-Identical Evidence . . . . .	15
Multiple evidence sharing for auto-acceptance . . . . .	16
Multiple evidence sharing for auto-activation . . . . .	16
Viewing Evidence Change History. . . . .	17
Evidence Sharing Business Scenarios . . . . .	18
Manual Acceptance of Identical Evidence . . . . .	19
Automatic Acceptance of Identical Evidence . . . . .	19
Automatic Activation of Identical Evidence. . . . .	19
Non-Identical Evidence Sharing . . . . .	19
Mapping Non-Identical SSN Evidence to Identification Evidence . . . . .	20

<b>Notices</b> . . . . .	<b>23</b>
--------------------------	-----------

Privacy Policy considerations . . . . .	25
Trademarks . . . . .	25



---

## Figures



---

## Tables

1.	Possible Evidence Sharing Scenarios based on Evidence Statuses . . . . .	13
2.	Additional Validations Applied when Accepting Multiple Incoming Evidence Records . . . . .	15
3.	Summary of Evidence Changes . . . . .	18
4.	Non-Identical Mapping of Identifications Evidence to SSN Details Evidence . . . . .	20
5.	Non-Identical Code Table Mapping of SSN Evidence to SSN Details Evidence . . . . .	20





---

## Cúram Evidence Broker overview

An introduction to evidence sharing and the Cúram Evidence Broker and an overview of using the Cúram Evidence Broker to share evidence.

---

### Evidence Sharing and the Evidence Broker

The following links provide an introduction to the concepts of evidence sharing and an overview of the functions that are handled by the Cúram Evidence Broker.

#### What Is Evidence Sharing?

In principle, evidence sharing is the ability for agencies to share evidence about their clients with other agencies. Use the following information to understand what evidence sharing is and how it is used.

Technology revolutionized the way information is accessed and shared. Most businesses changed the way that they operate to benefit from information sharing and consumers now expect business to operate in a more efficient fashion now that information is readily available. For example, when consumers repurchase, they expect their existing information to be available for reuse; when mortgage lenders investigate clients, they can access a credit history across other financial institutions.

Historically, agencies tend to deliver single programs and thus operate in isolation of other agencies that deliver different programs. Clients must provide the same evidence about themselves and their family members multiple times. Any evidence changes, such as a change in address, would need to be communicated by the client to the various agencies that work with the client. The principle of evidence sharing is widely accepted by agencies. Agencies understand that clients do not want to be required to complete the same information repeatedly for different programs and that all associated agencies need to be informed when client information changes.

Most agencies recognize the complexities involved in implementing any level of evidence sharing. Some agencies exist that want to collect information once and make sure that it is reflected across all programs and agencies automatically. Other agencies are not ready to accept sharing at that level. These agencies might want to be made aware of changes to evidence on other programs and agencies, but still be able to decide whether to take on the new evidence. Another factor is also the complexity of finding common ground in the evidence captured across agencies and programs. Though agencies likely are to capture similar information, they might not capture that information in identical formats. Any solution that supports evidence sharing must account for the different needs and concerns of agencies.

#### What Is the Evidence Broker?

The Cúram Evidence Broker provides a flexible approach to evidence sharing. Agencies can configure how they share evidence with other agencies in one way, and configure how they receive broadcasted evidence from other agencies in a different way. Agencies can define the rules for sharing case evidence per evidence type and per case type.

For systems that are configured to use person or prospect person evidence, the evidence broker also can be configured to share this evidence in addition to case evidence. The main features of the Cúram Evidence Broker are as follows:

- Evidence can be shared between cases, or for systems that are configured to use person/prospect person evidence, evidence can also be shared between a case and a person/prospect person record.
- The evidence broker recognizes the difference between sharing identical and non-identical evidence. For identical evidence, the same evidence type is shared between a source and target. For non-identical evidence, the source evidence type is different from the target evidence type.
- Evidence sharing is fully configurable with separate configuration processes for identical and non-identical evidence.
- When configured for sharing, identical evidence is broadcast to the target, where it can be automatically or manually accepted and activated. Identical evidence can also be rejected.
- Evidence from different sources can be compared to existing evidence so that a user can make an informed decision whether to accept it.
- The evidence broker recognizes that evidence can be shared at various stages in its lifecycle (that is, new, updated, and removed evidence). It also can be merged with evidence at various stages in its lifecycle. Therefore, the evidence broker provides the necessary business validations to cater to this situation and to preserve the integrity of the evidence workflow on both the source and target.
- The evidence broker allows the user to process incoming evidence one by one. For instance, if the user needs to compare against existing evidence on a case, but it also allows a user to process incoming evidence in bulk mode, either accepting or rejecting all incoming evidence.

## Identical Versus Non-Identical Evidence

In terms of brokering, evidence can be described as either identical or non-identical. Identical evidence refers to two evidence types that share the same evidence type name, meaning that they maintain all of the same evidence attributes. Non-identical refers to two evidence types that have different evidence type names and where not all evidence attributes are the same, if any. Non-identical evidence can be mapped for sharing so that the system recognizes two non-identical evidence types as the same and treats them as identical when brokered.

## How Does the Evidence Broker Work?

The evidence broker's main function is to mediate the sharing of evidence. It acts as both a receiver and a broadcaster of evidence. For example, source evidence on a source case is configured to share with target evidence on a target case.

After the source evidence is activated, it is broadcast to the target case. One of the configuration options in the Evidence Broker is to specify whether evidence is accepted automatically onto the target case or manually worked on by a user. Broadcast evidence that is configured for manual follow-up is available on the target case as incoming evidence, which the user must act on. A user can compare the incoming evidence to existing evidence on the target case and make informed decisions on whether to accept or reject the incoming evidence.

Alternatively, the Evidence Broker can be configured automatically to accept broadcast evidence, which removes the need for the caseworker to make these

decisions. If configured for automatic acceptance of broadcast evidence, the Evidence Broker also can be configured automatically to activate this broadcast evidence.

**Note:** For systems that are configured to use person or prospect person evidence, and where the person or prospect person record is specified as the target, some configuration settings and functions do not apply. For further information, see “Configuring Evidence Sharing to a Person or Prospect Person Record” on page 10 and also the *Cúram Evidence Guide*.

## **Broadcasting Evidence from Source to Target**

The evidence broker is configured to broadcast new, updated, and removed evidence from the source to the target. For example, income evidence from one product delivery case type can be shared with income evidence in another product delivery case type.

Evidence sharing is uni-directional and per evidence type. This process means that different case types or persons or prospect persons can be configured to receive and share each evidence type in different ways. For example, if required, one case type might be able to receive shared evidence, but not be able to share its own evidence.

Two categories of evidence sharing exist, identical evidence sharing and non-identical evidence sharing, each of which is configured separately. Evidence is identical when the source and target have the same categories of information and are effectively the same evidence. An example of identical evidence is pregnancy evidence; the same information is likely to be recorded for pregnant women across different case types. For non-identical evidence, the source and target evidence are two different evidence types with some common categories of information. Income evidence types are good examples of non-identical evidence, such as trust income. While two case types share the name of the trustee and the trust amount, more aspects of trust income maintained for a specific case type might exist, but not for other case types. When the evidence broker broadcasts evidence available for sharing, it separates identical evidence from non-identical evidence. Identical evidence can be fully shared whereas non-identical evidence cannot.

Each broadcast evidence record has an associated event that reflects the most recent action that is performed on the source evidence that results in the evidence to be broadcast. The evidence broker reflects the event so that users can see the sequence of evidence updates applied to the same piece of evidence. By examining the sequence of events on the broadcasted evidence, users can decide the order in which to process it. For example, a new evidence record that later was removed on the source case might not be relevant to the target case. Therefore, the user can decide not to accept the broadcast new evidence record since it was removed.

Three main business functions exist that might trigger the evidence broker to broadcast evidence, each one is described in the following list.

- Any time a new person is added to a target, the evidence broker first checks to see whether that person is a member on any source cases or has a person or prospect person record. The evidence broker then checks for active evidence on the source case or person or prospect person record that concerns the new person and that is set up to be shared with the target. This evidence then is broadcast to the target.
- Any time evidence changes are made to the source and the evidence changes are for the same person who exists on both the source and target, the evidence broker broadcasts those changes to the target.

- Any time a new target is created, the evidence broker searches for potential evidence to be shared. If found, the evidence broker broadcast it. This process is the default behavior but an application programming interface (API) is provided which an agency can use to alter this behavior.

In addition to the business functions that trigger the evidence broker to broadcast evidence, the following business rules exist to ensure that evidence that is being broadcast be valid on the target:

- If two members are involved in a piece of evidence on the source, the evidence is broadcast to the target only if both individuals are also members on the target. For example, Household Relationship evidence type is defined as being two case members and if that evidence is configured for sharing between two cases, a relationship is only broadcast to a target case if both individuals are case members on the target case.
- If the evidence that concerns a person also involves other participants who are participants on the source but they do not exist on the target, then the evidence is broadcast to the target and the related participant is added to the target with the appropriate role. For example, Student evidence that is recorded for a case member where the related participant is a school is broadcast to a target case if the individual for whom the Student evidence concerns is a case member on the target case. After this evidence is accepted onto the target case, the school is added to the target case with a case participant role of 'School'.

When these rules are applied, if non-identical evidence mapping is configured for the evidence between the source and target, it is the definition of the evidence on the target case that determines which of these rules are used.

For example, Person Relationship evidence is between two people. The additional person is considered a 'related person' and not a case member. If this evidence is shared to Household Relationship evidence, by using non-identical evidence mapping, which has evidence definition where the relationship must be between two case members, the evidence is shared only if both case members exist on the target case.

Likewise, if sharing the relationship from the case (where the relationship must be between two case members), back to the Person record (where the additional person is considered a 'related person' and not a case member), by using non-identical evidence mapping, the relationship can be shared as the target does not require the additional person to exist as a case member.

## Comparing Evidence

A user is informed of new incoming evidence by an informational on the evidence dashboard and also by a new task in their inbox. When notified, the user opens the incoming evidence list page that separates identical evidence from non-identical evidence. The user must work through this list to determine the appropriate action, review all the incoming evidence, and compare it to existing evidence on the case as necessary.

The comparison process works slightly differently depending on whether the evidence is identical or non-identical. When the user selects to compare identical evidence, the evidence broker displays a list of existing evidence records of the same type for the same client. When the user selects to compare non-identical evidence, the evidence broker displays a list of evidence records for a particular client that is of a different type but are likely to be impacted by the selected incoming evidence. The user then can select which of the evidence records they

want to compare the incoming evidence to. Up to four existing evidence records can be selected for comparison at any one time.

For identical evidence, like-for-like evidence is displayed in the same row so that the user is better able to decide whether to accept the incoming evidence.

For non-identical evidence records, evidence records of different types are displayed on the screen. For example, income evidence from a source case would include employment details as would employment evidence for the target case. Both records are displayed on the comparison in order for the user to determine how the source evidence affects the target evidence for the client.

## **Evidence Broker Configuration**

For identical evidence, is a configuration option exists to accept automatically shared evidence. When this configuration option is enabled, the target case automatically receives the shared evidence. New and updated evidence records appear in the **in edit** workspace of the case. A pending removal is set on all shared evidence removals unless the target evidence is **in edit**, in which case the **in edit** evidence is discarded. When this configuration is disabled, users need to resolve manually the incoming evidence.

When the Evidence Broker is configured to accept evidence automatically, it also can be configured to activate automatically this evidence on the target case. New and updated evidence records appear in the active workspace of the case. When this configuration is disabled, users need to activate manually the incoming evidence.

By default, any verification items that are associated with a piece of evidence are not shared to the target. This process means that any shared evidence that requires verification needs to be verified on the target and the appropriate verification items provided, even if the evidence already was verified and verification items were provided on the source. A configuration option is available for both identical and non-identical evidence. This option allows verification items that are associated with a piece of shared evidence to be copied to the target along with the evidence that is being shared. This option saves the user from having to verify evidence again if it already is verified.

For more information on Evidence Configuration, see “Configuring the Evidence Broker” on page 7.

## **Manually Resolving Incoming Evidence**

When accepting evidence automatically is not in use, either not configured for identical evidence or not applicable for non-identical evidence, then the user must review the incoming evidence list and decide how to act on the evidence. Identical evidence can be accepted or rejected, either one at a time or in bulk mode. Non-identical evidence must be captured manually on the target case based on the incoming details. Thereafter, the user can delete the non-identical evidence from the incoming evidence list.

For more information, see “Dismissing Non-Identical Evidence” on page 15.

Rejecting evidence is a straightforward process. After the evidence is rejected, the broadcast evidence is removed from the incoming evidence list. Accepting broadcast evidence requires an understanding of evidence statuses and the logical

order in which evidence updates need to be processed. A set of rules stop the caseworker from accepting evidence outside of this logical order. The following list summarizes the main logic to adhere to:

- When a target case has a pending update, the Evidence Broker checks to see whether the new update is related to the pending update and has the same effective date. If so, the incoming update cannot be accepted.
- When the target case has a pending removal, the Evidence Broker checks to see whether the new update is related to the pending removal and has the same effective date. If so, the incoming update cannot be accepted.
- An evidence removal cannot be accepted unless an active evidence record or in edit evidence record with the same effective date exists on the target case.
- An evidence removal cannot be accepted when there are active evidence records dependent on the active parent evidence record.

For more information on the Evidence Broker logic, see “Comparing Source Evidence to Target Evidence” on page 12 and “Accepting or Rejecting Identical Evidence” on page 14.

## **Support for Customizing Default Behavior**

Application programming interfaces (APIs) and hook points are provided, which an agency can use to alter the default behavior of the evidence broker. Use the information that is detailed in the Support for Customizing Default Behavior section to learn how to create and use APIs and hook points to use in evidence sharing.

### **Create Case API to Prevent Triggering of Evidence Broker:**

This application programming interface (API) can be used by an agency if they do not want to start the evidence broker at the time of case creation. This feature means that evidence can be configured for sharing at all other points in the case lifecycle but by calling this API at case creation, the sharing of evidence is prevented at case creation only.

For example, this process can be useful where an agency uses application cases to capture application information before the agency creates an ongoing case to manage the delivery aspects. Using this API allows the agency to exclude the sharing of evidence at the time of the ongoing case creation. This process is based on the assumption that the user building up the application case constructed the initial evidence set they desire for the ongoing cases on the application and taking evidence from elsewhere might confuse matters.

### **Hook Point Before Evidence Sharing:**

A hook is provided that allows an agency to develop their own customized logic so that they can control what evidence ends to be shared between a source and target regardless of what was configured. This feature is useful where configuration is loosely defined.

**Note:** This hook can be triggered only when evidence sharing is initiated (that is, something exists to share).

For example, where an event triggers the creation of a new case and the API to prevent the triggering of the evidence broker is being used, sharing is prevented at case creation (see “Create Case API to Prevent Triggering of Evidence Broker”). Then, when the evidence is activated, sharing then is triggered. If an agency is

using this hook point, they can control the list of evidence that is being shared to the target. For example, they might specify a larger list of evidence to be shared than what was configured.

---

## Configuring the Evidence Broker

A description of the administration components that you must configure to support evidence sharing. This includes the setting up of evidence sharing for case types, persons or prospect persons, and evidence types, and configuring the relationship between source and target evidence.

As part of setting up evidence sharing, each evidence type can be enabled to share its evidence. Once evidence sharing is enabled at the case evidence or person or prospect person evidence level, the relationship between source and target evidence and case types must also be configured.

### Enabling Evidence Broker Functions

These functions allow evidence sharing to take place between appropriately configured case types. For systems that are configured to use person or prospect person evidence, it also allows evidence sharing to take place between a case and a person or prospect person record. The person or prospect person record can be either the source or target.

To use evidence sharing, the Evidence Broker functions first must be enabled in the administration component. To enable Evidence Broker functions, the property `curam.miscapp.evidenceBrokerEnabled` in **Application > Miscellaneous Settings** needs to be set to *YES* in the Administration component.

### Setting Up Evidence Sharing

Setting up evidence sharing is simple, and requires the user only to enable or disable each evidence type for sharing on each case type or person or prospect person participant type. This process means that agencies can choose only those evidence types that need to be shared. For example, the income support integrated case type can have several evidence types and only a few of these evidence types might be enabled for sharing.

The evidence broker broadcasts evidence changes only for evidence types that are enabled for sharing. If necessary, this configuration option also can be disabled.

**Note:** If this option is disabled, evidence already broadcast still applies. However, no subsequent broadcasts of this evidence type occur.

### Configuring Evidence Sharing Between Case Types

Configuration options are available for evidence sharing between case types. Use this information to learn the details of how evidence is shared between case types.

**Note:** For systems configured to use person or prospect person evidence, the Evidence Broker configuration information that is contained within the flowing links also apply where a person/prospect person record is specified as the source and a case as the target.

However, where a person/prospect person record is specified as the target, some Evidence Broker configuration settings do not apply. For further information on the

differences when a user configures sharing to a person/prospect person record, see “Configuring Evidence Sharing to a Person or Prospect Person Record” on page 10.

## Selecting Source and Target

There are two processes for configuring evidence sharing between case types: one for identical evidence and one for non-identical evidence. For both processes, it is necessary to select a source and target. The evidence broker will broadcast shared evidence from the source to the target. The two processes differ in how the source and target evidence types are configured.

For identical evidence, it is only necessary to select the evidence types that will be shared between the source and target. This is because the evidence types are identical. For non-identical evidence, it is necessary to select both the source evidence type and the target evidence type because the evidence types are different and the source evidence type may affect the target evidence type.

Evidence broker allows for the sharing definition to be tightly or loosely defined. Where tightly defined, the configuration specifies the exact case on both source and target. Where loosely defined, the wildcard (\*) feature can be used. This supports sharing specifications such as; share the specified evidence type with any integrated case containing this evidence type, share the specified evidence type with any application case containing this evidence type. Therefore this is a more open specification as the exact case type does not need to be specified.

## Specifying Amount of Information to be Shared

The Evidence Broker includes a configuration option to limit the amount of information that can be shared per evidence type. This configuration ensures that any out-of-date or redundant information is not shared.

The configuration options include:

- Share the current update only. If selected, only the current active record is shared.
- Share a specified number of evidence updates. If selected, the specified number of active records that include the current updates are shared. For example, if five was specified here, the last five active records are shared. If only two records are specified, the system only shares two.
- Share updates from a specific period (months, weeks, or years). If selected, any active records from the specified period are shared. For example, if the user selected 10 years, any active records, including the current active record are shared.

The default behavior is to share all active records of that evidence type. Where the limit sharing configuration is not specified, the default behavior of sharing all active evidence of that evidence type between source and target applies.

## Automatically Accepting Shared Evidence

The Evidence Broker can be configured to accept automatically identical evidence from each source evidence type and source case onto each target evidence type and target case. This process saves the user from manually having to accept incoming evidence.

**Note:** For systems that are configured to use person or prospect person evidence, and where the person/prospect person record is specified as the target, this configuration setting does not apply.



When a new evidence record is shared (and accepted automatically), it is added to the list of **in edit** evidence. When an evidence update is shared (and accepted automatically), it also is added to the list of **in edit** evidence and the connection with the original record, which is changed, is maintained automatically by the system. The user then can choose whether to activate the new evidence or evidence updates.

Shared evidence removals can also be accepted automatically. This action results in either the pending removal indicator to be set on an active evidence record or the discarding of an **in edit** evidence record.

As was mentioned previously, shared evidence that is accepted automatically does not require manual intervention. A task is assigned to the user each time shared evidence is accepted automatically. Unless configured for automatic activation, the user still needs to activate the shared evidence manually. This process allows the user to check that the shared evidence is correct, make any necessary changes, and run validations against the evidence before it is activated. Shared evidence that is configured for automatic activation is activated automatically when broadcast.

### **Automatically Activating Shared Evidence**

When the evidence broker is configured to accept evidence automatically, it also can be configured to activate this evidence automatically on the target case. This configuration saves the user from having to activate evidence manually that already was accepted automatically.

**Note:** For systems that are configured to use person or prospect person evidence, and where the person/prospect person record is specified as the target, this configuration setting does not apply.

When a new evidence record is shared (and automatically accepted and activated), it is added to the list of active evidence. When an evidence update is shared (and automatically accepted and activated), it also is added to the list of active evidence and the connection with the original record that was changed is maintained automatically by the system. To ensure that the evidence is brokered as a complete set, activation happens in bulk rather than activating each evidence record separately.

Shared evidence removals can also be activated automatically, resulting in the removal of the evidence record rather than the pending removal indicator that is being set.

If the system is unable to activate any evidence records on the target case (for example, because a validation fails), a task is assigned to the user that notifies the user that the evidence record cannot be activated. The records that cannot be activated remain **in edit** on the target case, but all records that can be activated appear as active on the target case.

### **Sharing Verification Items**

By default, verification items that are associated with a piece of evidence are not shared to the target. However, the Evidence Broker can be configured so that verification items that are associated with a piece of identical or non-identical evidence can be copied to the target along with the evidence that is being shared. This configuration saves the caseworker from having to verify evidence that already is verified for the person.

Verification items can be configured to be always shared or to be shared only if applicable. Selecting **Always** would result in the verification item always being copied to the target, even if it is not used or required by the target. Selecting **If Applicable** would result in the verification item to be copied only to the target if the verification item is used or required by the target.

On acceptance of the incoming evidence or where evidence is accepted automatically, the incoming verification items are created against the accepted evidence record. Where evidence is automatically activated, the incoming verification items are created against the active evidence record. If the same verification items are used on the target to verify the evidence, the evidence automatically becomes verified. If different verification items are required on the target to verify the evidence, then the evidence would remain as not verified and the case owner receives a notification that informs the case owner that the evidence requires further verification.

## Configuring Evidence Sharing to a Person or Prospect Person Record

For systems that are configured to use person or prospect person evidence, the Evidence Broker can be configured to share this evidence in addition to sharing case evidence. Where the person or prospect person record, rather than a case, is specified as the target, some Evidence Broker configuration settings and functions do not apply.

When the Evidence Broker broadcasts new evidence to a person or prospect person record, the evidence is accepted automatically and activated on the person or prospect person record. This process means that it is added to the list of active evidence for the person or prospect person without the user to be required to accept and activate manually. Similarly, when an evidence update is shared to a person or prospect person record, it also is added to the list of active evidence and the connection with the original record that is changed is maintained automatically by the system. When an evidence removal is shared to a person or prospect person record, the evidence is removed from the person or prospect person record.

As the user does not need to accept and activate evidence manually that is broadcast to a person or prospect person record, the configuration options that are associated with this function do not apply. As a result, no **In Edit, Incoming Evidence**, or evidence comparison screens exist that are available within the evidence workspace for a person or prospect person record as they are not required. All other configuration options are applicable when the user configures evidence sharing to a person or prospect person record.

For further information on person or prospect person evidence, see the *Cúram Evidence Guide*.

## Configuring Evidence Sharing for Non-Identical Evidence Types

To allow sharing between evidence types which are non-identical firstly a non-identical evidence brokering rule must be specified. This configuration will specify the evidence types to be shared as well as and the direction in which brokering will occur.

When the evidence broker has been configured to share non-identical evidence between a source and a target then non-identical evidence attribute mapping can

be configured for those evidence types specified. Non-Identical evidence attribute mapping allows specific evidence attribute types to be brokered as identical. Once a non-identical evidence mapping configuration is defined the system will automatically create attribute mapping configurations between common identical attributes on the two evidence types. The user can specify attribute mapping configurations between any identical attribute data types they wish to share as identical. Attributes which have no mapping configurations associated with them will not be shared when brokering is invoked

Similarly, when two evidence attributes have underlying code tables which are the same, the system will automatically create mapping configurations between identical code table values. Likewise, the user can specify code table mapping configurations between any code table values they wish to broker as identical.

If code table values exist which have no associated code table mapping configurations, when brokered these evidence records will be shared as non-identical. If the user wishes for this to not occur, they can prohibit the system from brokering these records by setting the application property `curam.evidence.brokeringUnmappedCodetableValues` to 'NO'.

Non-Identical attribute mapping configurations do not specify the direction of brokering. That is, if a mapping configuration has been created it means whenever the evidence records are brokered they will be shared depending on how the configuration has been set up. The direction is specified on the non-identical evidence sharing configuration.

---

## Using the Evidence Broker

An overview of best practices for using the evidence broker to share evidence. After the configuration options for sharing evidence are set, you can use the evidence broker to manage evidence.

### Using the In Edit Workspace to Manage Evidence

Each case has its own 'in edit' workspace from which users can manage evidence updates. By default, this workspace displays all evidence on the case with an in edit status. It also displays any evidence pending removal.

If identical evidence is accepted, the evidence is updated onto the In Edit evidence list and thereafter the user must manage the evidence as per any evidence that is in edit on the case. Likewise in resolving non-identical evidence the user may capture evidence on the target case based on the incoming details; again this is maintained as per any new evidence on the case. For more information on how to manage evidence, see the *Cúram Evidence Guide*.

### Processing Shared Evidence

When evidence is available for sharing and has not been configured for automatic acceptance, the incoming evidence list on the evidence tab is populated. This lists all evidence available for sharing for all evidence types on the target case. Identical evidence from the source appears in a list separate from non-identical evidence. Users can choose to compare each evidence record from the source individually. Options are provided to accept or reject identical evidence or dismiss non-identical evidence. Evidence that has been configured for automatic acceptance is not displayed on the incoming evidence list, as this evidence goes straight to the in-edit evidence list. If it has been also configured for automatic activation, it will go straight to the active evidence list.

## Notifying Users of Evidence Available for Sharing

Typically users will receive tasks indicating that there is evidence available for sharing. From these tasks, users can navigate to the Incoming Evidence list where they can review all the incoming evidence and take appropriate actions. The evidence broker automatically closes off these tasks when identical, broadcasted evidence is accepted or rejected and non-identical, broadcasted evidence has been dismissed.

## Comparing Source Evidence to Target Evidence

To help users make decisions regarding broadcasted evidence, the evidence broker provides an option to compare the evidence being shared to existing evidence on the target case. In all evidence comparisons, a single evidence record from the source is compared to one or more existing evidence records on the target case. The evidence broker will display all existing target evidence records on the target case which are active, in edit, or pending removal and which are assigned to the same participant as the source evidence and originated from the source case or person/prospect person record.

The comparison process is slightly different for identical and non-identical evidence. For identical evidence, the evidence broker displays a table of values for both the source and target evidence allowing the user to compare like-for-like values. For non-identical evidence, the evidence broker displays the source evidence in a top panel and the target evidence in the bottom panel. The complexity of the evidence comparison increases with the number of target evidence records being compared to the source evidence record.

To make a decision on how to handle identical evidence, users can compare the effective date and status of the source evidence record to the effective date and status of the target evidence record(s). If the effective date for the source evidence record is different from the target evidence record, then the source evidence record can be active at the same time as the target evidence record since the two evidence records are effective during different time periods.

If the effective date is the same for the source and target evidence records, the evidence broker uses the status of the source and target evidence records to determine how the identical evidence is shared. Note that the evidence broker will highlight any records that are likely to be superseded if the user accepts and activates the shared evidence. It will also highlight records that will be discarded or removed as a result of accepting and activating the broadcast. It is important that the user understands how the evidence broker processes evidence based on the status of the incoming evidence.

The following table describes how the evidence broker will process evidence based on a set of possible sharing scenarios for identical evidence where the incoming evidence is related to the evidence on the case and has the same effective date:

**Important:** The evidence broker has been designed to ensure that no conflicting evidence records can be activated on the evidence workspace. For example, the evidence broker does not allow two evidence records of the same type and relating to the same participant to be in edit at the same time. This is to avoid confusion between the in edit evidence records. It has also been designed to give users sufficient information to resolve conflicts on the evidence workspace before accepting incoming evidence.

*Table 1. Possible Evidence Sharing Scenarios based on Evidence Statuses.*

This table describes each possible sharing scenario based on the statuses of the source and target evidence records.

Source Evidence Record Status	Target Evidence Record Status	Evidence Sharing Outcome
New	No existing evidence	The evidence broker shares the source evidence record on the target case. The new evidence record will have a status of in edit on the target evidence workspace.
New	In Edit	The new evidence record is not shared as there cannot be two in edit evidence records on the target evidence workspace for the same participant. The new evidence record can be accepted once the conflict is resolved.
New	Active with pending removal	The new evidence record is not shared since the active evidence is pending removal.
Updated	Active	The evidence broker shares the updated evidence record on the target case. The updated evidence record will have a status of in edit on the target evidence workspace. The evidence broker will also highlight that if activated, the shared record will supersede the active record.
Updated	In Edit	The updated evidence record is not shared as there cannot be two in edit evidence records on the target evidence workspace for the same participant. The updated evidence record can be accepted once the conflict is resolved.
Updated	Active with pending removal	The updated evidence record is not shared since the active evidence is pending removal. The updated evidence record can be accepted once the conflict is resolved.

Table 1. Possible Evidence Sharing Scenarios based on Evidence Statuses (continued).

This table describes each possible sharing scenario based on the statuses of the source and target evidence records.

Source Evidence Record Status	Target Evidence Record Status	Evidence Sharing Outcome
Removal	Active	The target case will accept the removal; the active evidence record will have a pending removal status. The evidence broker will also highlight that if activated, the shared record will remove the active record.
Removal	In Edit	The target case will accept the removal and the in edit evidence record will be discarded.
Removal	Active with pending removal	The removal is not accepted as the active evidence record is already pending removal.
Removal of parent	Active with dependent records	The removal cannot be accepted until the dependent evidence records are resolved.

A configuration validation exists in Evidence Broker that checks whether an In-Edit evidence record already exists on the target case to prevent having multiple In-Edit evidence record for the same effective date on the target case for a given evidence type and participant.

By default the validation is ON and results in the behavior, as outlined in the table above. Where the validation is changed to OFF, the above behavior changes as follows:

- If the evidence being modified on the source is the same record (same business object) as In-Edit evidence on the target and the user has performed a correction; the In-Edit evidence on the target case is updated and a correction history created
- If the evidence being modified on the source is the same record (same business object) as In-Edit evidence on the target and the user has performed a change of circumstance (a new record in the succession); the In-Edit evidence on the target case is not updated, a new In Edit record is created on the target case based on the new effective date.
- If the evidence from the source is not the same business object as the In-Edit evidence on the target, it is a new\different business object; the In-Edit evidence on the target case is not updated, a new In Edit record is created on the target case.

### Accepting or Rejecting Identical Evidence

The incoming evidence list displays the complete list of identical evidence available for sharing on the target case. From this list, users can choose to accept or reject any or all of the incoming evidence. While all incoming evidence can be rejected, the validations for accepting incoming evidence must take into account all evidence records for the same target evidence and ensure that there are no conflicts

introduced with accepting the incoming evidence. In addition to the basic validations described previously in Table 1 on page 13 under section Comparing Source Evidence to Target Evidence there are additional validations which come into play when accepting multiple incoming evidence records with conflicts.

**Note:** Users may find it easier to accept one incoming evidence record at a time, particularly when there are many related records leading to an increased risk of conflicts.

*Table 2. Additional Validations Applied when Accepting Multiple Incoming Evidence Records*

Source Evidence Record Statuses	Evidence Sharing Outcome
New incoming evidence record, related incoming evidence update	As the updated evidence is related to the new evidence, the user must accept these records one at a time.
New incoming evidence record, related incoming evidence removal	In this scenario, the user can accept either of these on its own or both; however, by accepting both, the evidence broker will discard the new, incoming evidence record due to the acceptance of the related removal.
Multiple, related incoming evidence updates	As the updates are related to each other, the user must accept these updates one at a time. Evidence comparison can help the user determine which evidence update is more suitable (if either) for acceptance on the target case.
Incoming evidence update, related incoming evidence removal	In this scenario, the user can accept either of these on its own or both; however, by accepting both, the evidence broker will discard the updated incoming evidence record due to the acceptance of the related removal.
New incoming evidence record, related incoming evidence update, related incoming evidence removal	Either the new or the updated evidence can be accepted but not both. The removal can be accepted along with the acceptance of either of these.

## Evidence Configured for Automatic Acceptance

Evidence which has been configured for automatic acceptance is not displayed on the incoming evidence list as it does not have to be manually accepted or rejected by the user. However, if the system experiences any problems during the broadcasting of this evidence, it will be left on the Incoming Evidence list and the case owner is notified of the failure to automatically accept the evidence. For example, by default the evidence broker does not allow two evidence records of the same type, relating to the same participant with the same effective date be accepted onto a target case. During the processing of shared evidence configured for automatic acceptance, if this validation fails, the case owner will be notified and the evidence will be displayed on the incoming evidence list.

## Dismissing Non-Identical Evidence

In addition to displaying the complete list of identical evidence available for sharing on the target case, the incoming evidence list also displays the list of non-identical evidence. Non-identical evidence must be manually dismissed (there is no functionality to automatically accept non-identical evidence changes unless the target is a person/prospect person record in which case all evidence, including non-identical will be automatically accepted and activated). The evidence broker

provides the ability to compare the non-identical evidence with the related evidence for the same client on the target case and to mark the non-identical evidence as dismissed.

### **Multiple evidence sharing for auto-acceptance**

Evidence sharing may happen in bulk depending on how the sharing was initiated from within the application. For example, authorizing an application takes on the evidence on that application and shares it to the ongoing case and may also share to other open cases for this client also, depending on sharing configurations. The following clarifies the error handling in place when sharing evidence in bulk with auto-acceptance enabled.

When multiple evidence records are available for sharing and have been configured for automatic acceptance, all the evidence records are shared successfully if no errors are encountered while sharing any of the evidence. When processing multiple evidence records, if a failure occurs on any one of the evidence records being shared at the point of acceptance then the brokering will be restarted for all the evidences with auto-acceptance turned off. Each evidence is moved to the Incoming list of the target and must be accepted manually by the user. For example, five evidence records are being shared from source to target and the first two evidences do not encounter any error conditions during processing but while accepting the third evidence, a validation error arises which prevents the evidence being automatically accepted. In this scenario the brokering will be restarted and all five evidences will be shared to the Incoming list of the target and the user must manually accept these.

When evidence has been configured to be shared from a single source to multiple targets, and also be automatically accepted onto the target cases, then the auto acceptance of evidence will be attempted on individual target cases if there is a failure in auto accepting an evidence record on a single target case.

For example, if evidence is brokered from a single source to three target cases and the system is unable to auto accept one of the evidence records on the first case due to a validation error. The system will still attempt to share the evidence records and auto accept them on the two remaining cases. If the system is unable to auto accept any evidence record shared to a target case then all evidence being brokered to that case will be restarted and will be placed on the incoming evidence list.

This functionality is governed by the system property “Evidence Broker - Attempt Acceptance on Individual Target Cases” which is set to “YES” by default. Disabling this property will mean that when an error is encountered auto accepting an evidence record on any of the target cases the whole brokering transaction will be restarted and the evidence will be shared to the incoming list on all the target cases in that transaction, where it will have to be manually accepted onto the case..

### **Multiple evidence sharing for auto-activation**

Evidence sharing may happen in bulk depending on how the sharing was initiated from within the application. For example authorizing an application takes on the evidence on that application and shares it to the ongoing case and may also share to other open cases for this client also, depending on sharing configurations. The following clarifies the error handling in place when sharing evidence in bulk with auto-activation is enabled.

When multiple evidence records are available for sharing and have been configured for automatic activation, all the evidence records are shared successfully



if no errors are encountered while sharing any of the evidence. When processing multiple evidence records, if a failure occurs on any one of the evidence records being shared at the point of activation then the brokering will be restarted for all the evidences with auto-activation turned off. When processing the evidence records for the second time if no errors are encountered then all the evidences are moved to In-Edit list of the target and the user must manually activate these. If a validation error arises which prevents one of the evidence record being automatically accepted then the brokering will be restarted for all the evidence records with auto-acceptance turned off. Each evidence is moved to the Incoming list of the target and must be accepted and activated manually by the user. For example, five evidence records are being shared from source to target and the first two evidences do not encounter any error conditions during processing but while activating the third evidence, a validation error arises which prevents the evidence being automatically activated. In this scenario the brokering will be restarted for all the five evidence records with auto activation turned off. While processing the evidences for the second time if a validation error arises which prevents one of the evidences being automatically accepted, then the brokering will be restarted will auto accept turned off for all the five evidences and they will be moved to the Incoming list of the target and the user must manually accept and activate these. While processing the evidences for the second time if no validation error arises then all five evidences will be shared to the In-Edit list of the target and the user must manually activate these.

When evidence has been configured to be shared from a single source to multiple targets, and also be automatically activated onto the target case, then the auto activation of evidence will be attempted on individual target cases if there is a failure in auto activating an evidence record on a single target case.

For example, if evidence is brokered from a single source to three target cases and the system is unable to auto activate one of the evidence records on the first case due to a validation error. The system will still attempt to share the evidence records and auto activate them on the two remaining cases. If the system is unable to auto activate any evidence record shared to a target case then all evidence being brokered to that case will be restarted and sharing will be attempted using auto accept configuration. If brokering using this configuration still fails then the evidence records will be placed on the incoming evidence list.

This functionality is governed by the system property “Evidence Broker - Attempt Activation on Individual Target Cases” which is set to “YES” by default. Disabling this property will mean that when an error is encountered auto activating an evidence record on any of the target cases the whole brokering transaction will be restarted and the evidence will be brokered attempting to use the auto accept configuration. If a subsequent error occurs then the evidence will be rolled back a second time and all evidence in that transaction will be shared and placed on the Incoming Evidence section on all target cases.

## Viewing Evidence Change History

The evidence change history provides a complete view of the changes made to a single piece of evidence. (A link is provided on the View Evidence page, Updated By field.) This history includes evidence changes made in the evidence workspace and shared evidence changes handled by the evidence broker. The following table describes each possible evidence change:

*Table 3. Summary of Evidence Changes.*

This table describes each possible evidence change

Evidence Change	Description
Input	This is when evidence is first created.
Updated	This is when an active evidence record has been updated and those updates have been accepted.
Pending Removal Set	This is when an active evidence record has a pending removal set.
Pending Removal Discarded	This is when a pending removal is discarded.
Superseded	This is when an active evidence record has been updated and the updates have been activated, thus superseding the existing, active evidence record.
Cancelled	This is when new evidence with an in edit status is canceled (before the evidence is activated).
Activated	This is when an in edit evidence record is activated.
Submitted	This is when evidence is submitted for approval before activation.
Approved	This is when evidence is approved for activation.
Rejected	This is when evidence is rejected and thus cannot be activated.
Pending Update Set	This is when an active evidence record is being updated and thus the pending update is set.
Pending Update Discarded	This is when an active evidence record was being updated but the evidence updates were cancelled, thus discarding the pending update on the active evidence record.
Evidence Transfer	This is when evidence is transferred from one case to another case.
Shared Evidence Added	This is when new evidence is available for sharing.
Shared Evidence Updated	This is when evidence updates are available for sharing.
Shared Evidence Accepted	This is when shared evidence has been accepted on the target case. The acceptance indicator is set on the source evidence.

## Evidence Sharing Business Scenarios

These simple business scenarios demonstrate the manual acceptance of identical evidence, the automatic acceptance of identical evidence, and non-identical evidence sharing.

## Manual Acceptance of Identical Evidence

Living Expense evidence also applies to eligibility determination for Cúram Child Services (CCS). The system is configured administratively to share this evidence type from Income Support to CCS, but not automatically. When the caseworker applies the Living Expense evidence on the Income Support case, the system determines that this information is a shared evidence type and that the participant exists on both cases.

For example, John Patterson is the primary client on a Cúram Income Support - Screening (Income Support) integrated case and a member of a CCS case. John informs his Income Support assigned caseworker of new Living Expense evidence. The caseworker adds this evidence and activates it.

The evidence broker updates the incoming evidence list to display the new available shared evidence. The caseworker in charge of the CCS case is notified of the shared evidence and examines the evidence. When satisfied that they agree with the change, the caseworker accepts the broadcast change. This evidence is now In Edit on the CCS case and can be activated as normal.

## Automatic Acceptance of Identical Evidence

Mary Smith is the primary client on a Income Support integrated case and a member of a CCS case. Mary informs her Income Support assigned caseworker of changes to her Liquid Resource evidence. The caseworker updates this evidence and activates it. Liquid Resource evidence also applies to eligibility determination for CCS. The system is configured administratively to share this evidence type from Income Support to CCS, and to automatically accept any evidence change.

When the caseworker applies the Liquid Resource evidence on the Income Support case, the system determines that this is a shared evidence type and that the participant Mary Smith exists on both cases. The system updates the Liquid Resource record on the CCS case and places it 'in edit. The caseworker in charge of the CCS case is notified of the automatically accepted shared evidence change and can activate it as normal.

## Automatic Activation of Identical Evidence

Jane Jones is the primary client on a Income Support integrated case and a member of a CCS case. Jane informs her Income Support assigned caseworker of changes to her Trust evidence. The caseworker updates this evidence and activates it. Trust evidence also applies to eligibility determination for CCS. The system is configured administratively to share this evidence type from Income Support to CCS, and to automatically accept and activate any evidence change.

When the caseworker applies the Trust evidence on the Income Support case, the system determines that this is a shared evidence type which has been configured for automatic activation, and that the participant Jane Jones exists on both cases. The system updates the Trust record on the CCS case and adds it to the active evidence list.

## Non-Identical Evidence Sharing

Joe Williams is the primary client on a Income Support integrated case and his son Michael is a member of the case. Joe informs his Income Support assigned caseworker that his son Michael has been immunized and the caseworker updates the child's Medical evidence to reflect this. Joe and his son are also members of a CCS case.

Immunization evidence also applies to eligibility determination for CCS but in a different format, as CCS evidence records full details of child immunization dates and times. The system is configured administratively to share non-identical evidence types of Medical evidence and Child Immunization evidence from Income Support to CCS.

When the caseworker applies the Medical evidence on the Income Support case, the system determines that this is a shared evidence type and that the participant Michael Williams exists on both cases. The caseworker in charge of the CCS case is notified of the shared non-identical evidence change, and can navigate to details of the change in order to decide on what action to take.

## Mapping Non-Identical SSN Evidence to Identification Evidence

A citizen Fred is applying for a benefit online and he has never been in receipt of benefits in the past and he is not recorded on the system. The system has been configured for non-identical evidence attribute mapping between the Identifications evidence (which is configured against person / prospect person) and SSN Details evidence which is configured against an integrated case. The attributes on each are as follows:

*Table 4. Non-Identical Mapping of Identifications Evidence to SSN Details Evidence*

Identifications Evidence	SSN Details Evidence
participant	participant
alternateID	alternateID
altIDType	altIDType
	ssnStatus
	noSSNReasonCode
fromDate	fromDate
toDate	toDate
	noSSNReasonOtherDetails
preferredInd	
comments	comments

The system recognizes that the evidence attributes participant, alternateID, altIDType, fromDate, toDate, and comments common identical attributes so therefore creates attribute mapping configurations between them.

The evidence attribute ID Type is of data type code table. The code table used for both attributes is the same, therefore the system automatically creates code table mapping configurations between the code table values on SSN Details Evidence and the corresponding values on Identification Evidence. The administrator has configured the code table mapping configurations to be as follows:

*Table 5. Non-Identical Code Table Mapping of SSN Evidence to SSN Details Evidence*

Identifications Evidence	SSN Details Evidence
Social Security Number	Social Security Number

This configuration will mean that when a value of Social Security Number is entered on Identifications Evidence or SSN Details Evidence it will be shared as identical when brokering is invoked between these two evidence types.

By configuring the non-identical evidence attribute mapping between these two dynamic evidence types, the evidence broker will share the attributes that match as if it were identical evidence. While the evidence are deemed non identical because they are different types, the attributes mapped between each type allow for any sharing to be treated in the same way as identical evidence. The following steps illustrate how this configuration would be applied in this scenario:

1. Fred completes an online application for benefits and enters the required information along with the following SSN identification details:  
SSN Identification Reference: 123-45-6789  
Type: SSN  
Comments: A brief note.  
Fred did not record any details for SSN Status, No SSN Reason, No SSN Other Details.
2. Fred submits the application to the agency where it is determined, using the search and match process, that he is not registered on the system.
3. Fred is registered as a person. The registration process inserts name, date of birth, and gender which is the mandatory registration information required. The system creates the person evidence records – name, birth and death and gender.
4. An application case for benefits is then created for Fred and all of the evidence that he supplied on his online application is added to the application case. Note an application case is created automatically when the application is submitted, all the evidence captured on his application is mapped to the new application case, using the Cúram Data Mapping Engine.
5. Paul, the intake worker, reviews the application case evidence and authorizes the application case. When the application is authorized, this triggers the evidence broker to share the application evidence based on its configurations.
6. Once the application is authorized, an integrated case is automatically created for Fred and adds the program for which Fred has been approved.
7. The evidence broker shares the evidence from the application case to the integrated case. The SSN details evidence on the application case maps directly to the SSN details evidence on the integrated case.
8. The evidence broker then shares Fred's application evidence to his person tab. The SSN details from the application case are non-identical and must be mapped to the identification evidence stored in the person tab. Once it is brokered the SSN Details evidence arrives on the Person evidence list as Identifications evidence. It is shared as identical evidence because it has been configured to do so when a code table value of type Social Security Number is captured.
9. Later the same day, Fred provides details of his passport that was required to verify his date of birth on the integrated case. The receptionist Jan also decides to capture this information in Fred's identification evidence. She therefore performs a person search and finds Fred's person record. She opens the person record and then proceeds to creating new identification evidence. Jan selects the type is Passport and the Identification reference is PO111111.
10. Jan saves the identification record. The evidence broker is triggered and the identification evidence is shared to the integrated case.
11. Caseworker for the integrated case, Sam, notices there is new incoming evidence received. He views the incoming evidence and notices that a passport/ID has been captured for Fred. The record is displayed on the non-identical tab on the incoming evidence sections no code table mapping configuration has been configured for the passport identification type. Sam

decides to reject this evidence because he does not require it for the case. Note that if Sam had accepted the evidence, a new SSN identification evidence record would be displayed as in edit. However, upon activating that evidence, the system may have invoked a validation to say that the type must only be SSN (if no validation on type then this would have been applied to the case).

Alternatively if the system administration property `curam.evidence.brokeringUnmappedCodeTableValues` was configured to 'NO' then this evidence record would not have been shared by the system at all.

---

## Notices

This information was developed for products and services offered in the United States.

IBM may not offer the products, services, or features discussed in this document in other countries. Consult your local IBM representative for information on the products and services currently available in your area. Any reference to an IBM product, program, or service is not intended to state or imply that only that IBM product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any IBM intellectual property right may be used instead. However, it is the user's responsibility to evaluate and verify the operation of any non-IBM<sup>®</sup> product, program, or service.

IBM may have patents or pending patent applications covering subject matter described in this document. The furnishing of this document does not grant you any license to these patents. You can send license inquiries, in writing, to:

*IBM Director of Licensing IBM Corporation North Castle Drive, MD-NC119 Armonk, NY 10504-1785 US*

For license inquiries regarding double-byte character set (DBCS) information, contact the IBM Intellectual Property Department in your country or send inquiries, in writing, to:

*Intellectual Property Licensing Legal and Intellectual Property Law IBM Japan Ltd. 19-21, Nihonbashi-Hakozakicho, Chuo-ku Tokyo 103-8510, Japan*

INTERNATIONAL BUSINESS MACHINES CORPORATION PROVIDES THIS PUBLICATION "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Some jurisdictions do not allow disclaimer of express or implied warranties in certain transactions, therefore, this statement may not apply to you.

This information could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in new editions of the publication. IBM may make improvements and/or changes in the product(s) and/or the program(s) described in this publication at any time without notice.

Any references in this information to non-IBM websites are provided for convenience only and do not in any manner serve as an endorsement of those websites. The materials at those websites are not part of the materials for this IBM product and use of those websites is at your own risk.

IBM may use or distribute any of the information you provide in any way it believes appropriate without incurring any obligation to you.

Licensees of this program who wish to have information about it for the purpose of enabling: (i) the exchange of information between independently created

programs and other programs (including this one) and (ii) the mutual use of the information which has been exchanged, should contact:

*IBM Director of Licensing IBM Corporation North Castle Drive, MD-NC119 Armonk, NY 10504-1785 US*

Such information may be available, subject to appropriate terms and conditions, including in some cases, payment of a fee.

The licensed program described in this document and all licensed material available for it are provided by IBM under terms of the IBM Customer Agreement, IBM International Program License Agreement or any equivalent agreement between us.

The performance data and client examples cited are presented for illustrative purposes only. Actual performance results may vary depending on specific configurations and operating conditions.

Information concerning non-IBM products was obtained from the suppliers of those products, their published announcements or other publicly available sources. IBM has not tested those products and cannot confirm the accuracy of performance, compatibility or any other claims related to non-IBM products. Questions on the capabilities of non-IBM products should be addressed to the suppliers of those products.

Statements regarding IBM's future direction or intent are subject to change or withdrawal without notice, and represent goals and objectives only.

All IBM prices shown are IBM's suggested retail prices, are current and are subject to change without notice. Dealer prices may vary.

This information is for planning purposes only. The information herein is subject to change before the products described become available.

This information contains examples of data and reports used in daily business operations. To illustrate them as completely as possible, the examples include the names of individuals, companies, brands, and products. All of these names are fictitious and any similarity to actual people or business enterprises is entirely coincidental.

#### COPYRIGHT LICENSE:

This information contains sample application programs in source language, which illustrate programming techniques on various operating platforms. You may copy, modify, and distribute these sample programs in any form without payment to IBM, for the purposes of developing, using, marketing or distributing application programs conforming to the application programming interface for the operating platform for which the sample programs are written. These examples have not been thoroughly tested under all conditions. IBM, therefore, cannot guarantee or imply reliability, serviceability, or function of these programs. The sample programs are provided "AS IS", without warranty of any kind. IBM shall not be liable for any damages arising out of your use of the sample programs.



---

## Privacy Policy considerations

IBM Software products, including software as a service solutions, (“Software Offerings”) may use cookies or other technologies to collect product usage information, to help improve the end user experience, to tailor interactions with the end user or for other purposes. In many cases no personally identifiable information is collected by the Software Offerings. Some of our Software Offerings can help enable you to collect personally identifiable information. If this Software Offering uses cookies to collect personally identifiable information, specific information about this offering’s use of cookies is set forth below.

Depending upon the configurations deployed, this Software Offering may use session cookies or other similar technologies that collect each user’s name, user name, password, and/or other personally identifiable information for purposes of session management, authentication, enhanced user usability, single sign-on configuration and/or other usage tracking and/or functional purposes. These cookies or other similar technologies cannot be disabled.

If the configurations deployed for this Software Offering provide you as customer the ability to collect personally identifiable information from end users via cookies and other technologies, you should seek your own legal advice about any laws applicable to such data collection, including any requirements for notice and consent.

For more information about the use of various technologies, including cookies, for these purposes, see IBM’s Privacy Policy at <http://www.ibm.com/privacy> and IBM’s Online Privacy Statement at <http://www.ibm.com/privacy/details> the section entitled “Cookies, Web Beacons and Other Technologies” and the “IBM Software Products and Software-as-a-Service Privacy Statement” at <http://www.ibm.com/software/info/product-privacy>.

---

## Trademarks

IBM, the IBM logo, and [ibm.com](http://www.ibm.com) are trademarks or registered trademarks of International Business Machines Corp., registered in many jurisdictions worldwide. Other product and service names might be trademarks of IBM or other companies. A current list of IBM trademarks is available on the Web at “ Copyright and trademark information ” at <http://www.ibm.com/legal/copytrade.shtml>.

Adobe, the Adobe logo, PostScript, and the PostScript logo are either registered trademarks or trademarks of Adobe Systems Incorporated in the United States, and/or other countries.

Java™ and all Java-based trademarks and logos are trademarks or registered trademarks of Oracle and/or its affiliates.

Linux is a registered trademark of Linus Torvalds in the United States, other countries, or both.

Microsoft, Windows, Windows NT, and the Windows logo are trademarks of Microsoft Corporation in the United States, other countries, or both.

UNIX is a registered trademark of The Open Group in the United States and other countries.

Other names may be trademarks of their respective owners. Other company, product, and service names may be trademarks or service marks of others.





Printed in USA