



# Cúram 8.2

## Understanding Evidence Guide



## Note

---

Before using this information and the product it supports, read the information in [Notices on page 21](#)



# **Edition**

---

This edition applies to Cúram 8.2.

© Merative US L.P. 2012, 2025

Merative and the Merative Logo are trademarks of Merative US L.P. in the United States and other countries.



# Contents

---

## Note.....

## Edition.....

<b>1 Understanding evidence.....</b>	<b>9</b>
1.1 What is evidence?.....	9
1.2 Who needs evidence and why is evidence collected?.....	10
1.3 How and where is evidence captured?.....	11
1.4 How is evidence verified?.....	13
1.5 How is evidence stored?.....	14
1.6 Predefined person evidence.....	14
1.7 How are existing evidence types extended?.....	16
1.8 How do evidence types relate to each other?.....	16
1.9 How are changes to evidence recorded?.....	17
1.10 How are changes to evidence approved?.....	18
1.11 Can evidence be copied from one case to another?.....	19

## Notices.....

Privacy policy.....	22
Trademarks.....	22



# Chapter 1 Understanding evidence

---

Evidence is information that the client provides about the client's personal and family circumstances. Organizations can use business rules that are based on legislation with the information that is provided by the client to determine the client's eligibility and entitlement.

Evidence is at the core of all social programs and services. The *Understanding evidence* section focuses on explaining evidence within the context of the application, why evidence is collected, and how evidence is used. The section also details the following information:

- A definition of evidence.
- An outline of how to implement evidence in your solution.
- An understanding of evidence in the wider context of Cúram processing.

Eligibility and entitlement capabilities are central to Cúram. Evidence and rules are the two key criteria that are used to determine the client's eligibility for a program. It is vital that social welfare organizations understand what evidence is and how it is managed.

## 1.1 What is evidence?

---

Evidence is information that is supplied by clients that an organization can use to make an assessment or a determination. For example, income and expense information can be used to determine eligibility and entitlement for a program.

When a client completes a paper application form, the information that must be captured is usually grouped into logical sections. For example, an Income Details section might require a client to provide the following three pieces of information:

- The income the client receives.
- The source of the income.
- The frequency that the income is received.

Evidence types represent a set of attributes that are grouped in a logical way. The following two examples are evidence types for a benefit that supports people who are unemployed and who are seeking work:

- The employment status evidence type might be used to capture attributes such as date work finished, reason for finishing work, and availability for work.
- The income evidence type might be used to capture attributes such as source of income, income amount, income frequency, and income start date.

The following are two more examples of evidence:

- The address evidence is used to capture where a person is living. The evidence might be an eligibility requirement that a person has a valid address and it might also be used for sending notices or correspondence.
- The bank account evidence might not be used in eligibility, but it is still information that a person supplies about themselves. In this instance, it might be provided so that the person can get financial payments paid directly to a bank account.

Specific common evidence types that are required for maintaining person and prospect person information are provided with the application. However, customers can also configure evidence types specific to their requirements by using the dynamic evidence editor in the administration application or by using the Evidence Generator to build custom evidence entities.

## 1.2 Who needs evidence and why is evidence collected?

Typically, organizations gather evidence to comply with legislative or policy-driven eligibility and entitlement rules for programs. Therefore, in many cases the evidence requirements for such programs can also evolve as the requirement to collect information for a case or a person changes.

Evidence must be collected from clients to determine whether clients meet criteria for a program or service. The criteria is typically driven by policy or regulation rules that govern clients' eligibility and, if applicable, financial entitlement. For example, a client's date of birth is managed as evidence because most programs include an age criteria. To meet eligibility for a government pension, the most basic criteria might be that the individual who submits the application must be aged 70 years or more. The following three criteria are examples of aspects that evidence must maintain to ensure that eligibility and entitlement are assessed correctly.

### Evidence evolution

To ensure that eligibility and entitlement can be assessed for the right periods, it is essential that evidence can change over time. For example, when a client applies for an income-tested benefit the client might be in a part-time job where the client earns \$200 per week. The income affects the benefit amount that the client receives and the income results in an entitlement of \$30 per week. However, three weeks later the client reports that the client's employer reduced the client's part-time hours. Consequently, the client is now earning only \$100 per week. In this example, the benefit must be reassessed from the date the new income took effect. Therefore, a requirement is to record when a change occurred and when it takes effect to reassess the benefit and to pay the correct entitlement from the right date.

### Evidence sharing

Evidence might be captured for a specific program. However, if evidence that is captured for one program is also relevant to another program the evidence can be shared between the programs. The following two advantages are gained by sharing the evidence:

- It eliminates duplicating data entry of the evidence, that is, it is not necessary to enter the same data twice on two programs.
- It ensures that the client's latest evidence is available when the system calculates eligibility and determination.

In contrast, evidence might be deemed restricted. In such a scenario, the evidence does not need to be shared between programs. Whether evidence must be shared between programs or restricted to one program, the system can be configured to support either objective.

### Verifying evidence

Depending on the governing program rules or the organization's policy, some data that is provided by clients is required to be verified. For example, if a client is applying for a program or service

for the first time, the client might need to prove the client's birth details evidence by supplying a birth certificate. Verifications apply to evidence data only.

## 1.3 How and where is evidence captured?

---

Clients can supply evidence in multiple ways, for example, by completing online or paper applications. Evidence can be accessed and maintained only within a prospect person, person, or case type record.

### How is evidence captured?

Typically, the process starts with the client who completes an application form or, if the client is already in receipt of a program or service, the client who notifies the organization of a change in circumstance. The Cúram application supports the following two channels to capture and maintain evidence:

- Online. By using the Universal Access application, clients can complete an application through a responsive and modern interface without the need for a caseworker to intervene.
- Paper application. When a client submits a paper application, a caseworker can capture the evidence either through an application script or by entering information directly into screens for each evidence type.

#### • Intelligent Evidence Gathering (IEG)

Organizations can also use IEG to create internal application scripts. Internal application scripts guide caseworkers through a long application process. The IEG scripts are designed to capture large sets of evidence, such as a new application for a program.

#### • Designing evidence screens

Evidence screens can be designed in either of the following two ways:

- By using dynamic evidence: organizations use the dynamic evidence editor in the administration application to design evidence screens.
- By static evidence: organizations can build and generate evidence screens within the development environment.

Caseworkers can use the evidence screens to maintain the individual evidence types that are configured by the organization. The pages are typically used after an application is submitted. Caseworkers can use the pages to view and maintain the evidence that was entered through the submission process. All data that is captured through an IEG script progresses to individual dynamic or static evidence entities through a technical data-mapping process. So, evidence is captured and submitted through an IEG script and evidence is then maintained in these screens. By using the dynamic evidence editor to generate evidence types, organizations can achieve the three following tasks:

- Implement evidence in the most efficient way.
- Ensure consistency across evidence types.
- Employ flexibility in verifying and sharing evidence.

## Where is evidence captured?

Evidence can be accessed and maintained only within a prospect person, person, or case type record. For example, an Application Case, Integrated Case, and Product Delivery case type. As evidence types can be added to the case types on which the information is held, the evidence can be shared between those cases. An evidence record is a set of saved information that is entered for an instance of that evidence type. However, the same evidence types can be configured to exist and to be maintained across many different case types. The same evidence types can exist in multiple places, but the evidence types need only to be updated in one location because the evidence sharing process ensures that the updates are applied to the relevant cases based on configuration settings. For more information on evidence sharing, see the *Sharing evidence with the evidence broker* related link.

The sharing process ensures that caseworkers need only to maintain evidence in one place and that caseworkers can perform activation and verification before the reassessment of benefits or services. Depending on the sharing configuration, the sharing process can also ensure that the evidence records are synchronized at the person and case levels. Certain common evidence types that are provided with the application, for example, address evidences and phone numbers, are configured to be maintained on the person and prospect person record.

## Entering evidence through an application

Clients can enter evidence by using an application within Universal Access. Typically, the evidence that is configured for an application includes all the information that is captured during an intake process. Evidence that is captured in the application is stored in a temporary data store until the application is submitted. When the application is submitted, the evidence is transferred into the internal application case in Common Intake. If any maintenance of the evidence is required, it can be performed when the evidence is in the internal application case. When the programs within an application are authorized and the application is complete, the evidence is shared in the following two ways:

- The evidence is shared with the corresponding ongoing Integrated Case.
- The evidence is shared with any other case that is configured to receive evidence from an application case.

**Note:** Universal Access is only applicable to customers who are licensed for this Cúram component.

## Case

Case is used to manage the ongoing delivery of benefits and services to client or families, including managing evidence changes over time. Evidence that is relevant to the successful delivery of the benefit or service can be associated with either a Product Delivery or an Integrated Case. When evidence is associated with a case, the evidence type is then available to an ongoing case so that a caseworker can manage the evidence for the client over time. The caseworker can capture any change of circumstances that affect the client or clients during the lifetime of the case.

## Related concepts

## 1.4 How is evidence verified?

Evidence verification is the process where organizations check the accuracy of information that is provided by clients. For example, organizations check the date of birth on a birth certificate or the annual income on a salary certificate.

Policy or legislation mandates whether evidence is verified as a prerequisite for eligibility. Therefore, where the policy differs between programs, evidence that applies to many programs can have differing verification requirements. Organizations can use the administration application to configure evidence verifications. The verification engine is the technical component that checks the verification configuration for each evidence type, and that enacts the required processing. For more information, see the related link.

### Verification requirements

Organizations must define the rules that the Verification Engine applies to determine whether verification requirements exist for an evidence record. Caseworkers can record verifications against evidence, and then the Verification Engine uses the verifications to determine whether the verification requirements that are defined for the evidence are satisfied.

Evidence maintenance functions are integrated with the Verification Engine. When any or all of the evidence maintenance functions are performed, the verification configurations are checked. Where configurations exist, performing the evidence maintenance functions runs the defined verification requirements. For example, where two verification items are required to satisfy a verification requirement, the applicable evidence can be activated only if two items are supplied by the client. Organizations can also configure groups of verification items for an item of evidence so that any of the items from the group satisfy the verification requirement.

### Conditional verifications

Cúram Express Rules (CER) rule sets are a language for expressing the rules for business calculations (in "rule sets"). Organizations can define and configure CER rule sets representing the conditions under which to apply verifications for use with the Verification Engine.

Organizations can use conditional verifications to define more complex rules to determine when to apply verifications. For example, cross evidence type rules.

### Conditional verification example

An organization must verify a client's income to check whether the client's income exceeds the maximum allowable threshold. In this example, the organization must consider the client's income as whole rather than individual income records. Therefore, the verification rules must evaluate all of the client's income evidence together. To support the verification rules in this way, the organization must ensure that the following three criteria are met:

1. Implement a CER rule set for the verification conditions.
2. Associate the CER rule set by using a propagation configuration.
3. Present the results in the **View Verification** page by using a Display Ruleset.

If the organization must change the evidence on which the rules operate, the verifications can be reevaluated.

For more information about verifications, see the *Cúram Verification Guide* related link.

### Related concepts

## 1.5 How is evidence stored?

The database entity structure that is used to store evidence differs depending on whether evidence is either static or dynamic.

### Static evidence

For static evidence, each static evidence type uses its own database entity on which the runtime data is stored.

Static evidence can be defined in metadata and, from the metadata, all the relevant technical artifacts that are generated from the user interface (UI) to the database tables. However, there is no editor for the static generator. The metadata for static evidence is defined in a development environment. To view sample server and client generator metadata, see the *Generator metadata sample: server and client* related link.

### Dynamic evidence

For dynamic evidence, the runtime data for each dynamic evidence type is stored on a single database entity, though all dynamic evidence types are on the same physical database table. Two tables are used across all dynamic evidence types. By using the structure of a single database entity, developing new entities for every new dynamic evidence type is not required. Address and bank account are examples of dynamic evidence types.

### Data that is captured through an IEG script

Data that is captured through an IEG script is not directly stored as evidence. Instead, the data is stored in a temporary data store until the data is submitted. Only after the data is submitted is the data from the temporary data store mapped to an evidence record.

### Related concepts

## 1.6 Predefined person evidence

In most cases, customers define their evidence based on the specific requirements of the organization.

During the analysis of evidence requirements, the preceding person and prospect person evidence types were identified to meet common requirements. For specific requirements, customers can define their own evidence.

Depending on the specific requirements of the organization and supporting legislation, the system differs in how it captures decision-related information. Typically, customers design and implement their own evidence, but exceptions occur.

Evidence is defined as information that is supplied by participants that a caseworker can use to make an assessment or a determination. By default, the following nine evidence types are configured for person and prospect persons:

- Gender
- Birth and death details
- Names
- Email addresses
- Addresses
- Identifications
- Relationships
- Bank accounts
- Phone numbers

The previous evidence types are configured by default for person and prospect persons. The evidence types must always remain configured for the person and prospect person entities. For usability reasons, configure evidence types with evidence records. That is, when you configure the evidence that must be maintained on a particular case, for example, an Application Case or Integrated Case, you can configure all the evidence record types that are required and any of these person evidence types. When you configure evidence types with evidence records, caseworkers need to maintain evidence in only one location. The evidence sharing process ensures that any updates to the evidence are shared with the person and prospect persons record and any other cases where the evidence is required.

The evidence must remain configured against a person and prospect person because, when dynamic evidence data is maintained, the data is copied back to the static participant manager entity. Specific system processes read data from the static participant tables and therefore require that the data is maintained and kept current. For more information about the evidence types and behaviors, see the *Círam Participant Guide* related link.

Depending on the organization's requirements, pre-configured dynamic evidence can be verified and shared. By using the dynamic evidence editor, extra evidence types can be configured as required. For more information about the dynamic evidence editor, see the *The dynamic evidence editor* related link.

The system automatically activates evidence that is maintained from the **Person and Prospect Person** pages. No `In Edit` state applies because, unlike cases, there is no participant 'owner'. For `Active` evidence, eligibility and entitlement operate at a case level only. So, by using two separate states at a person level mean that the system can differentiate between the following two states:

- Data entry work that is in progress and, so, is not yet to be used in eligibility and entitlement.
- Evidence that is complete or verified and, so, can be used in eligibility and entitlement.

So if the caseworker is manually updating person evidence, validations for that evidence ensure that the caseworker correctly maintains the evidence as expected. For example, if a person date of birth is captured, the caseworker is only permitted to correct the date of birth. For the caseworker to try to capture a second date of birth for a person is invalid.

## Extending person evidence

Organizations can add new attributes to existing person and prospect person evidence types. Where organizations must add new or existing person and prospect person evidence types to existing data on a current database table, organizations must perform extra customization. Organizations must extend the code that replicates the data from dynamic evidence tables to the current database tables to replicate the extra data that is stored as evidence.

Where data exists on the current database tables, organizations must copy the data in the current database tables to the equivalent dynamic evidence table or tables. Organizations must extend the code that performs that operation, that is, the 'converter', to convert the extra data into evidence. For more information about customization options and extension points available for person and prospect person evidence, see the *Customizing Person/Prospect Person Evidence* related link.

### Solution modules

Solution modules provide pre-defined evidence because the evidence requirements are largely known. Income Support is an example of a solution module. For more information about Income Support, see the *Cúram Income Support overview* related link.

### Related concepts

### Related information

## 1.7 How are existing evidence types extended?

Organizations can associate new evidence types with the person and prospect person or add new attributes to existing dynamic evidence types.

### Creating and associating new evidence types

To manage additional person and prospect person evidence, organizations can create dynamic evidence types and associate the new evidence types with the person and prospect person in the administration component. For more information about creating and associating new evidence types, see the *Creating a dynamic evidence type* link.

### Related concepts

## 1.8 How do evidence types relate to each other?

Evidence types can naturally relate to each other, for example, a parent employment evidence type can have a child income evidence type. An evidence type can be the parent of one evidence type and the child of another evidence type.

The most common evidence relationship is the parent-child relationship where a parent evidence record can have one or more related child evidence records. An example of a parent-child evidence relationship is where asset evidence is a 'parent' evidence that captures the following two pieces of information:

- The types of assets that a person on the case can own.

- The value of the assets.

In such a scenario, Asset Ownership might be designed as a 'child' evidence type that is optionally related to Asset evidence. The Asset Ownership evidence might record any other people with part ownership of the asset.

Evidence relationships affect evidence maintenance in a number of ways. The evidence type list for child evidence types is filtered to display only those evidence records that are related to the parent evidence record. Also, validations can be called that check for any evidence relationship requirements. For example, it might not be possible to remove a parent evidence record if there are any active child evidence records related to it.

Evidence types can have multiple evidence relationships. For example, an evidence type can be the parent of one evidence type and the child of another, which is referred to as a parent-child-grandchild relationship. Also, evidence relationships can be optional. For example, the housing expense evidence type might be in an optional parent-child relationship with the loan evidence type. From a business perspective, certain loans might be directly related to a housing expense, while other loans might be unrelated to housing expenses, such as a car loan.

## 1.9 How are changes to evidence recorded?

---

An evidence record is updated by two types of changes: a succession or a correction. A comprehensive change history is maintained for person and prospect person and case evidence.

- **Evidence succession**

A succession refers to a change that succeeds the previous information from a new effective date. For example, when a client applied for a benefit, the client's Income evidence record was added. The client receives income from a part-time job. The job started on 1 January 2018. The system records that the client receives a wage of \$50 per week. Later in the year, the client notifies the agency that the client's wage increased to \$70 per week with effect from 1 June 2018. When the Income evidence is edited, the caseworker can enter the **Effective date of change** record so that the date that the income changed and the change in the amount are recorded.

- **Evidence correction**

A correction means that information on an evidence record must be replaced or overwritten with corrected data. For example, when a client applies for benefits online the client is prompted to enter their date of birth. Later, the client realizes that the client inadvertently entered the date of birth as 30 March 1990 instead of 3 March 1990. A caseworker can edit the evidence by overwriting the existing date of birth with the correct one. The caseworker does not use the **Effective date of change** record because the information applies to the record from the original date.

For more information about evidence correction and succession, see the *Evidence correction and succession* related link.

Change history is started when a new evidence record is inserted and is added to whenever a change such as a modification or cancellation occurs. Each entry in the change history contains the type of change, the date and time that the change was made, and the user who made the

change. The change history is useful for determining the reason why a person and prospect person's eligibility might have changed and for audit purposes.

At the top level of evidence, the latest activity displays the most recent user who created, modified, or canceled the evidence, along with the date and time.

When a user expands the evidence, a history of all succession records is displayed. Each record includes change summary information, period, source, and an Updated By field. The Updated By field displays the user that created the succession record or the most recent user to apply a correction to the succession record, along with the date and time.

When a user expands an individual succession record and selects **Corrections**, a history of all correction records for the succession record is displayed. A new corrections record is created each time a user overwrites information on an evidence succession record with corrected data. The corrections record displays change summary information, period, and an Updated By field. The Updated By field displays the user that applied the update to the succession record, along with the date and time.

**Note:** If a succession record is corrected but the in-edit correction is then discarded, the name of the user who updated the record is displayed.

#### Related concepts

#### Related information

## 1.10 How are changes to evidence approved?

Evidence approval checks provide an extra step in the apply evidence change process to ensure that evidence changes are correct.

When a user selects to activate evidence or remove evidence, the system determines whether the evidence change requires approval from the case supervisor. Organizations might require a two-step authentication for sensitive evidence types. For example, for evidence types that might be susceptible to fraud. Where a new bank account evidence is added that is used to issue benefit payments, a supervisor might be required to approve the new bank account evidence to prevent internal fraud. If approval is required, the case supervisor is notified that the evidence cannot be activated or removed until the case supervisor approves the evidence change. The case supervisor can select to approve or reject the evidence changes. If the case supervisor selects to approve evidence changes, the case supervisor is brought directly to the approve evidence change conformation page. If the person who submits the evidence is the same as the user to whom the evidence approval task is assigned, the evidence is automatically activated.

The evidence framework supports configuring evidence approval checks for an evidence type. A percentage is entered for an evidence approval check that denotes the percentage of evidence changes that require manual case supervisor approval. For example, 80 percent of evidence changes for the income evidence type can require approval. So, 80 percent of all income evidence records must be manually approved before the records are activated or before the records are removed. If no evidence approvals are configured, the system is programmed to acknowledge that evidence approvals are not required.

The evidence framework provides a list of all evidence records on a case that are submitted for approval. The status of each evidence record is shown to provide a history of the rejected evidence records and the approved evidence records.

Evidence approval checks do not apply to evidence that is maintained in the **Person** tab because the evidence does not have an **In-Edit** state. So, evidence cannot be approved or rejected before the evidence is applied. So, to enable approvals for these evidence types the evidence must also be configured on the Integrated Case.

Evidence approval checks can also apply to different levels of the organization structure, including users, positions, and organization units. For more information about the organization structure, see the *Cúram Organization Administration Guide* related link.

#### Related information

## 1.11 Can evidence be copied from one case to another?

Case evidence can be transferred from one case to another.

Evidence sharing means that cases are configured to share evidence on an ongoing basis, that is, when cases are configured to share evidence, the evidence is always shared. In contrast, transferring evidence is a one-time process that involves the transfer or copy of evidence from one case to another. For example, the caseworker wants to end a case member on an Integrated Case (IC) and to set up the case member on the case member's own case. The caseworker creates a new IC for the case member to arrange a one-time transfer of the case member's evidence to the new case. The caseworker then ends the case member on the old case. For clients who haven't purchased Evidence Broker or for clients who haven't configured sharing between the cases, the one-off copy of evidence means that the caseworker can copy lots of evidence about the client, including historic information. As a result, a caseworker does not need to re-enter the data. However, unlike evidence sharing there is no connection between the evidence on the two cases. The process was a one-time copy only and, so, the cases are separate copies. Typically, the cases are maintained separately after the copy or transfer is complete.



# Notices

---

Permissions for the use of these publications are granted subject to the following terms and conditions.

## **Applicability**

These terms and conditions are in addition to any terms of use for the Merative website.

## **Personal use**

You may reproduce these publications for your personal, noncommercial use provided that all proprietary notices are preserved. You may not distribute, display or make derivative work of these publications, or any portion thereof, without the express consent of Merative.

## **Commercial use**

You may reproduce, distribute and display these publications solely within your enterprise provided that all proprietary notices are preserved. You may not make derivative works of these publications, or reproduce, distribute or display these publications or any portion thereof outside your enterprise, without the express consent of Merative.

## **Rights**

Except as expressly granted in this permission, no other permissions, licenses or rights are granted, either express or implied, to the publications or any information, data, software or other intellectual property contained therein.

Merative reserves the right to withdraw the permissions granted herein whenever, in its discretion, the use of the publications is detrimental to its interest or, as determined by Merative, the above instructions are not being properly followed.

You may not download, export or re-export this information except in full compliance with all applicable laws and regulations, including all United States export laws and regulations.

MERATIVE MAKES NO GUARANTEE ABOUT THE CONTENT OF THESE PUBLICATIONS. THE PUBLICATIONS ARE PROVIDED "AS-IS" AND WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO IMPLIED WARRANTIES OF MERCHANTABILITY, NON-INFRINGEMENT, AND FITNESS FOR A PARTICULAR PURPOSE.

Merative or its licensors may have patents or pending patent applications covering subject matter described in this document. The furnishing of this documentation does not grant you any license to these patents.

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

Any references in this information to non-Merative 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 Merative product and use of those websites is at your own risk.

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.

The licensed program described in this document and all licensed material available for it are provided by Merative under terms of the Merative Client Agreement.

#### 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 Merative, 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. Merative, therefore, cannot guarantee or imply reliability, serviceability, or function of these programs. The sample programs are provided "AS IS", without warranty of any kind. Merative shall not be liable for any damages arising out of your use of the sample programs.

## ***Privacy policy***

---

The Merative privacy policy is available at <https://www.merative.com/privacy>.

## ***Trademarks***

---

Merative™ and the Merative™ logo are trademarks of Merative US L.P. in the United States and other countries.

IBM®, the IBM® logo, and ibm.com® are trademarks or registered trademarks of International Business Machines Corp., registered in many jurisdictions worldwide.

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.

Oracle and Java are registered trademarks of Oracle and/or its affiliates.

The registered trademark Linux® is used pursuant to a sublicense from the Linux Foundation, the exclusive licensee of Linus Torvalds, owner of the mark on a worldwide basis.

Microsoft™, Windows™, 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 company, product, and service names may be trademarks or service marks of others.