Oracle® Applications Flexfields Guide

RELEASE 11*i*

September 2002

ORACLE®

Oracle Applications Flexfields Guide, Release 11*i*

The part number for this volume is A75393–03.

Primary Authors: Sara Woodhull, Mildred Wang

Major Contributors: Michael Konopik, Gursat Olgun

Contributors: Christopher Andrews, Anne Carlson, Jeff Caldwell, Steven Carter, Cliff Godwin, Grace Ling, Emily Nordhagen, Susan Stratton

Contents

Preface

Audience for This Guide

Welcome to Release 11*i* of the *Oracle Applications Flexfields Guide*.

This guide assumes you have a working knowledge of the following:

- The principles and customary practices of your business area.
- The Oracle Applications graphical user interface.

  To learn more about the Oracle Applications graphical user interface, read the *Oracle Applications User's Guide.*

See Other Information Sources for more information about Oracle Applications product information.

How To Use This Guide

This guide contains the information you need to understand and use flexfields in Oracle Applications.

This preface explains how this user guide is organized and introduces other sources of information that can help you. This guide contains the following chapters:

- Chapter 1 provides an overview of flexfields concepts and an overview of setting up flexfields.
- Chapter 2 contains information for planning and defining key flexfields.
- Chapter 3 contains information for planning and defining descriptive flexfields, as well as a section on how to identify a descriptive flexfield in a form.
- Chapter 4 describes how to use values and value sets in your flexfields.
- Chapter 5 provides information on additional flexfields features, such as shorthand aliases, security rules, and cross–validation rules.
- Chapter 6 contains a summary of the key flexfields used in Oracle Applications.
- Chapter 7 describes how Standard Request Submission interacts with flexfields.
- Chapter 8 explains how to report on flexfield data using flexfield rules.

- Chapter 9 tells you how to use special validation to provide flexfields as report parameters, and includes syntax for flexfields routines.
- Chapter 10 includes documentation about the Account Generator feature.
- Finally, an appendix contains information for the Business View Generator for Business Intelligence (BIS).

Documentation Accessibility

Our goal is to make Oracle products, services, and supporting documentation accessible, with good usability, to the disabled community. To that end, our documentation includes features that make information available to users of assistive technology. This documentation is available in HTML format, and contains markup to facilitate access by the disabled community. Standards will continue to evolve over time, and Oracle Corporation is actively engaged with other market–leading technology vendors to address technical obstacles so that our documentation can be accessible to all of our customers. For additional information, visit the Oracle Accessibility Program Web site at http:/ / www.oracle.com / accessibility / .

Accessibility of Code Examples in Documentation

JAWS, a Windows screen reader, may not always correctly read the code examples in this document. The conventions for writing code require that closing braces should appear on an otherwise empty line; however, JAWS may not always read a line of text that consists solely of a bracket or brace.

Accessibility of Links to External Web Sites in Documentation

This documentation may contain links to Web sites of other companies or organizations that Oracle Corporation does not own or control. Oracle Corporation neither evaluates nor makes any representations regarding the accessibility of these Web sites.

Why Flexfields Have A Separate Manual

While flexfields do not require programming, they do allow you to perform significant customizations to the Oracle Applications, so they do require enough explanation for you to get the most out of the

features they provide. Also, once you learn how to plan and set up one Oracle Applications feature that is built using a flexfield, you will find it much easier to set up any other Oracle Applications feature that uses a flexfield.

Other Information Sources

You can choose from many sources of information, including online documentation, training, and support services, to increase your knowledge and understanding of Oracle Applications flexfields.

If this guide refers you to other Oracle Applications documentation, use only the Release 11*i* versions of those guides.

Online Documentation

All Oracle Applications documentation is available online (HTML or PDF).

- **Online Help** – The new features section in the HTML help describes new features in 11*i*. This information is updated for each new release of Oracle Applications. The new features section also includes information about any features that were not yet available when this guide was printed. For example, if your administrator has installed software from a mini–pack or an upgrade, this document describes the new features. Online help patches are available on MetaLink.
- **11*i* Features Matrix** – This document lists new features available by patch and identifies any associated new documentation. The new features matrix document is available on MetaLink.
- **Readme File** – Refer to the readme file for patches that you have installed to learn about new documentation or documentation patches that you can download.

Related User's Guides

You can read the guides online by choosing Library from the expandable menu on your HTML help window, by reading from the Oracle Applications Document Library CD included in your media pack, or by using a Web browser with a URL that your system administrator provides.

If you require printed guides, you can purchase them from the Oracle Store at http://oraclestore.oracle.com.

Guides Related to This Product

Oracle Business Intelligence System Implementation Guide

This guide provides information about implementing Oracle Business Intelligence (BIS) in your environment.

Guides Related to All Products

Oracle Applications User's Guide

This guide explains how to enter data, query, run reports, and navigate using the graphical user interface (GUI) available with this release of Oracle Applications. This guide also includes information on setting user profiles, as well as running and reviewing reports and concurrent processes.

You can access this user's guide online by choosing "Getting Started with Oracle Applications" from any Oracle Applications help file.

Installation and System Administration

Oracle Applications Concepts

This guide provides an introduction to the concepts, features, technology stack, architecture, and terminology for Oracle Applications Release 11*i*. It provides a useful first book to read before an installation of Oracle Applications. This guide also introduces the concepts behind Applications–wide features such as Business Intelligence (BIS), languages and character sets, and Self–Service Web Applications.

Installing Oracle Applications

This guide provides instructions for managing the installation of Oracle Applications products. In Release 11*i*, much of the installation process is handled using Oracle Rapid Install, which minimizes the time to install Oracle Applications, the Oracle8 technology stack, and the Oracle8*i* Server technology stack by automating many of the required steps. This guide contains instructions for using Oracle Rapid Install and lists the tasks you need to perform to finish your installation. You

should use this guide in conjunction with individual product user's guides and implementation guides.

Upgrading Oracle Applications

Refer to this guide if you are upgrading your Oracle Applications Release 10.7 or Release 11.0 products to Release 11*i*. This guide describes the upgrade process and lists database and product–specific upgrade tasks. You must be either at Release 10.7

(NCA, SmartClient, or character mode) or Release 11.0, to upgrade to Release 11*i*. You cannot upgrade to Release 11*i* directly from releases prior to 10.7.

Maintaining Oracle Applications

Use this guide to help you run the various AD utilities, such as AutoUpgrade, AutoPatch, AD Administration, AD Controller, AD Relink, License Manager, and others. It contains how–to steps, screenshots, and other information that you need to run the AD utilities. This guide also provides information on maintaining the Oracle applications file system and database.

Oracle Applications System Administrator's Guide

This guide provides planning and reference information for the Oracle Applications System Administrator. It contains information on how to define security, customize menus and online help, and manage concurrent processing.

Oracle Applications Developer's Guide

This guide contains the coding standards followed by the Oracle Applications development staff. It describes the Oracle Application Object Library components needed to implement the Oracle Applications user interface described in the *Oracle Applications User Interface Standards for Forms–Based Products*. It also provides information to help you build your custom Oracle Forms Developer 6*i* forms so that they integrate with Oracle Applications.

Other Implementation Documentation

Oracle Applications Product Update Notes

Use this guide as a reference for upgrading an installation of Oracle Applications. It provides a history of the changes to individual Oracle Applications products between Release 11.0 and Release 11*i*. It includes new features, enhancements, and changes made to database objects, profile options, and seed data for this interval.

Oracle Workflow Guide

This guide explains how to define new workflow business processes as well as customize existing Oracle Applications–embedded workflow processes. You also use this guide to complete the setup steps necessary for any Oracle Applications product that includes workflow–enabled processes.

Oracle eTechnical Reference Manuals

Each eTechnical Reference Manual (eTRM) contains database diagrams and a detailed description of database tables, forms, reports, and programs for a specific Oracle Applications product. This information helps you convert data from your existing applications, integrate Oracle Applications data with non–Oracle applications, and write custom reports for Oracle Applications products. Oracle eTRM is available on Metalink.

Oracle Applications User Interface Standards for Forms–Based Products

This guide contains the user interface (UI) standards followed by the Oracle Applications development staff. It describes the UI for the Oracle Applications products and how to apply this UI to the design of an application built by using Oracle Forms.

Training and Support

Training

Oracle offers a complete set of training courses to help you and your staff master Oracle Applications and reach full productivity quickly. These courses are organized into functional learning paths, so you take only those courses appropriate to your job or area of responsibility.

You have a choice of educational environments. You can attend courses offered by Oracle University at any one of our many Education Centers, you can arrange for our trainers to teach at your facility, or you can use Oracle Learning Network (OLN), Oracle University's online education utility. In addition, Oracle training professionals can tailor standard courses or develop custom courses to meet your needs. For example, you may want to use your organization structure, terminology, and data as examples in a customized training session delivered at your own facility.

Support

From on–site support to central support, our team of experienced professionals provides the help and information you need to keep Oracle Applications working for you. This team includes your Technical Representative and Account Manager, and Oracle's large staff of consultants and support specialists with expertise in your business area, managing an Oracle8*i* server, and your hardware and software environment.

Do Not Use Database Tools to Modify Oracle Applications Data

Oracle STRONGLY RECOMMENDS that you never use SQL*Plus, Oracle Data Browser, database triggers, or any other tool to modify Oracle Applications data unless otherwise instructed.

Oracle provides powerful tools you can use to create, store, change, retrieve, and maintain information in an Oracle database. But if you use Oracle tools such as SQL*Plus to modify Oracle Applications data, you risk destroying the integrity of your data and you lose the ability to audit changes to your data.

Because Oracle Applications tables are interrelated, any change you make using Oracle Applications can update many tables at once. But when you modify Oracle Applications data using anything other than Oracle Applications, you may change a row in one table without making corresponding changes in related tables. If your tables get out of synchronization with each other, you risk retrieving erroneous information and you risk unpredictable results throughout Oracle Applications.

When you use Oracle Applications to modify your data, Oracle Applications automatically checks that your changes are valid. Oracle Applications also keeps track of who changes information. If you enter information into database tables using database tools, you may store

invalid information. You also lose the ability to track who has changed your information because SQL*Plus and other database tools do not keep a record of changes.

About Oracle

Oracle Corporation develops and markets an integrated line of software products for database management, applications development, decision support, and office automation, as well as Oracle Applications, an integrated suite of more than 160 software modules for financial management, supply chain management, manufacturing, project systems, human resources and customer relationship management.

Oracle products are available for mainframes, minicomputers, personal computers, network computers and personal digital assistants, allowing organizations to integrate different computers, different operating systems, different networks, and even different database management systems, into a single, unified computing and information resource.

Oracle is the world's leading supplier of software for information management, and the world's second largest software company. Oracle offers its database, tools, and applications products, along with related consulting, education, and support services, in over 145 countries around the world.

Your Feedback

Thank you for using Oracle Applications and this user's guide.

Oracle values your comments and feedback. At the end of this guide is a Reader's Comment Form you can use to explain what you like or dislike about Oracle Applications or this user's guide. Mail your comments to the following address or call us directly at (650) 506–7000.

Oracle Applications Documentation Manager
Oracle Corporation
500 Oracle Parkway
Redwood Shores, CA 94065
U.S.A.

Or, send electronic mail to **appsdoc_us@oracle.com**.

CHAPTER

1 Flexfield Concepts

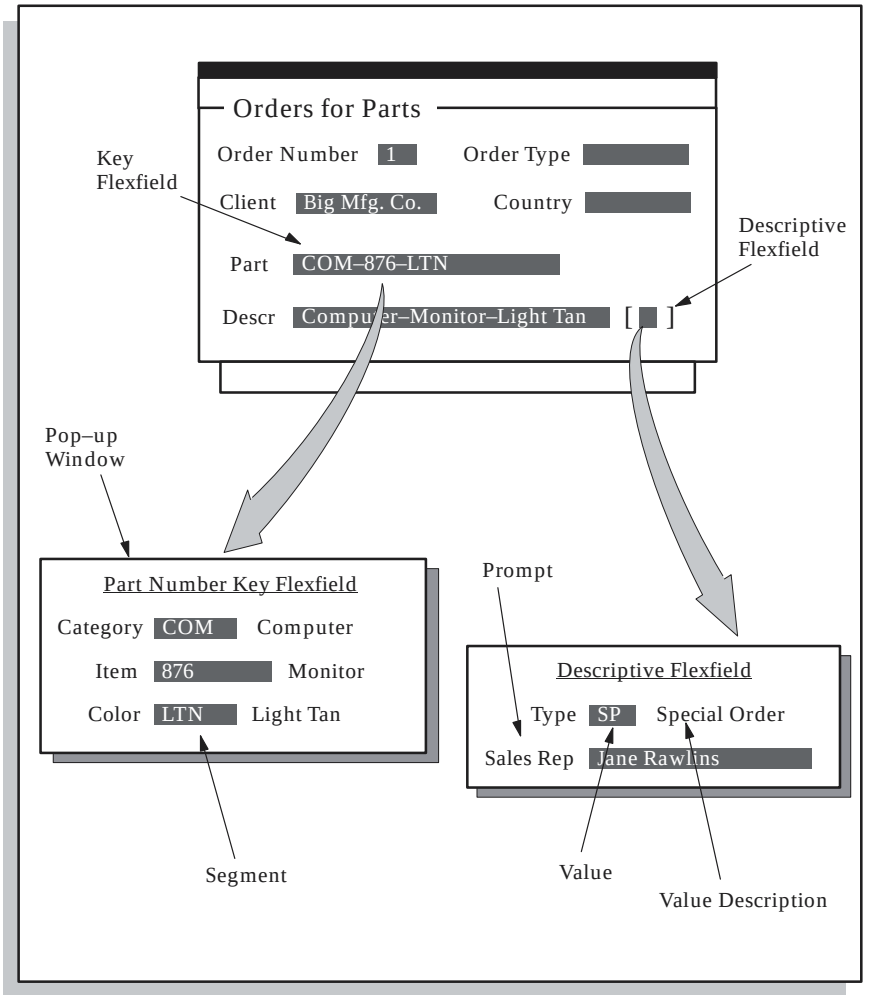
This chapter provides you with a conceptual overview of flexfields. You learn about:

- The general features of flexfields
- Flexfields terminology
- The benefits of flexfields
- The distinction between a key and descriptive flexfield
- The overall setup process for flexfields

Overview of Flexfield Concepts

A flexfield is a field made up of sub–fields, or segments. There are two types of flexfields: key flexfields and descriptive flexfields. A key flexfield appears on your form as a normal text field with an appropriate prompt. A descriptive flexfield appears on your form as a two–character–wide text field with square brackets [ ] as its prompt. When opened, both types of flexfield appear as a pop–up window that contains a separate field and prompt for each segment. Each segment has a name and a set of valid values. The values may also have value descriptions.

Figure 1 – 1



Key Flexfields

Most organizations use ”codes” made up of meaningful segments (intelligent keys) to identify general ledger accounts, part numbers, and other business entities. Each segment of the code can represent a characteristic of the entity. For example, your organization might use the part number PAD–NR–YEL–8 1/2x14” to represent a notepad that is narrow–ruled, yellow, and 8 1/2” by 14”. Another organization may identify the same notepad with the part number ”PD–8x14–Y–NR”. Both of these part numbers are codes whose segments describe a characteristic of the part. Although these codes represent the same part, they each have a different segment structure that is meaningful only to the organization using those codes.

The Oracle Applications store these ”codes” in key flexfields. Key flexfields are flexible enough to let any organization use the code scheme they want, without programming.

When your organization initially installs Oracle Applications, you and your organization’s implementation team customize the key flexfields to incorporate code segments that are meaningful to your business. You decide what each segment means, what values each segment can have, and what the segment values mean. Your organization can define rules to specify which segment values can be combined to make a valid complete code (also called a *combination*). You can also define relationships among the segments. The result is that you and your organization can use the codes you want rather than changing your codes to meet Oracle Applications’ requirements.

For example, consider the codes your organization uses to identify general ledger accounts. Oracle Applications represent these codes using a particular key flexfield called the Accounting Flexfield. One organization might choose to customize the Accounting Flexfield to include five segments: company, division, department, account, and project. Another organization, however, might structure their general ledger account segments differently, perhaps using twelve segments instead of five. The Accounting Flexfield lets your Oracle General Ledger application accommodate the needs of different organizations by allowing them to customize that key flexfield to their particular business usage. See: *Oracle General Ledger User’s Guide.*

Attention: Throughout this guide we use the ”Part Number Key Flexfield” in our examples and graphics. We use this example because it helps to illustrate the uses and behaviors of key flexfields without requiring any specialized accounting, human resources, or manufacturing knowledge. However, there is no actual ”Part Number Key Flexfield” in the Oracle

Applications, and you should not confuse it with the System Items Flexfield (Item Flexfield) used by many Oracle Applications products such as Oracle Inventory.

Descriptive Flexfields

Descriptive flexfields provide customizable ”expansion space” on your forms. You can use descriptive flexfields to track additional information, important and unique to your business, that would not otherwise be captured by the form. Descriptive flexfields can be context sensitive, where the information your application stores depends on other values your users enter in other parts of the form.

A descriptive flexfield appears on a form as a single–character, unnamed field enclosed in brackets. Just like in a key flexfield, a pop–up window appears when you move your cursor into a customized descriptive flexfield. And like a key flexfield, the pop–up window has as many fields as your organization needs.

Each field or segment in a descriptive flexfield has a prompt, just like ordinary fields, and can have a set of valid values. Your organization can define dependencies among the segments or customize a descriptive flexfield to display context–sensitive segments, so that different segments or additional pop–up windows appear depending on the values you enter in other fields or segments.

For example, consider the Additions form you use to define an asset in your Oracle Assets application. This form contains fields to capture the ”normal” information about an asset, such as the type of asset and an asset number. However, the form does not contain specific fields for each detail about a given asset, such as amount of memory in a computer or lifting capacity of a forklift. In this case, having all the potentially–needed fields actually built into the form is not only difficult, it is undesirable. Because while one organization may have computers and forklifts as assets, another organization may have only computers and luxury automobiles (and no forklifts) as assets. If the form contained built–in fields for each attribute of a forklift, for example, an organization with no forklifts would find those fields to be both unnecessary and a nuisance because a user must skip them to enter information about another type of asset. In fact, fields for forklift information would be cumbersome whenever a user in any organization tries to enter any asset that is not a forklift.

Instead of trying to contain all possible fields for assets information, the Additions form has a descriptive flexfield that you can customize to

capture just the information your organization needs about your assets. The flexfield structure can depend on the value of the Asset Category field and display only those fields (segments) that apply to the particular type of asset. For example, if the asset category were ”desk, wood”, your descriptive flexfield could prompt for style, size and wood type. If the asset category were ”computer, hardware”, your flexfield could prompt for CPU chip and memory size. You can even add to the descriptive flexfield later as you acquire new categories of assets.

See: Additions
(Oracle Assets User’s Guide)

The Enter Journals window in the Oracle General Ledger applications is another example of a form that includes descriptive flexfields to allow organizations to capture additional information of their own choosing. Each block contains a descriptive flexfield as its last field. You might use these to store additional information about each journal entry, such as a source document number or the name of the person who prepared the entry.

See: Entering Journals
(Oracle General Ledger User’s Guide)

Benefits of Flexfields

Flexfields provide you with the features you need to satisfy the following business needs:

- Customize your applications to conform to your current business practice for accounting codes, product codes, and other codes.
- Customize your applications to capture data that would not otherwise be tracked by your application.
- Have ”intelligent fields” that are fields comprised of one or more segments, where each segment has both a value and a meaning.
- Rely upon your application to validate the values and the combination of values that you enter in intelligent fields.
- Have the structure of an intelligent field change depending on data in your form or application data.
- Customize data fields to your meet your business needs without programming.

- Query intelligent fields for very specific information.

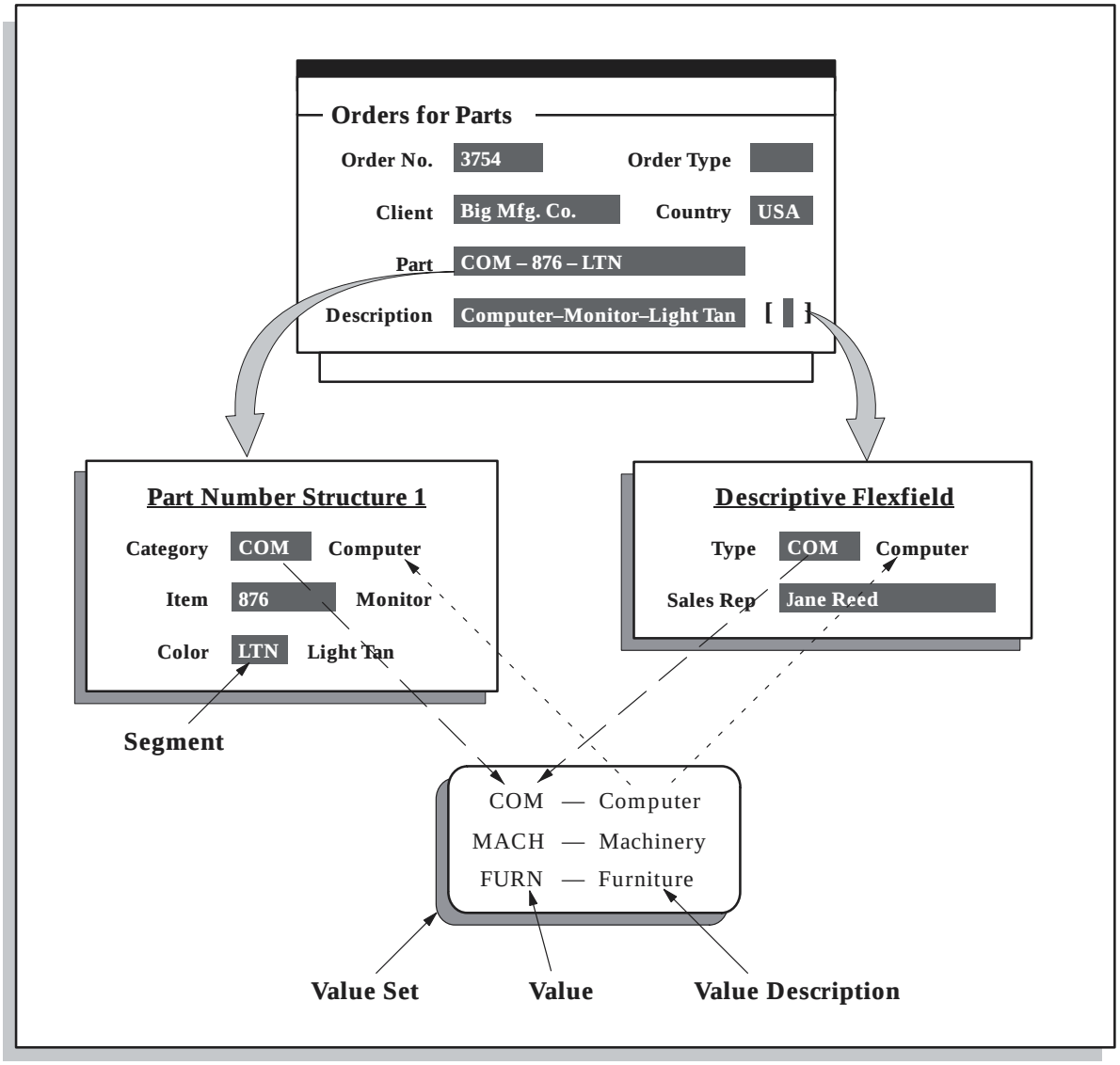
What is the distinction between flexfields and application features? Flexfields, while they are a major feature of the Oracle Applications as a whole, are merely a mechanism to provide many application features. Key flexfields provide a flexible way for the Oracle Applications to represent objects such as accounting codes, part numbers, job descriptions, and more. For example, the Accounting Flexfield is a feature that uses a key flexfield to represent accounting codes throughout most of the Oracle Applications. Similarly, descriptive flexfields provide a flexible way for the Oracle Applications to provide customizable ”expansion space” in forms, as well as a way to implement context–sensitive fields that appear only when needed. Both types of flexfield let you customize Oracle Applications features without programming.

Basic Flexfields Concepts

We use the following terms for both key and descriptive flexfields:

- Segment
- Value
- Validation (Validate)
- Value set
- Structure

Figure 1 – 2



Segment

A segment is a single sub–field within a flexfield. You define the appearance and meaning of individual segments when customizing a flexfield. A segment is represented in your database as a single table column.

For a key flexfield, a segment usually describes a particular characteristic of the entity identified by the flexfield. For example, you can have a key flexfield that stores part numbers. The key flexfield can contain the part number PAD–YEL–NR–8 1/2x14, which represents a yellow, narrow ruled, 8 1/2" x 14" note pad. Each section in the part number, separated by a hyphen, describes a characteristic of the part. The first segment describes the object, a note pad, the second segment describes the color of the object, yellow, and so on.

Note that we also refer to the fields in a descriptive flexfield pop–up window as segments even though they do not necessarily make up meaningful codes like the segments in key flexfields. However, they do often describe a particular characteristic of the entity identified elsewhere on the form you are using.

Values, Validation and Value Sets

Your end user enters a segment value into a segment while using an application. Generally, the flexfield validates each segment against a set of valid values (a "value set") that are usually predefined. To "validate a segment" means that the flexfield compares the value a user enters in the segment against the values in the value set for that segment.

You can set up your flexfield so that it automatically validates segment values your end user enters against a table of valid values (which may also have value descriptions). If your end user enters an invalid segment value, a list of valid values appears automatically so that the user can choose a valid value.

You can think of a value set as a "container" for your values. You choose what types of values can fit into your value set: their length, format, and so on.

A segment is usually validated, and usually each segment in a given flexfield uses a different value set. You can assign a single value set to more than one segment, and you can even share value sets among different flexfields. For most value sets, when you enter values into a flexfield segment, you can enter only values that already exist in the value set assigned to the segment.

Structure

A flexfield structure is a specific configuration of segments. If you add or remove segments, or rearrange the order of segments in a flexfield, you get a different structure.

You can define multiple segment structures for the same flexfield (if that flexfield has been built to support more than one structure). Your flexfield can display different prompts and fields for different end users based on a data condition in your form or application data. Both key and descriptive flexfields may allow more than one structure.

In some applications, different users may need a different arrangement of the segments in a flexfield (key or descriptive). Or, you might want different segments in a flexfield depending on, for example, the value of another form or database field.

Your Oracle General Ledger application, for example, provides different Accounting Flexfield (Chart of Accounts) structures for users of different sets of books. The Oracle General Ledger application determines which flexfield structure to use based on the value of the GL Set of Books Name user profile option.

See:

Oracle [Public Sector] General Ledger User's Guide

Overview of Setting Up Flexfields

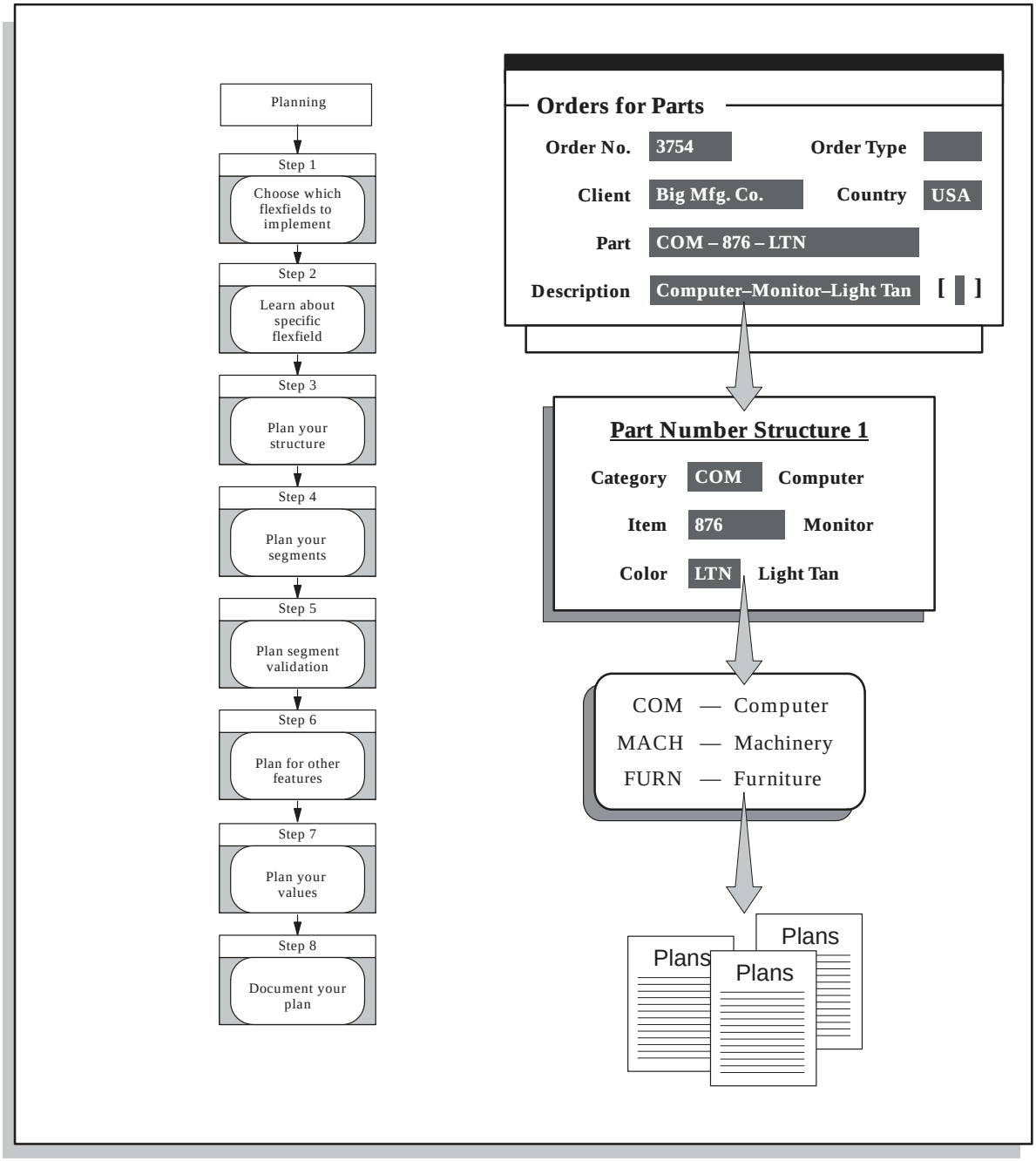
The general process of implementing and using flexfields consists of several major phases:

- Planning: page 1 – 10
- Defining: page 1 – 16
- Data entry and ongoing maintenance: page 1 – 16
- Reporting: page 1 – 17

You may also have requirements for other phases, such as building custom reports for your site.

Planning

Figure 1 – 3


Planning
Step 1
Choose which flexfields to implement
Step 2
Learn about specific flexfield
Step 3
Plan your structure
Step 4
Plan your segments
Step 5
Plan segment validation
Step 6
Plan for other features
Step 7
Plan your values
Step 8
Document your plan
Orders for Parts
Order No. 3754
Order Type
Client Big Mfg. Co.
Country USA
Part COM – 876 – LTN
Description Computer–Monitor–Light Tan
Part Number Structure 1
Category COM Computer
Item 876 Monitor
Color LTN Light Tan
COM — Computer
MACH — Machinery
FURN — Furniture
Plans
Plans
Plans

Just as for implementing any new application, planning is by far the most important (and probably the most time–consuming) phase of implementing flexfields, so you should give it careful thought. The planning phase can be broken into smaller, though still interrelated, steps:

- Decide which flexfields to implement
- Learning about a specific flexfield
- Planning the structure
- Planning the segments
- Planning the segment validation
- Planning to use additional features
- Documenting your plan

Suggestion: We recommend that you plan your flexfields as completely as possible, including your potential segment values, before you even begin to define them using Oracle Applications forms. Once you begin using your flexfields to acquire data, you cannot change them easily. Changing a flexfield for which you already have data may require a complex conversion process.

Decide which flexfields to implement

Oracle Applications products rely on some key flexfields as central parts of the applications, so you must set up these key flexfields. For example, while the Oracle General Ledger products use only the Accounting Flexfield key flexfield, almost every Oracle Applications product uses the Accounting Flexfield for some part of its processing. So, you must almost always set up the Accounting Flexfield, especially if you have more than one of the Oracle Applications at your site. In addition, many Oracle Applications products such as Oracle Inventory and Oracle Purchasing use the System Items Flexfield (Item Flexfield). Other Oracle Applications use various key flexfields for various purposes, and defining those flexfields is usually mandatory for a particular application.

See: Overview of Setting Up
(Oracle [Product] User's Guide)

While most Oracle Applications products require that you set up particular key flexfields, many descriptive flexfields are optional. You need only set up optional descriptive flexfields for forms where you want to capture business data not otherwise captured by the form fields.

Learning about a specific flexfield

Because each key and descriptive flexfield has a different purpose, you should be sure to understand the purpose and requirements for the flexfield you want to define. Some flexfields, particularly the Accounting Flexfield, have restrictions on how you can define them. Most descriptive flexfields simply provide a certain number of segment columns you can use for whatever you need to fill your organization's needs.

See:

Key Flexfields in Oracle Applications: page 6 – 2

Planning the structure

For each flexfield you want to implement, plan your segment structure(s). You can completely customize the appearance of your flexfield pop–up window for each structure, including its title and the number, order, length, and prompts of its segments. Though you can always change the cosmetic aspects of your flexfield pop–up window, such as the title and prompts, you should never change the number, order, and maximum length of your segments once you have acquired flexfield data. So, you should plan your structures carefully and allow for future needs.

See:

Planning Your Key Flexfield: page 2 – 13

Planning Your Descriptive Flexfield: page 3 – 24

Planning the segments

You must choose two lengths for each segment, the displayed length and the maximum length. The maximum length is the length of the longest value a user can enter into a segment. The largest maximum length you can choose must be less than or equal to the length of the underlying column that corresponds to the segment. Because these

column sizes vary among flexfields, you need to know what column lengths are available for your flexfield.

The displayed length is the segment length a user sees in the pop–up window. If the displayed length is less than the maximum length, the user must scroll through the segment to see its entire contents.

See:

Key Flexfields in Oracle Applications: page 6 – 2

Planning the segment validation

For each segment, plan your validation. Consider what types of values you will be using in your flexfield segments. These decisions affect how you set up your value sets and values.

- Do you want to provide a list of values for each segment? A list of values on a segment can make data entry faster and easier for your users and ensure that they enter valid values.
- Do you want to share values among segments in different structures or among different flexfields?
- Do you want the available values in a segment to depend upon what value a user entered in a prior segment?
- Do you not want to validate a segment at all (that is, do you want to allow a user to enter any value in the segment, such as a license number that would not be predefined)?

Keep in mind that your values will change over time. Usually, an organization adds more values as the organization grows or reorganizes to use new values. For example, you might have a two–character long segment that holds a department number. Initially, a two–character department number (such as 01, 02, 15, and so on) may be sufficient. However, if you later need a department number larger than 99, such as 100, your segment cannot contain the larger values, and you would need to change the segment length and then convert any existing data. For example, your three–character department numbers may become 001, 002, 015, and so on instead of 01, 02, 15, and so on. You want to avoid such conversions if possible, so you should plan your values to allow for future needs.

You should also consider how you plan to acquire your values:

- Do you plan to predefine each segment value manually using an Oracle Applications form?

- Do you already have application tables that contain appropriate values you can use?
- Do you plan to use non–validated segments (with no predefined values) where a user can enter any value in a segment?
- If you have legacy systems, do you plan to derive flexfield values from those systems in some automated fashion?

See: Values and Value Sets: page 4 – 2

Planning to use additional features

Flexfields have several additional features that make flexfields easier to use or that provide extra capabilities such as restricting users from using certain values. For a full discussion of these features, see the Using Additional Flexfields Features chapter. These features include:

- Flexfield value security
- Cross–validation (for key flexfields)
- Shorthand entry (for key flexfields)

Certain features that affect the end–user behavior of flexfields, such as AutoSkip and query–by–example, are discussed in the *Oracle Applications User's Guide*. See: Overview of Flexfields, *Oracle Applications User's Guide*.

See:

Overview of Shorthand Flexfield Entry: page 5 – 2

Cross Validation Rules: page 5 – 23

Overview of Flexfield Value Security: page 5 – 9

Documenting your plans

You should fully document your flexfield plans before you sit down to define your flexfields using your Oracle Applications setup forms.

We provide worksheets and templates throughout the book that you can use to aid your decision and documentation process.

Defining

Defining your flexfield is easy **once you have completed and documented your planning stage**. You use Oracle Applications setup forms to define your flexfield.

Define your value sets

Depending on exactly how you want to validate your segments, you may spend 10–30 minutes defining each value set (roughly one value set per segment, or fewer if you plan to share value sets or do not plan to use value sets for certain segments).

Note that you do not define your actual values at this point; rather, you are simply defining the containers for your values. See: Value Set Windows: page 4 – 50.

Define your segment structures

This is the main part of defining a flexfield, and includes defining structure titles, segment prompts, segment order, and segment display sizes. Depending on the number of structures and segments you have, you may spend 20–90 minutes per flexfield. See: Key Flexfield Segments: page 2 – 16, Descriptive Flexfield Segments: page 3 – 31.

Define your values, if necessary

Depending on exactly how you want to validate your segments, you may spend anywhere from 1–3 minutes defining each independent or dependent value in an Oracle Applications form. If you have legacy systems, you may need to build a program to import your legacy values into Oracle Applications tables. See: Segment Value Window: page 4 – 65, Values and Value Sets: page 4 – 2.

Define additional features, if necessary

If you plan to use additional features such as cross–validation rules or flexfield value security, you define those additional features at this point.

Data Entry and Ongoing Maintenance

Data entry consists of using your applications for your day–to–day operations. For key flexfields, you may want to predefine the complete

codes (combinations of segment values) you want to allow your users to enter.

See: Defining Accounts
(Oracle General Ledger User's Guide)

As your organization's needs change, you will need to perform ongoing maintenance of your flexfields. For example, you may need to define new flexfield structures or disable old structures. You may also need to add new values or cross–validation rules or value security rules.

See:

Key Flexfield Segments: page 2 – 16

Cross–Validation Rules: page 5 – 35

Defining Accounts
(Oracle General Ledger User's Guide)

Reporting

Oracle Applications provides many predefined reports you can use to retrieve your organization's data, and many of these include flexfields data. You can also build custom reports for your organization using the flexfields routines and views we provide. See: Reporting on Flexfields Data: page 8 – 1.

CHAPTER

2

Planning and Defining Key Flexfields

This chapter contains information on planning and defining key flexfields. It includes further discussion of flexfields concepts and provides additional concepts that are specific to key flexfields. It also includes discussions of the procedures you use to set up any key flexfield.

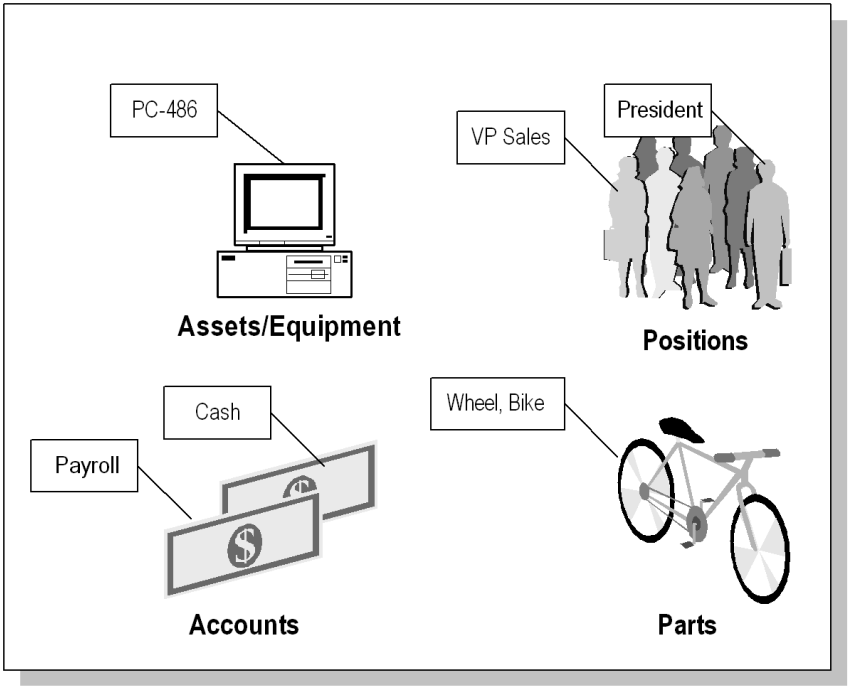
Additional Terms and Concepts for Key Flexfields

You should already know these basic flexfields terms and concepts:

- Flexfield
- Segment
- Structure
- Value
- Validation (Validate)
- Value set

Now that you know terms and concepts that apply to both key and descriptive flexfields, you need to know additional terms that apply to key flexfields only.

Intelligent Key



An *intelligent key* is a code made up of sections, where one or more parts may have meaning. An intelligent key ”code” uniquely identifies an object such as an account, an asset, a part, or a job. Intelligent keys are useful in applications because they are usually easier for a user to remember and use than a unique number. For example, a part number of PAD–YEL–11x14 is much easier to remember than a unique part number of 57494. However, unique ID numbers are easier to maintain in a relational database application because only one column is required for the ID number, while multiple columns would be required for an intelligent key (one for each section or segment of the code). The Oracle Applications use key flexfields to represent intelligent keys with unique ID numbers. That is, an end user sees and works with an easy–to–remember intelligent key code, while the Oracle Applications only need to store a hidden unique ID number in most tables.

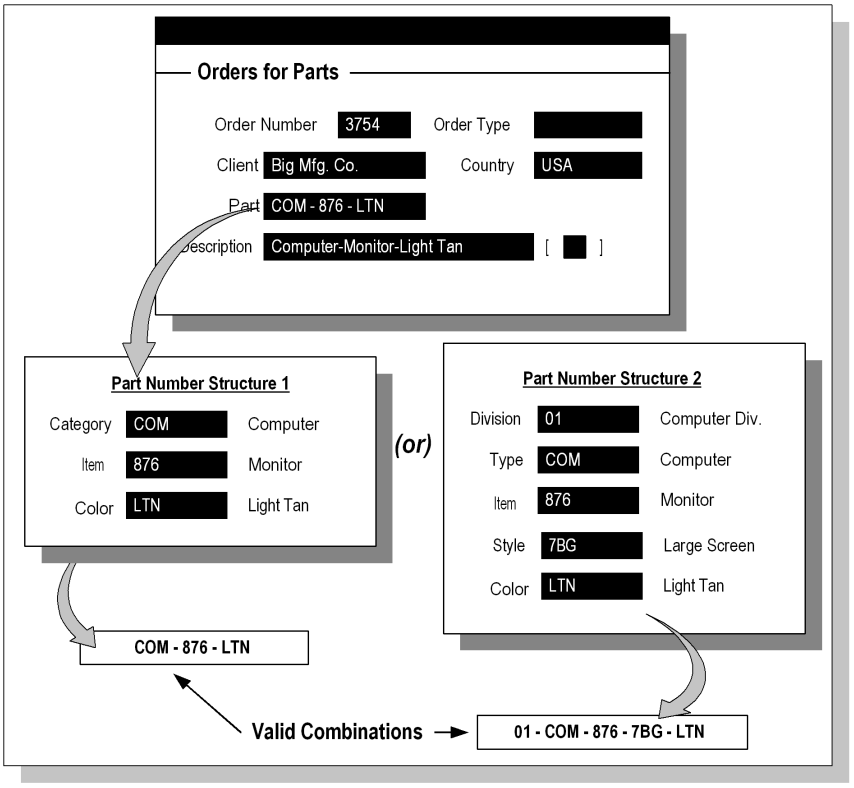
Attention: Throughout this guide we use the ”Part Number Key Flexfield” in our examples and graphics. We use this example because it helps to illustrate the uses and behaviors of key flexfields without requiring any specialized accounting, human resources, or manufacturing knowledge. However, there is no actual ”Part Number Key Flexfield” in the Oracle Applications, and you should not confuse it with the System Items Flexfield (Item Flexfield) used by many Oracle Applications products such as Oracle Inventory.

Combination

A *combination* is a particular complete code, or combination of segment values that makes up the code, that uniquely identifies an object. For example, each part number would be a single combination, such as PAD–YEL–11x14 or 01–COM–876–7BG–LTN (where the dash ”–” is the *segment separator*). If you had ten parts you would define ten combinations. A *valid combination* is simply a combination that may currently be used (that is, it is not out of date or disabled). A combination would have different segments depending on the flexfield structure being used for that combination. Any combination is associated with only one particular flexfield structure (arrangement of segments).

Note that many of the Oracle Applications products (and their documentation) do not necessarily refer to key flexfield combinations as ”combinations”. They may refer to combinations using the name of the entity or the key flexfield itself. For example, Oracle Assets uses a key flexfield called the ”Asset Key Flexfield” and refers to one of its

combinations as ”an asset key” or ”an asset key flexfield”. In another example, Oracle General Ledger and other Oracle Applications products generally use the term ”account” or ”GL account” to refer to combinations of the Accounting Flexfield.



Combinations Table

Each key flexfield has one corresponding table, known as the *combinations table*, where the flexfield stores a list of the complete codes, with one column for each segment of the code, together with the corresponding unique ID number (a *code combination ID number* or *CCID*) for that code. Then, other tables in the application have a column that stores just the unique ID for the code. For example, if you have a part number code, such as PAD–YEL–11x14, the ”Parts” combinations table stores that code along with its ID, 57494. If your application allows you to take orders for parts, you might then have an ”Orders” table that stores orders for parts. That ”Orders” table would

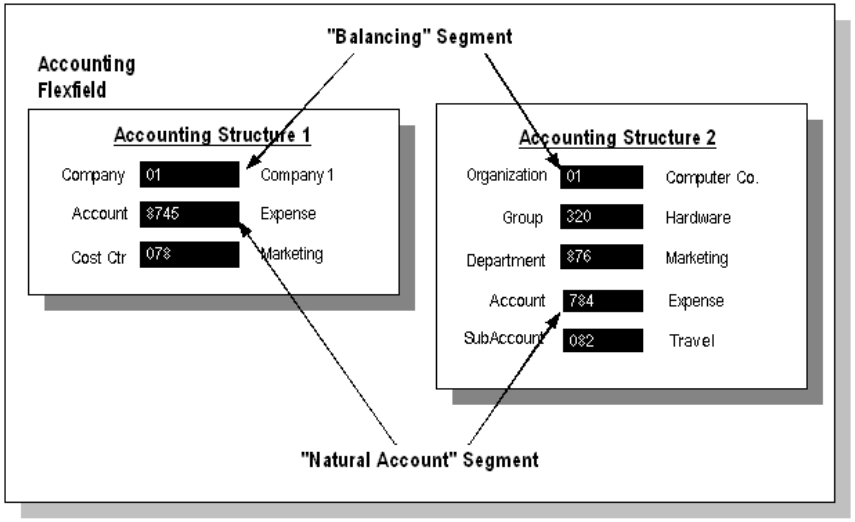
contain a single column that contains the part ID, 57494, instead of several columns for the complete code PAD–YEL–11x14.

Qualifiers

Flexfield Qualifier

A *flexfield qualifier* identifies a particular segment of a key flexfield.

Usually an application needs some method of identifying a particular segment for some application purpose such as security or computations. However, since a key flexfield can be customized so that segments appear in any order with any prompts, the application needs a mechanism other than the segment name or segment order to use for segment identification. Flexfield qualifiers serve this purpose. You can think of a flexfield qualifier as an ”identification tag” for a segment.



For example, your Oracle General Ledger product needs to be able to identify which segment in the Accounting Flexfield contains balancing information and which segment contains natural account information. Since you can customize the Accounting Flexfield so that segments appear in any order with any prompts, Oracle General Ledger needs the flexfield qualifier to determine which segment you are using for natural account information. When you define your Accounting

Flexfield, you must specify which flexfield qualifiers apply to which segments.

Other applications, such as Oracle Human Resources, also use flexfield qualifiers. Oracle Human Resources uses flexfield qualifiers to control who has access to confidential information in flexfield segments.

A segment qualifier identifies a particular type of value in a single segment of a key flexfield. In the Oracle Applications, only the Accounting Flexfield uses segment qualifiers. You can think of a segment qualifier as an ”identification tag” for a value. In the Accounting Flexfield, segment qualifiers can identify the account type for a natural account segment value, and determine whether detail posting or budgeting are allowed for a particular value.

It is easy to confuse the two types of qualifiers. You should think of a flexfield qualifier as something the whole flexfield uses to tag its pieces, and you can think of a segment qualifier as something the segment uses to tag its values.

Types of Key Flexfield Forms

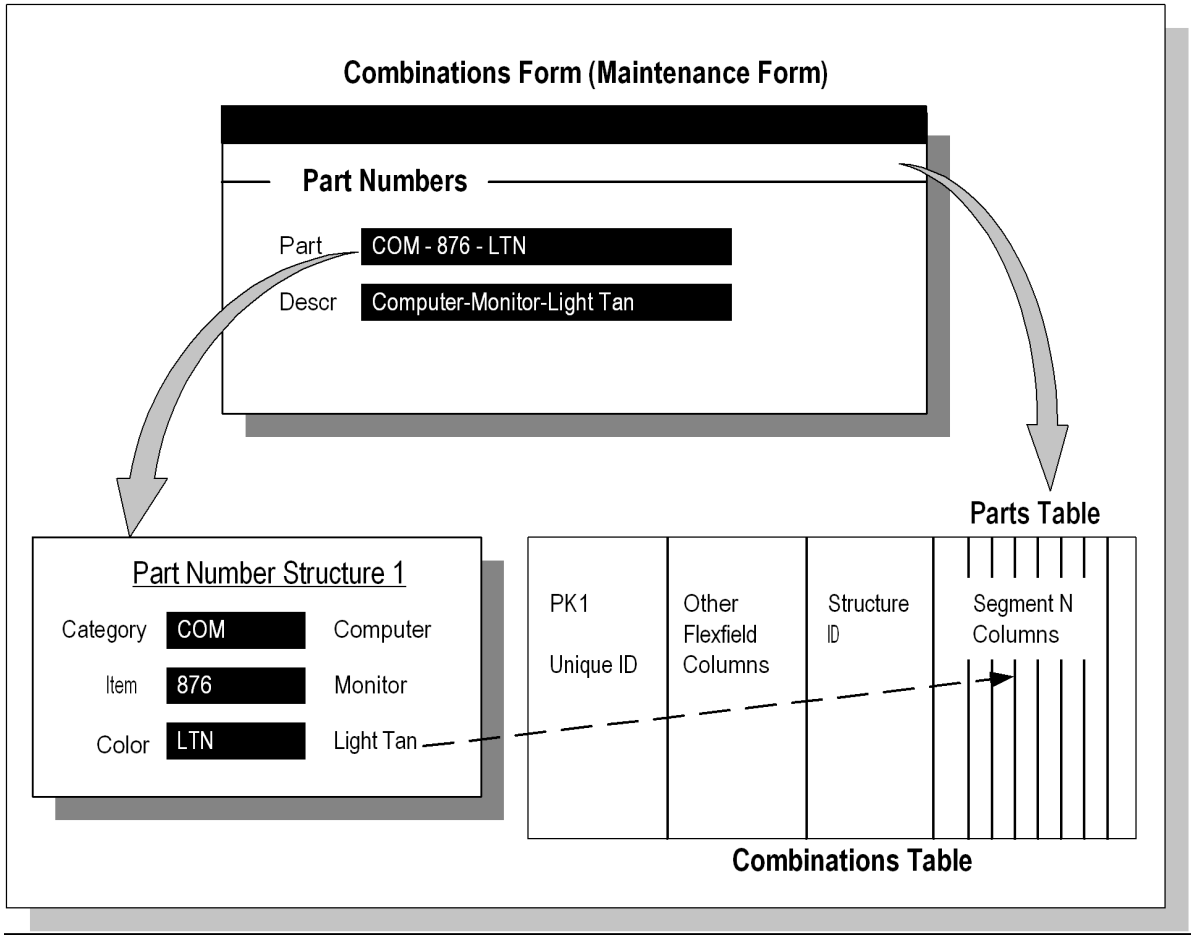
Key flexfields appear on three different types of application form:

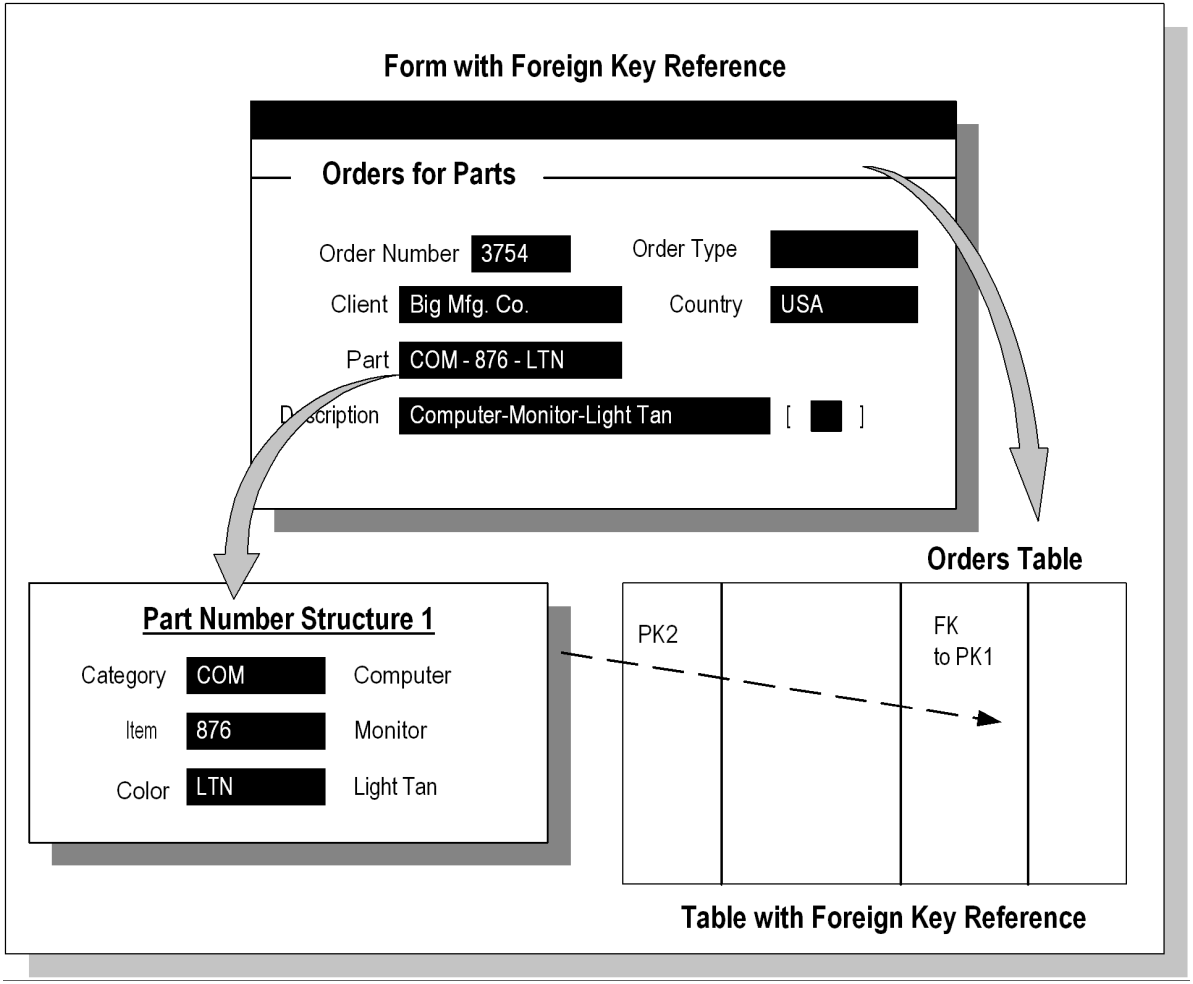
- Combinations form
- Foreign key form
- Range form

These form types correspond to the types of tables that contain key flexfield data.

Combinations form

A combinations form is a form whose only purpose is to maintain key flexfield combinations. The base table of the form is the actual combinations table. This table is the entity table for the object (a part, or an item, an accounting code, and so on). The table contains a unique ID column (also called the code combination ID column) as the primary key, as well as individual segment columns, a structure ID column, and other flexfields–related columns. The combinations form contains hidden fields for each segment column in the table, as well as displayed fields for the concatenated segment values (the combination) and any other fields (and columns) that the entity requires, such as a concatentated description field. A combinations form is sometimes also called a maintenance form.

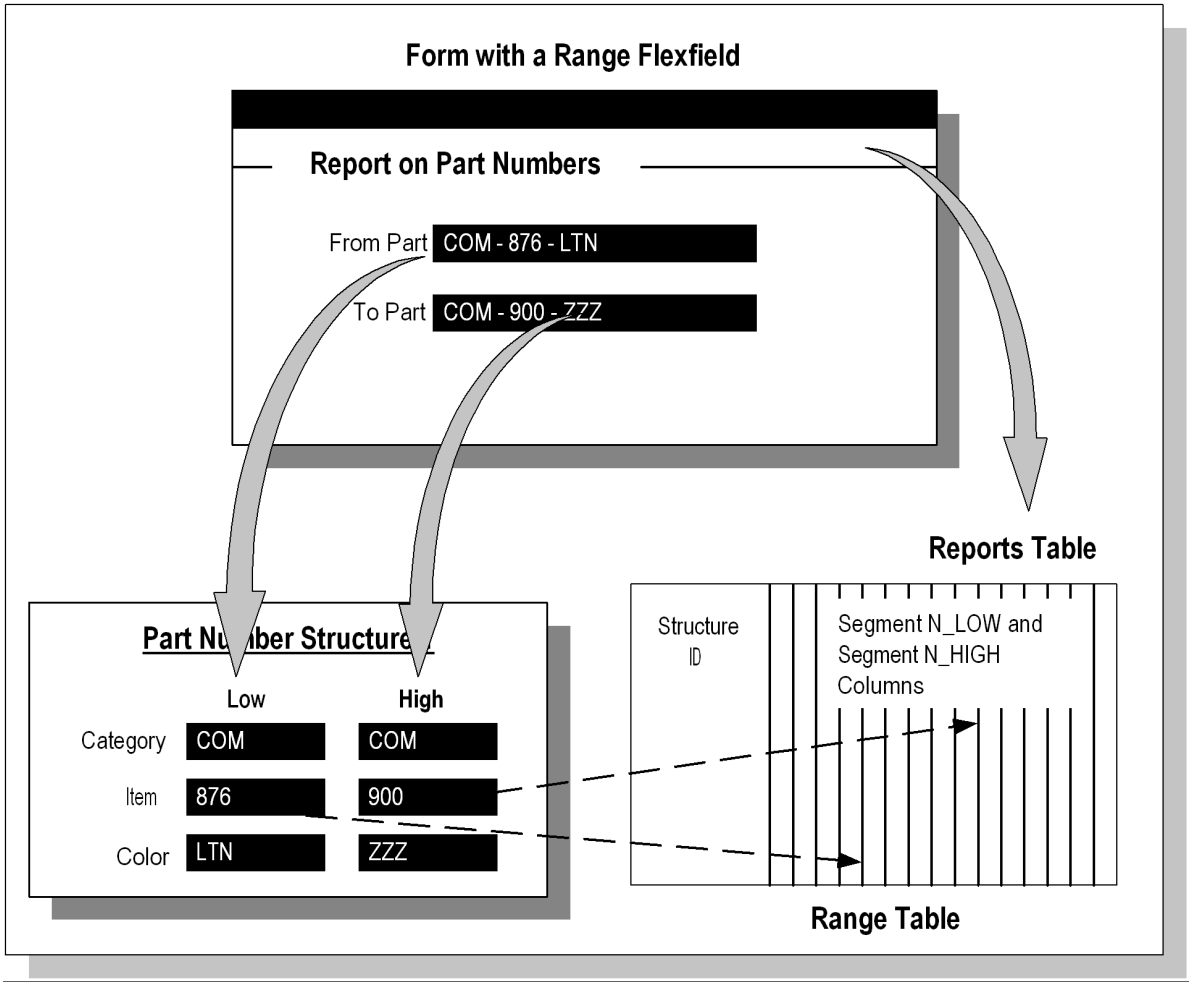

Combinations Form (Maintenance Form)
Part Numbers
Part
COM - 876 - LTN
Descr
Computer-Monitor-Light Tan
Parts Table
Part Number Structure 1
Category
COM
Computer
Item
876
Monitor
Color
LTN
Light Tan
PK1
Unique ID
Other
Flexfield
Columns
Structure
ID
Segment N
Columns
Combinations Table



Foreign key form

A foreign key form is a form whose underlying base table contains only one or two columns that contain key flexfield information, and those columns are foreign key columns to the combinations table (usually a foreign key to the CCID column of the combinations table and sometimes a structure ID column as well). The purpose of a foreign key form often has very little to do with the key flexfield itself, and that the key flexfield appears on the form is essentially incidental. For example, if you have a key flexfield that represents a part number, you would use the combinations form to define new parts and maintain existing part numbers. You would then have many foreign key forms that you use to manipulate your parts. You might have a form where

you take orders for parts, another form where you receive parts, and yet another form where you ship parts. The fact that your part number happens to be a key flexfield is not important to your taking orders for your parts, for example.



Range form

A range form displays a range flexfield, which is a special pop–up window that contains two complete sets of key flexfield segments. A range flexfield supports low and high values for each key segment rather than just single values. Ordinarily, a key flexfield range appears on your form as two adjacent flexfields, where the leftmost flexfield contains the low values for a range, and the rightmost flexfield contains

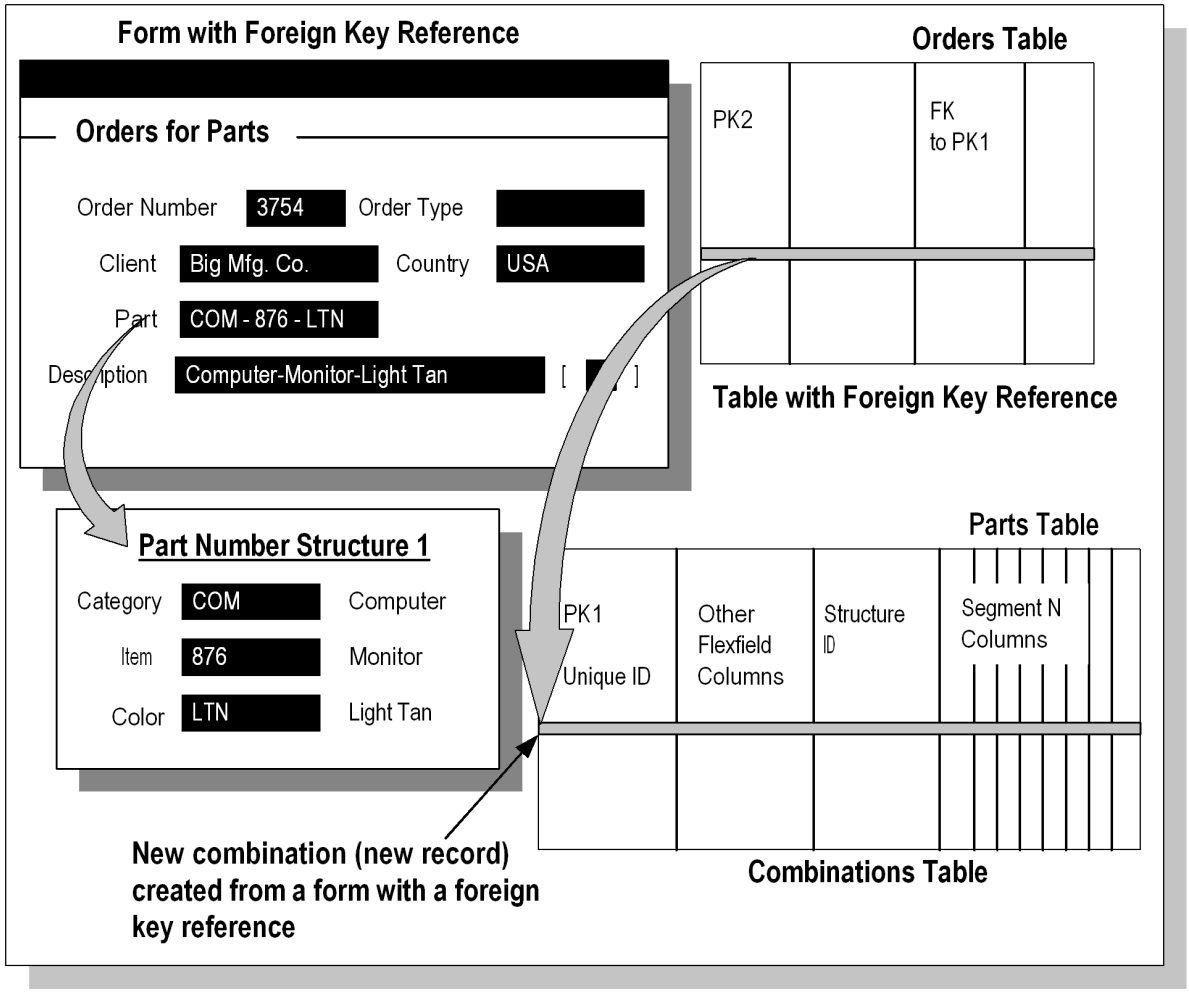
the high values. A user would specify a range of low and high values in this pop–up window. For example, you might choose a range of part numbers for which you want to run a report.

The range form uses a special table as its base table. This table contains one or more (usually two) columns for each segment column that appears in the combinations table. However, these columns do not necessarily contain actual segment values, and a row in the table does not necessarily contain actual valid combinations. Usually this table contains two columns for each segment, called SEGMENTn_LOW and SEGMENTn_HIGH (where n is the segment column number), that store the range of values for each segment.

In Oracle Applications, we use a key flexfield range to help you specify cross–validation rules for key flexfield combinations.

Some forms use a variation of a range flexfield to capture information for each key flexfield segment that is not necessarily a segment value. For example, the form might capture a "Yes" or "No" value for each segment (the Assign Function Parameters form displays a pop–up flexfield window where you choose Yes or No to specify whether you want to assign a value to each particular segment).

Dynamic Insertion



Dynamic insertion is the insertion of a new valid combination into a combinations table from a form other than the combinations form. If you allow dynamic inserts when you set up your key flexfield, a user can enter a new combination of segment values using the flexfield window from a foreign key form. Assuming that the new combination satisfies any existing cross–validation rules, the flexfield inserts the new combination into the combinations table, even though the combinations table is not the underlying table for the foreign key form.

For some key flexfields, dynamic inserts may not be allowed. Sometimes it may not make sense for an application to allow a user to

be able to create a new combination from any form other than the combinations form. For example, a user should not be able to create a new part while taking an order for parts using an Enter Orders form; the application should restrict the creation of new part numbers to authorized users using a Create Parts form.

Dynamic inserts may not be technically possible for some key flexfields. If the combinations table contains mandatory columns that are not maintained by the flexfield, dynamic inserts would not be possible. If the combinations table contains mandatory non–flexfield columns, such as a "unit of measure" column, the flexfield would not be able to complete the entire row in the combinations table from the foreign key form (because the base table of the foreign key form is not the combinations table). The flexfield does maintain the CCID column.

Generally there is only one, if any, combinations form for a given key flexfield. In some applications, there may not be a combinations form. In these cases, you would use dynamic inserts to create new combinations.

> **Note:** For details on dynamic insertion for a particular flexfield, refer to the *Oracle [Product] User's Guide* of the owning application.

Other Key Flexfield Features

Key flexfields also offer additional features that help your organization maintain valid combinations and make data entry easier for your users.

See:

Overview of Flexfield Value Security: page 5 – 9

Cross–Validation Rules: page 5 – 23

Overview of Shorthand Flexfield Entry: page 5 – 2

Planning Your Key Flexfield

Your first step in planning your key flexfields is to determine which key flexfields your Oracle Applications product requires. You should also determine the purpose of the key flexfield, as well as the number and length of its available segment columns (See: Key Flexfields in Oracle Applications: page 6 – 2). You should also note whether your key flexfield allows more than one structure, and determine if you do indeed need to define more than one structure. For example, the System Items Flexfield (Item Flexfield) supports only one structure.

Those key flexfields that allow multiple structures may use different mechanisms to determine which structure a user sees. For example, the Accounting Flexfield uses multiple structures if you have multiple sets of books with differing charts of accounts. Your forms determine which Accounting Flexfield structure to display by using the value of the GL_SET_OF_BOOKS_ID profile option associated with your current responsibility. Other key flexfields may have a field built into the form that allow a user to essentially choose which structure appears. See: Key Flexfields in Oracle Applications: page 6 – 2.

See: Overview of Setting Up
(Oracle [Product] User's Guide)

You should decide on the number, order and length of your segments for each structure. You must also choose how to validate each segment. See: Overview of Values and Value Sets: page 4 – 2.

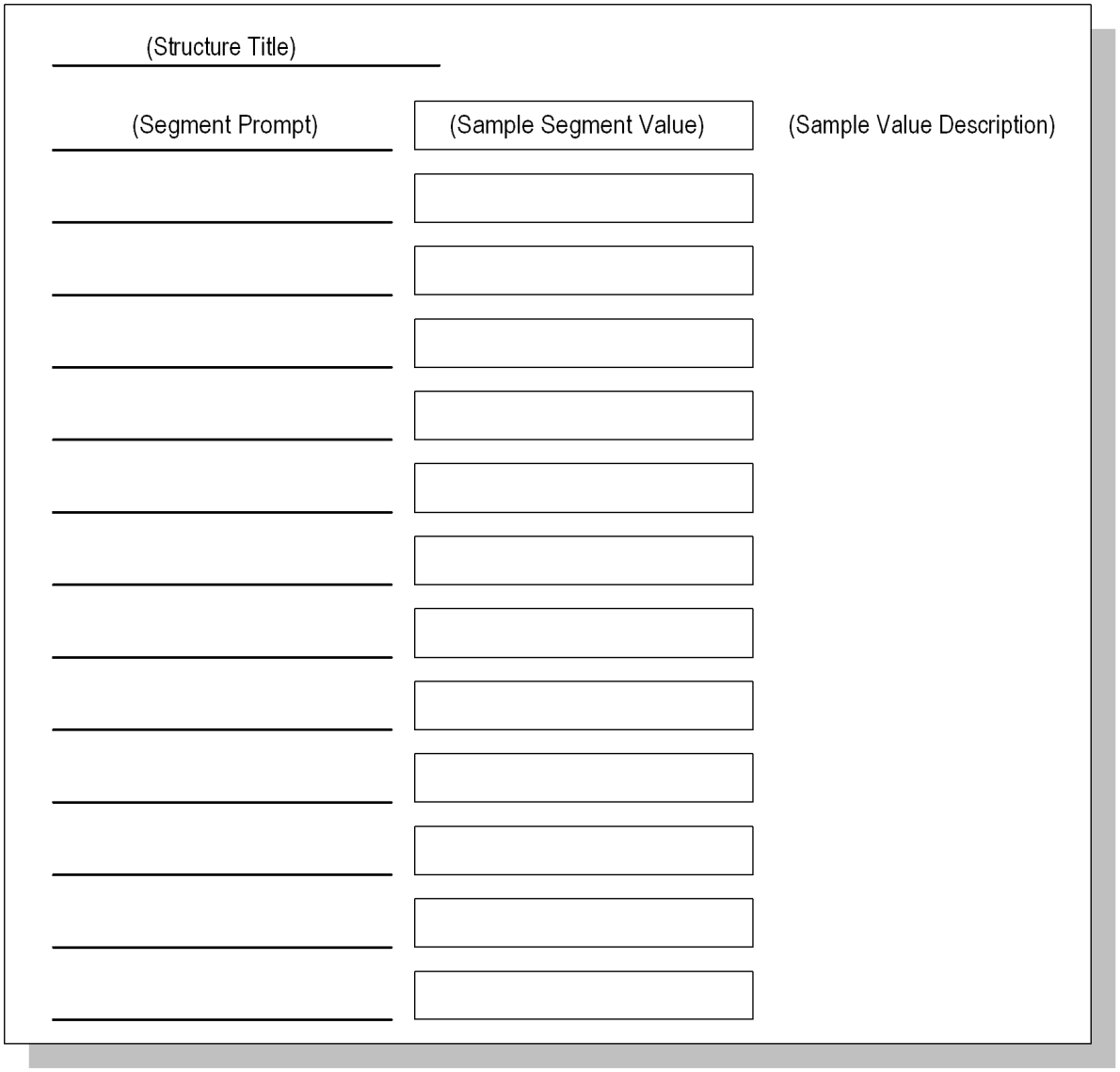
When you are planning your flexfields, you should consider the following questions and their corresponding decisions:

- ❑ How do you want to break down reporting on your key flexfield data? If you want to report on your data by certain criteria or sub–entities, such as account number or project or region, you may want to consider making that sub–entity a distinct segment, rather than combining it with another sub–entity, so that you can categorize and report on smaller discrete units of information.
- ❑ How often does your organization change? This would affect how you set up your values. For example, if you disable old cost centers and enable new ones frequently, you would "use up" cost center values quickly. You would therefore want to use a larger maximum size for your cost center value set so that you can have more available values (for example, you have 1000 available values for a 3–character value set instead of 100 available values for a 2–character value set).

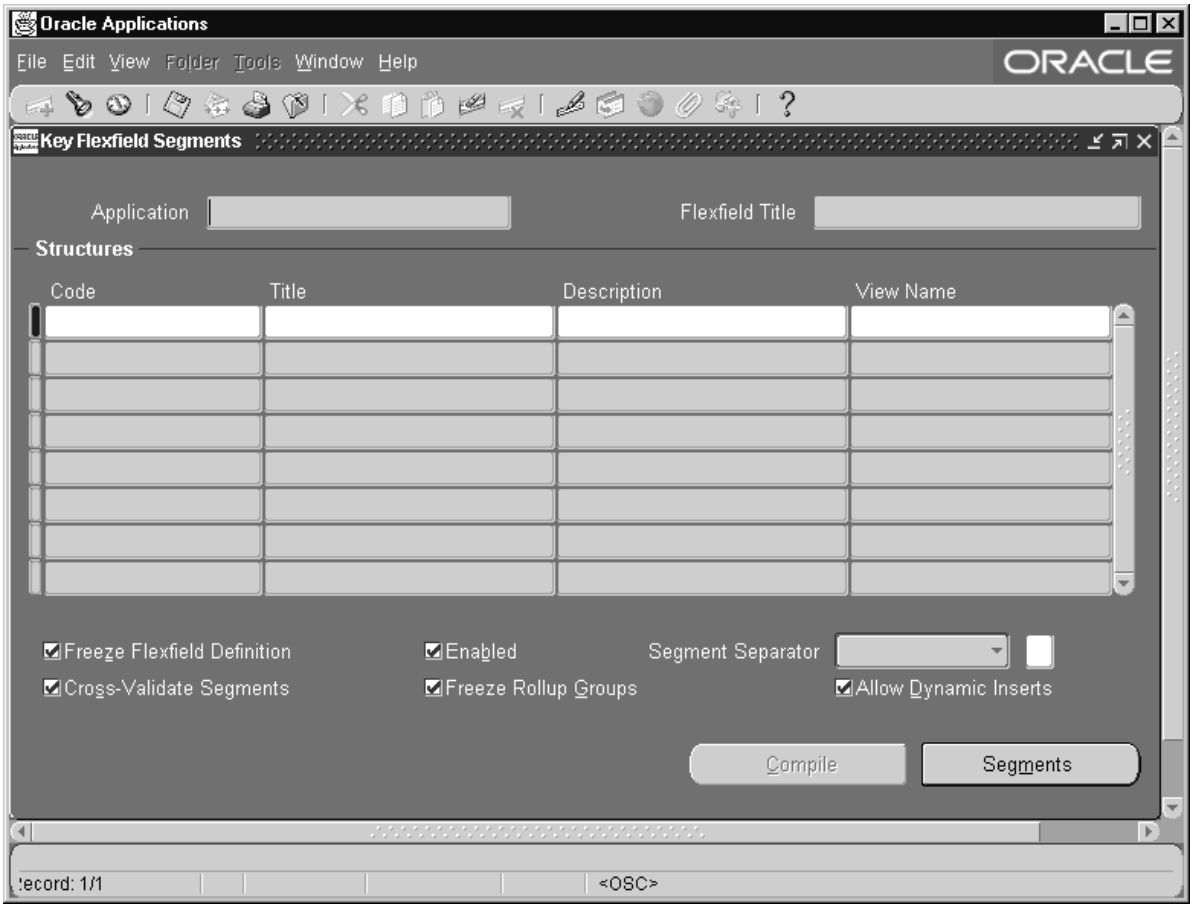
- ❑ Do you want to require a value for each segment?

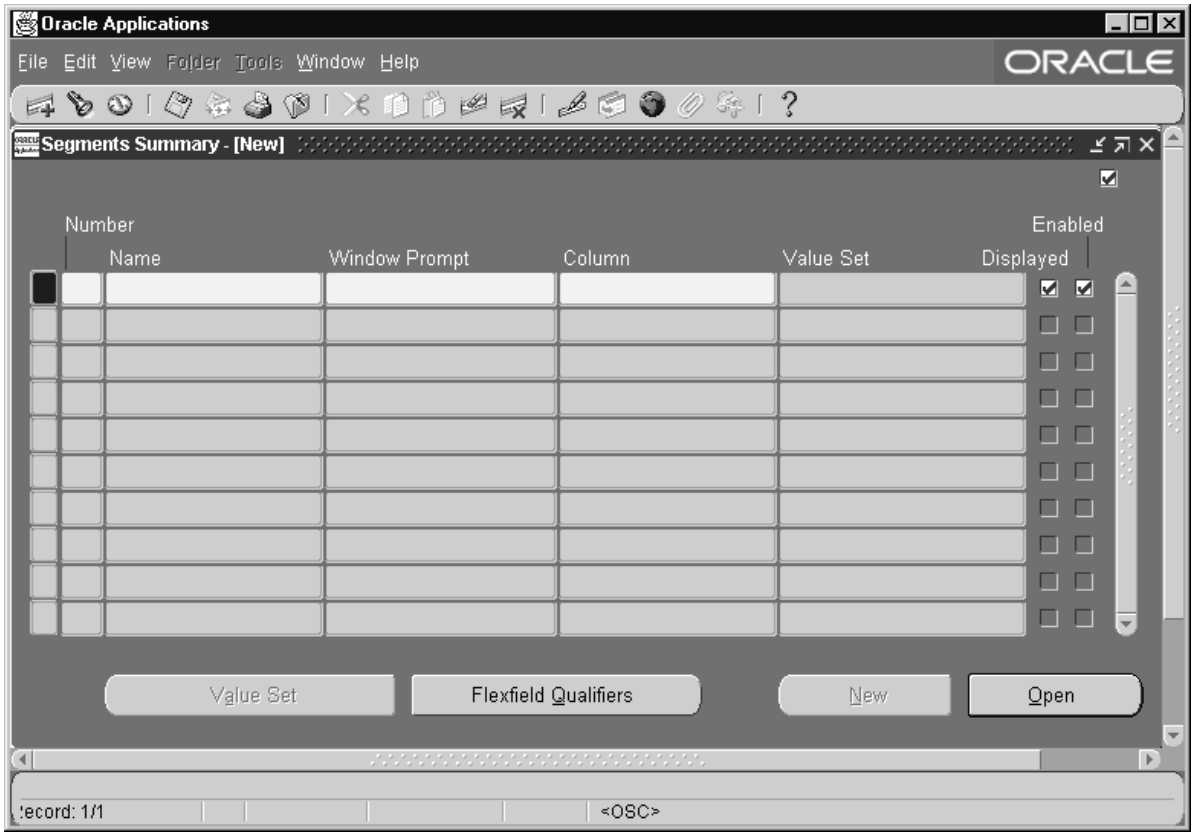
Key Flexfield Structure Planning Diagram

You can use photocopies of the following diagram to help you sketch out your key flexfield structures, including your structure title, segment prompts, sample values, and sample value descriptions. Add or subtract segments as appropriate for your structures. You can also use other worksheets to help make your decisions and document your plans.


(Structure Title)
(Segment Prompt)
(Sample Segment Value)
(Sample Value Description)

Key Flexfield Segments Window





Use this window to define the your key flexfield structure.

See:

Defining Key Flexfields: page 2 – 17

Tasks

Defining Key Flexfield Structures: page 2 – 19

Defining Segments: page 2 – 22

Defining Key Flexfields

You define descriptive information and validation information for each segment. You also determine the appearance of your key flexfield

window, including the size of the window, the number and order of the segments, and the segment descriptions and default values.

Once you set up or modify your structures and segments, you must freeze your flexfield definition and save your changes. When you do, your flexfield compiles automatically to improve on–line performance. You must recompile your flexfield *every time* you make changes using this form, including enabling or disabling cross–validation rules. You must also recompile your flexfield after you enable or disable shorthand entry using the Shorthand Aliases window.

You can see your flexfield changes immediately after you freeze and recompile your flexfield. However, your changes affect other users only after they change responsibilities or exit your application and sign back on.

Once you freeze your flexfield definition and save your changes, Oracle Applications submits one or two concurrent requests to generate database views of the flexfield's combinations table. You can use these views for custom reporting at your site. One of these views is always generated and contains concatenated segment values for all structures of the key flexfield. You see the name of this view in a message window. The other view is for the particular structure you are defining and freezing. This second view is generated only if you enter a view name for your structure in the View Name field. See: Overview of Flexfield Views: page 8 – 3.

Warning: Plan your key flexfield structures carefully, including all your segment information such as segment order and field lengths, before you define your segments using this form. You can define your key flexfields any way you want, but changing your structures once you acquire any flexfield data may create data inconsistencies that could have a significant impact on the behavior of your application or require a complex conversion program. Changing your existing structures may also adversely affect the behavior of any cross–validation rules or shorthand aliases you have set for your structures, so you should be sure to manually disable or redefine any cross–validation rules (using the Cross–Validation Rules window) and shorthand aliases (using the Shorthand Aliases window) to reflect your changed structures.

Defining Key Flexfield Structures

Prerequisites

- ❑ Use the Value Sets window to define any value sets you need. See: Value Sets: page 4 – 50.

1. Navigate to the Key Flexfield Segments window.
2. Select the application name and title of the key flexfield you want to define. You cannot create a new flexfield or change the name of an existing flexfield using this window.
3. For those application flexfields that support more than one structure (such as the multiple charts of accounts in the Accounting Flexfield), you can create a new structure for your flexfield by inserting a row. If you are defining the first structure for your flexfield, select the default flexfield structure that appears automatically. If you are modifying an existing structure, use your cursor keys to select the title of the flexfield structure you want.

   You can change the title of an existing flexfield structure by typing in a new title over the old title. You see this name when you choose a flexfield structure and as the window title in your key flexfield (unless the flexfield is used for a specific purpose such as "Consolidation Account", in which case the structure title does not appear in the flexfield window).

   The code for a structure is a developer key and is used by loader programs. The value you specify for the code will default into the title field.

   If you upgraded from Release 10.7 or 11.0, the codes for your structures were created from your structure titles during the upgrade.
4. If you want to generate a database view for this structure, enter a view name. Your view name should begin with a letter and must not contain any characters other than letters, numbers, or underscores (_). Your view name must not contain any spaces. See: Overview of Flexfield Views: page 8 – 3.
5. Check the Enabled check box so that this structure may be used in your key flexfield. You cannot delete structures from this window because they are referenced elsewhere in the system, but you can disable them at any time. A structure must be enabled before it can be used.

You should enable at least one structure for each key flexfield. If you disable a structure that already contains data, you cannot use that structure to create new combinations or query up your old information.

6. Select the character you want to use to separate your flexfield segment values or descriptions whenever your application forms display concatenated segment values or descriptions.

   You should choose your separator character carefully so that it does not conflict with your flexfield data. For example, if your data frequently contains periods (.) in monetary or numeric values, you should not use a period as your segment separator.

   It is recommended that you do not use a character as your segment separator if you expect that character to appear frequently in your segment values or descriptions.

   If you do use a character that appears in your segment values or descriptions, then that character will be preceded by a backslash (\) when it appears in a value or a description. A backslash in your values will be preceded by another backslash.

   Note: Do not use a backslash as your segment separator.

   For example, say the segment separator is a period (.) and your values contain periods also. The table below illustrates how the segment values would appear in the combination.

Segment Values	Concatenated Segments as Combination
”1.2”, ”34”, ”5.6”	”1\.2.34.5\.6”
”1”, ”2.34”, ”5.6”	”1.2\.34.5\.6”
”1\.2”, ”34\.5”, ”6”	”1\\\.2.34\\\.5.6”

Table 2 – 1 (Page 1 of 1)

Warning: Some Oracle Applications tables store the segment separator as part of your flexfield values. Changing your separator once you have data in such tables may invalidate that data and cause application errors.

7. Select the Cross–Validate Segments check box if you want to cross–validate multiple segments using cross–validation rules. You can define cross–validation rules to describe valid combinations using the Cross–Validation Rules form. Uncheck the box if you

want to disable any existing cross–validation rules. See: Cross–Validation Rules: page 5 – 35.

8. Indicate whether you want to freeze your rollup group definitions. If you do, you prevent users from modifying rollup groups using the Segment Values form.

   You can freeze rollup groups before or after you define your flexfield structure. See: Segment Values: page 4 – 65.

9. If you want to allow dynamic inserts, check the Allow Dynamic Inserts check box. You would allow dynamic inserts of new valid combinations into your generic combinations table if you want users to create new combinations from windows that do not use your combinations table. You should prevent dynamic inserts if you want to enter new valid combinations only from a single application window you create to maintain your specific combinations table.

   You can update this field only if your application flexfield has been built to allow dynamic inserts. Otherwise this field is display only.

10. Choose the Segments button to open the Segments Summary window, and define your flexfield segments. See: Defining Segments: page 2 – 22.

11. Save your changes.

12. Freeze your flexfield structure by checking the Freeze Flexfield Definition check box.

    Do not freeze your flexfield if you want to set up or modify your flexfield segments or change the appearance of your key flexfield window. You cannot make most changes while your flexfield is frozen.

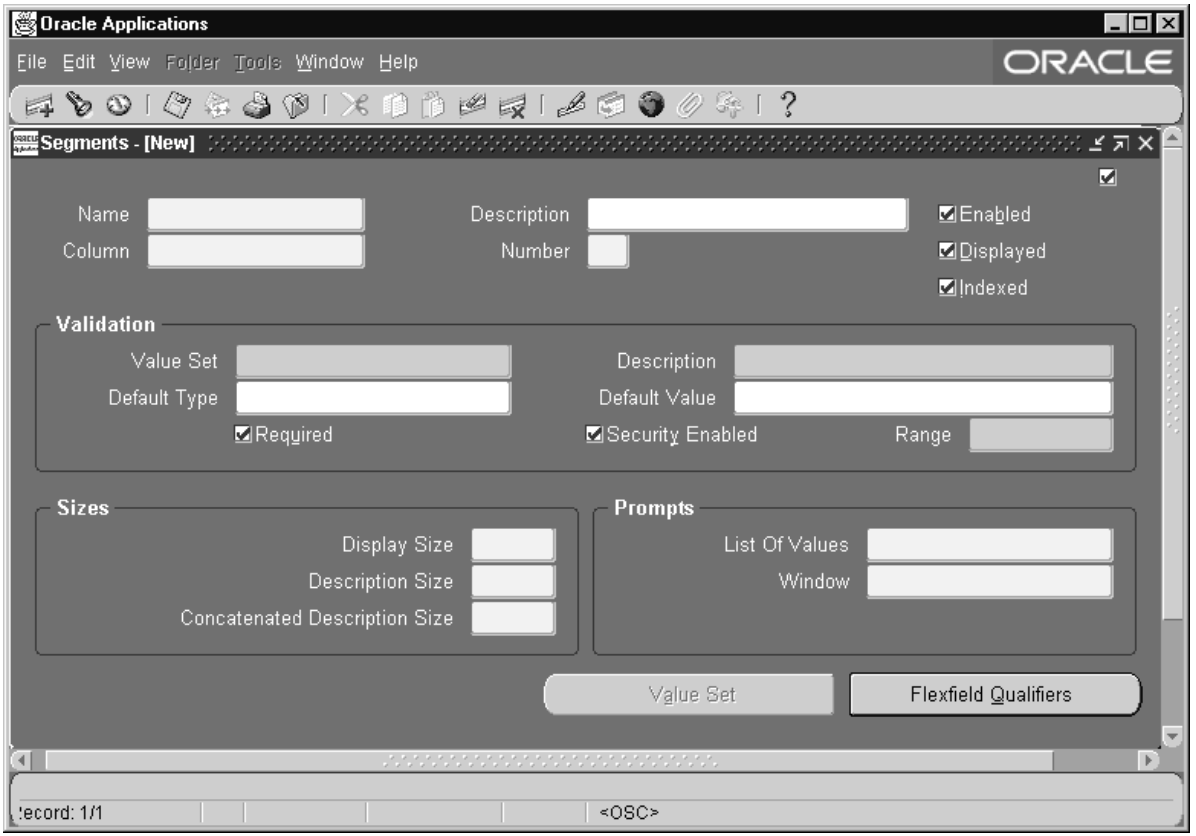
13. Compile your frozen flexfield by choosing the Compile button. Your changes are saved automatically when you compile.

You *must* freeze and compile your flexfield definition before you can use your flexfield. If you have more than one flexfield structure, you must freeze, save, and compile each structure separately. If you decide to make changes to your flexfield definition, make sure that you freeze and save your flexfield definition again after making your changes.

Warning: Do *not* modify a frozen flexfield definition if existing data could be invalidated. An alteration of the flexfield structure once you have any flexfield data can create serious data inconsistencies. Changing your existing structures may also adversely affect the behavior of any cross–validation rules or shorthand aliases you have for your structures, so you

should be sure to manually disable or redefine any cross–validation rules and shorthand aliases to reflect your changed structures.

Defining Segments



Use the Segments window to define segments for your flexfield. The window title includes the current flexfield's name. If your flexfield definition is frozen (that is, the Freeze Flexfield Definition check box is checked), this window becomes display–only.

You can define as many segments as there are defined segment columns in your flexfield table. You can create a new segment for your flexfield by inserting a row.

Note: If your flexfield definition is frozen, the Segments window fields are not updateable.

Prerequisites

- ❑ Use the Key Flexfield Segments window or the Descriptive Flexfield Segments window to define your flexfield structure. See: Key Flexfield Segments window: page 2 – 16, Descriptive Flexfield Segments window: page 3 – 31.

▶ To define segments:

1. Enter a name for the segment that you want to define.

   Your segment name should begin with a letter and use only letters, numbers, spaces or underscores (_). The segment prompts get their default values from this field. The flexfield view generator will use your segment name as a column name and change all spaces and special characters to underscores (_). See: Segment Naming Conventions: page 8 – 7.

2. Indicate that you can use this flexfield segment by checking the Enabled check box.

   Your flexfield does not display disabled segments. You can define as many segments as there are defined segment columns in your key flexfield combinations table.

   Suggestion: To protect the integrity of your data, you should not disable a segment if you have already used it to enter data.

3. Select the name of the column you want to use for your flexfield segment.

   Suggestion: If you are defining more than one segment in the same structure at one time, ensure that you use unique columns for each segment. If you attempt to use a single column for more than one segment in the same structure, you cannot save your changes or compile your structure. Columns you choose for your segments do not disappear from your list of values until you save your work.

4. Enter the segment number for this segment.

   This number indicates the relative position in which this segment appears in a flexfield window. A segment with a lower segment number appears before a segment with a higher segment number. Dependent segments should occur after the segment they depend upon in the flexfield window.

You receive a warning message if you enter a segment number that is already defined for your flexfield. This warning is only a reminder that the segment number is in use. If you attempt to freeze a flexfield in which two segments share the same segment number, the flexfield does not compile.

Suggestion: For most flexfields, if you give your segments widely spaced numbers (such as 10, 20, 30...) to indicate their relative positions, you can add segments to your structure more easily. Adding segments still disables all your existing cross–validation rules and shorthand aliases for this flexfield structure, however. Note that the Accounting Flexfield requires consecutive segment numbers beginning with 1 (such as 1, 2, 3, ...).

Warning: Changing the order of your segments invalidates all existing cross–validation rules and shorthand aliases for this flexfield structure.

5. Indicate whether you want this segment to appear in the flexfield window. If your segment is not displayed, you should provide a default type and value so that the user does not need to enter a value for this segment. If you do not display a segment but also do not provide a default value for it, your users may see error messages when using this flexfield.

Warning: If you are defining the Accounting Flexfield, you *must* display *all* segments. Hiding segments will adversely affect your application features such as Mass Allocations.

6. If you are defining the Accounting Flexfield, decide whether you should check the Indexed check box. For details on the Accounting Flexfield, see the *Oracle General Ledger User's Guide*. If you are defining any other Oracle Applications (key) flexfield, you can skip the Indexed check box.

   The Oracle General Ledger applications use the Indexed field for the Optimization feature. What you enter here does not affect Oracle Applications key flexfields other than the Accounting Flexfield, but the value may or may not affect key flexfields in custom applications (depending on whether those applications have logic that uses the value of this field).

   Indicate whether you want the database column in the combinations table used to store this key segment to have a single–column index. You should create indexes on segments you expect to have many distinct values (instead of just a few distinct

values). The Oracle General Ledger products' Optimizer does not drop existing indexes.

If you set up a new structure of the same flexfield, this value defaults to the value in the first structure you set up.

See: Running the Optimizer Program
(Oracle General Ledger User's Guide)

7. Enter the name of the value set you want your flexfield to use to validate this segment. See: Choosing Your Value Set: page 2 – 26.

8. Indicate whether you want to require a value for this segment. If you do, users must enter a value before leaving the flexfield window. If not, the segment is optional.

Attention: All segments in your Accounting Flexfield must be required.

If this segment is required but depends on an optional segment, then this segment will become optional if a user leaves the depended–upon segment blank.

9. Indicate whether to allow security rules to be used for this segment. Otherwise any defined security rules are disabled.

If the value set for this segment does not allow security rules, then this field is display only.

10. If you want your flexfield to validate your segment value against the value of another segment in this structure, then choose either Low or High in the Range field. Segments with a range type of Low must appear before segments with a range type of High (the low segment must have a lower number than the high segment). For example, if you plan two segments named "Start Date" and "End Date," you may want to require users to enter an end date later than the start date. You could have "Start Date" be Low and "End Date" be High. In this example, the segment you name "Start Date" must appear before the segment you name "End Date," or you cannot compile your flexfield.

If you choose Low for one segment, you must also choose High for another segment in that structure (and vice versa). Otherwise you cannot compile your flexfield.

If your value set is of the type Pair, this field is display only, and the value defaults to Pair.

11. Enter the display size and prompt information for the segment. See: Segment Prompts and Display Lengths: page 2 – 30.

Choosing Your Value Set

If you do not want your flexfield to validate this segment, you can use the Value Sets window to define a value set with a Validation Type of None, or you can leave this field blank.

If you do not choose a value set, your segment behaves as if it were using a value set with validation type None, format type of Char, width the same as the underlying key flexfield segment column, with mixed–case alphabetic characters allowed and no right justification or zero fill. You *must* use a value set for any segment whose underlying column is not a Char column, or you will not be able to compile your flexfield. You *must* use a value set for the Accounting Flexfield.

Initially this field only lets you select from independent, table, and non–validated value sets, and you do not see dependent value sets in your list. If you want to define your structure to have a dependent segment that depends on an independent segment, you should define your independent segment first by selecting an independent value set in this field. Then save your changes *before* you start to define your dependent segment. Once you save your independent segment, you can also select from the dependent value sets that depend on your chosen independent value set.

This field prevents you from choosing a value set whose maximum size is greater than the size of your flexfield's underlying table columns. Value sets whose maximum sizes are too large for your flexfield do not appear in the list of values, and you cannot use them for your flexfield segment.

If your key flexfield does not allow "hidden ID" table–validated value sets (most Oracle Applications key flexfields), those value sets do not appear in the list of values, and you cannot use them for your flexfield segment.

You should ensure that the total of the value set maximum sizes for all of the segments in a given structure, plus the number of segment separators you need (number of segments in your structure minus one), does not add up to more than 512. If your structure's concatenated length exceeds 512, you may experience truncation of your flexfield data in some forms. See: Value Set Windows: page 4 – 50, Defaulting Segment Values: page 2 – 27.

Defaulting Segment Values

▶ **To set a default segment value:**

1. If you want to set a default value for this segment, identify the type of value you need.

   Your list contains only the default types that have formats that match your value set format type.

   Valid types include:

Constant The default value can be any literal value.

Current Date The default value is the current date in the format DD–MON–RR or DD–MON–YYYY, depending on the maximum size of the value set.

```
Maximum     Date
Size        Format
9           DD-MON-RR
11          DD-MON-YYYY
```

The following table lists Current Date default date formats for different value set format types.

Value Set Format Type	Value Set Maximum Size	Date Format
Standard Date	11	User date format
Standard DateTime	20	User date / time format
Date	11	DD–MON–YYYY
Date	9	DD–MON–RR
Char	Greater than or equal to 11	DD–MON–YYYY
Char	9, 10	DD–MON–RR

Table 2 – 2 (Page 1 of 1)

Current Time The default value is the current time or the current date and time, depending on the maximum size of the segment.

The following table lists Current Time default date / time formats for different value set format types.

Value Set Format Type	Value Set Maximum Size	Date/Time Format
Standard DateTime	20	User date / time format
DateTime	20	DD–MON–YYYY HH24:MI:SS
DateTime	18	DD–MON–RR HH24:MI:SS
DateTime	17	DD–MON–YYYY HH24:MI
DateTime	15	DD–MON–RR HH24:MI
Time	8	HH24:MI:SS
Time	5	HH24:MI
Char	Greater than or equal to 20	DD–MON–YYYY HH24:MI:SS
Char	18, 19	DD–MON–RR HH24:MI:SS
Char	17	DD–MON–YYYY HH24:MI
Char	15, 16	DD–MON–RR HH24:MI
Char	Between 8 and 14 (inclusive)	HH24:MI:SS
Char	Between 5 and 7 (inclusive)	HH24:MI:SS

Table 2 – 3 (Page 1 of 1)

Field The default value is the current value in the field you designate in the Default Value field. The field must be in the same form as the flexfield.

Profile The default value is the current value of the user profile option defined in the Default Value field.

Segment The default value is the value entered in a prior segment of the same flexfield window.

SQL Statement The default value is determined by the SQL statement you define in the Default Value field.

If you choose Current Date or Current Time, you skip the next field.

Attention: If you are using flexfields server–side validation, you cannot use form field references (*:block.field*). You must either remove your field references or turn off flexfields

server–side validation using the profile option Flexfields:Validate on Server.

See:

Flexfields:Validate on Server: page 4 – 28

2. Enter a default value for the segment. Your flexfield automatically displays this default value in your segment when you enter your key flexfield window. You determine whether the default value is a constant or a context–dependent value by choosing the default type.

   Your default value should be a valid value for your value set. Otherwise, when you use your flexfield for data entry, your flexfield displays an error message and does not use your invalid default value in your flexfield segment.

   For each default type chosen in the Default Type field, the valid values for the Default Value field are:

Constant — Enter any literal value for the default value.

Field — The default value is the current value in the field you specify here. The field must be in the same form as the flexfield. Use the format :*block.field*.

The value of the field must be in the format of the displayed value for the segment.

Profile — The default value is the current value of the user profile option you specify here. Enter the profile option name, not the end–user name.

The value of the profile option must be in the format of the displayed value of the segment.

Segment — The default value is the value entered in a prior segment of the same flexfield window. Enter the name of the segment whose value you want to copy.

The default value can be one of three values associated with the prior segment. The three choices are: ID, VALUE, and MEANING. The ID is the hidden ID value for the segment. VALUE is the displayed value for the segment. MEANING is the description of the segment.

To use the displayed value of the prior segment, specify *segment_name*.VALUE in this field. Specify

segment_name.MEANING for the description of that segment. Specify *segment_name*.ID for the hidden ID value of the segment. If you specify *segment_name* only, the hidden ID value of the segment is the default value.

For Standard Date and Standard DateTime value sets you should use *segment_name*.VALUE of the prior segment.

SQL Statement The default value is determined by the SQL statement you enter here. Your SQL statement must return exactly one row and one column in all cases.

For date values, the SQL statement must return the value in the correct displayed format. Use the FND_DATE package for date conversions.

Attention: If you are using flexfields server–side validation, you cannot use form field references (*:block.field*). You must either remove your field references or turn off flexfields server–side validation using the profile option Flexfields:Validate on Server.

See:

Flexfields:Validate on Server: page 4 – 28

Oracle Applications Developer's Guide

Segment Prompts and Display Lengths

The lengths you choose for your segments and prompts affect how the flexfield displays.

You should ensure that the total of the value set maximum sizes (not the display sizes) for all of the segments in a given structure, plus the number of segment separators you need (number of segments in your structure minus one), does not add up to more than 512. If your structure's concatenated length exceeds 512, you may experience truncation of your flexfield data in some forms.

The display size of the segment must be less than or equal to the maximum size that you chose in the Value Sets window. If you enter a display size that is shorter than the maximum size, you can still enter a

segment value of the maximum size since the segment field in the window can scroll.

The default for the display size of a segment when you first enable the segment is the maximum size of the segment based on the size of the underlying column, or 50, whichever is less. Once you choose a value set for your segment, the default for Display Size is the maximum size of the value set. See: Value Set Windows: page 4 – 50.

Description Sizes for Segment Value Descriptions

Your application uses Description Size when displaying the segment value description in the flexfield window. Concatenated Description Size specifies the number of characters long a segment value description should be when a window displays it as part of a concatenated description for the concatenated flexfield values. Your flexfield may show fewer characters of your description than you specify if there is not enough room for it in your flexfield window. However, your flexfield does not display more characters of the description than you specify.

The value you specify for Description Size also affects the length of a value description that appears in a list of segment values for the segment (if the segment uses a validated value set). However, the width of the description column in a list will not be less than 11 for English–language versions of the Oracle Applications (the length of the word Description in English). This width may vary for other–language versions of the Oracle Applications.

Some flexfields, particularly the Accounting Flexfield, display a special multicolumn format in some forms (for example, the Define MassBudgets window in the Oracle General Ledger products). In these forms, your flexfield window may scroll horizontally if the longest description size (plus the longest prompt and display sizes) is large.

Suggestion: For ease of use, we recommend that you set the Description Size for each of your Accounting Flexfield segments to 30 or less so that your flexfield window does not scroll horizontally.

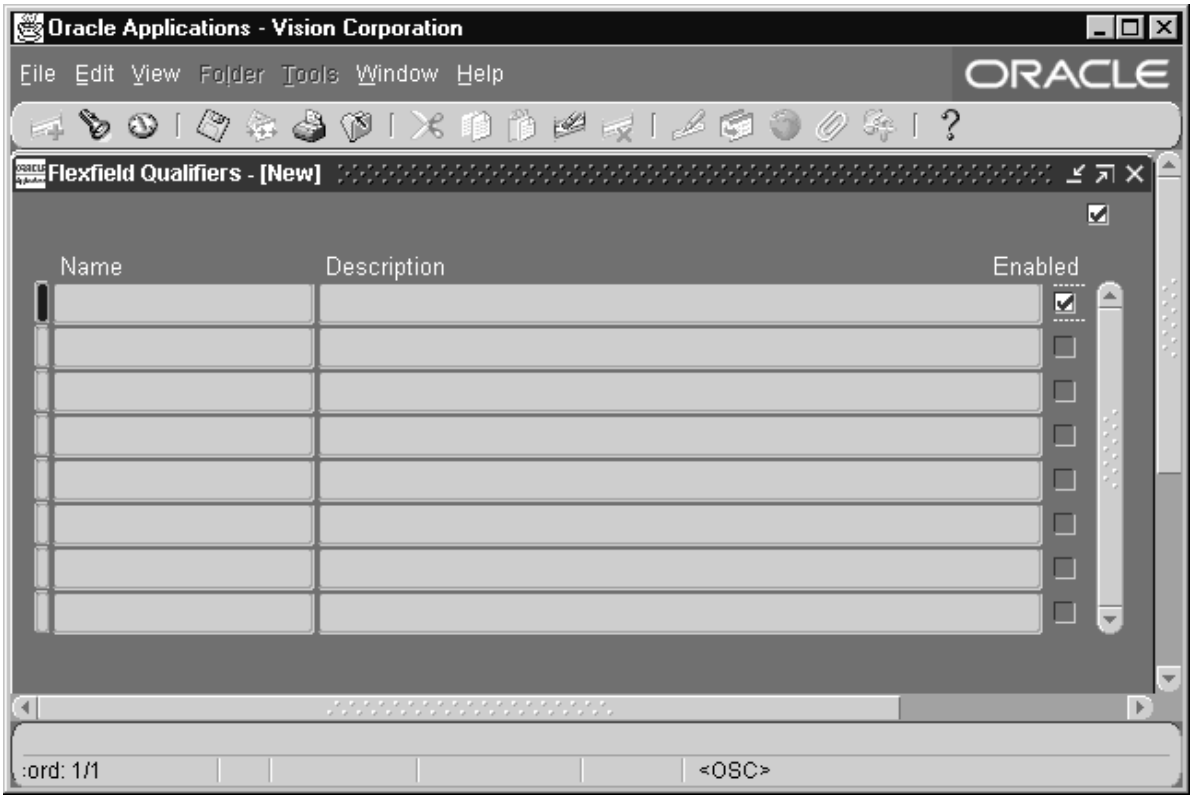
Segment Prompts and List of Values

Enter prompts for the segment (as it should appear in the flexfield window) and its list of values (if this segment uses a validated value set) and in reports your application generates. Do not use special characters such as +, –, ., !, @, ', or # in your prompts.

If your List of Values prompt is longer than the segment length, you see a warning displayed after you leave this field. This warning is for cosmetic considerations only; your flexfield will still compile normally.

Suggestion: Keep your segments' prompts short and fairly uniform in length wherever possible.

Flexfield Qualifiers



Use this window to apply flexfield qualifiers to your key flexfield segments. The window title includes the current flexfield and segment names.

For each qualifier, indicate whether it is enabled for your key flexfield segment.

Since you can set up your key flexfields in any way you prefer, Oracle Applications products use flexfield qualifiers to identify certain

segments used for specific purposes. You should consult the help for your key flexfield to determine whether your key flexfield uses qualifiers and what purposes they serve.

Some qualifiers must be unique, and you cannot compile your flexfield if you apply that qualifier to two or more segments. Other qualifiers are required, and you cannot compile your flexfield until you apply that qualifier to at least one segment.

See Also

Key Flexfields in Oracle Applications: page 6 – 2

Reporting Attributes

If you are using Oracle Public Sector General Ledger, you may have access to the Reporting Attributes block.

Reporting Attributes Zone

You can use this zone only if you are using Oracle Public Sector General Ledger and you have enabled the FSG:Reporting Attributes profile option (available only with Oracle Public Sector General Ledger). You use this zone to enter attributes to use for FSG report selection. For more information, see: Reporting Attributes, *Oracle [Public Sector] General Ledger User's Guide.*

CHAPTER

3

Planning and Defining Descriptive Flexfields

This chapter contains information on planning and defining descriptive flexfields. It includes further discussion of flexfields concepts and provides additional concepts that are specific to descriptive flexfields. It also includes discussions of the procedures you use to set up any descriptive flexfield, as well as how to identify a descriptive flexfield on a particular form.

Descriptive Flexfield Concepts

You should already know some basic flexfields terms and concepts:

- Flexfield
- Segment
- Structure
- Value
- Validation (Validate)
- Value set

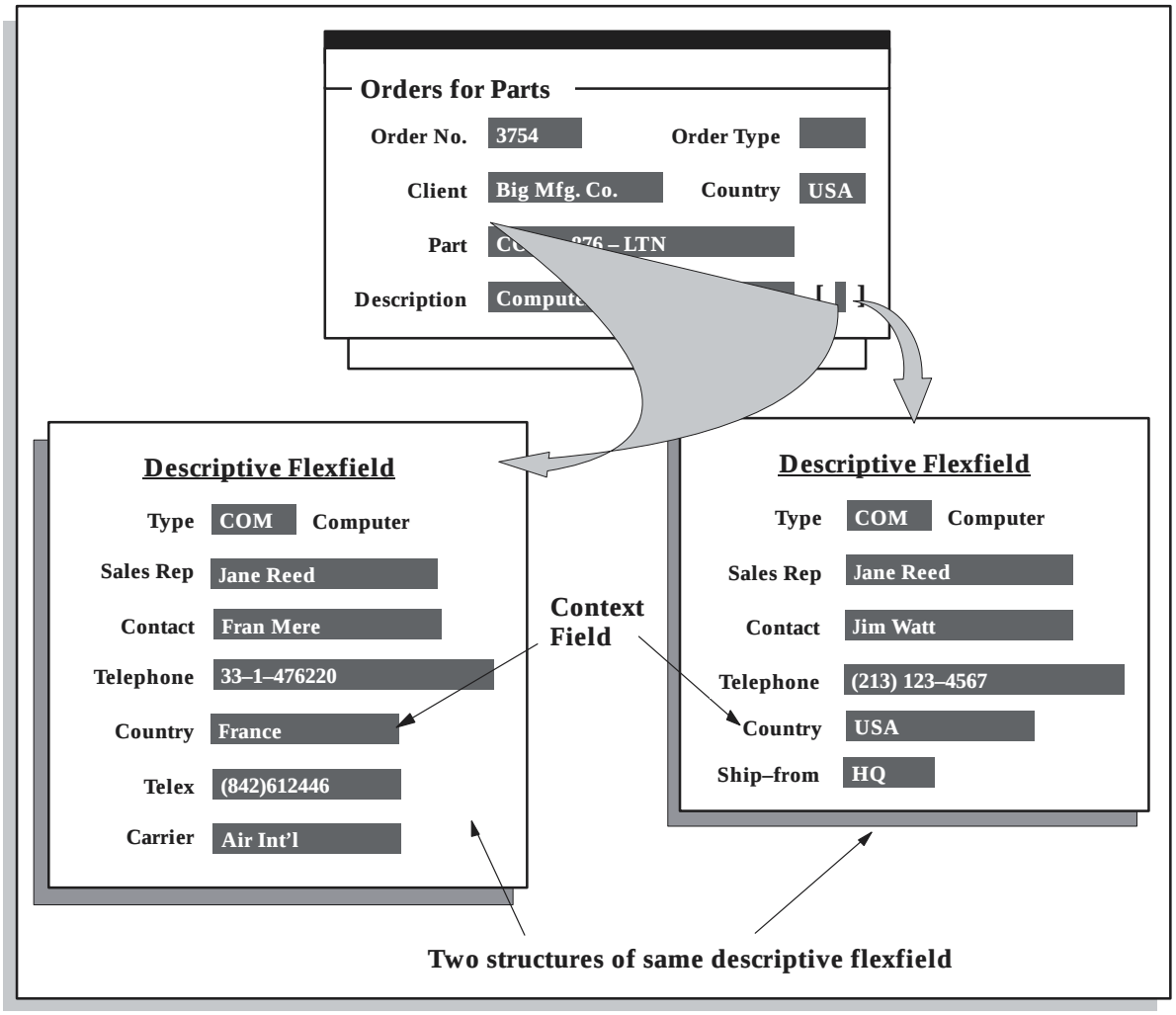
Now that you know terms and concepts that apply to both key and descriptive flexfields, you need to know additional terms that apply to descriptive flexfields only.

Descriptive flexfield segments

Descriptive flexfields have two different types of segments, global and context–sensitive, that you can decide to use in a descriptive flexfield structure.

A *global segment* is a segment that always appears in the descriptive flexfield pop–up window, regardless of *context* (any other information in your form). A *context–sensitive segment* is a segment that may or may not appear depending upon what other information is present in your form.

Figure 3 – 1



Context–sensitive segments

If you have context–sensitive segments, your descriptive flexfield needs context information (a *context value*) to determine which context–sensitive segments to show. A descriptive flexfield can get context information from either a field somewhere on the form, or from a special field (a *context field*) inside the descriptive flexfield pop–up

window. If the descriptive flexfield derives the context information from a form field (either displayed or hidden from users), that field is called a *reference field* for the descriptive flexfield.

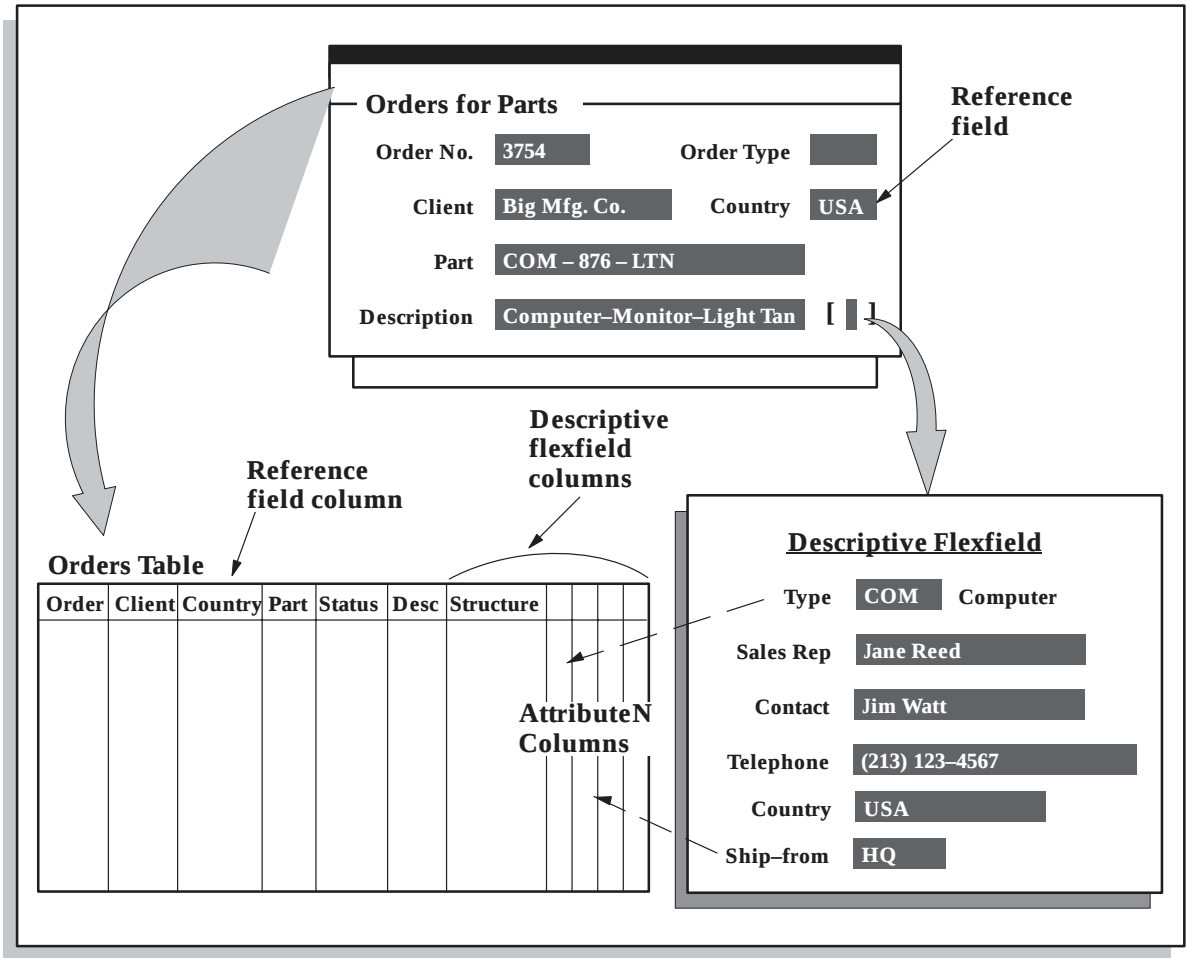
A context field appears to an end user to be just another segment, complete with its own prompt. However, a context field behaves differently from a normal flexfield segment (either global or context–sensitive). When a user enters a context value into the context field, the user then sees different context–sensitive segments depending on which context value the user entered. You define a context field differently as well. You use a context field instead of a reference field if there is no form field that is a suitable reference field, or if you want your user to directly control which context–sensitive segments appear.

A context–sensitive segment appears once the appropriate context information is chosen. The context–sensitive segments may appear immediately if the appropriate context information is derived from a form field before the user enters the descriptive flexfield.

For a descriptive flexfield with context–sensitive segments, a single "structure" consists of both the global segments plus the context–sensitive segments for a particular context field value. That is, a structure consists of all the segments that would appear in the pop–up window at one time (after the structure has been chosen).

How Segments Use Underlying Columns

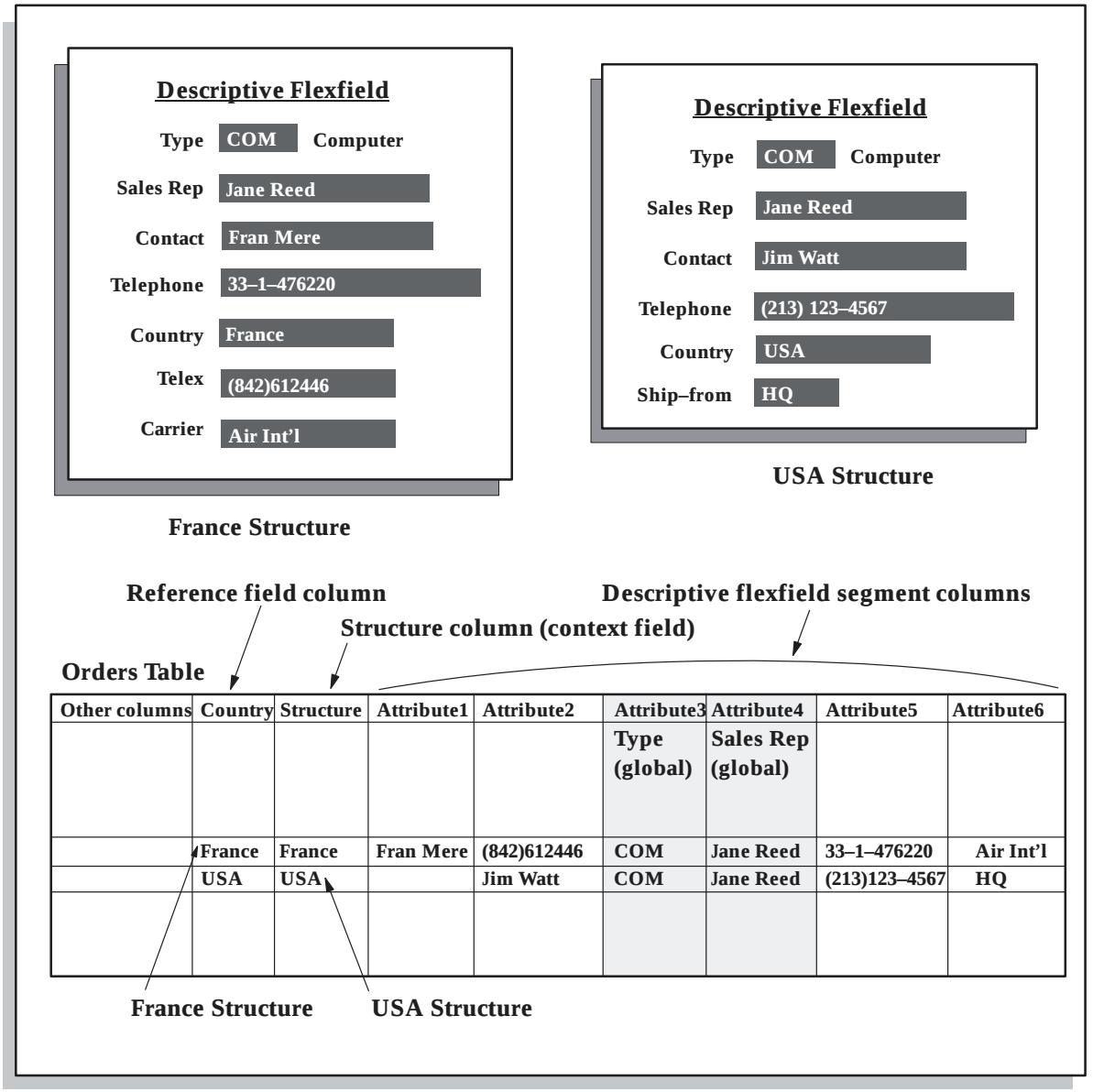
Figure 3 – 2



A descriptive flexfield uses columns that are added on to a database table. The table contains any columns that its entity requires, such as a primary key column and other information columns. For example, a Vendors table would probably contain columns for standard vendor information such as Vendor Name, Address, and Vendor Number. The descriptive flexfield columns provide ”blank” columns that you can use to store information that is not already stored in another column of that table. A descriptive flexfield requires one column for each possible segment and one additional column in which to store structure

information (that is, the context value). You can define only as many segments in a single structure as you have descriptive flexfield segment columns in your table. The descriptive flexfield columns are usually named ATTRIBUTEn where n is a number.

Figure 3 – 3



A global segment uses the same column for all rows in the table. A context–sensitive segment for one structure uses a given column, but a context–sensitive segment in a different structure can ”reuse” that same column. When you define your descriptive flexfield, you should always define your global segments first to ensure that your global segment can ”reserve” that column for all structures. Then, you define your context–sensitive segments using the remaining columns.

Note that when you use a descriptive flexfield that has context–sensitive segments, and you change an existing context value to a new context value, the flexfield automatically clears out all the context–sensitive segment columns, and re–defaults any segments that have default values.

Context Fields and Reference Fields

The values of context fields and / or reference fields influence both the behavior and the appearance of descriptive flexfields.

Context Fields

All descriptive flexfields have a hidden context field in the form that holds structure information for the descriptive flexfield (this field is often called ATTRIBUTE_CATEGORY or CONTEXT). Depending on how you set up the flexfield, a user may also be able to see and change the context field in the descriptive flexfield window.

In earlier versions of Oracle Applications, you allow users to see and modify the value in the context field in the descriptive flexfield window by checking the "Override Allowed (Display Context)" check box. Starting with Release 11i.6 (11.5.6) of Oracle Applications, this check box is now called "Displayed" though its effect is unchanged.

Using Value Sets With Context Fields

Typically, you set up context field values by typing them into the Descriptive Flexfield Segments window individually, and you then set up context–sensitive segments for each context field value. In some cases, however, you may have an existing table of the values that would be valid context field values but would not all have corresponding context–sensitive segments (for example, a table of countries), and you do not want to duplicate the contents of the existing table by creating a new context field value for each existing value in your table (each country name, for example). In this case, starting with Release 11i.6 (11.5.6) of Oracle Applications, you can set up a value set containing your existing values and use the value set to populate the context field. You must still type in the context field value when you set up any context–sensitive segments for that value.

Value sets used for context fields must obey certain restrictions or they will not be available to use in the Value Set field in the Context Field region of the Descriptive Flexfield Segments window:

- Format Type must be Character (Char)
- Numbers Only must not be checked (alphabetic characters are allowed)

- Uppercase Only must not be checked (mixed case is allowed)
- Right–justify and Zero–fill Numbers must not be checked
- Validation Type must be Independent or Table

If the validation type is Independent:

- the value set maximum size must be less than or equal to 30

If the validation type is Table:

- the ID Column must be defined, it must be Char or Varchar2 type, and its size must be less than or equal to 30. The ID column corresponds to the context field value code (the internal, non–translated context field value).
- the Value Column must be defined, it must be Char or Varchar2 type, and its size must be less than or equal to 80. The Value column corresponds to the context field value name (the displayed context field value).
- the value set maximum size must be less than or equal to 80

Descriptive Flexfield Segments Window: page 3 – 31

All context field values (the code values) you intend to use must exist in the value set. If you define context field values in the Context Field Values block of the Descriptive Flexfield Segments window that do not exist in the context field value set, they will be ignored, even if you have defined context–sensitive segments for them.

Context Field Values: page 3 – 37

In the case where the context field is displayed, there are no global segments, and a context field value is in the value set but does not have any context–sensitive segments, only the context field is displayed. The context field value the user chooses from the value set would then be stored in the structure column of the underlying descriptive flexfield table, but no values would be stored in the ATTRIBUTEn segment columns.

Using table–validated value sets with your context field allows you to make your context field values conditional, such as by restricting the values by the value of a profile option bind variable in the WHERE clause of the value set.

WHERE Clauses and Bind Variables for Validation Tables: page 4 – 33

Example of using a value set with a context field

Suppose we have a table that has all the countries defined, and the table is called MY_COUNTRIES_TABLE. Here is some sample data:

```
REGION   COUNTRY_CODE    COUNTRY_NAME     DESCRIPTION
------   ------------    ------------     -----------
America  US              United States    US Desc.
America  CA              Canada           CA Desc.
Europe   UK              United Kingdom   UK Desc.
Europe   GE              Germany          GE Desc.
Europe   TR              Turkey           TR Desc.
Asia     IN              India            IN Desc.
Asia     JP              Japan            JP Desc.
Africa   EG              Egypt            EG Desc.
Africa   SA              South Africa     SA Desc.
...
```

Also, suppose that depending on some profile option we want our users to see only a subset of the country data. Here is the value set definition:

```
MY_COUNTRIES_VALUE_SET
Format Type      : Char
Maximum Size     : 80
Validation Type  : Table
Table Name       : MY_COUNTRIES_TABLE
Value Column     : COUNTRY_NAME/Varchar2/80
Meaning Column   : DESCRIPTION/Varchar2/100
ID Column        : COUNTRY_CODE/Varchar2/30

WHERE/ORDER BY Clause :
        WHERE region = :$PROFILES$.CURRENT_REGION
        ORDER BY country_name
```

Now, when a user logs in from a site in the Europe region, for example, he or she would be able to see only European countries in the context field list of values.

Example of combining table values and context values in a value set

Suppose you defined some countries in the Context Field Values block of the Descriptive Flexfield Segments window (these values will be in the view FND_DESCR_FLEX_CONTEXTS_VL), and you have other countries in MY_COUNTRIES_TABLE. However, some of the context

values in FND_DESCR_FLEX_CONTEXTS_VL do not exist in MY_COUNTRIES_TABLE. If you do not define them in your context field value set then you will not be able to use them, but you do not want to add (duplicate) them in your custom table. The solution is to create a view that is a union of the two tables, and to create a table–validated value set using that view. Here is an example:

Define the following view:

```
MY_COUNTRIES_UNION_VIEW
CREATE OR REPLACE VIEW MY_COUNTRIES_UNION_VIEW
        (region, country_code,
        country_name, description)
AS
SELECT  'N/A', descriptive_flex_context_code,
                descriptive_flex_context_name,
                description
FROM    FND_DESCR_FLEX_CONTEXTS_VL
WHERE   application_id = 123  -- Assume DFF's app id is 123
AND     descriptive_flexfield_name =
        'Address Descriptive Flexfield'
AND     global_flag = 'N'
AND     enabled_flag = 'Y'
UNION
SELECT  region, country_code
        country_name,
        description
FROM    MY_COUNTRIES_TABLE
WHERE   enabled_flag = 'Y'
```

Then define the following value set.

```
MY_COUNTRIES_VALUE_SET
Format Type     : Char
Maximum Size    : 80
Validation Type : Table
Table Name      : MY_COUNTRIES_UNION_VIEW
Value Column    : COUNTRY_NAME/Varchar2/80
Meaning Column  : DESCRIPTION/Varchar2/100
ID Column       : COUNTRY_CODE/Varchar2/30

WHERE/ORDER BY Clause :
           WHERE (region = 'N/A' OR
                  region = :$PROFILES$.CURRENT_REGION)
```

```
ORDER BY country_name
```

This gives the correct union. Note that you cannot do a union in the value set WHERE / ORDER BY clause.

Example of conditional context field values without a separate table

Suppose you already defined all of your context field values, and you do not need another table. However, you want to make the values in the context field list of values conditional on some criteria (data striping).

Suppose you defined your context values using a pattern such as "<CountryCode>.<ApplicationShortName>.<FormName>.<BlockName>", where a context field value might be something like "US.SQLPO.POXPOMPO.HEADER" (this pattern is similar to that used for some globalization features of Oracle Applications). You want users located at U.S. sites to see only 'US.%' contexts. Here is the value set that you might define:

```
Custom_Globalization_Value_set

Format Type      : Char
Maximum Size     : 80
Validation Type  : Table
Table Name       : FND_DESCR_FLEX_CONTEXTS_VL
Value Column     : DESCRIPTIVE_FLEX_CONTEXT_NAME/Varchar2/80
Meaning Column   : DESCRIPTION/Varchar2/240
ID Column        : DESCRIPTIVE_FLEX_CONTEXT_CODE/Varchar2/30

WHERE/ORDER BY Clause :
            WHERE application_id = 123
            AND   descriptive_flexfield_name =
                     'My Descriptive Flexfield'
            AND   global_flag = 'N'
            AND   enabled_flag = 'Y'
            AND   descriptive_flex_context_code LIKE 'US.%'
            ORDER BY descriptive_flex_context_name
```

Note That 'US.%' in the WHERE clause can be replaced with
:$PROFILES$.COUNTRY_CODE | | '.%'
to make it conditional by the users' country.

Reference Fields

Using a field as a reference field has no effect on the field itself. That is, the reference field is simply a normal form field that has nothing to do with the flexfield unless you define the flexfield to use it as a reference field. Typically, an application developer specifies one or more fields on the form as potential reference fields while building the descriptive flexfield into the form, and then you decide which, if any, reference field you want to use. Reference fields provide a way for you to tie the context–sensitivity of descriptive flexfield information you capture to existing conditions in your business data.

If you use a reference field, the value of that field populates its own column. For example, if the reference field on your form is the ”Country” field, it populates the ”country” column in the table (remember that the reference field is just an ordinary field on the form before you choose to use it as a reference field). However, that reference field value also populates the structure (context) column in the table, since that value specifies which structure the flexfield displays. If you provide a context field in the flexfield pop–up window, in addition to using the reference field, the reference field essentially provides a default value for the context field, and the user can choose a different context value. In this case, the reference field column and the structure column might contain different values. If you use the reference field without a displayed context field, the values in the two columns would be the same. The form also contains a hidden context field that holds the structure choice, regardless of whether you choose to display a context field in the pop–up window.

The field you choose must exist in the same block as the descriptive flexfield. In addition, if the descriptive flexfield appears in several different windows or blocks, the same field must exist in all blocks that contain this descriptive flexfield. You can specify your field using either the field name by itself or using the :block.field notation.

Suggestion: Choose your reference fields carefully. A reference field should only allow previously defined values so that you can anticipate all possible context field values when you define your structures using the Context Field Values zone.

For example, the descriptive flexfield in an application window may be used to capture different information based on which country is specified in a field on that window. In this case, the country field could be used as a reference field.

Typically, you would define different structures of descriptive flexfield segments for each value that the reference field would contain. Though you do not necessarily define a structure for *all* the values the reference

field could contain, a field that has thousands of possible values may not be a good reference field. In general, you should only use fields that will contain a relatively short, static list of possible values, such as a field that offers only the choices of Yes and No or perhaps a list of countries. You should not use fields that could contain an infinite number of unique values, such as a PO Number field or a date field (unless that date field has a list of a few particular dates, such as quarter end dates, that would never change). Often the business uses of the particular window dictate which fields, if any, are acceptable reference fields.

Suggestion: A descriptive flexfield can use only one field as a reference field. You may derive the context field value for a descriptive flexfield based on more than one field by concatenating values in multiple fields into one form field and using this concatenated form field as the reference field (this may require a customization to the form if the form does not already include such a concatenated field).

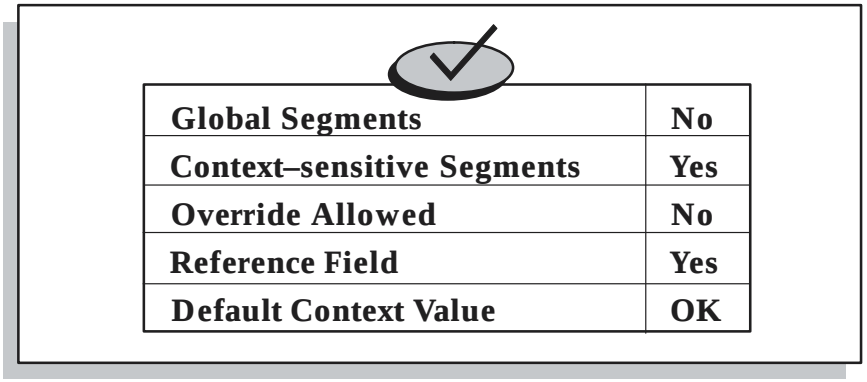
Other Descriptive Flexfield Features

You can also use Flexfield Value Security with descriptive flexfields.
See: Using Flexfield Value Security: page 5 – 9.

Different Arrangements of Segments

You have many choices for how you want your descriptive flexfield structures to look and behave. The following diagrams show you different arrangements of segments you could define by choosing different descriptive flexfield setup options.

Figure 3 – 4



The different descriptive flexfield setup options are:

- Global Segments
- Context–sensitive segments
- Override Allowed
- Reference Field
- Default Context field

Note that the option ”Override Allowed” controls whether your user sees a context field in the flexfield pop–up window. You set ”Override Allowed” to Yes if you want a context field to appear in the descriptive flexfield pop–up window. You set ”Override Allowed” to No if you do not want users to choose a structure from within the pop–up window.

In earlier versions of Oracle Applications, you allow users to see and modify the value in the context field by checking the ”Override Allowed (Display Context)” check box. Starting with Release 11i.6 (11.5.6) of Oracle Applications, this check box is now called ”Displayed” though its effect is unchanged.

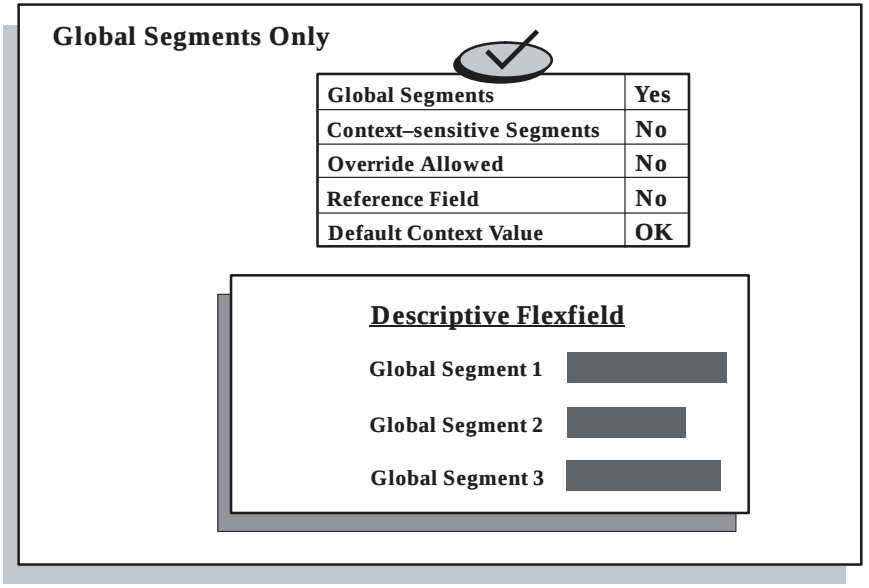
In these diagrams, ”OK” means that whether you specify Yes or No for an option does not matter (another option may have an ”overriding” effect). For example, if you have a default context field value (structure

choice), but you have a context field as well, your default value will appear in the context field but the user can choose a different value instead.

One structure

The simplest way to define a flexfield is to have one structure that contains only global segments. However, this arrangement does not allow much future flexibility, since if you use all your available columns for global segments, you do not have any remaining columns for context–sensitive segments.

Figure 3 – 5



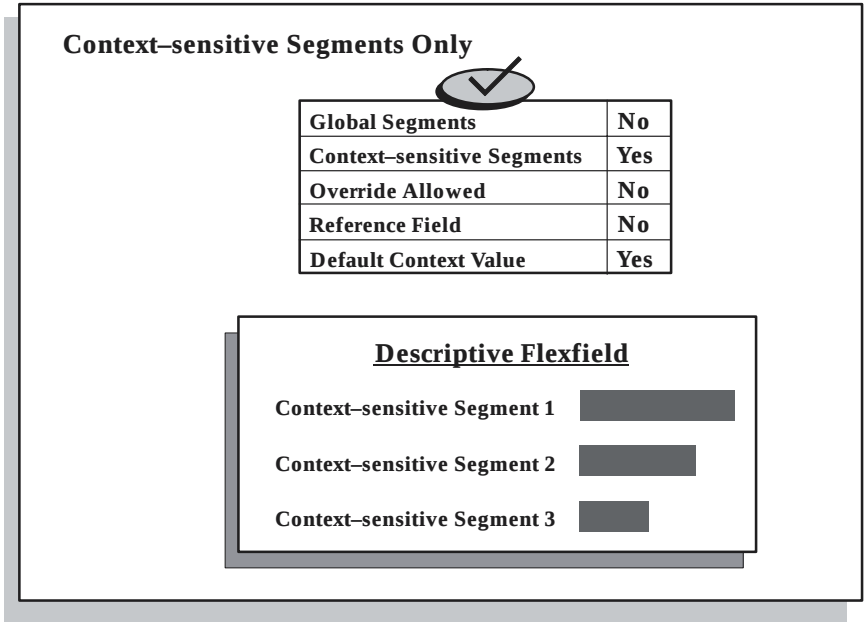
In this example, you have the following settings:

- Global Segments – Yes
- Context–sensitive segments – No
- Override Allowed – No
- Reference Field – No
- Default Context field – No

This example has three global segments.

Another way to achieve a similar effect is to define a single structure that contains only context–sensitive segments. You also define a default context value, and you do not provide a context field or a reference field. The effect of this setup is that the user always sees the same segment structure, so it behaves as if it were a structure of global segments. However, if later you needed to add more structures of context–sensitive segments, you could do so by enabling the context field or a reference field, disabling the default context field value, and defining your new context–sensitive segment structure. Note that if you had already used all the available segment columns in your first context–sensitive structure, you would not be able to add more segments to that structure; you would only be able to define additional structures. One drawback to using the context–sensitive segments only strategy is that if you have certain segments that should appear for all contexts (all structures), you would have to define those segments separately for each context–sensitive structure.

Figure 3 – 6



In this example, you have the following settings:

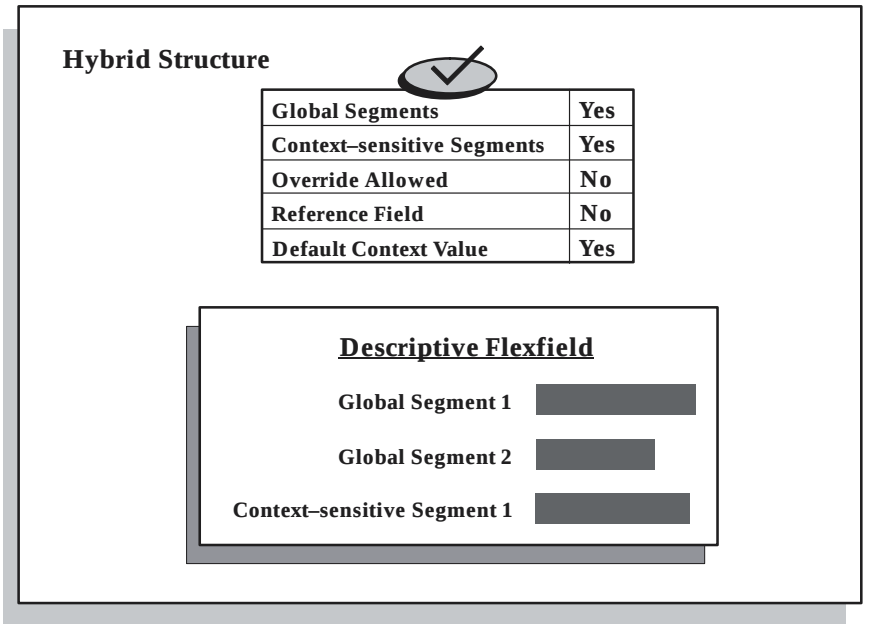
- Global Segments – No
- Context–sensitive segments – Yes
- Override Allowed – No

- Reference Field – No
- Default Context field – Yes

This example has three context–sensitive segments.

Of course, you could initially define a hybrid structure that contains some global segments and some context–sensitive segments but has only one context–sensitive structure with a default context field value (but no context field or reference field).

Figure 3 – 7



In this example, you have the following settings:

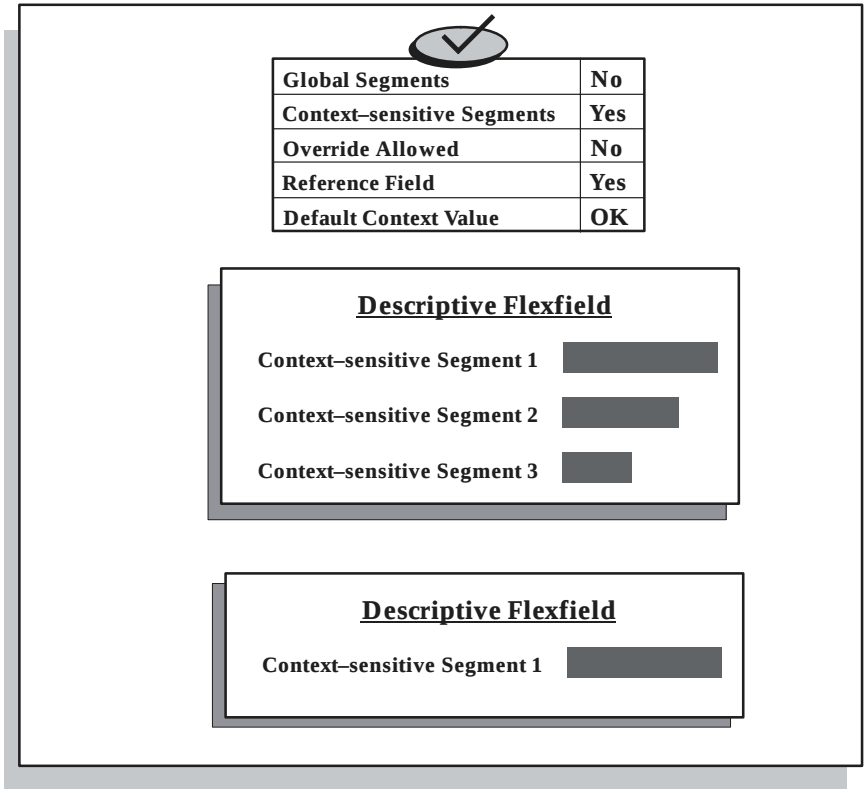
- Global Segments – Yes
- Context–sensitive segments – Yes
- Override Allowed – No
- Reference Field – No
- Default Context field – Yes

This example has two global segments and one context–sensitive segment.

More than one structure

Once you've established that you need more than one (context–sensitive) structure, you have a number of options for how you want to arrange various combinations of global and / or context–sensitive segments, reference field or no reference field, context field or no context field, and so on. The following diagrams show these various arrangements (for a setup that uses two context–sensitive structures).

Figure 3 – 8



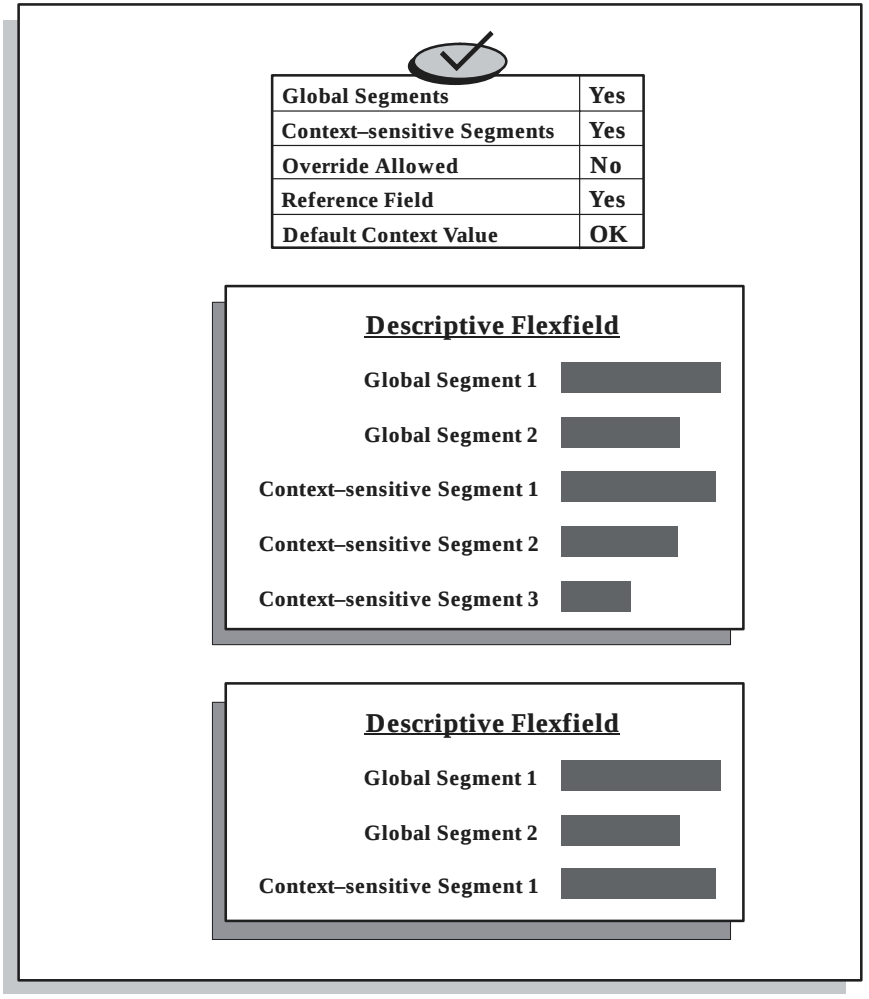
In this example, you have the following settings:

- Global Segments – No
- Context–sensitive segments – Yes
- Override Allowed – No
- Reference Field – Yes

- Default Context field – OK

This example has two context–sensitive structures, one with three context–sensitive segments and another with one context–sensitive segment.

Figure 3 – 9



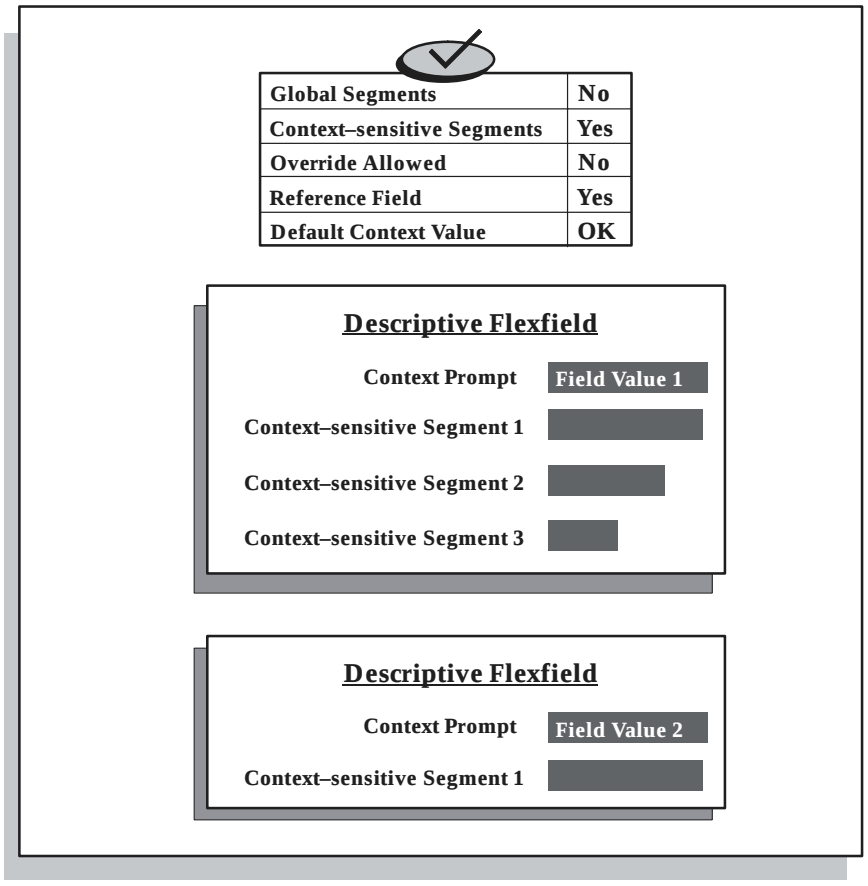
In this example, you have the following settings:

- Global Segments – Yes
- Context–sensitive segments – Yes
- Override Allowed – No

- Reference Field – Yes
- Default Context field – OK

This example has two context–sensitive structures, both with two global segments. The first structure has three context–sensitive segments and the second has one context–sensitive segment.

Figure 3 – 10



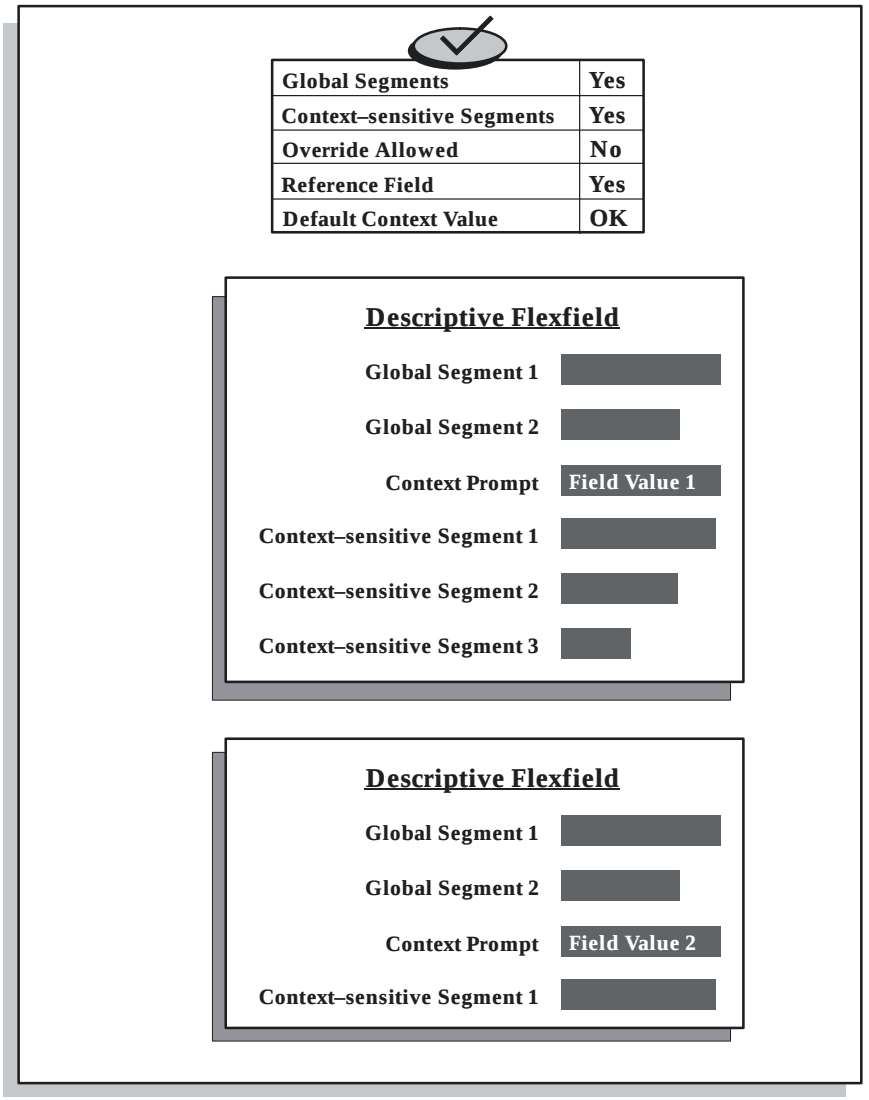
In this example, you have the following settings:

- Global Segments – No
- Context–sensitive segments – Yes
- Override Allowed – No
- Reference Field – Yes

- Default Context field – OK

This example shows a two structures that share a context prompt. The value of the context prompt determines whether the user sees the first structure with three context–sensitive segments or the second structure with one context–sensitive segment.

Figure 3 – 11



In this example, you have the following settings:

- Global Segments – Yes

- Context–sensitive segments – Yes
- Override Allowed – No
- Reference Field – Yes
- Default Context field – OK

This example shows a two structures that have two global segments and a context prompt. The value of the context prompt determines whether the user sees the first structure which has three context–sensitive segments or the second structure which has one context–sensitive segment.

Planning Your Descriptive Flexfield

When you are planning your flexfields, you should consider the following questions and their corresponding decisions:

- ❑ Do you want to capture information that is not otherwise captured by the form? If yes, you define this descriptive flexfield. If no, you need not define this descriptive flexfield at all.
- ❑ Do you want to capture the same information every time, regardless of what other data appears in the form? If yes, you need to define global segments.
- ❑ Do you want to capture certain information sometimes, depending on what other data appears in the form? If yes, you need to define context–sensitive segments.
- ❑ If you want context–sensitive segments, do you want to have the form automatically determine which descriptive flexfield structure to display based on the value of a field somewhere on the form? If yes, you need to define a reference field (note that some descriptive flexfields do not provide reference fields).
- ❑ If you want context–sensitive segments, do you want to have the user determine which descriptive flexfield structure to display by choosing a value in a field inside the pop–up window? If yes, you need to define a context field.
- ❑ How do you want to break down reporting on your descriptive flexfield data? If you want to report on your data by certain criteria or sub–entities, such as account number or project or region, you may want to consider making that sub–entity a distinct segment, rather than combining it with another sub–entity, so that you can categorize and report on smaller discrete units of information.
- ❑ How often does your organization change? This would affect how you set up your values. For example, if you disable old cost centers and enable new ones frequently, you would ”use up” cost center values quickly. You would therefore want to use a larger maximum size for your cost center value set so that you can have more available values (for example, you have 999 available values for a 3–character value set instead of 100 available values for a 2–character value set).
- ❑ Do you want to require a value for each segment?

See:

Overview of Setting Up Flexfields: page 1 – 10

You should decide on the number, order and length of your segments for each structure. You must also choose how to validate each segment.

See:

Overview of Values and Value Sets: page 4 – 2

Descriptive Flexfield Structure Planning Diagrams: page 3 – 25

Descriptive Flexfield Structure Planning Diagrams

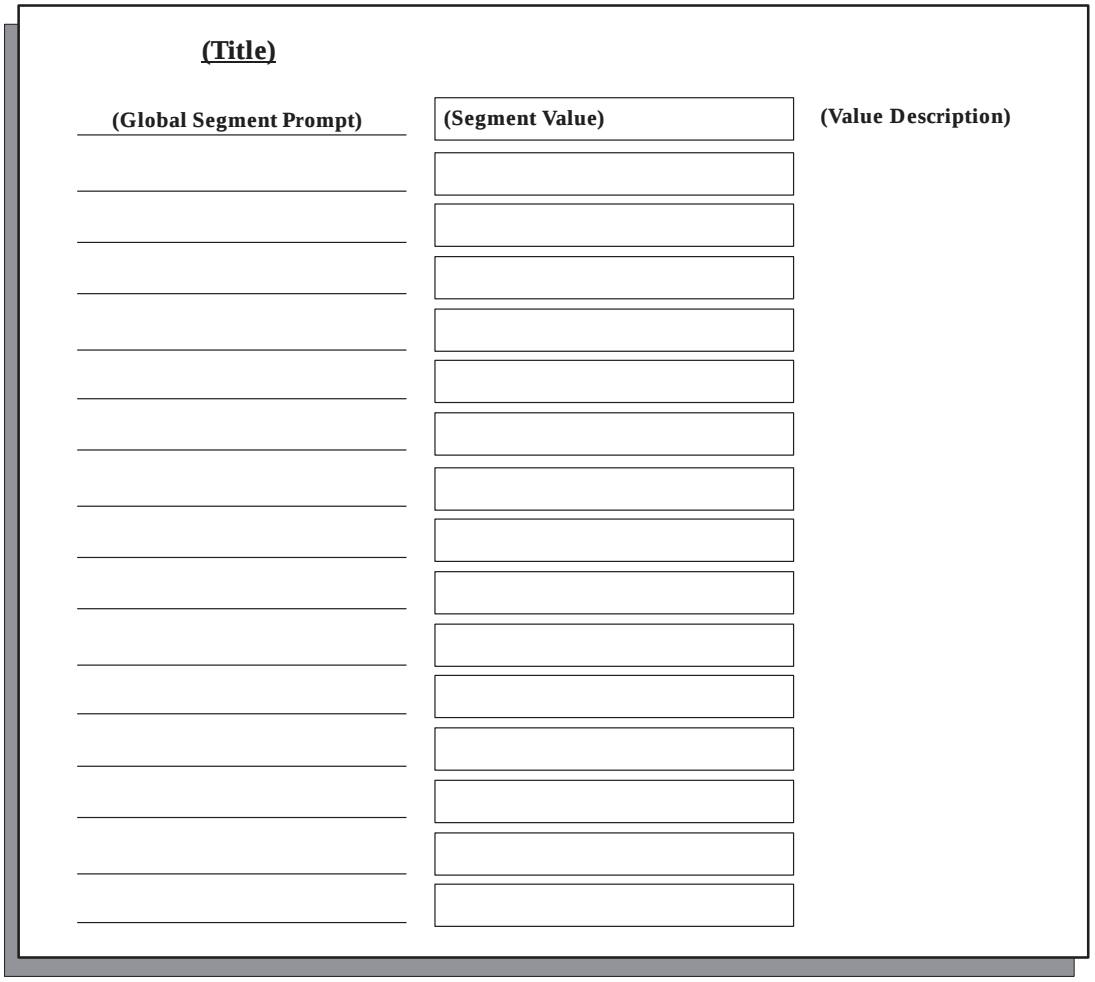
You can use photocopies of the following diagrams to help you sketch out your descriptive flexfield structures. Add or subtract segments as appropriate for your structures.

Global Segments Only

Use this diagram for a single descriptive flexfield structure that contains only global segments and does not use a context field, reference field, or context–sensitive segments.

You can use it to list your global segment prompts, segment values, and value descriptions.

Figure 3 – 12



Global and Context–Sensitive Segments

Use the following two diagrams for a descriptive flexfield that has more than one structure that contains both context–sensitive segments and global segments and may use a context field and / or a reference field.

You can list the segment prompts, segment values, and value descriptions for your global segments and your context sensitive segments.

Figure 3 – 13

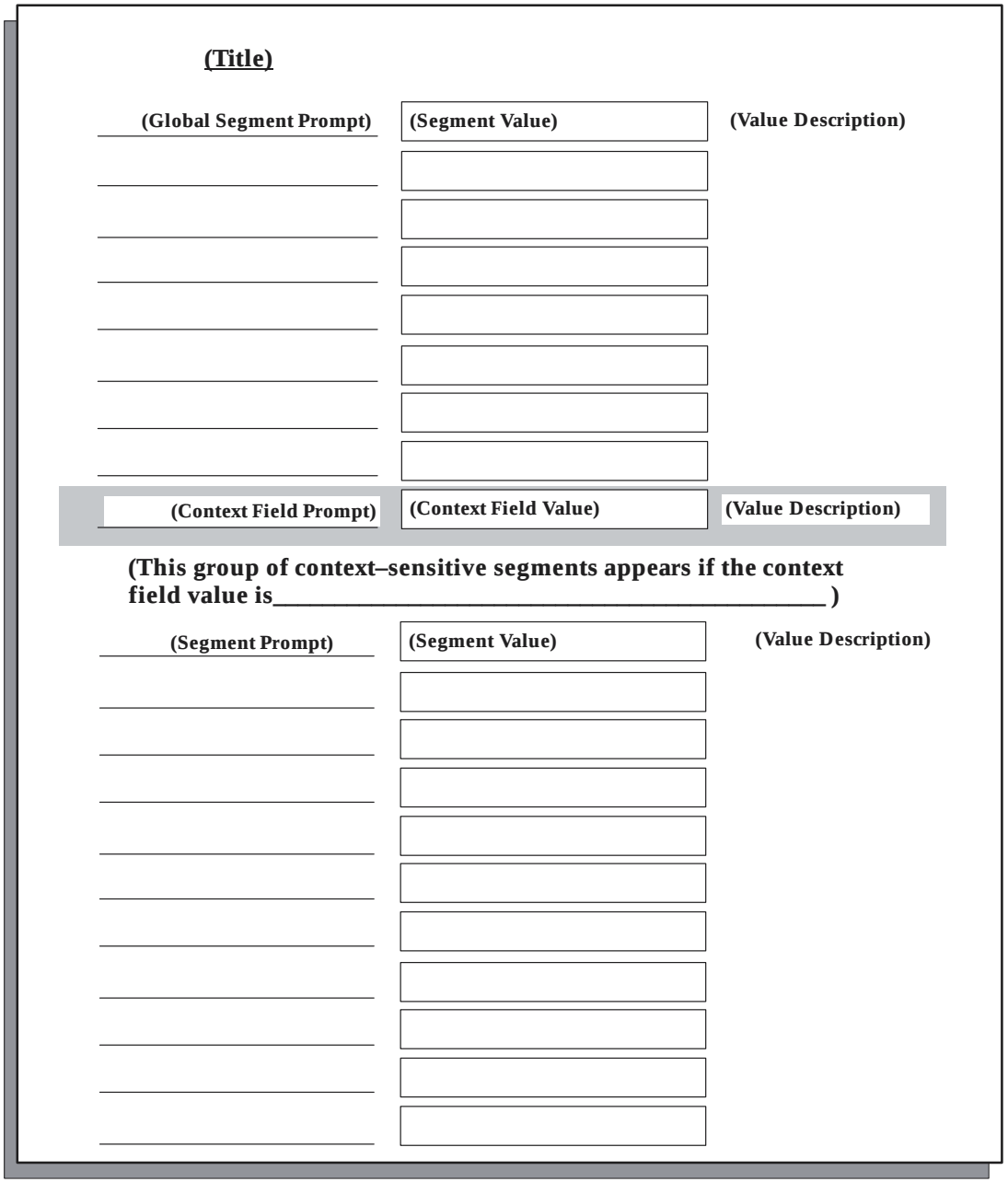
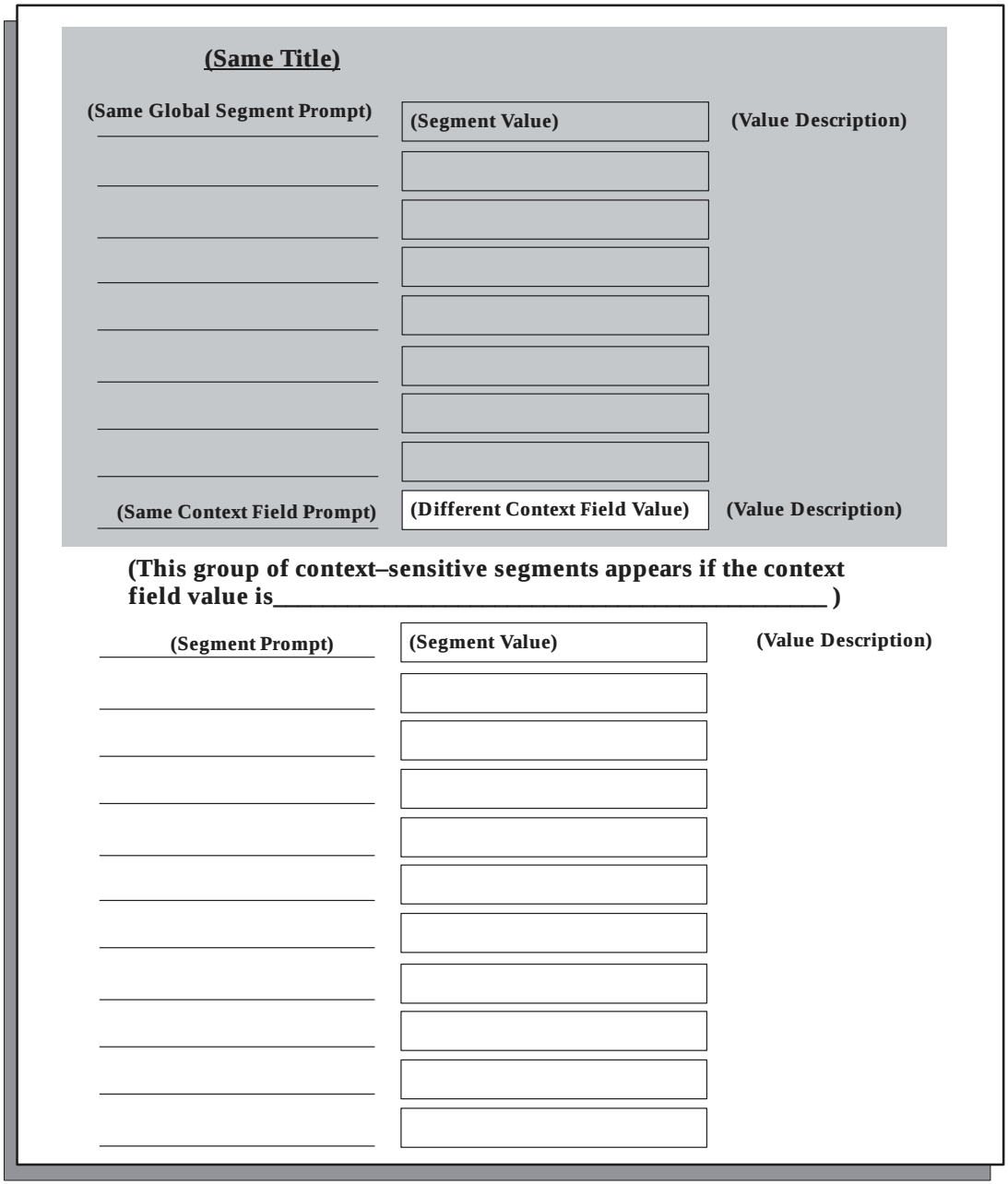

(Title)
(Global Segment Prompt)
(Segment Value)
(Value Description)
(Context Field Prompt)
(Context Field Value)
(Value Description)
(This group of context–sensitive segments appears if the context field value is_____)
(Segment Prompt)
(Segment Value)
(Value Description)

Figure 3 – 14

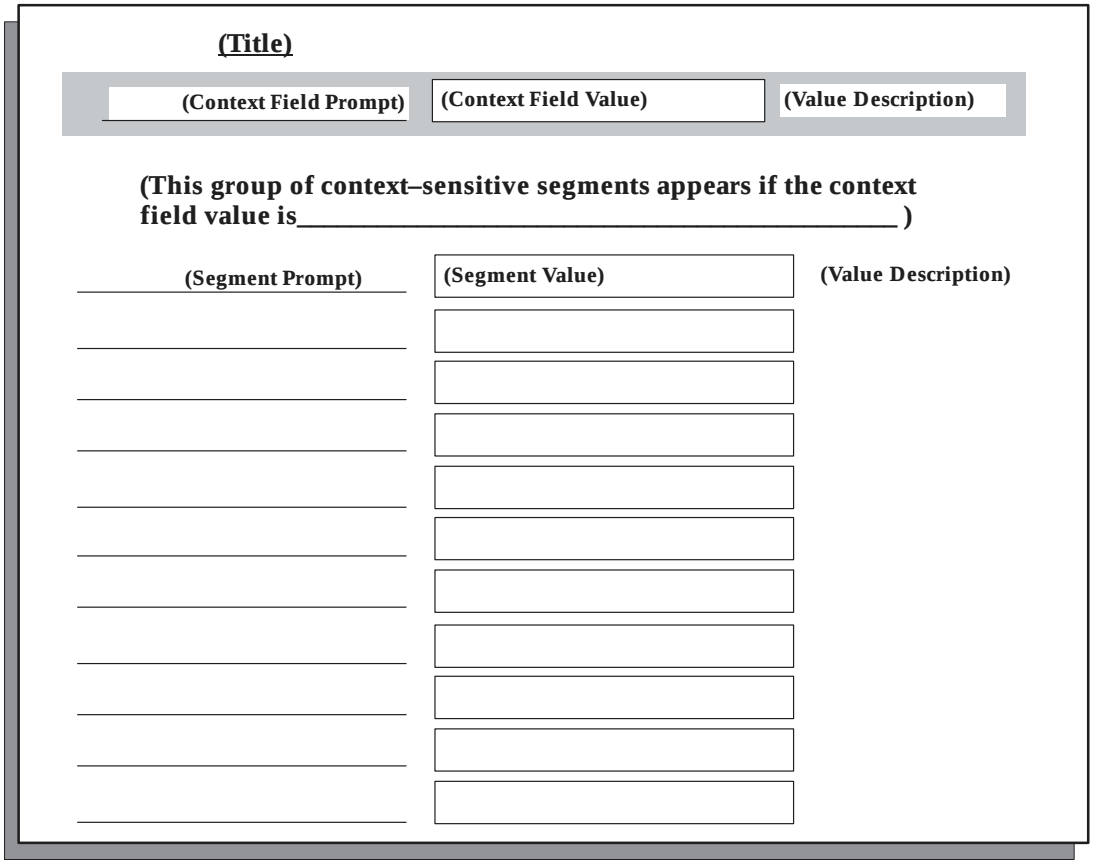

(Same Title)
(Same Global Segment Prompt)
(Segment Value)
(Value Description)
(Same Context Field Prompt)
(Different Context Field Value)
(Value Description)
(This group of context–sensitive segments appears if the context field value is_____)
(Segment Prompt)
(Segment Value)
(Value Description)

Context–Sensitive Segments Only

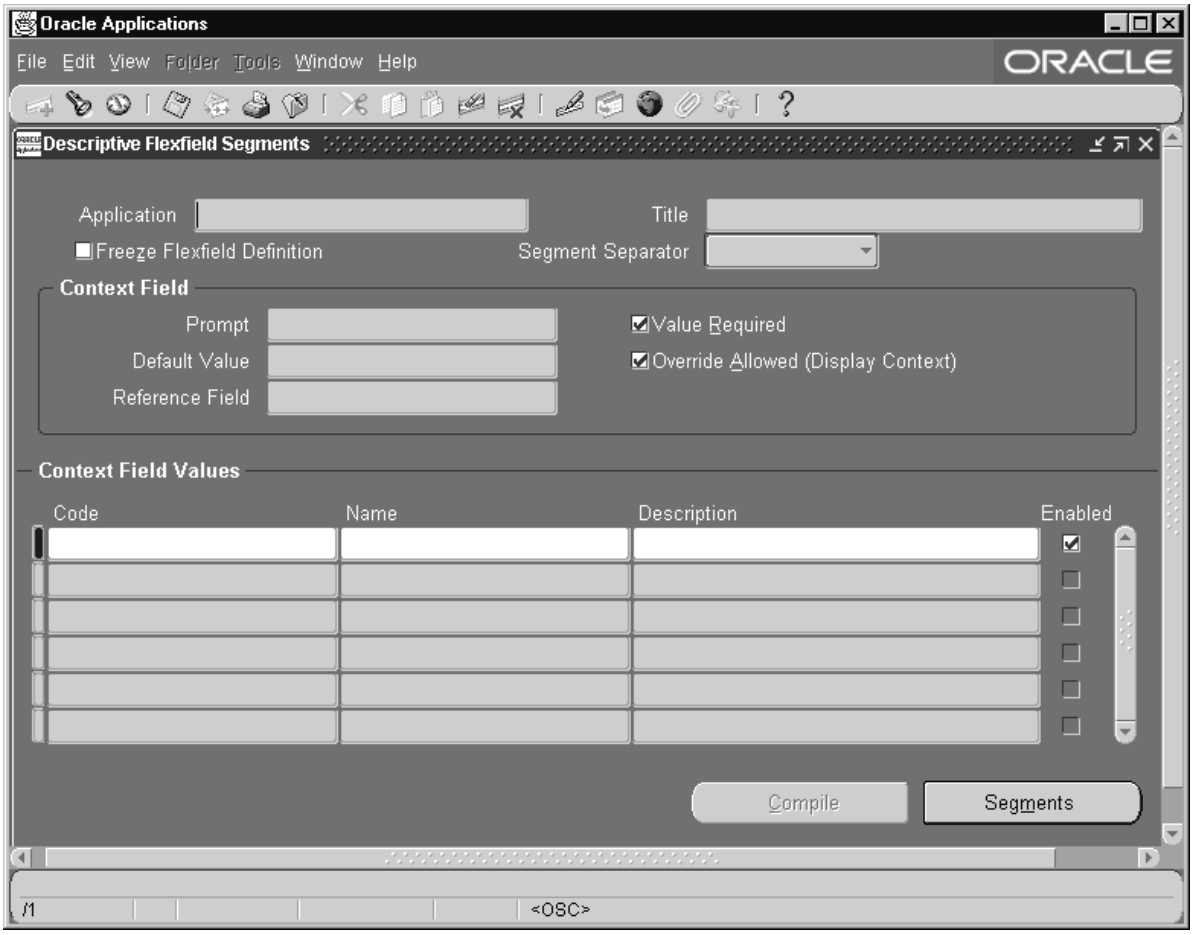
Use multiple copies of the following diagram for a descriptive flexfield that has more than one structure and contains only context–sensitive segments. Your structures may use a context field and / or a reference field.

You can list the segment prompts, segment values, and value descriptions for your context–sensitive segments.

Figure 3 – 15



Descriptive Flexfield Segments Window



Use this window to define your descriptive flexfield structures.

Planning Your Descriptive Flexfield: page 3 – 24

Tasks

Defining Descriptive Flexfield Structures: page 3 – 33

Defining Segments: page 2 – 22

Identifying Descriptive Flexfields in Oracle Applications: page 3 – 40

Defining Descriptive Flexfields

To define your descriptive flexfield, you define the segments that make up your descriptive flexfield structures, and the descriptive information and validation information for each segment in a structure. You also determine the appearance of your descriptive flexfield window, including the size of the window, the number and order of the segments, and the segment descriptions and default values. The maximum number of segments you can have within a single structure depends on which descriptive flexfield you are defining.

To take advantage of the flexibility and power of descriptive flexfields in your application, you must define your flexfield structure. If you do not define any descriptive flexfield segments, you cannot use descriptive flexfields within your windows, but there is no other loss of functionality.

Once you define or change your flexfield, you must freeze your flexfield definition and save your changes. When you do, Oracle Applications automatically compiles your flexfield to improve online performance.

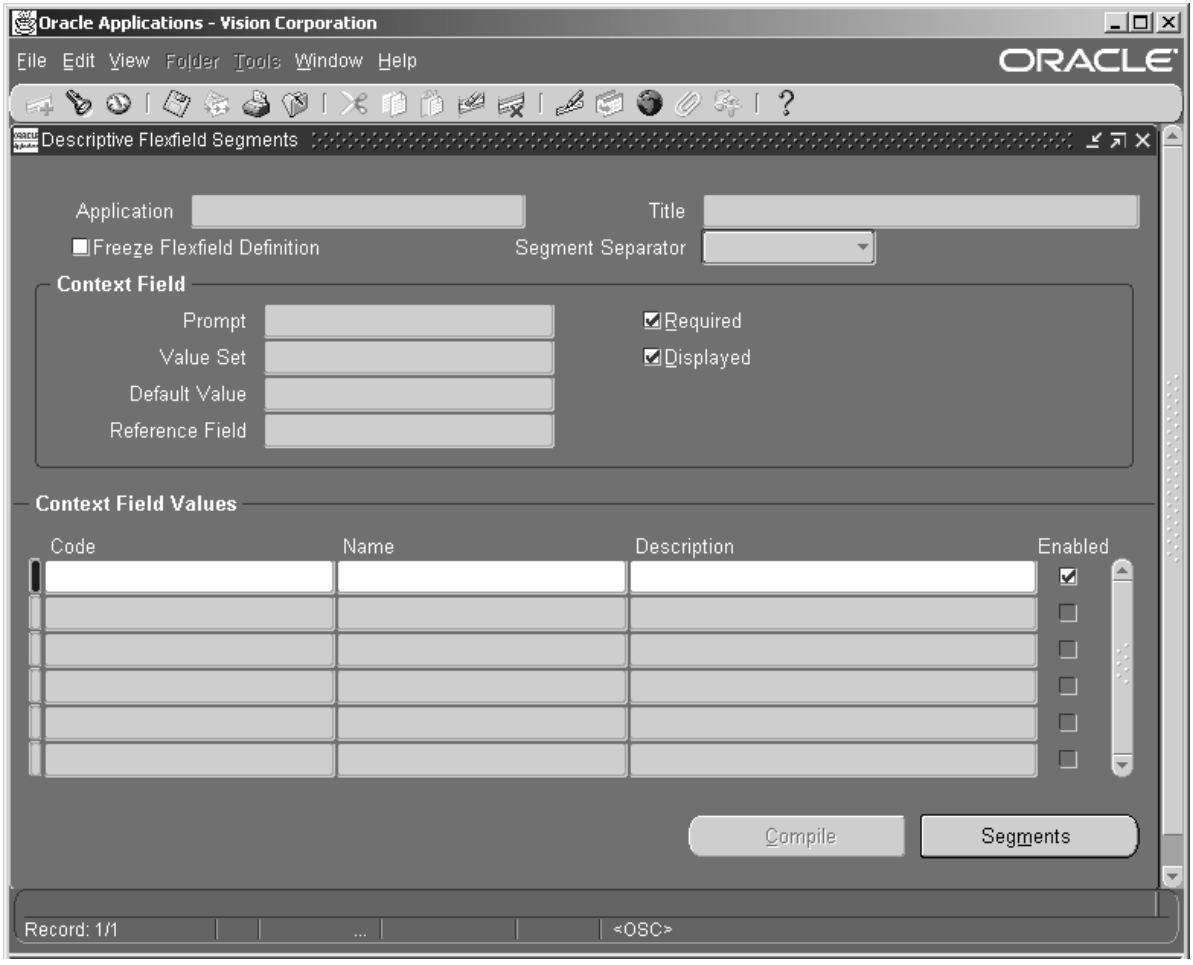
Once you freeze your flexfield definition and save your changes, Oracle Applications submits a concurrent request to generate a database view of the table that contains your flexfield segment columns. You can use these views for custom reporting at your site. See: Overview of Flexfield Views: page 8 – 3.

You can see your flexfield changes immediately after you freeze and recompile your flexfield. However, your changes do not affect other users until they change responsibilities or exit the application they are using and sign back on.

Suggestion: Plan your descriptive flexfield structures carefully, including all your segment information such as segment order and field lengths, before you set up your segments using this window. You can define your descriptive flexfields any way you want, but changing your structures once you acquire flexfield data may create data inconsistencies that could have a significant impact on the performance of your application or require a complex conversion program.

Identifying Descriptive Flexfields in Oracle Applications: page 3 – 40

Defining Descriptive Flexfield Structures



Prerequisites

- ❑ Use the Value Sets window to define any value sets you need. See: Value Sets: page 4 – 50.

Application and Title

Use View > Find to select the title and application name of the descriptive flexfield you want to define. You cannot create a new flexfield using this window. See: Identifying Descriptive Flexfields in Oracle Applications: page 3 – 40.

You can change the flexfield title by typing in a new name over the old name. You see this name whenever you select a descriptive flexfield and as the window title whenever a user enters your descriptive flexfield.

Freeze Flexfield Definition

The default value for this field is unchecked (flexfield definition not frozen).

Do not freeze your flexfield if you want to define new structures, set up or modify your flexfield segments, or change the appearance of your descriptive flexfield window. You cannot make most changes while the flexfield is frozen.

Freeze your flexfield after you set it up. Then save your changes. When you do, this window automatically compiles your flexfield. You *must* freeze and compile your flexfield definition before you can use your flexfield. If you decide to make changes to your flexfield definition, make sure that you freeze and save your flexfield definition again once you have made your changes.

Warning: Do *not* modify a frozen flexfield definition if existing data could be invalidated. An alteration of the flexfield structure can create data inconsistencies.

Segment Separator

Enter the character you want to use to separate your segments in a concatenated description field.

You should choose your separator character carefully so that it does not conflict with your flexfield data. Do not use a character that is used in your segment values. For example, if your data frequently contains periods (.) in monetary or numeric values, do not use a period as your segment separator.

Warning: Some Oracle Applications tables store the segment separator as part of your flexfield values. Changing your separator once you have data in such tables may invalidate that data and cause application errors.

Context Field Region

Prompt

The context field automatically displays any existing context window prompt for this flexfield. You can change this prompt by typing a new prompt over the current prompt. Your flexfield displays this prompt in a flexfield window if you can choose the context–sensitive flexfield structure you want to see when you enter the flexfield (that is, if you have permitted Override).

When you choose a prompt, you should keep in mind that the context field in the flexfield window appears as just a normal field or segment to a user. For example, if you have a Client Type descriptive flexfield with two different segment structures called Customer (for external clients) and Employee (for internal clients), you might define your prompt as "Client Type".

Value Set

If you have context field values contained in an existing table, you can create a value set that includes those values, and enter the name of that value set here. Using a value set for the context field allows you to have valid context field values without specifically defining context–sensitive segments for those context field values.

For example, if you have a list of countries where you want all the countries to be valid context field values, but only a few of the countries have related context–sensitive segments, you would use a value set that includes your entire list of countries. You would then define context–sensitive segments for just those countries that need context–sensitive segments.

Using Value Sets With Context Fields: page 3 – 8

Default Value

Enter a default context field value for your flexfield to use to determine which descriptive flexfield structure to display. You must define the default context field value as a structure in the Context Field Values zone before you can compile your flexfield. Your flexfield automatically uses this default context field value if you do not define a reference field.

If you do not have any context–sensitive segments, or you want the context field to remain blank unless filled in by a reference field, you should leave this field blank.

Required

Indicate whether a context field value is required. If a context field value is required, your flexfield does not allow you to leave the flexfield window without entering a valid value. Otherwise, you do not have to choose a value for your context field. In this case, you leave the flexfield window without seeing any context–dependent structures.

Reference Field

Enter the name of the reference field from which your flexfield can automatically derive the context field value. You can select from a list of potential reference fields that have been predefined. Some descriptive flexfields may not have any reference fields predefined.
See: Reference Fields: page 3 – 13.

Displayed

In earlier versions of Oracle Applications, you allow users to see and modify the value in the context field by checking the ”Override Allowed (Display Context)” check box. Starting with Release 11i.6 (11.5.6) of Oracle Applications, this check box is now called ”Displayed” though its effect is unchanged.

If you have any context–sensitive segments for your flexfield, you should always check the Displayed check box if you do not specify either a default value or a reference field. Without the displayed context field, your flexfield must determine the context field value from the reference field or your default value.

If you check the Displayed check box, a user can see and change the context field value that your flexfield derives from a reference field or obtains as a default value.

Suggestion: You should leave the Displayed check box unchecked *only* if the context field value derives from a reference field or a default value that you specify using this region, or you have only global segments. If you do derive your context field value from a reference field, however, we recommend that you do not allow your user to see or change that value in the flexfield window.

Context Field Values

Use this block to define valid context field values (that also serve as structure names) for this descriptive flexfield. You can set up a different descriptive flexfield segment structure for each value you define.

A Global Data Elements value always appears in this block. You use Global Data Elements to set up global segments that you want to use in every segment structure. These segments appear before any context field or context–sensitive segments in the flexfield window.

For example, suppose you have a Client Type flexfield. You have two context–sensitive structures, Employee (internal client), and Customer (external client), for which you want to have different segments to capture different information. However, you also want to capture certain information for both structures. You define global segments for the common information, using the Global Data Elements value. You also define context–sensitive segments for each of your two structures, Employee and Customer, to capture the two sets of different information. See: Planning Your Descriptive Flexfields: page 3 – 24.

Code

Enter a unique context field value (also known as the flexfield structure name) under the Code column. Your flexfield uses this value, either derived from a reference field or entered by your user in an initial descriptive flexfield window, to determine which flexfield structure to display. This value is written out to the structure column of the underlying table.

This value must be thirty (30) characters or fewer.

Once you save your context field value, you cannot delete or change your context field value because it is referenced elsewhere in the system. You can disable a value, however.

Suggestion: Choose and type your context field values carefully, since once you save them you cannot change or delete them later.

Attention: If you are upgrading from Release 10, the value for your context name is copied to the context code and context name in Release 11. The name and description are translatable, and will appear in the customer's chosen language. The context code is not translatable.

If you are using a reference field, the values you enter here must *exactly* match the values you expect your reference field to provide, including

uppercase and lowercase letters. For example, your reference field may be a displayed field that provides the values ”Item” and ”Tax”, so you would specify those. However, those would not be valid if you were using a corresponding hidden field as your reference field and that field provides the values ”I” and ”T”.

If you are using a value set for the context field, any values you enter here must *exactly* match the values you expect your context field value set to provide, including uppercase and lowercase letters. All the values you enter in this field must exist in the value set, or they will not be valid context field values, even if you define context–sensitive segments for them. You only need to enter those values that require context–sensitive segments. If the value set is a table–validated value set, the values in this Code field correspond to the values in the ID column of the value set.

Using Value Sets With Context Fields: page 3 – 8

Name

Enter a name for this descriptive flexfield context value.

The context code will default in to this field. For a descriptive flexfield that is set up so that the context field is displayed, the context name would be entered in the displayed context field, and the context field value code will be stored in the hidden context field. The list of values on the context field will show the context name and description.

If you use a value set for the context field, the displayed value in the value set overrides the corresponding value name you type in this field (for the same hidden ID value or context code).

Using Value Sets With Context Fields: page 3 – 8

Description

Enter a description for this descriptive flexfield context field value. You can use this description to provide a better explanation of the content or purpose of this descriptive flexfield structure. You see this description along with the context name whenever you pick a descriptive flexfield context from inside the flexfield window. When you navigate to the next zone, this window automatically saves your pending changes.

Attention: The width of your descriptive flexfield window depends on the length of the longest description you enter in this field, if this description is longer than the longest

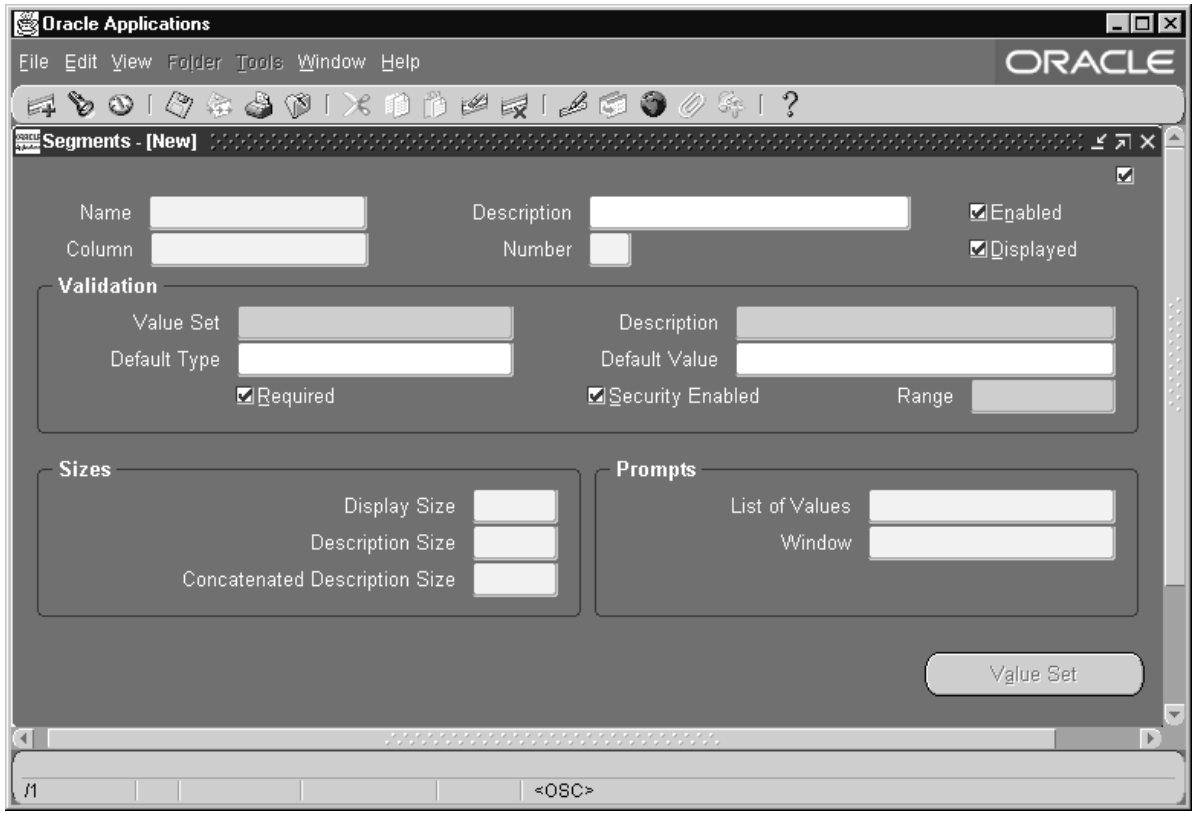
description size you choose for any of your segments in a given structure.

Enabled

You cannot enable new structures if your flexfield definition is frozen.

Segments Button

Choose the Segments button to open the Segments window, and define your flexfield segments. See: Defining Segments: page 2 – 22.



Identifying Descriptive Flexfields in Oracle Applications

Some descriptive flexfields in Oracle Applications are documented explicitly with specific setup suggestions, but most descriptive flexfields in Oracle Applications, which are meant to be set up on a site–by–site basis, are not explicitly documented.

In most cases, you can identify which descriptive flexfield appears on a particular form using the following procedure.

Identifying Descriptive Flexfields: page 3 – 40

Identifying Descriptive Flexfields

▶ **To identify the descriptive flexfield present in a window (Oracle Applications Release 11 and 11*i*):**

1. Navigate to the window and block for which you want to set up the descriptive flexfield.
2. Use the Help menu to choose Diagnostics > Examine. If Examine is disabled or requires a password on your system, contact your system administrator for help.
3. The Examine Field and Variable Values window initially displays the hidden block and field names of the field your cursor was in when you opened Examine. Note the block name displayed to help you select the correct flexfield in a later step.
4. Use the list on the Block field to choose $DESCRIPTIVE_FLEXFIELD$.
5. If there is more than one descriptive flexfield for your form, use the list on the Field field to select the one you want (the list displays the hidden block names and field names for all descriptive flexfields on the form).

   If you do not see the descriptive flexfield you want, it may be because your form has special logic that prevents the flexfield from being read by Examine, such as logic that makes the flexfield appear only under certain conditions. Make sure the descriptive flexfield is visible, that those conditions are met, and that your cursor is in the same block as the flexfield. Try using Examine again.

6. The flexfield title that appears in the Value field is the title you should choose in the Descriptive Flexfield Segments form. See: Defining Descriptive Flexfield Structures: page 3 – 33.

CHAPTER

4 Values and Value Sets

This chapter contains information on planning and defining your values and value sets.

Overview of Values and Value Sets

Oracle Application Object Library uses values, value sets and validation tables as important components of key flexfields, descriptive flexfields, and Standard Request Submission. This section helps you understand, use and change values, value sets, and validation tables.

When you first define your flexfields, you choose how many segments you want to use and what order you want them to appear. You also choose how you want to validate each of your segments. The decisions you make affect how you define your value sets and your values.

You define your value sets first, either before or while you define your flexfield segment structures. You typically define your individual values only after your flexfield has been completely defined (and frozen and compiled). Depending on what type of value set you use, you may not need to predefine individual values at all before you can use your flexfield.

You can share value sets among segments in different flexfields, segments in different structures of the same flexfield, and even segments within the same flexfield structure. You can share value sets across key and descriptive flexfields. You can also use value sets for report parameters for your reports that use the Standard Request Submission feature.

Because the conditions you specify for your value sets determine what values you can use with them, you should plan both your values and your value sets at the same time. For example, if your values are 01, 02 instead of 1, 2, you would define the value set with Right–Justify Zero–fill set to Yes.

Remember that different flexfields may have different requirements and restrictions on the values you can use, so you should read information for your specific flexfield as part of your value planning process. For example, the Accounting Flexfield requires that you use certain types of value sets.

See:

Key Flexfields in Oracle Applications: page 6 – 2

Designing Your Accounting Flexfield
Oracle [Public Sector] General Ledger User's Guide

Planning Values and Value Sets

▶ **To plan values and value sets:**

1. Choose a format for your values. See: Choosing Value Formats: page 4 – 3.
2. Decide whether your segment should have a list of values. See: Decide What Your User Needs: page 4 – 15.
3. Choose an appropriate validation type for your segment. See: Choosing a Validation Type for Your Value Set: page 4 – 17.
4. Consider using values that group neatly into ranges so that using range–based features (value security, value hierarchies, and so on) will be easier. See: Plan Values to Use Range Features: page 4 – 22.
5. Plan both values and descriptions as appropriate.
6. Plan any value hierarchies, cross–validation rules, value security rules, and so on as appropriate.

Choosing Value Formats

Since a value set is primarily a ”container” for your values, you define your value set such that it can control the types of values that are allowed into the value set (whether predefined or non–validated). You can specify the format of your values:

- Character: page 4 – 7
- Number: page 4 – 7
- Time: page 4 – 8
- Standard Date: page 4 – 8
- Standard DateTime: page 4 – 9
- Date: page 4 – 10
- DateTime: page 4 – 10

Warning: Date and DateTime will be obsolete in Release 12 and are provided for backward compatibility only. For new value sets, use the the format types Standard Date and Standard DateTime.

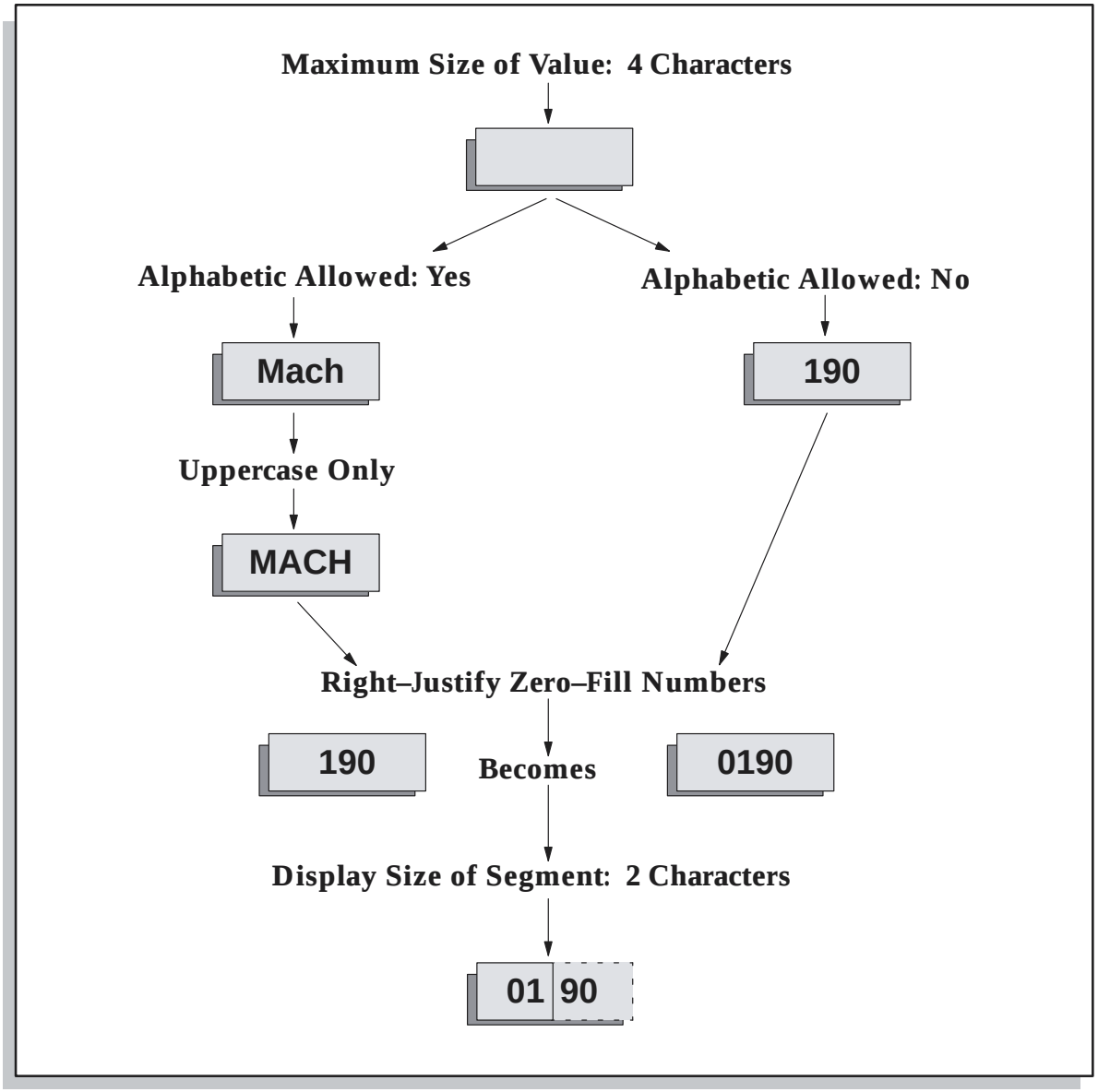
You can also specify the maximum length your values can be, as well as a minimum and maximum value that can be used with your value set.

Choosing the maximum size for your value set depends on what flexfield you plan to use with your value set. Your value set size must be less than or equal to the size of the underlying segment column in the flexfield table. Oracle Applications does not allow you to assign a value set whose values would not fit in the flexfield table.

You want to specify a maximum size for your values that fits the way your organization works. Generally, if you use values with descriptions, your values tend to be short and have longer descriptions. For example, you might have a value of 02 that has a description of New Orleans Region. If you plan to have Oracle Applications right justify and zero–fill your values (so a three–character value set value of 7 automatically comes 007), you want your maximum size to be short enough so that your users are not overwhelmed by zeros, but long enough so that your organization has room to add more values later.

Values never change; descriptions can. For example, a department code of 340 cannot change, but its description may change from Sales to Corporate Accounts. Disable values and create new ones as needed.

The following diagram shows how some of these formatting options interact.



You have several other options from which to choose. See: Value Formats: page 4 – 6.

Value set options include the following:

- Name
- Description
- List Type
- Security Type

Format options include:

- Format Type
- Maximum Length
- Precision
- Numbers Only?
- Uppercase Only?
- Right–Justify and Zero–Fill Numbers?
- Minimum Value
- Maximum Value

Validation types include:

- Independent
- Dependent
- None
- Table
- Special
- Pair
- Translatable Independent
- Translatable Dependent

Value Formats

The format type you specify in the Format Type field is the format for the segment or parameter value. If you use a validation table for this value set, this format type corresponds to the format type of the value column you specify in the Validation Table Information region, regardless of whether you also specify a hidden ID column.

Because your changes affect all flexfields and report parameters that use the same value set, you cannot change the format type of an existing value set.

All of these format options affect both the values you can enter in the Segment Values windows and the values you can enter in flexfield segments and report parameters.

Format Types

Char

Char lets you enter any character values, including letters, numbers, and special characters such as # $ % ( ) . / , & and *. If you choose this format type but enter values that appear to be numbers, such as 100 or 20, you should be aware that these values will still behave as character values. For example, the value 20 will be "larger" than the value 100. If you want such values to behave (and be sorted) more like numeric values, you should check the Numbers Only check box or check the Right–justify and Zero–fill Numbers check box. If you choose this format type but enter values that appear to be dates, such as DD–MON–RR or DD–MON–YYYY, you should be aware that these values will still behave as character values. For example, the value 01–SEP–2002 will be "larger" than the value 01–DEC–2002. If you want such values to behave (and be sorted) like date values, you should use the Standard Date format type.

If you use the Char format type, you can also specify character formatting options. See: Character Formatting Options: page 4 – 12.

Number

Number lets you ensure that users enter a numeric value. The numeric format allows a radix character ('D' or decimal separator) and a plus or minus sign (although the plus sign is not displayed in the segment). All leading zeros and plus signs are suppressed, and entered data behaves as in a NUMBER field in Oracle Forms or a NUMBER column in the database. Note that this format behaves differently than a "Numbers Only" format, which is actually a character format.

Real numbers are stored with '.' internally and displayed using the current radix separator. Group separators are not used by flexfields. This is also true for Char format, Numbers Only value sets.

Once you have chosen a Number format, you can enter a value in the Precision field. Precision indicates the number of places that should

appear after the decimal point in a number value. For example, to display 18.758, you choose a precision of 3. Similarly, to display 1098.5, you choose a precision of 1. To display an integer such as 7, you choose a precision of 0.

Time

Time enforces a time format such as HH24:MI, depending on the maximum size for this value set. These are the supported time formats and value set maximum sizes you can use:

Maximum Size	Time Format
5	HH24:MI
8	HH24:MI:SS

You can use corresponding default values for segments whose value sets use one of the above sizes. You define these defaults when you define your segments or report parameters.

These values are treated and sorted as time values.

Standard Date

Standard Date enforces the user's preferred date format. Users see the dates in the dates in their preferred format while entering data, querying data and using the List of Values.

For flexfield segments using value sets with this format type, the date values are stored in the application tables in the format YYYY/MM/DD HH24:MI:SS if the columns where the values are stored are of type VARCHAR2. For report parameters using these value sets the concurrent manager will pass dates in this format to the report. Because there is no time component in the Standard Date type value set values, the time component is 00:00:00.

Note: The underlying column size must be at least 20.

Value sets with the "Standard Date" and "Standard DateTime" formats can have validation types of "None", "Table", "Independent", "Dependent", "Special", or "Pair" in Release 11*i*.

You can specify minimum and maximum boundary values for these value sets in the current NLS date format while defining the value set.

Table validated value sets using the "Standard Date" or "Standard DateTime" formats cannot use the ID column. The VALUE column

should be a DATE column or a VARCHAR2 column (which should have the date values in the canonical format YYYY/MM/DD HH24:MI:SS). If the existing values in the table are not in the canonical format you should create a view that will do the conversion to the canonical format or to a date column and the value set should be defined on this view.

These values are treated and sorted as date values, so 01–DEC–2002 is "larger" than 01–SEP–2002.

Standard DateTime

Standard DateTime enforces the user's date/time format. Users see the dates in the dates in their preferred format while entering data, querying data and using the List of Values.

For flexfield segments using value sets with this format type, the date values are stored in the application tables in the format YYYY/MM/DD HH24:MI:SS if the columns where the values are stored are of type VARCHAR2. For report parameters using these value sets the concurrent manager will pass dates in this format to the report.

Note: The underlying column size must be at least 20.

Value sets with the "Standard Date" and "Standard DateTime" formats can have validation types of "None", "Table", "Independent", "Dependent", "Special", or "Pair" in Release 11*i*.

You can specify minimum and maximum boundary values for these value sets in the current session's date format while defining the value set.

Table validated value sets using the "Standard Date" or "Standard DateTime" formats cannot use the ID column. The VALUE column should be a DATE column or a VARCHAR2 column (which should have the date values in the canonical format YYYY/MM/DD HH24:MI:SS). If the existing values in the table are not in the canonical format you should create a view that will do the conversion to the canonical format or to a date column and the value set should be defined on this view.

These values are treated and sorted as date–time values, so 01–DEC–2002 00:00:00 is "larger" than 01–SEP–2002 00:00:00.

Date

Warning: Date and DateTime value set formats will be obsolete in Release 12 and are provided for backward compatibility only. For new value sets, use the the format types Standard Date and Standard DateTime.

Date enforces a date format such as DD–MON–RR or DD–MON–YYYY, depending on the maximum size for this value set. These are the supported date formats and value set maximum sizes you can use:

Maximum Size	Date Format
9	DD–MON–RR
11	DD–MON–YYYY

You can use corresponding default values for segments whose value sets use one of the above sizes. You define these defaults when you define your segments or report parameters.

These values are treated and sorted as date values, so 01–DEC–2002 is ”larger” than 01–SEP–2002.

Note: Date value sets use a fixed date format depending on their maximum size regardless of the user’s date format.

DateTime

Warning: Date and DateTime will be obsolete in Release 12 and are provided for backward compatibility only. For new value sets, use the the format types Standard Date and Standard DateTime.

DateTime enforces a date format such as DD–MON–RR HH24:MI, depending on the maximum size for this value set. These are the supported date–time formats and value set maximum sizes you can use for DateTime:

Maximum Size	Date Format
15	DD–MON–RR HH24:MI
17	DD–MON–YYYY HH24:MI
18	DD–MON–RR HH24:MI:SS
20	DD–MON–YYYY HH24:MI:SS

You can use corresponding default values for segments whose value sets use one of the above sizes. You define these defaults when you define your segments or report parameters.

These values are treated and sorted as date–time values, so 01–DEC–2002 is ”larger” than 01–SEP–2002.

> **Note:** Date value sets use a fixed date format depending on their maximum size regardless of the user’s date format.

Value Set Maximum Size

This size represents the longest value you can enter into a segment that uses this value set, as well as the longest Display Size you can specify when you define your flexfield segment or report parameter.

> **Note:** This size is the number of bytes, not characters.

In most cases, this maximum size cannot exceed the size of the segment column in the underlying table for the flexfield that uses this value set. If you set the maximum size longer than that column size, you cannot choose this value set when you define your flexfield segments or report parameters.

If you define your segments or report parameters using a Display Size less than this maximum size, then your pop–up window displays the leftmost characters of the value in the segment. Your user scrolls through the segment to see any remaining characters.

For report parameters, the largest maximum size you can use is 240.

If your Format Type is Standard Date, your maximum size is 11. If your Format Type is Standard DateTime, you maximum size is 20

If you are defining a value set that uses a validation table, your maximum size should reflect the size of the column you specify as your value column. The maximum size must also be equal to or less than the width of the destination segment column. Therefore, after you choose your value column size, you may get a message instructing you to modify the value set maximum size to match your value column width.

However, if you also specify a hidden ID column for your value set, the flexfield determines if the hidden ID value will fit into the underlying column rather than the value column. For example, if you specify your maximum size as 60, which is also the size of your value column, but you also specify a hidden ID column whose size is 15, you could still use that value set for a flexfield whose underlying segment column size

is only 20. Such value sets do appear in the value set list of values you see when you define your flexfield segments or report parameters.

See Also

Overview of Implementing Table–Validated Value Sets: page 4 – 28

Precision

For value sets that contain numeric values (Number format, or Character format with Numbers Only selected), this attribute represents the number of digits after the radix character. Values are stored with exactly this number of digits following the radix character, with zeroes added or rounding applied as needed. If this field is left empty (”NULL precision”), then the radix character may appear anywhere in the value, as long as the other size and value constraints are met.

Character Formatting Options

Numbers Only (0–9)

With the Numbers Only option, you may not enter the characters A–Z, a–z, or special characters such as ! , @, or # , in the segment that uses this value set. You may enter *only* the values 0–9, minus signs, plus signs, the radix separator (D), and the group separator (G) in any segment or parameter that uses this value set. Note also that your Char format type value set remains Char even without alphabetic characters, and your values will behave and sort as character values.

Attention: If you want to restrict users from entering a negative sign for a value set where you do not allow alphabetic characters, you should enter zero (0) as this value set’s minimum value. However, you cannot prevent users from entering a value that contains the radix character (D).

If you are defining a value set that uses a validation table, you should set the value in this field to reflect the characteristics of the values in the value column you specify for your validation table.

Note: The Numbers Only option cannot be used in Translatable Independent and Translatable Dependent value sets.

Uppercase Only

Indicate whether any alphabetic characters you enter as values for a segment using this value set should automatically change to uppercase.

If you are defining a value set that uses a validation table, you should set the value in this field to reflect the characteristics of the values in the value column you specify for your validation table.

> **Note:** The Uppercase Only option cannot be used in Translatable Independent and Translatable Dependent value sets.

Right–justify and Zero–fill Numbers

Indicate whether your flexfield should automatically right–justify and zero–fill numbers when you enter values for this value set. This option affects values that include only the characters 0–9, regardless of whether you select the Numbers Only option. This option has no effect on values that contain alphabetic characters or special characters such as a period or a hyphen.

For example, if you have a five–character value set, and you define a value of 7, your flexfield stores and displays your value as 00007. If you define your flexfield segment to have a display size less than the maximum size and you want to Right–justify and Zero–fill Numbers, your flexfield segment may often display only zeroes (your flexfield segment displays only the number of characters specified by the display size). In these cases, your users need to scroll through the flexfield segment to see a meaningful value, thus slowing data entry or inquiries.

Usually you use this option to ensure that character values that appear to be numbers will be sorted and appear in order as if they were actually number values (for cross–validation rules, value security rules, and reporting, for example). You may also use this option to ensure that numeric–looking values all have the same number of characters so they line up nicely in reports.

If you set Right–Justify and Zero–fill Numbers to Yes, you should ensure that the values in this value set use Right–justify and Zero–fill.

> **Suggestion:** We recommend that you set Right–justify and Zero–fill Numbers to Yes for value sets you use with the Accounting Flexfield and to No for most other value sets.

If you are defining a value set that uses a validation table, you should set the value in this field to reflect the characteristics of the values in your validation table.

If you set the Right–Justify and Zero–Fill Numbers flag to Yes, the values in your value columns should also be right–justified and zero–filled; that is, there should be an exact match in formatting.

Minimum and Maximum Value Range

Min Value

Enter the minimum value a user can enter in a segment that uses this value set. Your minimum value may not violate formatting options such as the maximum value size you specify for this value set.

You can use the Minimum Value and Maximum Value fields to define a range of valid values for your value set. Once you specify a range of values, you cannot define a new valid value that falls outside this range. The Minimum Value and Maximum Value fields can therefore allow you to create a value set with a validation type of None (non–validated, where any value is valid) where the user cannot enter a value outside the specified range.

For example, you might create a value set with format type of Number where the user can enter only the values between 0 and 100. Or, you might create a value set with format type of Standard Date where the user can enter only dates for a specific year (a range of 01–JAN–2002 to 31–DEC–2002, for example). Since the minimum and maximum values enforce these limits, you need not define a value set that contains each of these individual numbers or dates.

You can define a range of values for a value set that already contains values. Existing combinations or existing data that use values outside the valid range are treated as if they contain expired segment values.

Your minimum or maximum value can differ depending on your format type. For example, if your format type is Char, then 1000 is less than 110, but if your format type is Number, 110 is less than 1000. In addition, when you use a Char format type for most platforms (ASCII platforms), numeric characters are ”less” than alphabetic characters (that is, 9 is less than A), but for some platforms (EBCDIC platforms) numeric characters are ”greater” than alphabetic characters (that is, Z is less than 0). This window gives you an error message if you specify a larger minimum value than your maximum value for your platform.

Max Value

Enter the maximum value a user can enter in a segment that uses this value set. Your maximum value may not be longer than the maximum size you specify for this value set.

If you leave this field blank, the maximum value for this value set is automatically the largest value possible for your value set.

Examples of Minimum and Maximum Values

If your value set uses Char format,with Numbers Only and maximum size of 3, then your minimum value is '–99' and your maximum value is '999'.

If your value set uses Number format, with maximum size is 5 with precision of 2, then your minimum value is '–9.99' and your maximum value is ' '99.99' (using the US radix character '.').

Decide What Your User Needs

First, you should decide whether your users need a predefined list of values from which to choose, or whether they can enter any value that fits the value set formatting conditions. If you want to provide a list of values, you choose from independent, dependent, translatable independent, translatable dependent, or table value sets. If you do not want a list, use a non–validated (None) value set.

Once you have chosen to provide a list of values for a segment, you choose whether to use independent, dependent, translatable independent, or translatable dependent or table validation. You would only use a dependent set if you want your segment values to depend upon the value chosen in a prior independent segment (a segment that uses an independent value set). You would only use a translatable dependent set if you want your segment values to depend upon the value chosen in a prior translatable independent segment (a segment that uses a translatable independent value set). Whether you use an independent or table set depends on where you intend to get your values. If you already have suitable values in an existing table, you should choose a table set. If you were to use an independent set and you already maintain those values in an application table, you would need to perform double maintenance on your values. For example, if you need to disable an invalid value, you would need to disable it in both the Segment Values window (for your value set) and in your application form that maintains your existing table (for use by your

application). If you do not already have a suitable table, you should probably use an independent set and maintain your values using the Segment Values window.

The following table lists each value set type, whether it uses a list of values, and where these values, if any, are stored.

Value Set Type	List of Values	Values Stored
Independent	Yes	FND table
Dependent	Yes	FND table
Table	Yes	Application Table
None	No	No
Special / Pair	Depends on value set	Depends on value set
Translatable Independent	Yes	FND table
Translatable Dependent	Yes	FND table

Table 4 – 1 (Page 1 of 1)

Overview of Values and Value Sets: page 4 – 2

Planning Values and Value Sets: page 4 – 3

Defining Values and Value Sets: page 4 – 24

Choosing Value Formats: page 4 – 3

Choosing a Validation Type for Your Value Set: page 4 – 17

Plan Values to Use Range Features: page 4 – 22

Using Validation Tables: page 4 – 29

Using Translatable Independent and Translatable Dependent Value Sets: page 4 – 40

Value Set Windows: page 4 – 50

Value Formats: page 4 – 6

Defining Hierarchy and Qualifiers Information: page 4 – 70

Qualifiers: page 4 – 71

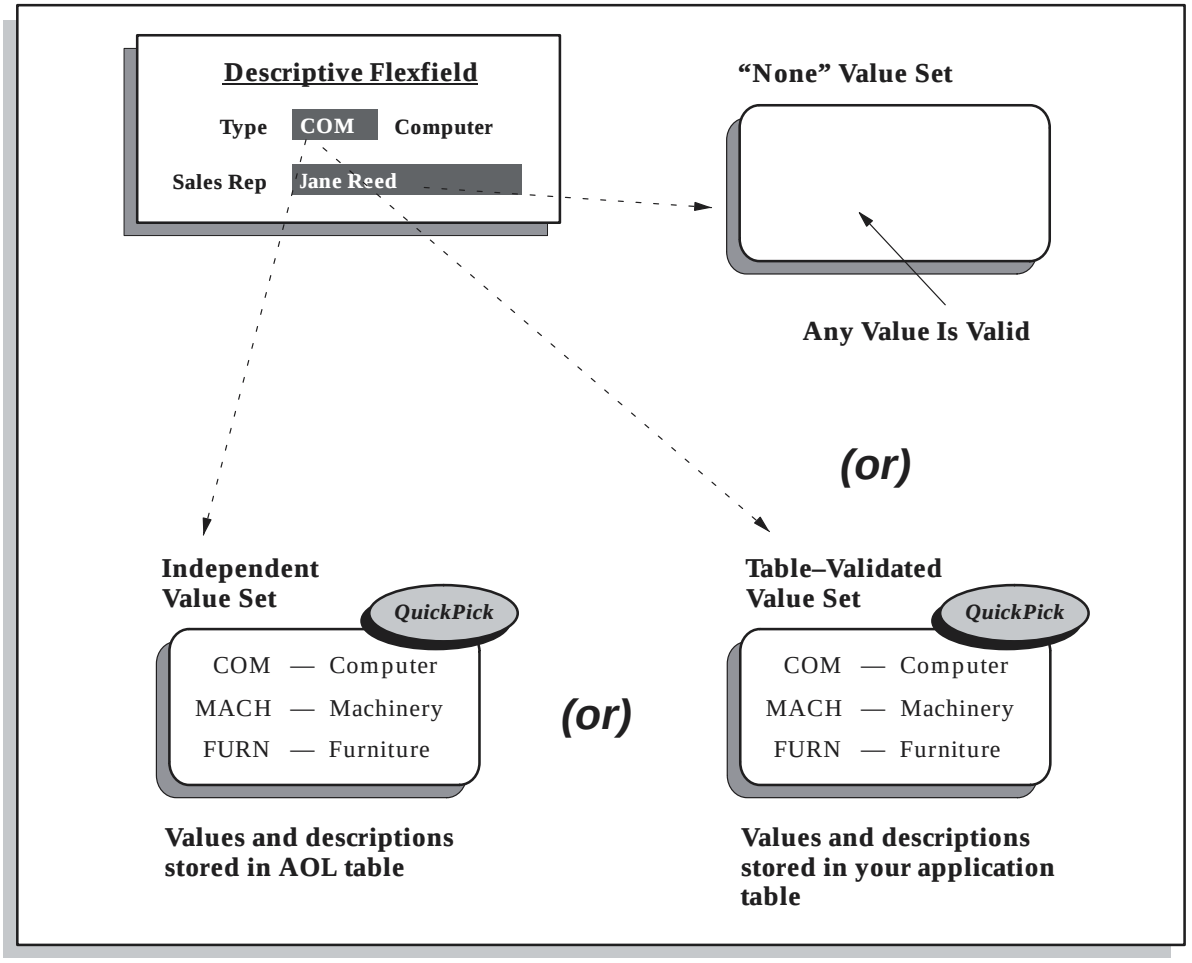
Choosing a Validation Type for Your Value Set

There are several validation types that affect the way users enter and use segment or parameter values:

- None (not validated at all)
- Independent
- Dependent
- Table
- Special (advanced)
- Pair (advanced)
- Translatable Independent
- Translatable Dependent

Attention: The Accounting Flexfield only supports Independent, Dependent, and Table validation (table validation cannot have any additional WHERE clauses).

You cannot change the validation type of an existing value set, since your changes affect all flexfields and report parameters that use the same value set.



None

You use a None type value set when you want to allow users to enter any value so long as that value meets the value set formatting rules. That is, the value must not exceed the maximum length you define for your value set, and it must meet any format requirements for that value set. For example, if the value set does not allow alphabetic characters, your user could not enter the value ABC, but could enter the value 456 (for a value set with maximum length of three). The

values of the segment using this value set are not otherwise validated, and they do not have descriptions.

Because a None value set is not validated, a segment that uses this value set does not provide a list of values for your users. A segment that uses this value set (that is, a non–validated segment) cannot use flexfield value security rules to restrict the values a user can enter.

Independent

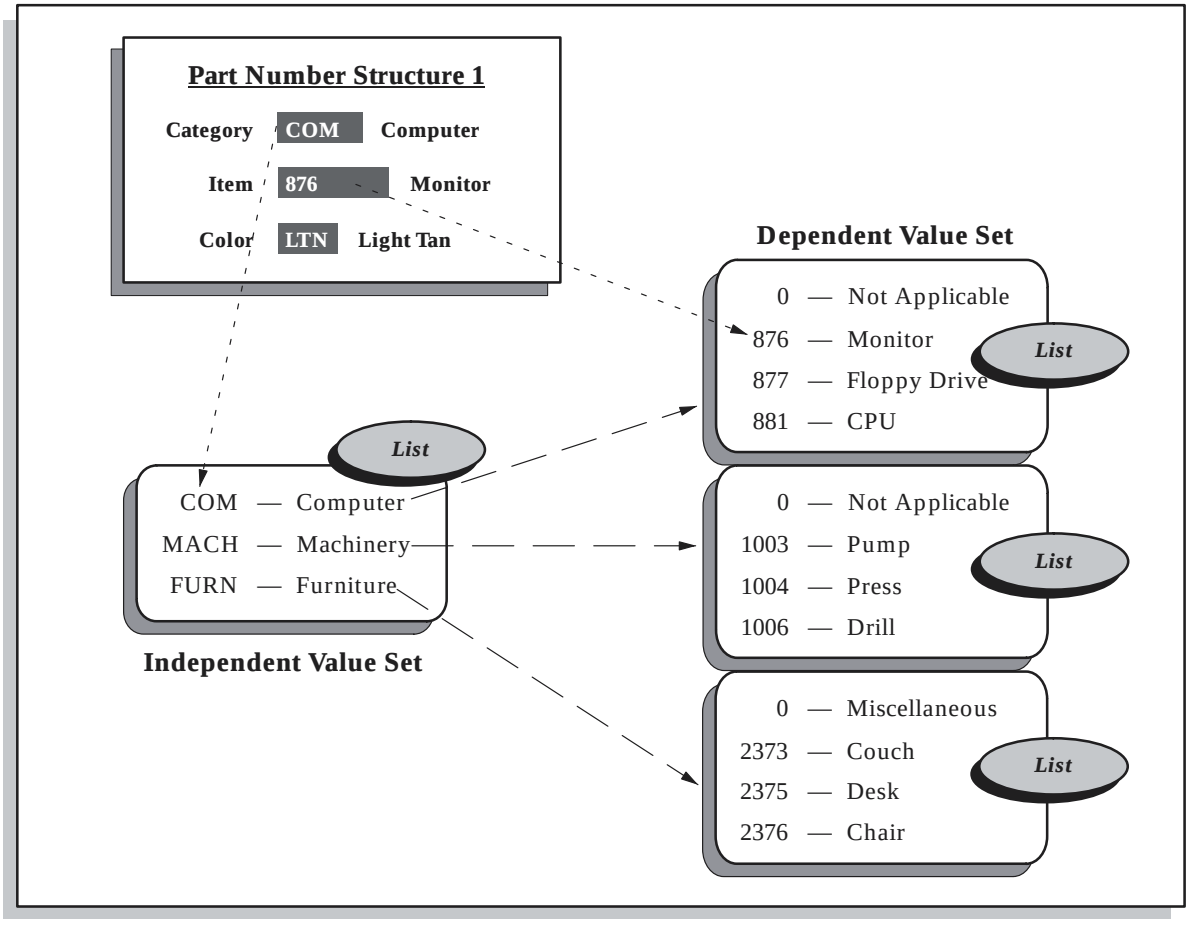
An Independent value set provides a predefined list of values for a segment. These values can have an associated description. For example, the value 01 could have a description of ”Company 01”. The meaning of a value in this value set does not depend on the value of any other segment. Independent values are stored in an Oracle Application Object Library table. You define independent values using an Oracle Applications window, Segment Values.

Table

A table–validated value set provides a predefined list of values like an independent set, but its values are stored in an application table. You define which table you want to use, along with a WHERE cause to limit the values you want to use for your set. Typically, you use a table–validated set when you have a table whose values are already maintained in an application table (for example, a table of vendor names maintained by a Define Vendors form). Table validation also provides some advanced features such as allowing a segment to depend upon multiple prior segments in the same structure.

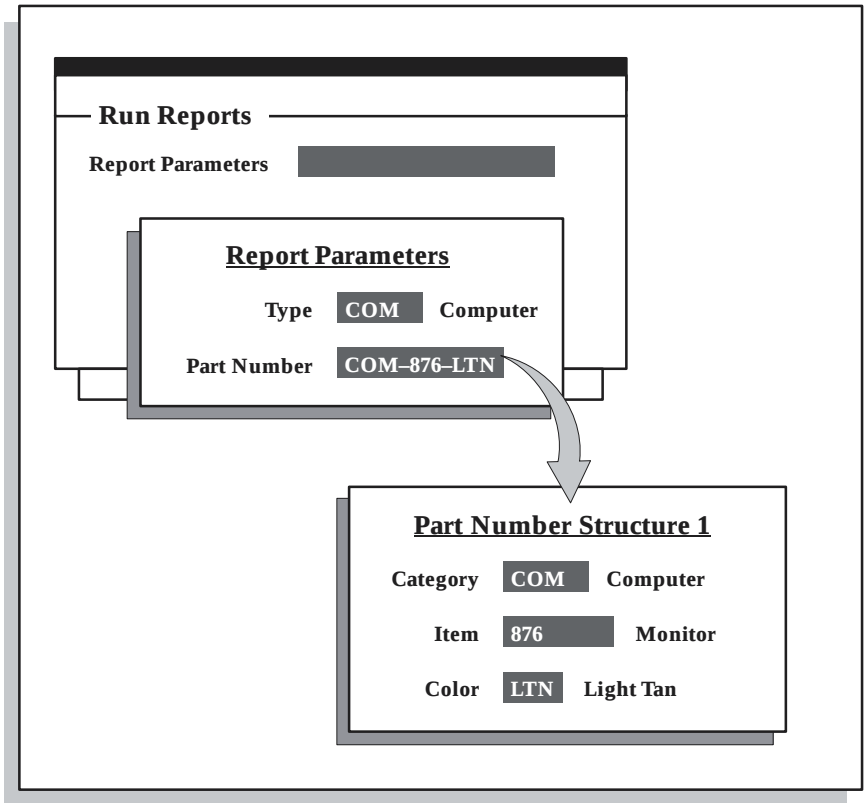
Dependent

A dependent value set is similar to an independent value set, except that the available values in the list and the meaning of a given value depend on which independent value was selected in a prior segment of the flexfield structure. You can think of a dependent value set as a collection of little value sets, with one little set for each independent value in the corresponding independent value set. You must define your independent value set before you define the dependent value set that depends on it. You define dependent values in the Segment Values windows, and your values are stored in an Oracle Application Object Library table. See: Relationship Between Independent and Dependent Values: page 4 – 25.



Special and Pair Value Sets

Special and pair value sets provide a mechanism to allow a ”flexfield–within–a–flexfield”. These value sets are primarily used for Standard Request Submission parameters. You do not generally use these value sets for normal flexfield segments.



Special and Pair value sets use special validation routines you define. For example, you can define validation routines to provide another flexfield as a value set for a single segment or to provide a range flexfield as a value set for a pair of segments.

Translatable Independent and Translatable Dependent

A Translatable Independent value set is similar to Independent value set in that it provides a predefined list of values for a segment. However, a translated value can be used.

A Translatable Dependent value set is similar to Dependent value set in that the available values in the list and the meaning of a given value depend on which independent value was selected in a prior segment of the flexfield structure. However, a translated value can be used.

Flexfield Value Security cannot be used with Translatable Independent or Translatable Dependent value sets.

For format validation, translatable value sets must use the format type Char. The maximum size must be no greater than 150. The Number Only option and the Right–justify and Zero–Fill Numbers option cannot be used with translatable value sets.

Range flexfields cannot use Translatable Independent or Translatable Dependent value sets.

You cannot create hierarchies or rollup groups with Translatable Independent or Translatable Dependent value sets.

> **Note:** The Accounting Flexfield does not support Translatable Independent and Translatable Dependent value sets.

Plan Values to Use Range Features

Use sensible ranges of values by grouping related values together to simplify implementing features such as cross–validation and security rules.

It is a good idea to plan your actual values while keeping cross–validation, security, and reporting ranges (”range features”) in mind (also parent or summary values that would fall at one end of a given range, for example). For example, you may want to base security on excluding, say, all values from 1000 to 1999. Keep in mind, though, that if you use the Character format for your value set, your values and ranges are sorted by characters. So, 001 < 099 < 1 < 100 < 1000 <12 < 120 < 1200, which is different from what you expect if these were really numbers (using a Number format value set).

> **Note:** You cannot use range features with Translatable Independent and Translatable Dependent value sets.

Value Set Naming Conventions

If you plan to refer to your value set name in a WHERE clause for a validation table value set, you should use only letters, numbers, and underscores (_) in your value set name. You should not include any spaces, quotes, or other special characters in your value set name. Do not use the string $FLEX$ as part of your value set name. Note that

validation tables are case–sensitive for value set names you use in validation table WHERE clauses.

Suggestion: Make your value set names contain only one case (either upper or lower case) to avoid case–sensitivity problems.

Oracle Applications includes many predefined value sets. These are primarily value sets for Standard Request Submission parameters. During an upgrade, Oracle Applications will overwrite your value sets that use the same names as Oracle Applications value sets. While Oracle Applications provides a list of reserved value set names before an upgrade so that you can rename your sets to prevent their being overwritten, you should name your value sets carefully to make upgrades easier.

Oracle Applications reserves certain naming patterns. Oracle Applications reserves the patterns of either two or three characters immediately followed by either an underscore or hyphen, as in AP_VALUE_SET or PER–Value Set.

Note that Oracle Applications products do not completely follow these guidelines for Release 11*i*, so you will still need to check and possibly rename your value sets before upgrades. However, if you name your value sets with names we are unlikely to use, your future upgrades will be simpler. For example, you might want to give your value sets names that begin with a six–character name for your site.

Predefined Value Sets

Many Oracle Applications reports use predefined value sets that you may also use with your flexfield segments. If your flexfield segment uses a value set associated with a Standard Request Submission report parameter, any changes you make to its value set also affect any reports that use the same value set. Also, your changes to Oracle Applications value sets may be overwritten by a future upgrade.

Oracle Applications provides two predefined values sets, FND_STANDARD_DATE and FND_STANDARD_DATETIME that you can choose for your segments. These special values sets ensure that you enter a properly–formatted date, instead of any set of characters, in your flexfield segment. These value sets have a validation type of None, so they accept any date value in the correct format. Date values using this value set will appear in the user's session date display mask. If your flexfield segment or report parameter uses FND_STANDARD_DATE or

FND_STANDARD_DATETIME it must have the correct length for the display format to avoid truncation of the dates.

For backwards compatibility, Oracle Applications provides some predefined value sets, FND_DATE and FND_DATE4 that you can choose for your date segments. These special value sets ensure that you enter a properly–formatted date, instead of any set of characters, in your flexfield segment. FND_DATE provides a date format of DD–MON–RR, and FND_DATE4 provides a date format of DD–MON–YYYY. Both of these value sets have a validation type of None, so they accept any date value in the correct format. If your flexfield segment or report parameter uses FND_DATE or FND_DATE4, it must have a length of 9 or 11 characters (respectively) to avoid truncation of the dates. However, we recommend that you create your own date value sets for any new flexfield segments.

> **Note:** The FND_DATE and FND_DATE4 value sets are for backwards compatibility only. The DATE format type will be obsolete in Release 12. Also, your users do not have flexibility with the display format for the values in these value sets.

For backwards compatibility, Oracle Applications provides another predefined value set, NUMBER15, that you can choose for your numeric segments. This special value set ensures that you enter a positive or negative number, instead of any set of characters, in your flexfield segment. This value set has a validation type of None, so it accepts any positive or negative number value up to fifteen characters long (including the minus sign). If you use this value set, your flexfield strips any leading zeros from the values you enter and ensures that your numbers have only one radix character ('.' in the US format, for example). However, we recommend that you create your own number value sets for any new flexfield segments.

Defining Values and Value Sets

Prerequisites

- ❑ Plan your flexfield structures and segments.
- ❑ Thoroughly plan your values and value sets. See: Planning Values and Value Sets: page 4 – 3.

▶ **To define values and value sets:**

1. Navigate to the Value Sets window.

2. Define your value set. See: Defining Value Sets: page 4 – 51.
3. Define your values. See: Defining Segment Values: page 4 – 68.

Relationship Between Independent and Dependent Values

Independent and dependent value sets have a special relationship. While you can have the same dependent *values* for any of your independent values, the *meanings* (or descriptions) – as well as any segment qualifier values, enabled / activation information and descriptive flexfield data for that value – of the dependent values depend on which of the independent values you choose in the prior independent segment. For example, you could have value sets with the values (dependent default value of 0) as described in the following table:

Independent Value Set (Account Segment) Value	Independent Value Set (Account Segment) Description	Dependent Value Set (Sub–Account Segment) Value	Dependent Value Set (Sub–Account Segment) Description
01	Cash accounts	0	Default Value
01	Cash accounts	1	Bank of Californ-nia
01	Cash accounts	2	Bank of Denver
01	Cash accounts	3	First Federal Bank
02	Equipment accounts	0	Misc equipment
02	Equipment accounts	1	Computers
02	Equipment accounts	2	Printers

Table 4 – 2 (Page 1 of 2)

Independent Value Set (Account Segment) Value	Independent Value Set (Account Segment) Description	Dependent Value Set (Sub–Account Segment) Value	Dependent Value Set (Sub–Account Segment) Description
02	Equipment accounts	3	Delivery Vehicles
03	Other asset accounts	0	Default value

Table 4 – 2 (Page 2 of 2)

You must set up your independent–dependent value sets carefully using the following sequence:

- Create your independent value set first
- Create your dependent value set, specifying a default value
- Define your independent values
- Define your dependent values

When you define each of your independent values, Oracle Applications automatically creates a default dependent value that goes with your independent value. For example, the previous diagram shows a default value of zero (0). If for some reason you create a dependent value set after your independent value set has values, you must manually create a default value in your dependent set for *each* of your independent values, since each independent value *must* have a default dependent value. If necessary, create your default dependent values manually using the Segment Values form (you also use this form to create all dependent values other than the default value). You must create at least one dependent value for each independent value, or else your user will be unable to enter segment value combinations in the flexfield. However, we recommend that you carefully follow the above order for creating your value sets so that you never have to create default dependent values manually, since manually creating default dependent values is both tedious and error–prone.

See:

Value Set Windows: page 4 – 50

Segment Values Window: page 4 – 65

"Dependent" Values with Table Validation

Flexfields uses a special mechanism to support table–validated segments whose values depend on the value in a prior segment (a different mechanism from that used for independent value sets with dependent value sets). You can use flexfield validation tables with a special WHERE clause (and the $FLEX$ argument) to create value sets where your segments depend on prior segments. You can make your segments depend on more than one segment (cascading dependencies). However, you cannot use parent value / child value features with these value sets, nor can you use this mechanism with the Accounting Flexfield.

See:

WHERE Clauses and Bind Variables for Validation Tables: page 4 – 33

Example of $FLEX$ Syntax: page 4 – 38

Parent and Child Values and Rollup Groups

Only Oracle General Ledger and Oracle Public Sector General Ledger use these features, and only with the Accounting Flexfield. Parent and child value sets have a relationship different from the relationship between independent and dependent values. For information on these features, see: *Oracle [Public Sector] General Ledger User's Guide*.

See:

Rollup Groups Window: page 4 – 83

Overview of Implementing Table–Validated Value Sets

Table–validated value sets let you use your own application tables as value sets for flexfield segments and report parameters instead of the special values tables Oracle Applications provides. You need not enter each value manually using the Segment Values window. Value sets you base on validation tables can be similar to Independent value sets, where values in your Table type value sets are independent of the values in all other segments. Or, depending on how you define your validation table's WHERE clause, they can depend on one or more previous segments in your flexfield.

In general, you should use a validation table if you want a key or descriptive flexfield segment, or report parameter, to use values that your application already requires or maintains for other application purposes. Using a validation table then lets you avoid maintaining two copies of the same values (one in your application's table and the other in Oracle Application Object Library's tables).

You can use many advanced features with your table–validated value sets. You can use validation tables for flexfield segments or report parameters whose values depend on the value in a prior segment. You use flexfield validation tables with a special WHERE clause (and the $FLEX$ argument) to create value sets where your segments depend on prior segments. You can make your segments depend on more than one segment, creating *cascading dependencies*. You can also use validation tables with other special arguments to make your segments depend on profile options or field values.

> **Note:** Table–validated value sets with WHERE clauses cannot be used with the Accounting Flexfield.

If you want to make use of key flexfield features such as rollup groups and parent–child relationships, you can store the child values in your validation table, but you should use the Segment Values windows Oracle Applications provides to add or define the parent values and rollup groups.

See:

Segment Values Window: page 4 – 65

Using Validation Tables

Use the Table Validation Information window to define the characteristics of a table you want to use to validate your segment or report parameter.

▶ **To implement a validation table:**

1. Create or select a validation table in your database. You can use any existing application table, view, or synonym as a validation table. See: Defining Your Validation Table: page 4 – 31.
2. Register your table with Oracle Application Object Library (as a table). You may use a non–registered table for your value set, however. If your table has not been registered, you must then enter all your validation table information in this region without using defaults.
3. Create the necessary grants and synonyms. See: Creating Grants and Synonyms for Your Table: page 4 – 32.
4. Define a value set that uses your validation table. See: Defining Value Sets: page 4 – 51.
5. Define your flexfield structure to use that value set for a segment.

You can use the same table for more than one value set, using different SQL WHERE clauses to limit which values are used for flexfield and report parameter validation. For example, if you wish to validate different segments against different rows of the same table, you would use the same table twice but select different rows of the table for each value set by using different SQL WHERE clauses.

Note: The value column and the defined ID column in the table must return a unique row for a given value or ID.

If the ID column is used, then each value in the ID column must be unique. If the ID column is not used then each value in the value column must be unique.

Warning: You should not use any WHERE clause and / or ORDER BY clause at all for a value set you intend to use with the Accounting Flexfield.

In general, you may use a WHERE clause and / or an ORDER BY clause for validation tables you intend to use with key flexfields other than the Accounting Flexfield.

Attention: If you need a complex SQL clause to select your values from a table, you should instead first define a view over

the table which selects the rows you need, and then define the value set over the view.

See: WHERE Clauses and Bind Variables for Validation Tables: page 4 – 33 for detailed information on using WHERE clauses with special bind variables.

Using hidden ID columns with value sets

If you specify a hidden ID column in addition to your value column, the flexfield saves your hidden ID value, instead of the value from the value column, in the segment column (in your ATTRIBUTEn column or SEGMENTn column) of the underlying flexfield table.

Generally, you use value sets with hidden ID columns only for report parameters. You would not normally use them for most key flexfields. In fact, most key flexfields prevent you from using a value set with a hidden ID column by not displaying those value sets in the list of values you use to assign a value set to a segment.

Attention: You should not specify a hidden ID column for value sets you use with your Accounting Flexfield or most other key flexfields.

If you specify a hidden ID column in addition to your value column, the report parameter window passes your hidden ID value, instead of the value from the value column, to your report.

Table validated value sets using the ”Standard Date” or ”Standard DateTime” formats cannot use the ID column.

Using multiple tables in a single value set

For value sets that use multiple tables, you should always include the table aliases with all your column names. You must enter the column name directly, since your list of values cannot retrieve any column names for a ”table name” that is not a registered single table. For example, you might enter:

```
f.column_name
```

For value sets that use multiple tables, you can and should leave the Table Application field blank, since it is effectively ignored in this case. You enter the table names and aliases you want in the Table Name field. Then, you enter the Value Column and Description Column column names directly, with table aliases, since your list of values cannot retrieve any column names for a ”table name” that is not a registered single table.

Displaying additional columns in your list of values

You can design your value set to display several columns in the segment value or report parameter value list of values, and these columns may be in different tables. If all your columns exist in the same table, you simply list the additional columns in the Additional Columns field. If your columns exist in different tables, you must specify more than one table name in the Table Name field. You should always use table names or aliases with your column names for your Additional Columns and WHERE clause.

Finally, you can enter the names of the extra columns you want, with their table aliases, in the Additional Columns field. You can specify column widths to display.

In some cases you may want to use a SQL expression instead of specifying a single column name. For example, you may want to use a DECODE statement instead of a simple column name, such as:

```
DECODE(FORM.FORM_NAME, 'OEDEOR', 'Enter Orders', 'Not
available')
```

or

```
DECODE(FORM.FORM_ID, 1234, 1234, NULL)
```

You can also use message names as alias names; this functionality allows for ease of translation of column titles. The syntax for using a message name as an alias name is:

E_FLAG "APPL=<Application Short Name>;NAME=<Message Name>"(width)

Defining Your Validation Table

Create a new flexfield validation table, or use an existing application table, that includes the following columns:

- A column that holds segment values, type VARCHAR2, DATE or NUMBER
- A column that holds descriptions for the segment values, type VARCHAR2, DATE or NUMBER

Your table can also include the following optional columns:

- ENABLED_FLAG, type VARCHAR2, length 1, NOT NULL

- START_DATE_ACTIVE and END_DATE_ACTIVE, type DATE, NULL ALLOWED

If you use these optional columns, they must be defined with the listed characteristics. When you register your validation table, Oracle Application Object Library checks your table to see if these columns exist. If they do, Oracle Application Object Library uses them as part of the flexfield validation information. If you add the ENABLED_FLAG column to an existing table, you must populate the column (with Y or N) for all rows.

Normally, you should use the values form Oracle Application Object Library provides, Define Segment Values, to contain parent values and rollup group information (together with child values contained in your validation table as described in the previous section).

If you have certain special columns, such as SUMMARY_FLAG, START_DATE_ACTIVE, END_DATE_ACTIVE, STRUCTURED_HIERARCHY_LEVEL, COMPILED_VALUE_ATTRIBUTES or ENABLED_FLAG, in your registered table, your value set uses those columns automatically once you set up your table as a validation table.

If you do not want your value set to use those columns automatically, you should use an alias with your table name in the Table Name field.

Attention: If you need to use SQL functions or very complex WHERE clauses with your table, you should instead first define a view over the table and then use the view.

Creating Grants and Synonyms for Your Table

Your validation table resides in your application's ORACLE account. Oracle Applications requires access to your flexfield validation table, as follows:

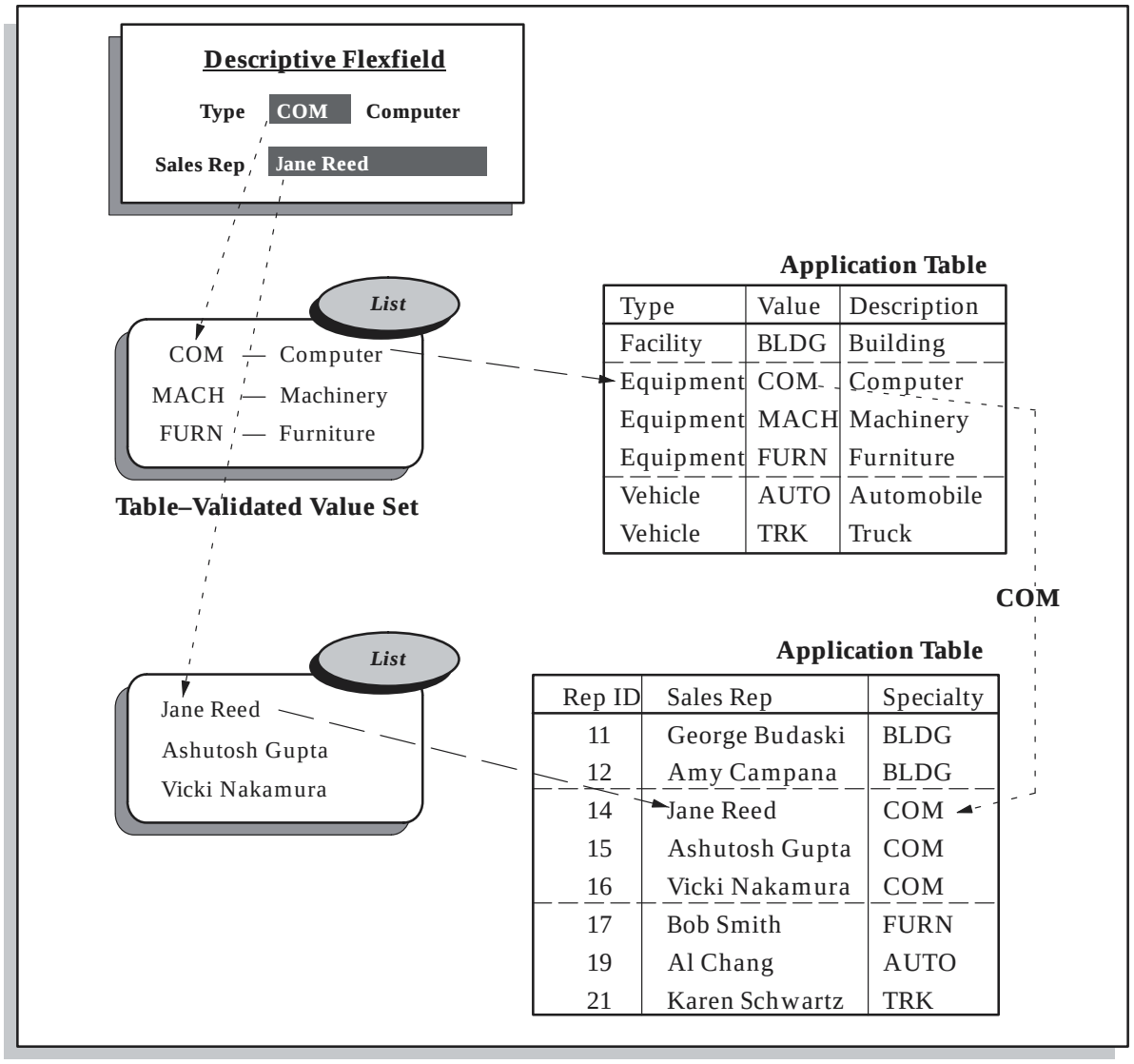
Create a synonym for your validation table in the APPS schema (ORACLE account). Your synonym should be the same name as your table name.

Grant SELECT privileges on the table from your application's ORACLE account to the APPS schema.

Ensure that your responsibilities connect to the APPS schema.

WHERE Clauses and Bind Variables for Validation Tables

You can use validation tables with WHERE clauses to set up value sets where one segment depends on a prior segment that itself depends on a prior segment (”cascading dependencies”).



Using bind variables in WHERE/ORDER BY clauses

You may use special bind variables, such as :*block.field*, :$PROFILES$.*Option_name*, or :$FLEX$.*Value_set_name*, in your WHERE / ORDER BY clause. However, you may not use them in the Value Column or Hidden ID Column fields (where you would normally specify a column name), even if you do specify a SQL fragment instead of specifying a single column name. You may use bind variables in the Description Column and Additional Columns fields.

Attention: If you are using flexfields server–side validation, you cannot use form field references (*:block.field*). You must either remove your field references or turn off flexfields server–side validation using the profile option Flexfields:Validate on Server.

See:

Flexfields:Validate on Server: page 4 – 28

Attention: You may not use a DISTINCT clause in any of the column fields or in your WHERE / ORDER BY clause (you should use a view with a GROUP BY clause instead of your actual table).

If you are using a validation table with special arguments such as :$FLEX$.*Value_Set_Name* for your value set, you should specify No Security in the Security Type field, since any security rules you have for your value set would ignore the values of these special arguments, and your rules could have effects other than what you intend.

See:

Overview of Implementing Table–Validated Value Sets: page 4 – 28

Bind Variables: page 4 – 34

Bind Variables

You can put special arguments (bind variables) in your WHERE clause that allow you to base your values on other values. These bind variables include :*block.field*, :$PROFILES$.*Option_name*, or :$FLEX$.*Value_set_name*. You may not use bind variables in the Value Column or Hidden ID Column fields (where you would normally

specify a column name). You may use bind variables in the Description Column and Additional Columns fields.

Note that a bind variable, by default, is required; that is, it must have a value for the statement, expression, or user exit which uses it to have meaning. A bind variable can be made optional by using the :NULL suffix; so that if the bind variable is NULL, the segment / parameter using it will be disabled, and its required property (if enabled) will be ignored. The :NULL suffix is discussed at the end of this section.

:$FLEX$.*Value_ Set_Name*

Value_Set_Name is the name of either the value set for a prior segment, or the segment name of a prior segment in the same flexfield or parameter window that you want your validation table–based values to depend on. When you define your flexfield structure or report parameter window, you define the segment or parameter that uses value set *Value_Set_Name* to have a lower sequence number than the segment that uses your validation table–based value set. The $FLEX$ mechanism uses the ”closest” prior segment with either a matching value set name or segment name (it looks for the value set name first, and uses the segment name second if there are no matching value set names).

Value_Set_Name is case–sensitive, so you must ensure that the name you specify here exactly matches the value set name you define in the Define Value Set form. Note that you can only use letters, numbers, and underscores (_) in your value set names if you want to use them with a :$FLEX$.*Value_Set_Name* clause. You cannot use quotes, spaces, or other special characters in these value set names, so you should be careful to define your value sets with names that do not contain spaces, quotes, or other special characters.

You can specify more than one :$FLEX$.*Value_Set_Name* in a single WHERE clause, thereby creating a segment whose list of possible values depends upon more than one previous segment.

When you specify :$FLEX$.*Value_Set_Name*, your flexfield segment or report parameter defaults to always use the hidden ID column (of the previous value set) to compare with your WHERE clause. The end user would never see the hidden ID value, however. If you do not specify a hidden ID column, your segment defaults to use the value in the value column instead.

When you specify :$FLEX$.*Value_Set_Name*, you can also explicitly choose which column for which you want :$FLEX$.*Value_Set_Name* to return a value. You do this by specifying

:$FLEX$.*Value_Set_Name.OUTPUT*, where *OUTPUT* can be ID, VALUE, or MEANING (to return the value of the description column).

When you specify your validation table value sets, you can also use an INTO clause in the Additional Columns field (after your entire list of columns and aliases) to put the value into a variable you use with :$FLEX$.*segment_name.OUTPUT*, where *OUTPUT* is a name you choose. You can then retrieve that value using :$FLEX$.*segment_name.OUTPUT* (where *OUTPUT* is the same name) from another segment's value set WHERE clause. You cannot use *OUTPUT* to put a value directly into a field, but a value that a flexfield segment retrieves may be put into a hidden form field that the segment corresponds to once the popup window closes. If you do not specify an INTO clause in your Additional Columns field, your value is not placed anywhere other than being displayed in the list of values (it goes INTO NULL).

Attention: If you are using flexfields server–side validation, you cannot use the INTO clause for your value set. You must either remove your INTO clauses or turn off flexfields server–side validation using the profile option Flexfields:Validate on Server.

See:

Flexfields:Validate on Server: page 4 – 28

:*block.field*

:*block.field* is the SQL*Forms / Oracle Forms name of a field on the form where your descriptive flexfield appears. You can use this argument to make your value set context–sensitive to a field on a form. While this is somewhat similar to using a reference field with a descriptive flexfield, using a reference field with a descriptive flexfield provides a choice between different *structures* of context–sensitive segments (and indirectly, their value sets). Using this :*block.field* argument, however, gives you the same segments that would normally appear, but changes the contents of the value set attached to the segment depending on what appears in your :*block.field*. In some cases, you may wish to use a :*block.field* value set instead of a descriptive flexfield reference field with many different context–sensitive structures.

Note that if you use this argument, you *must* have the same :*block.field* on *every* form where a value set based on this validation table could be used. For example, if the same flexfield appears on seven forms, then all seven forms must have this *block.field*. Similarly, if you share your value set among more than one flexfield, then all forms that use any of

those flexfields must have this *block.field*. Though it is possible to use this argument for a key flexfield segment or report parameter, the same restriction applies; that is, you must have the same *block.field* wherever the value set can be used.

Warning: The :*block.field* mechanism is present for backward compatibility only. Value sets that use this mechanism will not be compatible with a future release of Oracle Applications. If you are using flexfields server–side validation, you cannot use form field references (:*block.field*). You must either remove your field references or turn off flexfields server–side validation using the profile option Flexfields:Validate on Server.

See:

Flexfields:Validate on Server: page 4 – 28

:$PROFILES$. *profile_option_ name*

Profile_option_name is the internal option name of a user profile option such as CONC_COPIES (for Concurrent:Report Copies) or GL_SET_OF_BKS_ID. For example, you could define your WHERE clause as:

```
WHERE SET_OF_BOOKS_ID =
:$PROFILES$.GL_SET_OF_BKS_ID
```

:NULL suffix

Use the :NULL suffix to make your bind variable optional, that is, allow null values. Instead of :*block.field*, :$PROFILES$.*Option_name*, or :$FLEX$.*Value_set_name*, you would use :*block.field*:NULL, $PROFILES$.*Option_name*:NULL, or :$Flex$.*Value_set_name*:NULL, respectively. For example, if your value set name is Car_Maker_Name_Value_Set, you would use :$FLEX$.Car_Maker_Name_Value_Set:NULL.

See also: Example of $FLEX$ Syntax: page 4 – 38

Special Treatment for WHERE Clauses

Behind the scenes, the flexfield adds an AND... clause to the WHERE clause you define for your table validated value set. If your WHERE clause contains an OR, then the appended AND clause might not apply to your whole WHERE clause (without the parentheses), and might not produce the correct results. So, flexfields implicitly put parentheses around your WHERE clause.

Example of $FLEX$ Syntax

Here is an example of using :$FLEX$.Value_Set_Name to set up value sets where one segment depends on a prior segment that itself depends on a prior segment ("cascading dependencies"). Assume you have a three–segment flexfield where the first segment is car manufacturer, the second segment is car model, and the third segment is car color. You could limit your third segment's values to only include car colors that are available for the car specified in the first two segments. Your three value sets might be defined as follows:

```
Segment Name          Manufacturer
Value Set Name        Car_Maker_Name_Value_Set
Validation Table      CAR_MAKERS
Value Column          MANUFACTURER_NAME
Description Column        MANUFACTURER_DESCRIPTION
Hidden ID Column          MANUFACTURER_ID
SQL Where Clause      (none)

Segment Name          Model
Value Set Name        Car_Model_Name_Value_Set
Validation Table      CAR_MODELS
Value Column          MODEL_NAME
Description Column        MODEL_DESCRIPTION
Hidden ID Column          MODEL_ID
SQL Where Clause      WHERE MANUFACTURER_ID =
                      :$FLEX$.Car_Maker_Name_Value_Set

Segment Name          Color
Value Set Name        Car_Color_Name_Value_Set
Validation Table      CAR_COLORS
Value Column          COLOR_NAME
Description Column        COLOR_DESCRIPTION
Hidden ID Column          COLOR_ID
SQL Where Clause      WHERE MANUFACTURER_ID =
                      :$FLEX$.Car_Maker_Name_Value_Set
                      AND MODEL_ID =
                      :$FLEX$.Car_Model_Name_Value_Set
```

In this example, MANUFACTURER_ID is the hidden ID column and MANUFACTURER_NAME is the value column of the Car_Maker_Name_Value_Set value set. The Model segment uses the hidden ID column of the previous value set,

Car_Maker_Name_Value_Set, to compare against its WHERE clause. The end user never sees the hidden ID value for this example.

Using Translatable Independent and Translatable Dependent Value Sets

Translatable Independent and Translatable Dependent value sets are similar to Independent and Dependent value sets except that translated values can be displayed to the user. Translatable Independent and Translatable Dependent value sets allow you to use hidden values and displayed (translated) values in your value sets. In this way your users can see a value in their preferred languages, yet the values will be validated against a hidden value that is not translated.

Implementation

Define Your Translatable Value Set

Define your Translatable Independent or Translatable Dependent value set in the Value Sets form. Choose Translatable Independent or Translatable Dependent for your Validation Type.

Translatable Dependent value sets behave like Dependent value sets except that they must be dependent on a Translatable Independent value set. A Translatable Independent value set can have only Translatable Dependent value sets dependent on it.

Your value set must use the Char format type. The maximum size for any translatable set is 150 characters. You can specify your values to be Uppercase only. The maximum size applies to your translated values as well as the hidden values.

The following features are disabled for translatable value sets: Security, Numbers Only, Right–justify and Zero–Fill Numbers.

Attention: The Accounting Flexfield does not support Translatable Independent or Translatable Dependent Value Sets.

See Also

Overview of Values and Value Sets: page 4 – 2

Value Set Windows: page 4 – 50

Defining Value Sets: page 4 – 51

Dependent Value Set Information Window: page 4 – 54

Define Your Values

Navigate to the the Segment Values form to define your values and translated values.

In the Values, Effective tabbed region, the Value column contains the ”hidden” untranslated value.

The Translated Value field contains the current translated value. The hidden value defaults in the Translated Value field if no other value is defined. The Translated Value field is enabled for Translatable Independent and Translatable Dependent value sets only.

You can update the translated value for the current session language in the Translated Value field. To update the translated value for a language other than the current session language, use the Translation icon in the Toolbar.

Limitations on Translatable Value Sets

Flexfield Value Security cannot be used with Translatable Independent or Translatable Dependent value sets.

For format validation, translatable value sets must use the format type Char. The maximum size must be no greater than 150. The Number Only option and the Right–justify and Zero–Fill Numbers option cannot be used with translatable value sets.

Range flexfields cannot use Translatable Independent or Translatable Dependent value sets.

You cannot create hierarchies or rollup groups with Translatable Independent or Translatable Dependent value sets.

> **Note:** The Accounting Flexfield does not support Translatable Independent and Translatable Dependent value sets.

Converting Independent/Dependent Value Sets to Translatable Independent/Dependent Value Sets

You can convert an Independent value set to a Translatable Independent value set, or a Dependent value set to a Translatable Dependent value set. These are the only types of conversions allowed. All limitations for translatable value sets apply to your updated value sets.

You convert an Independent / Dependent value set to a Translatable Independent / Dependent value set using the affupg1.sql script. Your new value set will have the validation type Translatable Independent or Translatable Dependent. This is the only change made, and values are not affected.

The difference between the old value set and the new value set can be seen in the Segment Values form. The Translated Value column will be enabled for the new, translatable value set.

To run affupg1.sql, perform the following at the command line:

```
$ cd $FND_TOP/sql
$ sqlplus <APPS username>/<APPS password> @afffupg1.sql
```

Choose the appropriate menu option to change your value set.

After you have created your new translatable value set, you can use the Segment Values form to enter translated values for the value set.

Using Special and Pair Value Sets

Use the Special Validation Routines window to define special validation for a Special value set. You also use this window to define validation routines for a Pair value set.

Warning: You should never change or delete a predefined value set that Oracle Applications supply. Such changes may unpredictably affect the behavior of your application features such as reporting.

You can use this region to define a value set that lets your users enter an entire key flexfield combination within a single report parameter. For example, you may want to pass concatenated Accounting Flexfield segments as a parameter to a report. With this type of value set, a user can enter the report parameter and then see the ”normal” behavior of a key flexfield, such as the key flexfield window and segment validation associated with that key flexfield. You use Oracle Application Object Library flexfield routines for these special value sets.

See: Special Validation Value Sets: page 9 – 23 for information on using these validation types. This section contains information on the various types of events and flexfield routine arguments and syntax you use with special validation. It also contains a worked example of using special validation for the Accounting Flexfield.

See:

Key Flexfield Segments: page 2 – 16

Descriptive Flexfield Segments: page 3 – 31

Defaulting Flexfield Values

This section describes the various methods of defaulting flexfield values with their respective precedence.

Precedence of Default Values, Shorthand Entry Values, and COPY Values in Key Flexfields

There are four ways you can put a value into a key flexfield segment (in order of precedence, where the first overrides the second, which overrides the third, which in turn overrides the fourth):

1. Enter a value manually into the segment once the flexfield window has popped open.
2. Insert a value using a shorthand flexfield entry alias
3. Copy a value into the segment from a form field using the COPY parameter to POPID (Implementing Key Flexfields)
4. Define a default value for the segment using the Key Flexfield Segments form

The value you copy using the COPY parameter in POPID overrides any default value you set for your segment(s) using the Key Flexfield Segments form. COPY does not copy a NULL value over an existing (default) value. However, if the value you copy is not a valid value for that segment, it gives the appearance of overriding a default value with a NULL value: the invalid value overrides the default value, but the flexfield then erases the copied value because it is invalid. You should ensure that the field you copy from contains valid values. However, shorthand flexfield entry values override COPY values.

If your key or descriptive flexfield has required segments (where a value set requires values and, for a key flexfield, the REQUIRED parameter in POPID is set to Yes), the flexfield uses your default values in certain cases. If you try to save a record without ever entering the flexfield pop–up window, then the flexfield (in the VALID or VALDESC routine) attempts to fill in all the required segments with your default values. If you have not specified valid default values for all your required segments, the flexfield generates an error message and requires your user to enter any missing values before saving the row. The default values never override a value your user enters manually.

> **Note:** If you copy a record with a descriptive flexfield, the flexfield information may not be copied along with it,

depending on the form or program used. For example, Oracle Purchasing does not copy descriptive flexfields from a requisition to a purchase order during AutoCreate. That is, if there's a required descriptive flexfield on a requisition, Purchasing does not prompt you to enter the flexfield or default a value in the flexfield when you autocreate the purchase order.

Changing the Value Set of an Existing Flexfield Segment

In general, once you have set up and begun to use a flexfield, you should never change anything about its structure or its value sets (other than defining, enabling, and disabling values, shorthand aliases, and cross–validation and security rules). In particular, once you have any rules or data, you should avoid changing the number or arrangement of your segments, and you should avoid changing the value set that a segment points to. Even changing cross–validation rules or flexfield security rules can cause inconsistencies with existing data.

Warning: Changing your flexfield definition once you have used it to acquire data can cause serious inconsistencies with existing data.

This section does not include all possible ways you could change your value sets, nor does it contain complete information on all the data changes you might need to do if you were to make such changes. Since flexfields data is used throughout the Oracle Applications, you should carefully consider what forms, tables, and entities such changes might affect. Because of the risk of damaging the integrity of your existing data, you should never change Oracle Applications data using SQL*Plus.

In general, when you change your segment to use a different value set than it used before, you need to be careful not to invalidate your existing flexfield data. Before you make such a change you should back up all of your existing data, including Oracle Application Object Library data, before attempting any value set changes.

Oracle Applications prevents you from inadvertently invalidating your flexfield value set data by preventing you from changing the validation type of an existing value set. However, sometimes your business needs change unforeseeably, and you may need to change the validation type of your value set by defining a new value set and attaching it to your flexfield segment in place of your old value set. Whether you can change your value set depends on your value set's current type and the type you want to change to. See the following lists to determine if you can make such changes to your flexfield.

Oracle Applications also prevents you from inadvertently invalidating your flexfield value set data by preventing you from deleting an existing value set under some conditions. If you define and save a value set and then immediately re–query it, you can delete it. However, once you use your value set in any of the following ways, you cannot delete your value set:

- assign it to a key or descriptive flexfield segment
- assign it to report parameter
- assign one or more values to it (even if it is not assigned to a segment)
- assign a security rule to it (through the segment to which your value set is attached)

Changing to a Non–validating (”None”) Value Set

When you replace an old value set with a new non–validating (”None” type) value set, these types of changes do not cause a problem with existing flexfield data so long as the format conditions are not violated (character, number, date, numbers only, uppercase only, and so on). Note that the values in the new value set do not have descriptions (meanings) at all, and that any value is now valid:

- Independent to None (do *not* make this change if you have an associated dependent value set or if you need segment qualifier information for those values)
- Table to None
- Dependent to None

You may need to convert any existing application data that uses value descriptions, since you will no longer have descriptions or segment qualifiers for your segment values.

Changing from a None Value Set to Independent or Table Value Sets

When you replace an old value set with a new value set, you can make these types of changes as long as you ensure that your new value set contains every single value that you ever used for that segment and that is now in the combinations table as parts of your code combinations. If you are missing any values that had been in the original value set, your users will get error messages upon querying up any old records whose values are now missing.

- None to Independent
- None to Table

Changing Between Independent and Table Value Sets

You can make these types of changes as long as you ensure that the new value set contains every single value that the old value set

contained. If you are missing any values that had been in the original value set, your users will get error messages upon querying up old code combinations whose values are now missing.

- Independent to Table
- Table to Independent

Changes You Should Never Make

You should *never* make these types of changes (old value set to new value set) because you will corrupt your existing key flexfield combinations data:

- Independent to Dependent
- Dependent to Independent
- None to Dependent
- Dependent to Table
- Table to Dependent
- Translatable Independent to Translatable Dependent
- Translatable Dependent to Translatable Independent
- None to Translatable Dependent
- Translatable Dependent to Table
- Table to Translatable Dependent

Changing the Maximum Size of Your Value Set

Oracle Applications prevents you from invalidating your existing flexfields data by preventing you from decreasing the maximum size of an existing value set. You should *never* attach a new value set to your segment where the maximum size of the new value set is smaller than the maximum size of the old value set. You will cause data corruption because your existing segment values will be truncated.

In general, increasing the maximum size of an existing value set (or replacing your value set with a bigger one instead) does not cause any problem with your existing flexfields data so long as your new maximum size is still small enough to fit in the underlying flexfield table's segment columns. However, you should never change to a value set with a larger (or smaller) maximum size if your value set is Right–justify Zero–fill, since 001 is not the same as 0000001, and all of your existing values would become invalid. Oracle Applications products prevent you from invalidating your existing flexfields data by

preventing you from changing the maximum size of an existing value set at all if the value set is Right–justify Zero–fill.

Value Set Windows

The value sets you define using these windows appear in lists of values you see when you define flexfield segments using the Key Flexfield Segments window or the Descriptive Flexfield Segments window.

If you are defining reports that your users run from the Submit Requests window, use this window to define value sets for your report arguments. The value sets you define using this window also appear when you define report parameters using the Concurrent Programs window.

See:

Overview of Values and Value Sets: page 4 – 2

Dependent Value Set Information Window: page 4 – 54

Validation Table Information Window: page 4 – 57

Special Validation Routines Window: page 4 – 64

Tasks

Defining Value Sets: page 4 – 51

Reference

Value Formats: page 4 – 6

Overview of Value Set Windows

You can share value sets among segments in different flexfields, segments in different structures of the same flexfield, and even segments within the same flexfield structure. You can share value sets across key and descriptive flexfields. You can also share value sets with parameters for your concurrent programs that use the Standard Request Submission feature. Many Oracle Applications reports use predefined value sets that you may also use with your flexfield segments. However, any changes you make to a value set also affect all requests and segments that use the same value set.

Warning: You should never change or delete a predefined value set that Oracle Applications supply. Such changes may

unpredictably affect the behavior of your application features such as reporting.

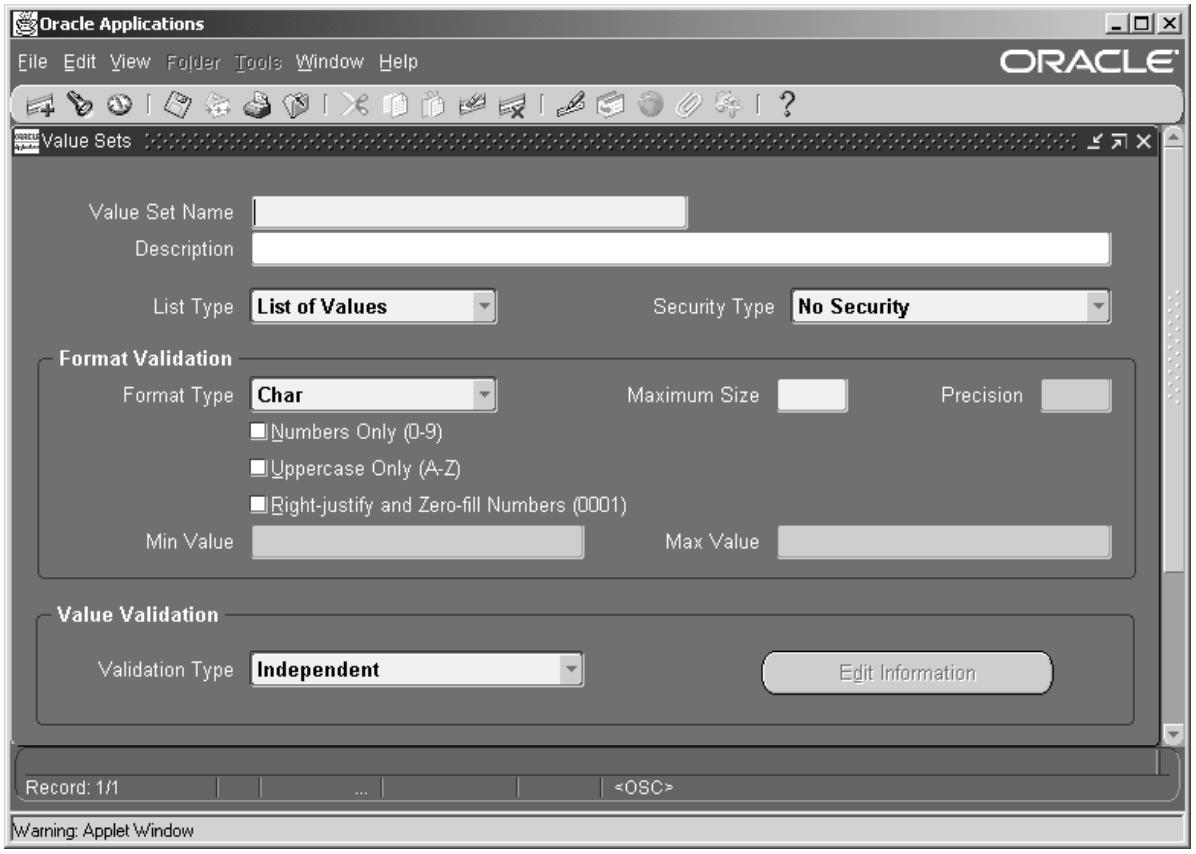
This window prevents you from changing the validation type or format type of an existing value set because your changes affect other flexfields that use the same value set. In addition, other changes may affect the values in your value set in ways other than you expect. You cannot delete a value set that a flexfield or parameter currently uses.

If you make any changes to your value set after you have used your flexfield or concurrent program that uses this value set, you must either change responsibilities or exit to the operating system and log back in before you can see your changes take effect.

Defining Value Sets

▶ **To define a value set:**

1. Navigate to the Value Sets window.



2. Enter a unique name for this value set. See: Value Set Naming Conventions: page 4 – 22.

3. Specify the List Type for your value set.

   Choose List of Values if your value set should not provide the LongList feature in Oracle Forms applications. A user will not see a poplist in Oracle Self–Service applications.

   Choose Long List of Values if your value set should provide the LongList feature in Oracle Forms Applications. The LongList feature requires a user to enter a partial segment value before the list of values retrieves all available values. You may not enable LongList for a value set that has a validation type of None. A user will not see a poplist in Oracle Self–Service applications.

   Choose Poplist if your value set should not provide the LongList feature in Oracle Forms applications, but should provide a poplist in Oracle Self–Service applications.

Here are guidelines for the List Type field:

- Poplist – fewer than 10 values expected
- List of Values – between 10 and 200 values expected
- Long List of Values – more than 200 values expected

4. Specify the Security Type you plan to use with any segments that use this value set. Security does not apply to value sets of validation type None, Special, or Pair. See: Defining Security Rules: page 5 – 19.

   Note: Flexfield value security is not available for Translatable Independent and Translatable Dependent value sets.

   The possible security types are:

   - No Security – All security is disabled for this value set.
   - Hierarchical Security – Hierarchical security is enabled. With hierarchical security, the features of value security and value hierarchies are combined. With this feature any security rule that applies to a parent value also applies to its child values.

   Warning: Within a hierarchical tree of values, a value is subject to a security rule if any parent above it is subject to that security rule.

   - Non-Hierarchical Security – Security is enabled, but the rules of hierarchical security do not apply. That is, a security rule that applies to a parent value does not ”cascade down” to its child values.

5. Enter the type of format you want to use for your segment values. Valid choices include: Char, Date, DateTime, Number, Standard Date, Standard DateTime, and Time.

   Note: Translatable Independent and Translatable Dependent value sets must have the Char format.

6. Enter formatting information appropriate to your format type, including information such as whether your values should include numbers only and whether they must fall within a certain range.

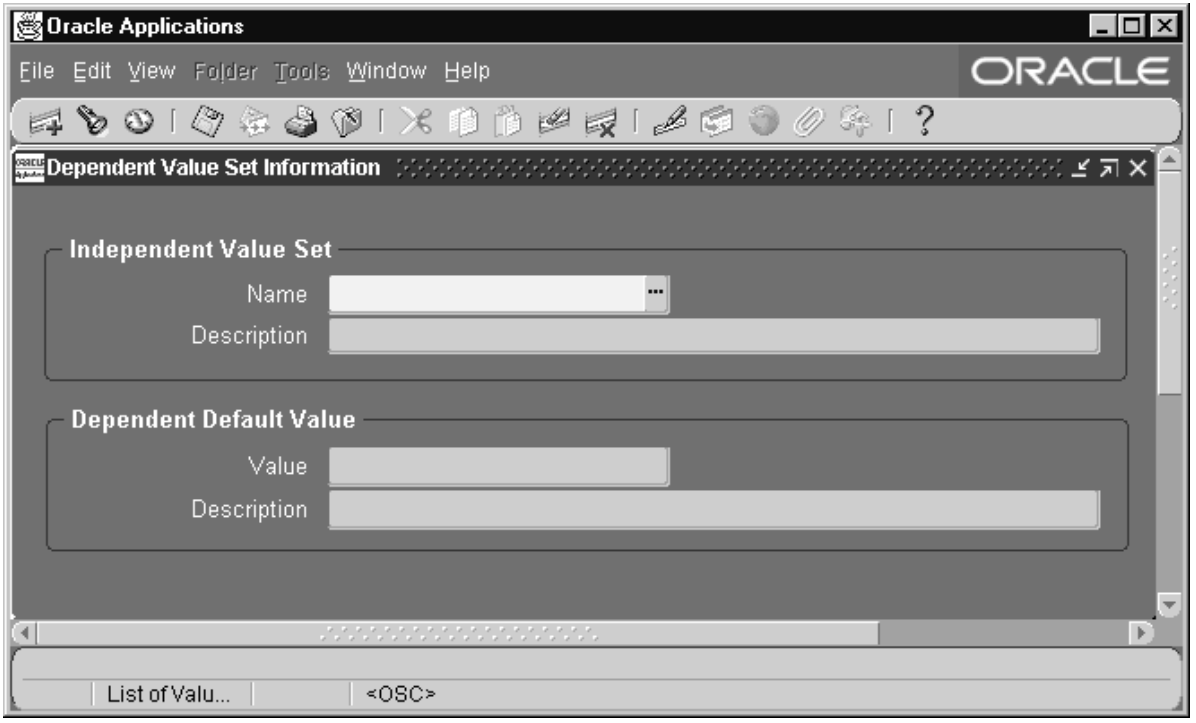
   Note: The maximum size for Translatable Independent and Translatable Dependent value set values is 150. You cannot use the Numbers Only feature or the Right–Justify and Zero–fill feature with translatable value sets.

7. Select your validation type: Independent, Dependent, Table, None (non–validated), Special, Pair, Translatable Independent, or

Translatable Dependent. See: Choosing a Validation Type for Your Value Set: page 4 – 17.

8. If you are creating a Dependent,Translatable Dependent, Table, Special or Pair value set, choose the Edit Information button to open the appropriate window. Enter any further information required for your validation type. See: Dependent Value Set Information Window: page 4 – 54, Validation Table Information Window: page 4 – 57, Special Validation Routines Window: page 4 – 64.
9. Save your changes.

Dependent Value Set Information Window



Prerequisites

- ❑ Define your independent value set. You should *not* define individual independent values for the corresponding independent

value set before defining your dependent value set. See: Defining Value Sets: page 4 – 51.

❑ Define your dependent value set name and formatting options. See: Defining Value Sets: page 4 – 51.

Note: This window is also used to enter information for Translatable Dependent value sets. Translatable Dependent value sets must be dependent on Translatable Independent value sets. Translatable Independent value sets can have only Translatable Dependent value sets dependent on them.

▶ **To define dependent value set information:**

1. Enter the name of an independent value set on which this dependent value set depends.

   You can only enter the name of a value set you have already defined. You must save the value set definition of your independent value set before you can select it in this field. An independent value set may have more than one dependent value set depending upon it, but a dependent set cannot depend on another dependent set.

   The Segment Values window automatically creates your dependent default values at the time you create your independent values. To ensure that the Segment Values window creates a dependent default value for each of your independent values, you should create the values in your independent value set only *after* you create all of the dependent value sets that depend on that independent set. If you create a new dependent set for an independent set that already contains values, you must manually enter the dependent default value for each existing independent value using the Segment Values window.

Suggestion: First define all of the independent value sets your application needs, then define all of your dependent value sets. Create all of your value sets before you create any of your values.

See: Segment Values Window: page 4 – 65

2. Enter a default value for your dependent value set.

   This value is the default for any segments that use this dependent value set. Usually, you enter zero. You must make sure that the value you enter here fits the value set information you enter. For example, if this dependent value set does not allow alphabetic

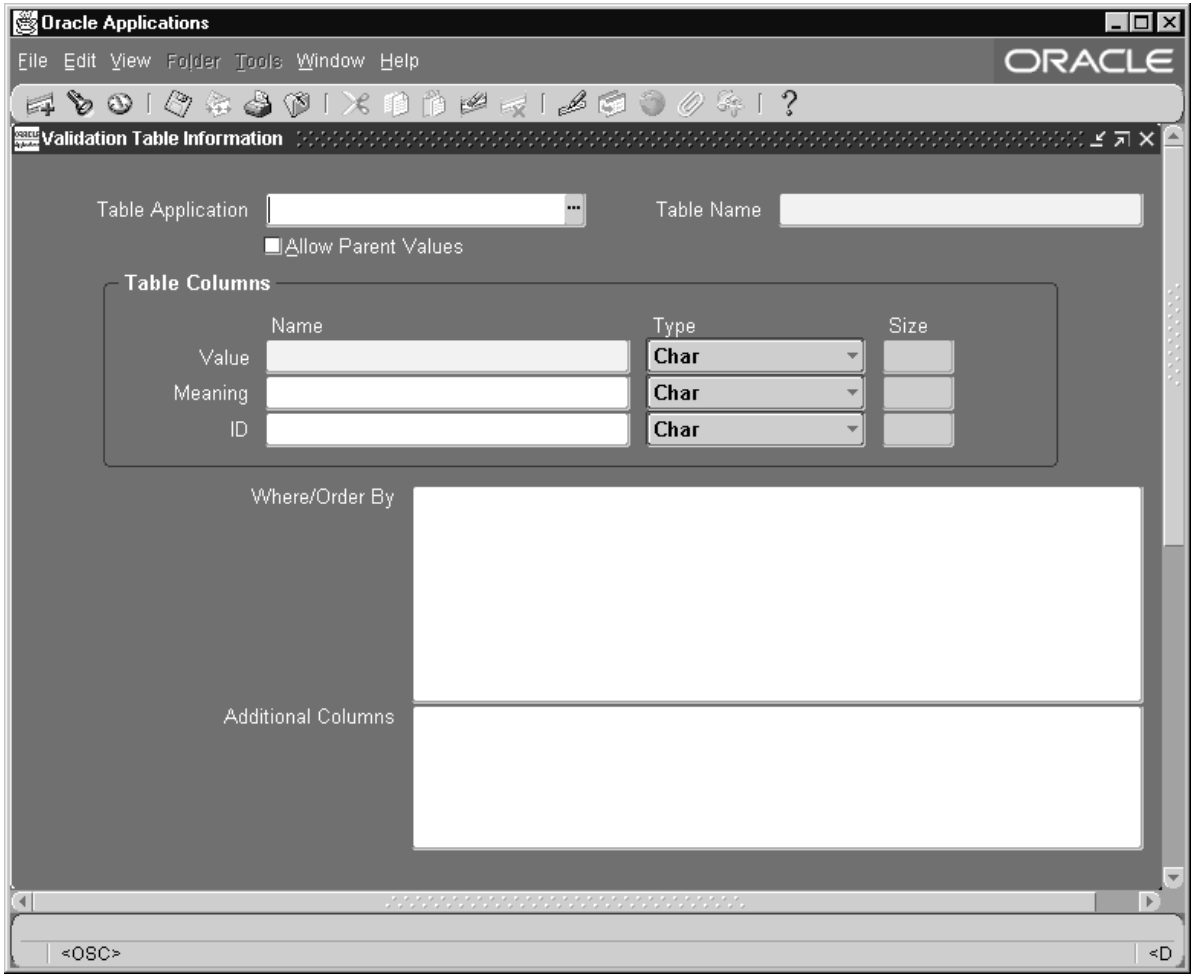
characters, your default value may not contain any alphabetic characters.

All the values in the independent set must have at least one dependent value. So, whenever a user creates a new value in the independent value set (using the Segment Values form), it must have at least one dependent value. The Segment Values window automatically creates the required dependent value by using the default value you enter here. See: Segment Values Window: page 4 – 65.

For example, suppose you have an independent value set called "Account" with a dependent value set called "Sub–Account." You may wish to create a new independent value, 99, for "Account" with description "Receivables" without creating any associated sub–account values. Since your flexfield requires a dependent value of some sort to go with the independent value, it uses the default value you enter here, such as 00 with description "No Sub–Account."

3. Enter a description for your default dependent value. The Segment Values window creates this description with the dependent default value it creates whenever you create a new independent value. For example, suppose you have an independent value set called "Account" with a dependent value set called "Sub–Account." You may wish the "Sub–Account" default value 00 to have the description "No Sub–Account." See: Segment Values Window: page 4 – 65.

Validation Table Information Window



Prerequisites

- ❑ Create a database table or view that holds valid values and value descriptions in CHAR, VARCHAR2, NUMBER, or DATE type columns.
- ❑ Use the Register Tables window to register your table with Oracle Application Object Library. This step is recommended but not required.

- ❑ Create a synonym for your validation table in any application ORACLE account that will access a flexfield or report that uses a value set based upon your validation table.
- ❑ Grant SELECT privileges on the table from your application's ORACLE account to any application ORACLE accounts that will use a value set based upon the table.
- ❑ Define your value set name and formatting options. See: Defining Value Sets: page 4 – 51.

▶ **To define validation table information:**

1. Enter the name of the application with which your validation table is registered. Application name and table name uniquely identify your table.

   If you plan to display columns from more than one table in your list of values, you should leave this field blank, since it is effectively ignored in this case.

2. Enter the name of an application table, view or synonym you want to use as a validation table. If your table is not registered with Oracle Applications, you should type in the entire name of the table you wish to use.

   You can define your value set to display several columns, and these columns may be in different tables. If your columns exist in different tables, you must specify more than one table name, separated by commas, in this field. You may use table aliases if desired. For example, you might enter the following information in this field (using two tables):

```
fnd_form f, fnd_application a
```

   Then, in the Value Column, Description Column, Hidden ID Column, WHERE / ORDER BY, and Additional Columns fields, you would use the corresponding table aliases (for a WHERE clause):

```
where f.application_id = a.application_id
```

3. Enter the name of the column in your validation table that contains values you want to use to validate a value a user enters for a flexfield segment or a report parameter.

   Your selection of available columns depends on the Format Type you specify, and doesn't necessarily match your Format Type. For example, if you specify a Format Type of Standard Date, you select from those columns that have been registered as Date or Char type

columns. Similarly, if you specify a Format Type of Number, you select from only those columns that have been registered as Number or Char type columns. If you specify a format type of Character, however, you see only columns of type Char. The format type you specify in the Format Type field is the format for the segment or parameter value.

You may use a SQL expression in place of a column name, but you may not use any special bind variables.

> **Note:** If possible, avoid using a SQL expression in place of a column name because support for SQL expressions will be obsolete in a future release.

4. Enter the name of the column in your validation table that contains descriptions for the values in the Value Column. If you leave this field blank, your value set automatically uses the value column as the description column (but does not display it twice).

   Your flexfield or report parameter window displays a meaning from this column when you enter the corresponding value for a flexfield segment or report parameter.

5. Enter the name of the column in your validation table that contains values you want to use to validate a value a user enters for a flexfield segment or a report parameter, but that you do not want to display for the user.

   If you specify a hidden ID column in addition to your value column, the flexfield saves your hidden ID value, instead of the value from the value column, in the segment column (in your ATTRIBUTEnn column or SEGMENTnn column) of the underlying flexfield table.

   Attention: Do not specify a hidden ID column for value sets you use with your Accounting Flexfield or most other key flexfields.

   If you specify a hidden ID column in addition to your value column, the report parameter window passes your hidden ID value, instead of the value from the value column, to your report.

6. Enter a SQL WHERE clause or an ORDER BY clause, or both.

7. Enter any additional columns you want to display for a segment that uses this value set. These are columns other than the columns you specify for Value Column, Description Column, or Hidden ID Column.

8. Indicate whether to allow parent values to be stored in the Oracle Application Object Library FND_FLEX_VALUES table and displayed in the list for a segment that uses this value set.

Column Type Fields

The three Type fields automatically display the types of the columns you select. You should never change the displayed column types.

If you specify a SQL expression (or a column in a non–registered table) in a Column field instead of a registered single column name, you must specify the type of value (character, number, or date) you expect your expression to return. You must specify the type because this window cannot retrieve this information for a "column name" that is not a registered single column.

Column Size Fields

The three Size fields automatically display the sizes of the columns you select.

If you do not specify a hidden ID column, Oracle Applications uses the value set maximum size to determine if a value can fit in the underlying flexfield segment column. The maximum size for your value set changes automatically to the column size you specify in the Size field for the Value column. If the value cannot fit, you cannot use your value set when you define a flexfield segment.

If you use a hidden ID column, the size you specify for the hidden ID column becomes the "effective" maximum size for this value set for a flexfield, since Oracle Applications uses the size of the hidden ID column to determine if a value can fit in the underlying flexfield segment column. If the value cannot fit, you cannot use your value set when you define a flexfield segment.

Generally, you should avoid changing the displayed column size. However, in some cases you may want to change it if you want to use this value set for a flexfield whose underlying column size is less than the actual size of your value (or hidden ID) column in the validation table. For example, if you are using a lookup code column of a lookup table (List of Values), and you know that all of your lookup codes are two characters long or less, you may want to specify 2, even though the column in the lookups table can actually contain 30 characters. You can then use this value set for a flexfield whose underlying segment column size is between 2 and 30.

You may only change the displayed size for a column if you know that the maximum size of the values in that column will *always* be equal to or shorter than the length you specify in this field. You should not attempt to ”trick” Oracle Applications by specifying a size that is smaller than your actual potential value size, since you may cause data truncation errors, ”value not defined” errors, or other errors.

If you specify a SQL expression (or a column in a non–registered table) in a Column field instead of specifying a registered single column name, you must specify the length of the value (size) you expect your expression to return. You must specify the size because this window cannot retrieve this information automatically for a ”column name” that is not a registered single column.

WHERE / ORDER BY Field

Use a SQL WHERE clause to limit the set of valid values to a subset of the values in the table. For example, if you have a table that contains values and meanings for all of your employees but you only want to validate against entries for employees located in California, you can enter a SQL WHERE clause that limits valid values to those rows WHERE LOCATION = ’CALIFORNIA’. You may want to choose your value set name to reflect the limitation, such as ”California Employees” for this example.

Use an ORDER BY clause to ensure that your values appear in a non–standard order in your list of values on a segment that uses your value set. The ”standard” order depends on the format type for your value set. For example, if you have a table containing the days of the week, you might want the list of values to display them in the chronological order ”Monday, Tuesday, Wednesday, ...” instead of in the alphabetical order ”Friday, Monday, Saturday, ...” that would be used for a Character format type value set. To display them in chronological order, you might have a second column in your table (which you might also use as the hidden value column) that identifies each day by a number. So, if you call that column of numbers DAY_CODE, your ORDER BY clause would be ORDER BY DAY_CODE.

Warning: You should not use a WHERE clause and / or ORDER BY clause at all for a value set you intend to use with the Accounting Flexfield. In general, you may use a WHERE clause and / or an ORDER BY clause for validation tables you intend to use with key flexfields other than the Accounting Flexfield.

If you use a WHERE clause you must have the word "WHERE" as the first word of the clause. If you use ORDER BY, you must have the words "ORDER BY" in the clause.

You may not use HAVING or GROUP BY in your clause. You may not use UNION, INTERSECT, MINUS, PLUS, or other set operators in your clause, unless they are within a subquery.

You should always include the table names or aliases in your clause when you refer to a column, even if you are using only one validation table and have not used an alias for that table in the Table Name field. For example, you might enter:

```
where f.application_id = a.application_id
```

or

```
where form_table_name.application_id =
      application_table_name.application_id
```

You can use special variables in your WHERE clause that allow you to base your values on other values. The special variables you can use include

- :$FLEX$.*Value_Set_Name*
- :*block.field*
- :$PROFILES$.*profile_option_ name*

Warning: The :*block.field* mechanism is present for backward compatibility only. Value sets that use this mechanism will not be compatible with a future release of Oracle Applications.

See the section WHERE Clauses and Bind Variables for Validation Tables: page 4 – 33 for detailed information on using these special bind variables.

Additional Columns Field

What you specify here should be of the general syntax:

```
sql_expression_such_as_column_name  "Column Title
Alias"(width)
```

where either the column title alias or the width is optional. If you specify only the SQL fragment but no alias or width, your column does not show up. You can specify several such expressions, separated by commas, as follows:

```
column_name_1 "Column 1 Title"(width), column_name_2 "Column
2 Title"(width), ...
```

You can also use message names as alias names, this functionality allows for ease of translation of column titles. The syntax for using a message name as an alias name is:

sql_expression_such_as_message name "APPL=<Application Short Name>;NAME=<Message Name>"(width)

You should specify the column widths you want to display. You can use (*) to specify a column whose display width depends on the values it contains. You should always use an alias for any SQL expression that is not a simple column name. For value sets that use multiple tables, you should always include the table aliases in your column names. For example:

```
f.user_form_name "Form Title"(30), a.application_name
"Application Name"(*)
```

If the segment or parameter is displayed, the Value Column appears with the parameter or segment prompt as the column title.

You can include more complex SQL fragments, such as concatenated column names and constants. For example:

```
 f.user_form_name "Form Title"(30),
'Uses table: ' || t.user_table_name "Table Used"(30)
```

Allow Parent Values Field

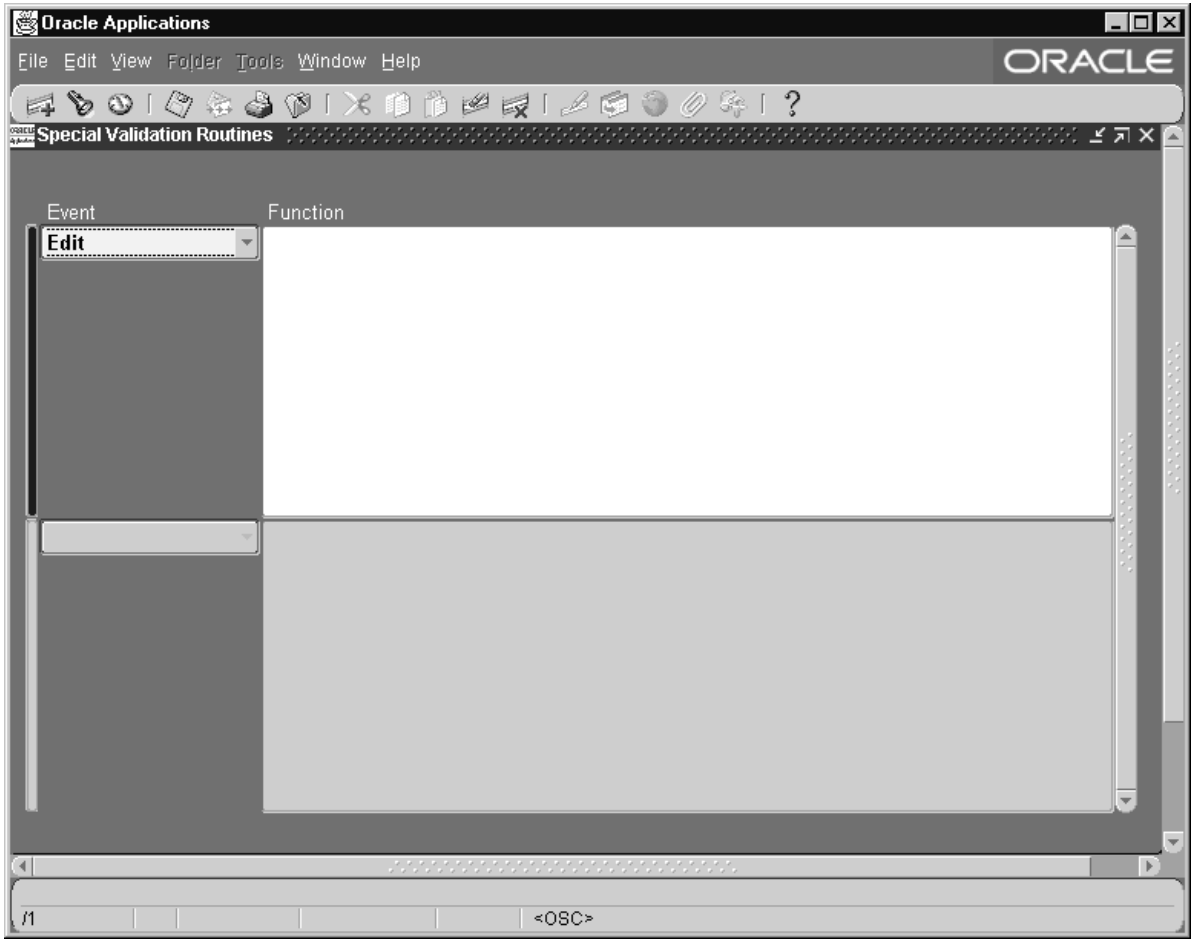
If you allow parent values, you can create them for the values in your validation table using the Segment Values window.

Suggestion: We recommend that you allow parent values for segments in your Accounting Flexfield. Parent values are used to create summary accounts and to increase the productivity of Oracle Applications. However, we recommend that you do not allow parent values for other value sets. Allowing them for other value sets may have an adverse performance impact because the flexfield must validate against the union of the values in your table and the related values in the FND_FLEX_VALUES table and use an extra query for normal validation. For example, if a user uses the list of values on the segment, the list must retrieve the values from both tables.

If you specify additional columns in the Additional Columns field, or you specify a hidden ID column in the Hidden ID Column field, or you have a SUMMARY_FLAG column in your validation table, you must specify No in this field.

See: Segment Values Window: page 4 – 65

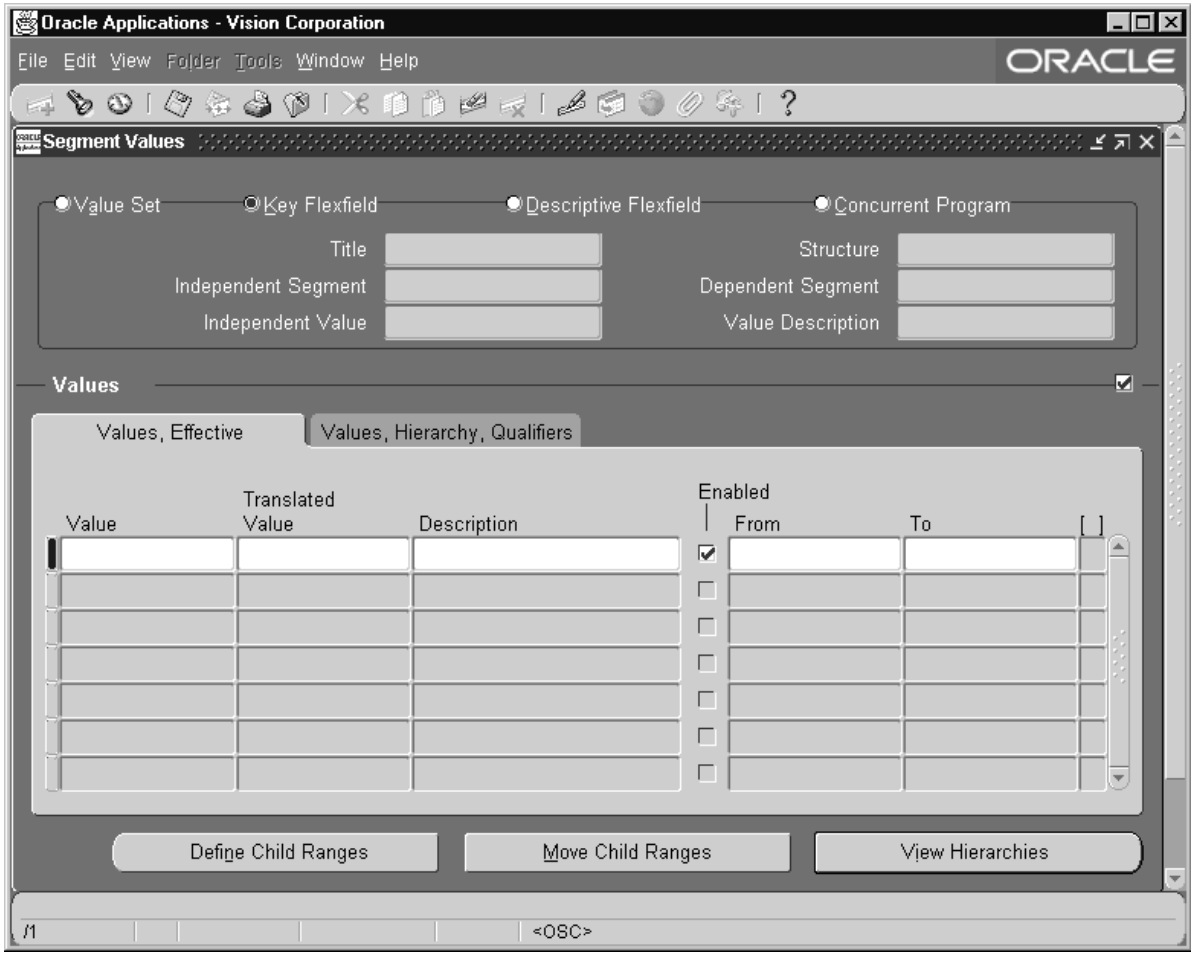
Special Validation Routines Window



Warning: You should never change or delete a predefined value set that Oracle Applications supply. Such changes may unpredictably affect the behavior of your application features such as reporting.

See Special Validation Value Sets: page 9 – 23 for information on using this region. The section contains information on the various types of events and flexfield routine arguments and syntax you use with special validation. It also contains a worked example of using special validation for the Accounting Flexfield.

Segment Values Window



Use this window to define valid values for a key or descriptive flexfield segment or report parameter. You must define at least one valid value for each validated segment before you can use a flexfield. These validated segments provide users with a list of predefined valid segment values, and have a validation type of Independent, Dependent, Translatable Independent, Translatable Dependent, or Table.

You should use this window to define values that belong to Independent, Dependent, Translatable Independent, Translatable Dependent, or Table value sets. You can define new segment values,

specify value descriptions for your values and to enable or disable existing values as well.

The values you define for a given flexfield segment automatically become valid values for any other flexfield segment that uses the same value set. Many Oracle Applications reports use predefined value sets that you may also use with your flexfield segments. If your flexfield segment uses a value set associated with a Standard Request Submission report parameter, creating or modifying values also affects that parameter. If you use the same value set for parameter values, the values you define here also become valid values for your report parameter.

You also specify segment value qualifiers, rollup groups, and child value ranges.

You can also view and maintain segment value hierarchies for the Accounting Flexfield or for any custom application flexfields that use the value hierarchies feature.

Attention: Because the Accounting Flexfield is the only Oracle Applications key flexfield that uses the parent, rollup group, hierarchy level and segment qualifier information, you need only enter this information for values that are associated with your Accounting Flexfield.

For certain types of changes to value hierarchies, a concurrent request is submitted to rebuild the value hierarchies. One request per value set that the change affects (the value set attached to the segment for which you are defining or maintaining values) may be submitted. For example, if you make hierarchy structure changes for five different key flexfield segments, all of which use different value sets, up to five concurrent requests may be submitted.

A concurrent request is submitted for the following changes to value hierarchies:

- A new hierarchy range is defined, or an existing hierarchy range is updated or deleted.
- A hierarchy range is moved to another value.
- The value definition for non–parent values is updated in some way. For example, the description is changed.

Suggestion: For ease of maintenance, you should carefully plan your value hierarchy structures before you define your values, so that your structures follow a logical pattern you can expand later as you need more values.

Attention: You cannot modify values for a value set if that value set is currently being modified by another user, either using the Segment Values Window or the Account Hierarchy Editor with Oracle General Ledger. If you get a message saying that the value set is already being modified, you can try again at a later time.

If your value set is based on a flexfield validation table (validation type Table) and you have defined your value set to allow parent values, then you can use this window to define parent values for the values in your table. This window stores your parent values and rollup groups for you and does not add them to your validation table. You can define child value ranges for the parent values you define, and you can assign your parent values to rollup groups. The values in your validation table can be child values, but they cannot be parent values, and you cannot assign them to rollup groups. You cannot create new values in your validation table using this window.

See:

Value Set: page 4 – 50

Key Flexfield Segments: page 2 – 16

Descriptive Flexfield Segments: page 3 – 31

Prerequisites

- ❑ Use the Value Set window to define your independent value sets, any dependent value sets that depend on them, and any table–validated value sets your flexfield needs
- ❑ Use the Key Flexfield Segments window to define your flexfield structure and segments

  or

- ❑ Use the Descriptive Flexfield Segments window to define your flexfield structure and segments
- ❑ Define your rollup groups, if any. See: Rollup Groups Window: page 4 – 83.

Suggestion: First use this window to define all of the independent values your application needs, then define your dependent values.

This window does not allow you to choose an independent value that would violate any flexfield security rules that are enabled for your responsibility.

Segment Values Block

Use this block to define valid values, to specify values for rollup groups and segment qualifiers, if any, and to enable and disable values. If you define a value you use as a default value for your segment or dependent value set, you must not specify a start or end date for that value. Also, you should not define security rules that exclude your default values.

Some key flexfields use segment qualifiers to hold extra information about individual key segment values. For example, the Accounting Flexfield in Oracle Applications products uses segment qualifiers to determine the account type of an account value or whether detail budgeting and detail posting are allowed for an Accounting Flexfield combination containing a given value.

You cannot define values that would violate any flexfield security rules that are enabled for your responsibility.

Defining Segment Values

For most flexfield segments and report parameters, defining values is very simple if they use independent value sets and their value sets are not used with the Accounting Flexfield.

▶ **To define segment values:**

1. Navigate to the Segment Values window.
2. Query the value set to which your values (will) belong. You can locate values either by their value set or by the flexfield segment or concurrent program parameter that uses their value set for validation.
3. Enter a segment value that is valid for your application. A valid value can be a word, phrase, abbreviation, or numeric code. Users can enter this value in a flexfield segment or a report parameter that uses this value set. Users also see this value whenever they select a value in a flexfield segment that uses this value set.

Any value you define must conform to the criteria you defined for your value set. For example, if your value set can only accept values one character long with no alphabetic or special characters allowed, you can only enter the values 0 through 9 in this field.

If you enter a value that contains the segment separator character defined for the flexfield that uses this value set, application windows display the character in your value as a ^ (or another non–alphanumeric character, depending on your platform) in your concatenated value fields to differentiate it from the segment separator. This change is for concatenated display purposes only and does not affect your value.

Since individual values can be referenced from many places in your applications, you cannot delete valid values that have already been defined, nor can you change those values. You can, however, change the description of a valid value in the Description field after you query up the value (or the translated value of a Translatable Independent or Translatable Dependent value set).

You cannot define values that would violate any flexfield security rules that are enabled for your responsibility.

If your value set is a Translatable Independent or Translatable Dependent value set, this value is ”hidden” from the user in the flexfield windows.

4. If your value set has the type Translatable Independent or Translatable Dependent, the Translated Value field is enabled. The value from the previous step defaults in. You can update the Translated Value for all installed languages using the Translation icon in the Toolbar.

   Validation is done for the translated values as well as the hidden values. For example, if you have defined your value set to have a maximum size of 50 characters, no translated value may be larger than 50 characters.

5. Enter a description for your value. Users see this description along with your value whenever they select a value in a flexfield segment that uses this value set.

6. Check the Enabled check box to make your value effective.

7. If you want to have the value effective for a limited time, you can enter a start date and / or an end date for it. The value is valid for the time including the From and To dates.

   You cannot delete values from this window because they are referenced elsewhere in the system, but you can disable them at

any time. You should not disable or have effective dates for a segment value that you use as a segment default or a default dependent value.

8. If you are defining values whose value set will be used with the Accounting Flexfield, define hierarchy and qualifiers information. See: Defining Hierarchy and Qualifiers Information: page 4 – 70.
9. Save your changes.

Defining Hierarchy and Qualifiers Information

You only need to define hierarchy and qualifiers information if you are defining values whose value set will be used with the Accounting Flexfield.

Prerequisites

- ❑ Define your value. See: Defining Segment Values: page 4 – 68.

▶ **To define hierarchy and qualifiers information**:

1. Determine whether this value is a parent value. If so, you can define and move child value ranges for this value, and you can assign this value to a rollup group. If not, you cannot define and move child value ranges for this value, and you cannot assign this value to a rollup group.
2. Enter the name of a rollup group to which you want to assign this flexfield segment value. You can use a rollup group to identify a group of parents for reporting or other application purposes. You can enter a rollup group name only if this flexfield segment value is a parent value and Freeze Rollup Groups in the Key Segments window is set to No. You can enter a range of child values for this flexfield segment value in the Define Child Ranges zone. You create rollup groups using the Rollup Groups window. See: Rollup Groups Window: page 4 – 83.
3. Enter the level for this value. This can be a description of this value's relative level in your hierarchy structure. This level description is for your purposes only.
4. If you are defining values for a value set used with the Accounting Flexfield, you must define segment qualifier information for each value. See: Qualifiers: page 4 – 71.

Qualifiers

Some key flexfields use segment qualifiers to hold extra information about individual key segment values. For example, the Accounting Flexfield uses segment qualifiers to determine the account type of an account value or whether detail budgeting and detail posting are allowed for an Accounting Flexfield combination containing a given value.

If you are defining values for any value set that is used by a key flexfield that uses segment qualifiers, you see the Segment Qualifiers pop–up window prompting you for this information. If you share this same value set with additional flexfields, such as a descriptive flexfield, you see the Segment Qualifiers pop–up window regardless of how you identified your value set in this window. Segment qualifiers contain information about a value rather than the segment that uses the value.

After you have saved your segment qualifier values, the values for your segment qualifiers appear in the Qualifiers field in the main window. You can click in the Qualifiers field to bring up the Segment Qualifiers window and see the qualifiers.

The Allow Budgeting, Allow Posting, and Account Type fields are segment qualifiers for the Accounting Flexfield.

> **Note:** Oracle General Ledger has an Inherit Segment Value Attributes concurrent program that can automatically update an account combination's detail budgeting allowed, detail posting allowed, global reconciliation flag, enabled flag, start date, and end date attributes whenever these attributes change for a segment value in that account combination.
>
> See the *Oracle [Public Sector] General Ledger User's Guide* for more information.

Allow Budgeting

Indicate whether to allow detailed budgeting to GL accounts with this segment value. When you accept this value, you can perform detailed budgeting to GL accounts with this segment value. When you enter No, you can neither assign GL accounts with this segment value to budget organizations nor define budget formulas for GL accounts with this segment value.

When you are defining a parent segment value, enter No here, since you cannot budget amounts to a segment value which references other segment values where detail budgeting is already allowed.

When you change this field for a segment value that you have already defined, you should also make a corresponding change to all GL accounts which include that value. Use the GL Account Combinations window to allow or disallow detail budgeting to your flexfield combinations.

Allow Posting

Enter Yes or No to indicate whether Oracle Applications should allow detailed posting to GL accounts with this segment value. The default value for this field is Yes. When you accept this value, you can post directly to GL accounts with this segment value. When you enter No, you can neither use this segment value in GL accounts on the Enter Journals window, nor define formula journal entries that affect GL accounts with this segment value.

When you are defining a parent segment value, enter No here.

When you change this field for a segment value that you have already defined, you should also make a corresponding change to all GL accounts which include that value. Use the GL Account Combinations window to allow or disallow detail posting to your flexfield combinations.

Account Type

You see this qualifier, which requires a value, for the natural account segment only. Enter the type of your proprietary account (Asset, Liability, Owners' Equity, Revenue or Expense) or the type of your budgetary account (Budgetary Dr or Budgetary Cr) your segment value represents. Choose any proprietary balance sheet account type if you are defining a statistical account segment value. If you choose a proprietary income statement account type for a statistical account segment value, your statistical balance will zero–out at the end of the fiscal year.

Your GL account combinations have the same account type as the account segment which they include. Changing the account type only affects new GL accounts created with the reclassified account segment. Changing the account type does not change the account type of existing GL accounts.

To change the account type of existing Accounting Flexfields, refer to the Misclassified Account Types topical essay and / or call Oracle customer support for assistance.

See Also

Defining Accounts
(Oracle [Public Sector] General Ledger User's Guide)

Correcting Misclassified Account Types
(Oracle [Public Sector] General Ledger User's Guide)

Hierarchy Details Buttons

The Hierarchy Details buttons open the windows you use to define and maintain detailed information about your value hierarchies.

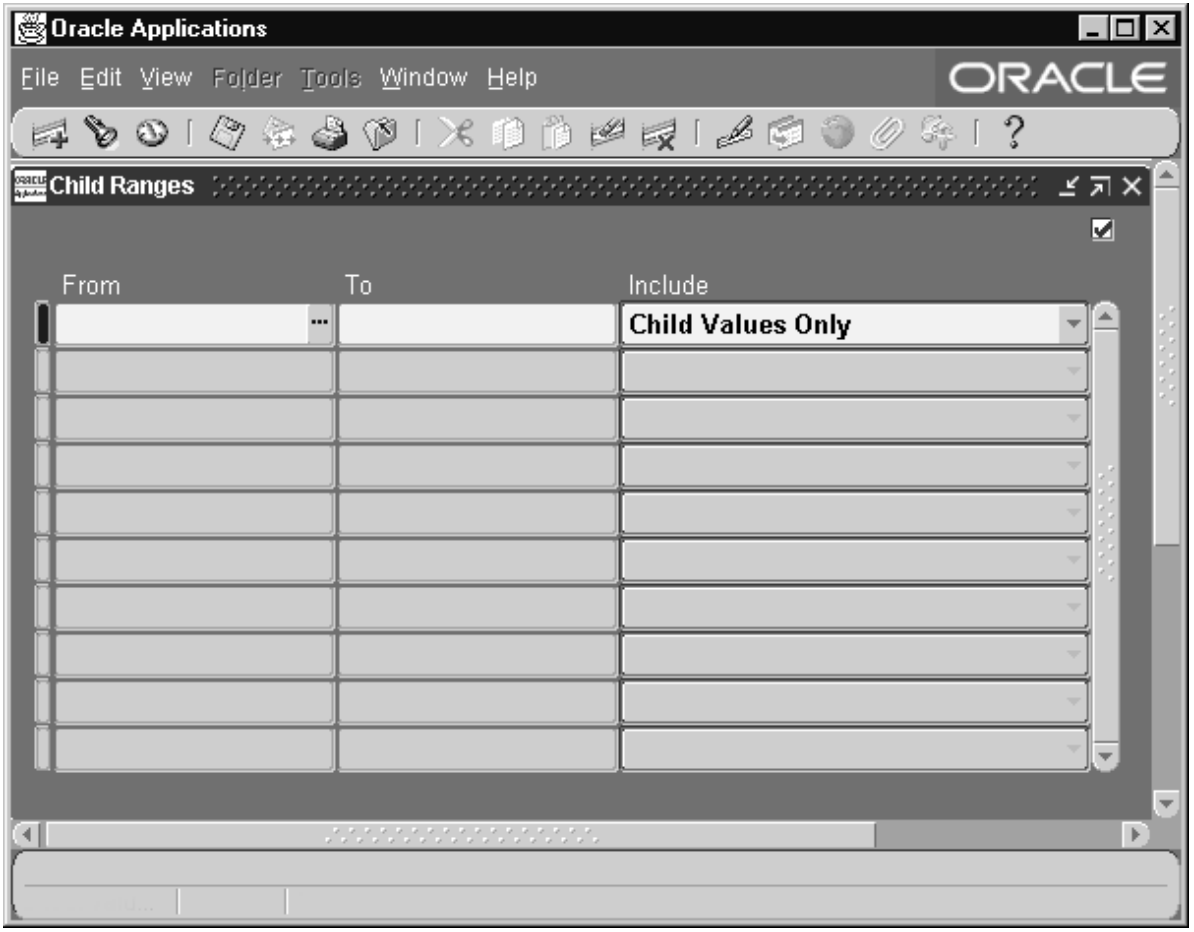
You use the Hierarchy Details zone and the following zones primarily for values you use in segments of the Accounting Flexfield.

Define Child Ranges Choose this button to define child ranges for your parent value. The button is disabled unless your value is already a parent value.

Move Child Ranges Choose this button to move child ranges from one parent value to another parent value. The button is disabled unless your value is already a parent value.

View Hierarchies Choose this button to view the hierarchy structure to which your selected value belongs. You cannot make changes in this window. The button is disabled unless your value belongs to a hierarchy structure (it is either a parent value or a child value of another parent value).

Define Child Ranges



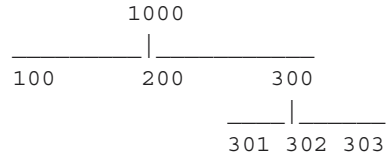
Use this window to define child values for the value you defined in the Segment Values zone. Oracle Applications use child values to sum families of data or report on groups of data. You specify child values by entering a set of ranges. If you want to specify a single child value, set the low and high ends of the range equal to that value.

You cannot open this window if the value belongs to a rollup group and rollup groups are frozen. You freeze rollup groups using the Key Flexfield Segments window.

You can create networked hierarchies; that is, you can create hierarchy structures where a particular value may be a child that belongs to more than one parent. You should plan your value hierarchy structures

carefully to avoid unwanted duplication of information caused by reporting or counting the same value more than once.

For example, suppose you want to define a hierarchy structure like this:



For the parent value 300, you could specify the child value range 301 (Low) to 303 (High). Since all three values 301, 302 and 303 are not parent values, you give this range a range type of Child.

For the parent value 1000, you need to specify two ranges so that you include both non–parent values (100 and 200) and parent values (300). First, you specify the child value range 100 (Low) to 200 (High) and give this range a range type of Child to include the values 100 and 200 as well as all the values between them (alternatively, you could specify these two values individually by specifying the same value for both Low and High). Then, to include the parent value 300, you specify the child value range 300 (Low) to 300 (High) and give this range a range type of Parent.

5. Enter the low and high ends of your child value range. You can enter any value that meets the validation criteria you define for this value set using the Define Value Set window. The high end of your child value range must be greater than or equal to the low end. Your ranges behave differently depending on your value set format type. For example, in a value set with a Character format type, 100 is less than 99 (even though they appear to be numbers). Similarly, a range that includes values from 100 to 200 would also include the value 1000.

Attention: The Accounting Flexfield uses value sets that have a format type of Character, so you should specify your child ranges carefully for those value sets. For example, 100 is less than 99 (even though they appear to be numbers).

To specify a range that contains only a single value, enter the same value for both Low and High.

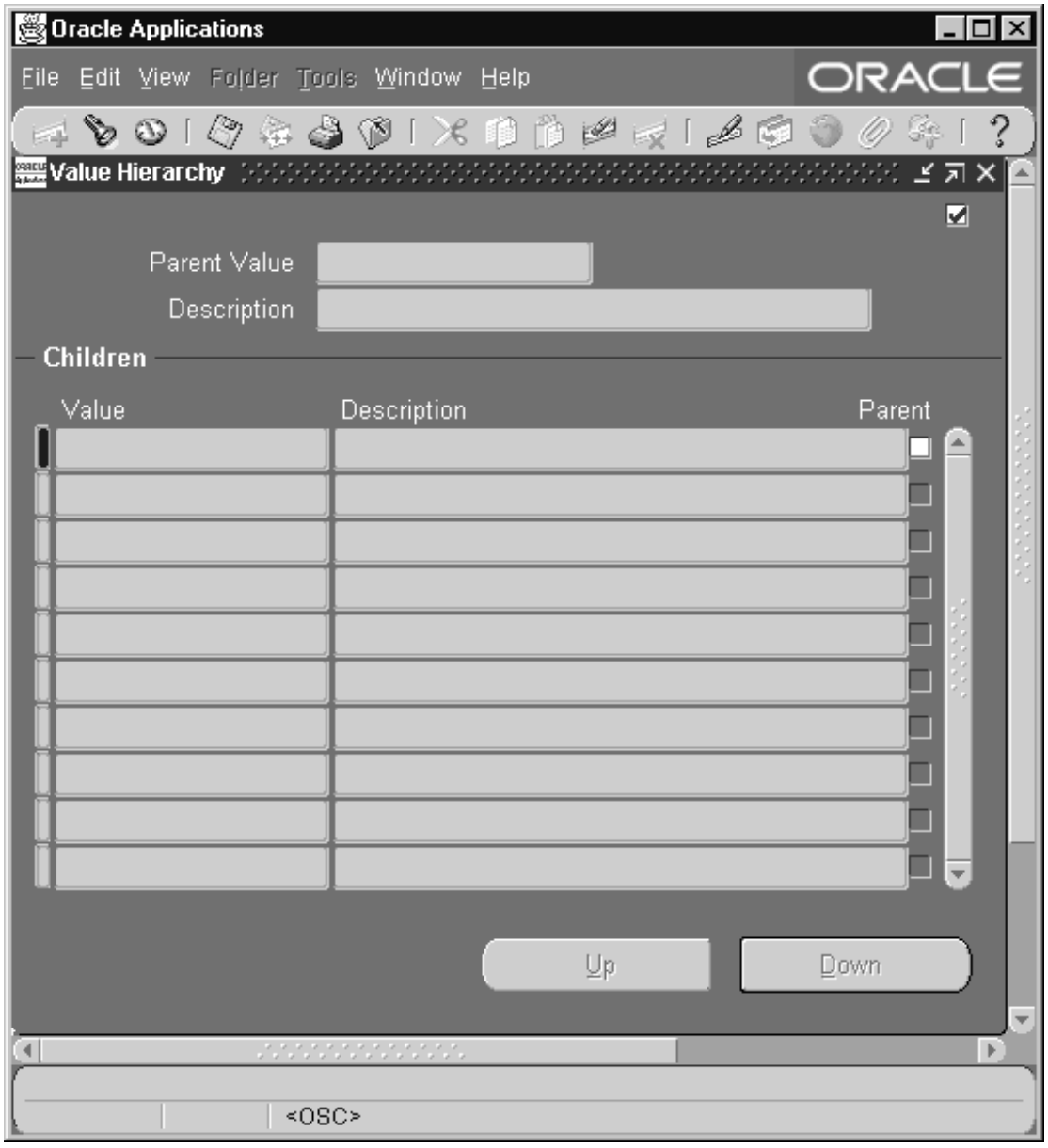
Range Type

If you select Child, any child values that fall in your specified range are considered to be children of your parent value. If you select Parent, any parent values that fall in your specified range are considered to be

children of your parent value. Specifying Parent lets you create tree–structured hierarchies.

If you have existing child ranges from a previous version of Oracle Applications, those ranges automatically receive a range type of Child and they behave exactly as they did with your previous version.

View Hierarchies



Use this window only for values you use in segments of the Accounting Flexfield in Oracle General Ledger.

You cannot make changes to your hierarchy structures in this zone.

The Value field displays the value that is a child of the parent value displayed in the Parent Value field.

The Parent field displays whether the child value is itself a parent value. If so, you can choose the Down button in the Navigate to view any values that are children of this value.

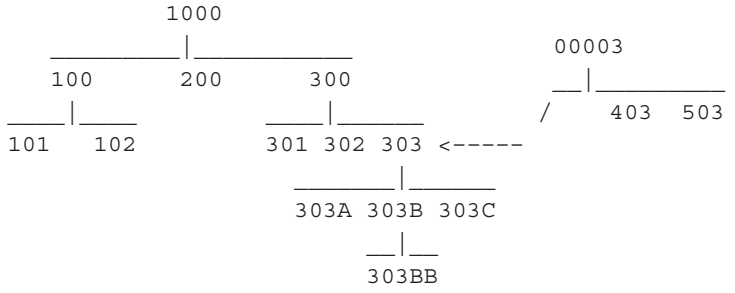
Navigate Buttons

Up/Down

Choose Up to view the values at the level just above your current value. If this value is a parent value, you can choose Down to view the child values that belong to the current value. If this value has more than one parent, you see a list of the parent values to which you can navigate. If you choose Up after navigating down a networked hierarchy, you move up to the parent you navigated down from most recently.

If you move up or down in the hierarchy structure, this window automatically changes the parent value displayed in the Parent Value field to show you the parent value in the level immediately above the level of the values you are viewing.

For example, suppose you have a hierarchy structure (in this case a networked structure) like this:



where 303 is a child of both 300 and 00003. Suppose you want to look at the structure starting with the value 1000 in the Segment Values zone. When you open the View Hierarchies window, you see:

```
Parent  1000

_____________

        100
        200
Down    300
```

You choose Down with your cursor on 300, as shown above (Down is your only choice for this value). Once you choose Down, you then see (immediately):

```
Parent   300

_____________
         301
         302
Down     303
```

You choose Down with your cursor on 303, as shown above (you can choose from Up or Down for this value). Once you choose Down, you then see:

```
Parent    303

_______________
         303A
Down     303B
         303C
```

You choose Down with your cursor on 303B, as shown above (you can choose from Up, Down, or Network for this value). Once you choose Down, you then see:

```
Parent   303B

_____________
Up       303BB
```

You choose Up, as shown above (you can only choose Up for this value). Once you choose Up, you then see:

```
Parent    303

_______________
         303A
Network  303B
         303C
```

At this point, your cursor is next to the value 303B and the parent displayed in the Parent Value zone is 303. When you choose up, you can either go back up to your original parent value (303, which has the parent value 300), or you can go over to the other hierarchy path that leads to the parent value 00003. Once you choose 303B, you see a window offering you the two choices 300 and 00003 (these choices indicate the values that would appear in the Parent Value field. You

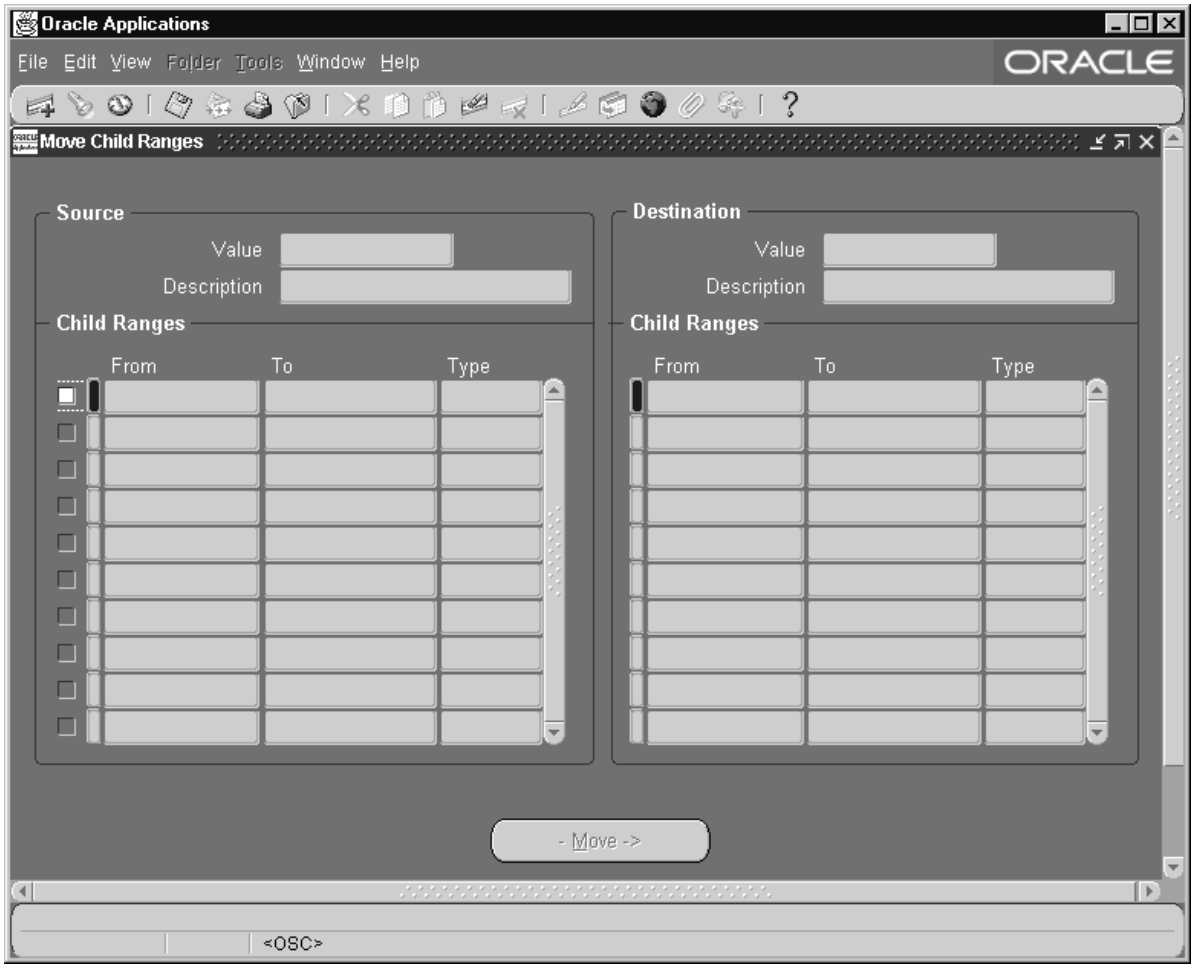
will see 303 in the Children block if you make either choice), and 300 is highlighted. You choose 00003 this time, and then you see:

```
Parent  00003

_____________
        303
        403
        503
```

At this point you cannot go up any further in the hierarchy structure.

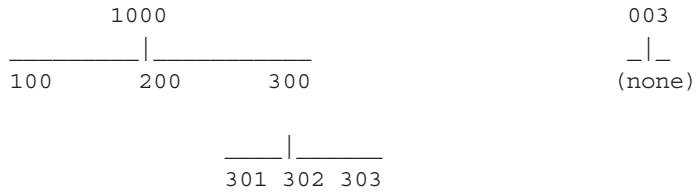
Move Child Ranges



Use this window to move a range of child values from one parent value (the source value) to another parent value (the destination value). When you move a range of child values from one parent value to another, you also move any child values that belong to the child values in the range you move. In other words, when you move a child to a different parent, you also move any ”grandchild” values with it.

Use this window only for values you use in segments of the Accounting Flexfield.

For example, suppose you have defined a hierarchy structure like this:



If you move the parent value 300 from the parent value 1000 to the parent value 003, you also move the child value range 301 (Low) to 303 (High). All three values 301, 302 and 303 are now grandchild values of 003 instead of 1000.

1. Enter the value from which you want to move a child range.

   This field defaults to display the selected parent value from the Segment Values window.

2. Choose which child ranges you want to move to the destination value's child ranges.

   The Type field displays the type of values this child range includes. If the field contains Child, any child values that fall in the specified range are considered to be children of your parent value. If the field contains Parent, any parent values that fall in the specified range are considered to be children of your parent value.

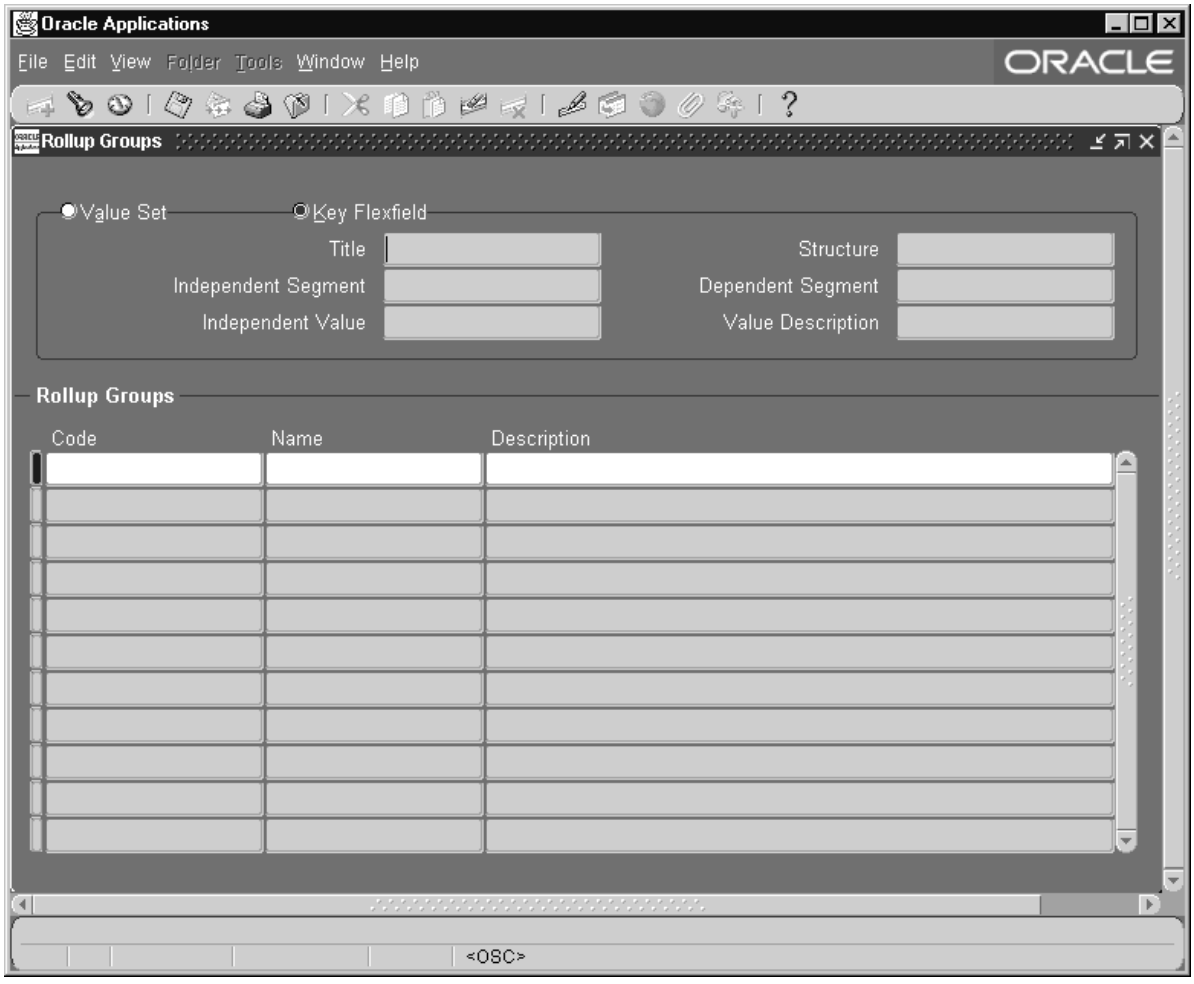
   The Destination block displays the child value ranges that currently belong to the destination parent value.

3. Enter the parent value to which you want to move child value ranges. You can only choose a value that is already a parent value.

   The Type field displays the type of values this child range includes. If the field contains Child, any child values that fall in the specified range are considered to be children of your parent value. If the field contains Parent, any parent values that fall in the specified range are considered to be children of your parent value.

4. Choose the Move button to move the child ranges you selected in the Source block to the destination parent value you specified in the Destination block.

Rollup Groups Window



Use this window to define rollup groups to which you can assign key flexfield values. You can use a rollup group to identify a group of parent values for reporting or other application purposes. You assign key flexfield segment values to rollup groups using the Segment Values window.

In Oracle Applications, only the Accounting Flexfield uses rollup groups. Rollup groups are used to create summary accounts for reporting purposes.

See Also

Oracle [Public Sector] General Ledger User's Guide

Defining Rollup Groups

Prerequisites

- ❑ Use the Value Set window to define your independent value sets, any dependent value sets that depend on them, and any table–validated value sets your flexfield needs. See: Value Set Windows: page 4 – 50.
- ❑ Use the Key Flexfield Segments window to define your key flexfield structure and segments. See: Key Flexfield Segments: page 2 – 16.

▶ **To define rollup groups:**

1. Enter a code for your rollup group. The code is required and used internally.
2. Enter a name and description for your rollup group.
3. Save your changes.
4. Apply your rollup group name to particular values using the Segment Values window. See: Defining Segment Values: page 4 – 68.

CHAPTER

5

Using Additional Flexfields Features

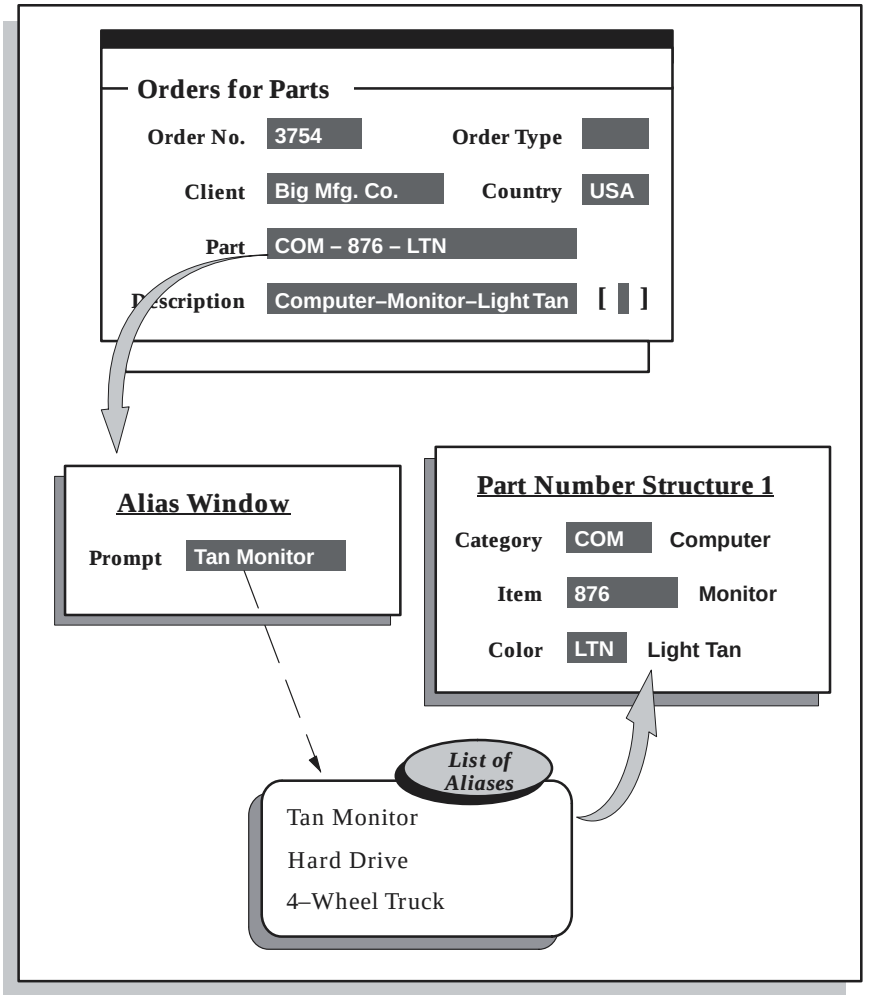
This chapter contains topical essays on three flexfields features that you may want to use at your site.

- Shorthand flexfield entry (key flexfields only)
- Flexfield value security
- Cross–validation (key flexfields only)

Overview of Shorthand Flexfield Entry

Shorthand flexfield entry lets you enter key flexfield data quickly by using shorthand aliases to represent valid flexfield combinations or patterns of valid segment values. A shorthand alias is a word or code that represents a complete or partial key flexfield combination.

Figure 5 – 1



Shorthand flexfield entry helps you satisfy the following data entry needs:

- Enter key flexfield data quickly by associating shorthand aliases with frequently–used sets of valid key flexfield segment values.
- Associate either complete or partial flexfield combinations with shorthand aliases.

You can define a shorthand flexfield entry pop–up window (the shorthand window) for any key flexfield. You specify a name and size for each shorthand window.

You define the complete or partial set of key flexfield segment values (the template) that each shorthand alias represents. These values can be valid flexfield combinations or different patterns of valid segment values. For example, if the flexfield consists of six segments, you can define a shorthand alias to represent a partial combination where four of the six segments contain valid values for those segments. The other two segments remain blank. When you enter this alias at the shorthand window prompt, you only need to enter values for two segments manually, and shorthand flexfield entry enters the other four for you automatically. Or, you can define an alias to represent a valid flexfield combination, where all six segments contain valid values and meet any appropriate flexfield cross–validation rules. For this shorthand alias, you would not have to enter any segment values manually.

For each key flexfield structure, you can define as many shorthand aliases as you need. If you make changes to your shorthand aliases, your changes take effect immediately for both you and other users.

If Shorthand Flexfield Entry is enabled and the Flexfields:Shorthand Entry profile option is set to an appropriate value, the shorthand window allows you to enter an alias before the flexfield window opens. The combination or partial combination you defined for your alias is entered into your flexfield window.

Validation of alias values

You cannot enter invalid values into a single segment of a shorthand alias, but the Shorthand Aliases window does not identify invalid combinations of segment values in an alias. If you define aliases that contain values that become invalid later, your flexfield detects these invalid values at the time you use your alias in your flexfield window. Your flexfield then does not allow you to enter the invalid values. Your flexfield also checks your alias against your security and cross–validation rules when you use your alias to enter data in your flexfield window.

Note that if the alias contains a value that you are restricted from using (by flexfield value security), that value disappears immediately and you must enter a different value in that segment.

After you enter an alias that represents a complete flexfield combination, the flexfield validates your combination using the criteria you define in the Cross–Validation Rules window. See: Cross–Validation Rules Window: page 5 – 35.

Changing your key flexfield structure after defining aliases

If you change your key flexfield structure after you define your aliases, you must change your existing aliases to match your new structure. Changes that make your existing aliases invalid include:

- changing the order of segments
- adding a new segment
- disabling a segment
- changing segment lengths

Enabling Shorthand Entry

Prerequisites

- ❑ Set up your key flexfield structure. See: Key Flexfield Segments Window: page 2 – 16.
- ❑ Define valid segment values for your structure. See: Segment Values Window: page 4 – 65.

▶ **To enable shorthand entry:**

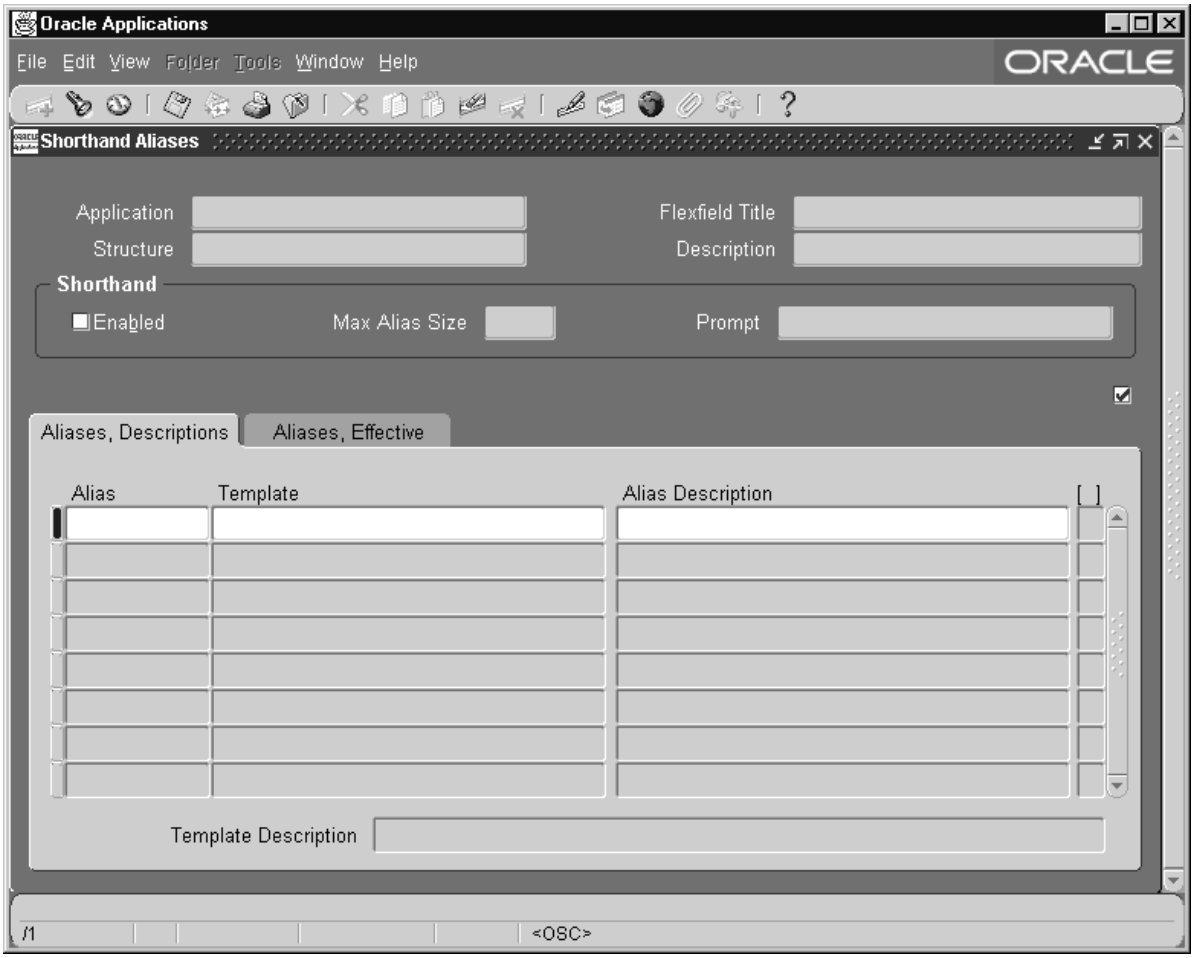
1. Navigate to the Shorthand Aliases window.
2. Select the name and structure of the key flexfield for which you want to enable shorthand entry.
3. Check the Enabled check box in the Shorthand region.
4. Enter a prompt for the shorthand window.
5. Enter the maximum alias size, which determines the maximum length of your shorthand aliases.
6. Save your changes.

Whenever you enable or disable shorthand entry, you must also recompile your key flexfield using the Key Flexfield Segments window. See: Key Flexfield Segments Window: page 2 – 16.

On a user–by–user basis, you can enable or disable shorthand flexfield entry for yourself (for all key flexfields that use it) by setting your user profile option Flexfield: Shorthand Entry to an appropriate value. Your System Administrator can set this profile option at other levels (such as for a responsibility).

However, in some forms, such as forms where you define new key flexfield combinations (combinations forms), you do not see the shorthand window even if shorthand entry is enabled. For example, you cannot use shorthand entry in the Oracle General Ledger Define Accounting Flexfield Combinations form. See: Disabling or Enabling a Shorthand Alias: page 5 – 7.

Defining Shorthand Aliases



▶ **To define shorthand aliases:**

1. Navigate to the Shorthand Aliases window.
2. Select the name and structure of the key flexfield for which you want to define shorthand aliases.
3. Enter an alias, which serves as a ”name” for a combination or partial combination. A shorthand alias can be any combination of characters.
4. In the Template field, enter either an entire flexfield combination or the pattern of segment values that your alias represents.

Your flexfield validates each segment value you enter but does not check whether the combination is a valid combination (if you enter an entire combination).

If you want to enter a value for a segment that depends on another segment, you must first enter a value into the corresponding independent segment.

5. Enter an alias description. This field is required.
6. If you want to have the alias effective for a limited time, you can enter a start date and / or an end date for the alias. The alias is valid for the time including the From and To dates.
7. Save your changes.

See:

Overview of Shorthand Flexfield Entry: page 5 – 2

Disabling or Enabling a Shorthand Alias: page 5 – 7

Disabling or Enabling a Shorthand Alias

You can disable or re–enable individual existing aliases.

▶ **To disable a shorthand alias:**

1. Navigate to the Shorthand Aliases window.
2. Select the name and structure of the key flexfield for which you want to disable shorthand aliases.
3. Select the alias you want to disable.
4. In the Effective tabbed region, uncheck the Enabled check box, or set either From to a date later than today or To to the date of the last day the alias should be valid.

   If the Enabled check box is unchecked, the alias is disabled regardless of the effective dates given.
5. Save your changes.

▶ **To re–enable a disabled shorthand alias:**

1. Navigate to the Shorthand Aliases window.

2. Select the name and structure of the key flexfield for which you want to enable shorthand aliases.
3. Select the alias you want to enable.
4. In the Effective tabbed region, check the Enabled check box if it is not already checked.

   Also, set either From to a date no later than today or To to the date of the new last day the alias should be valid. Alternatively, you can blank out the effective dates as appropriate to make your alias valid.

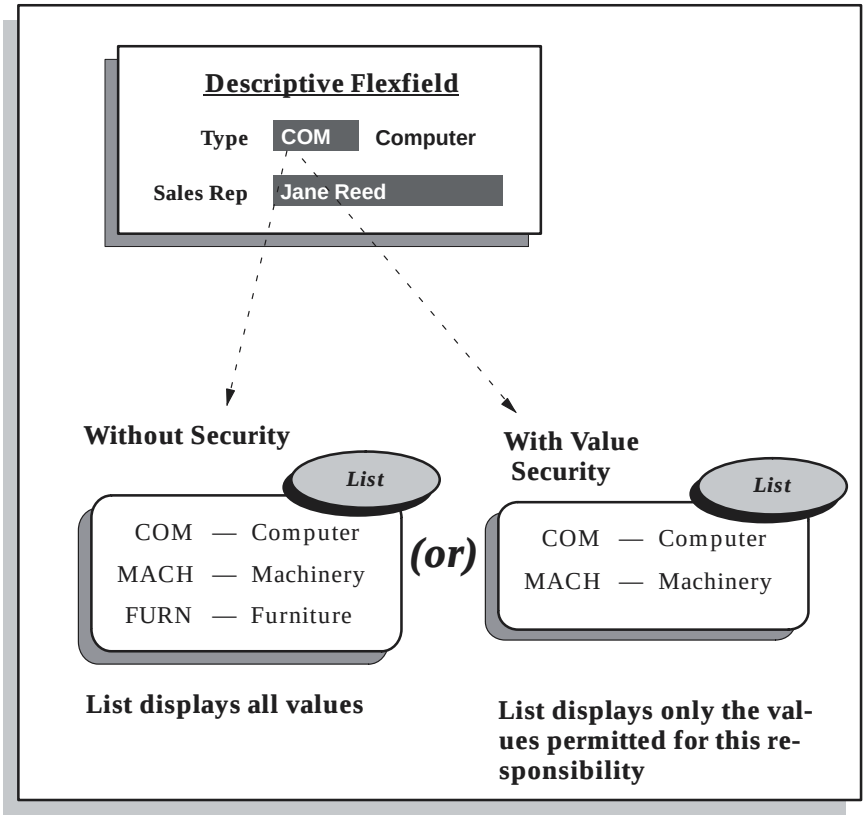
   If the Enabled check box is unchecked, the alias is disabled regardless of the start and end dates given.
5. Save your changes.

Overview of Flexfield Value Security

Flexfield Value Security gives you the capability to restrict the set of values a user can use during data entry. With easy–to–define security rules and responsibility level control, you can quickly set up data entry security on your flexfield segments and report parameters.

Flexfield Value Security lets you determine who can use flexfield segment values and report parameter values. Based on your responsibility and access rules that you define, Flexfield Value Security limits what values you can enter in flexfield pop–up windows and report parameters. Flexfield Value Security gives you greater control over who can use restricted data in your application. When you use Flexfield Value Security, users see only values they are allowed to use; restricted values do not appear in lists of values associated with the flexfield or report parameter.

Figure 5 – 2



Flexfield Value Security provides you with the features you need to satisfy the following basic security needs:

- Specify ranges of segment values particular users are allowed to enter.
- Prevent users from entering segment values they are not allowed to use.

Effects of Flexfield Value Security

The security rules you define and assign affect any segment or parameter that uses the same value set as the segment for which you initially set up your rules, provided that the other segment has security enabled and that the user works within the responsibility to which the rule is assigned.

For example, if your key flexfield segment shares its value set with a descriptive flexfield segment, your security rules also affect that descriptive segment. If you use the same value set for Standard Request Submission parameter values, the rules you assign here also affect your request parameter, provided that the parameter has security enabled.

Many Oracle Applications reports use predefined value sets that you may also use with your flexfield segments. If your flexfield segment uses a value set associated with a Standard Request Submission report parameter, the security rules you define here also affect the report parameter, provided that the parameter has security enabled. In addition, if you query a key flexfield combination where one or more of the segments already contain a secure value, you cannot update any of the segment values in the combination.

Security rules for the Accounting Flexfield also restrict query access to segment values in the Account Inquiry, Funds Available, and Summary Account Inquiry windows. In these windows, you cannot query up any combination that contains a secure value.

Entering Values in Flexfields and Report Parameters

Flexfield Value Security limits the values you can enter in segments in flexfield pop–up windows or report parameters. If you enter a secure segment or parameter, you cannot enter values for which you do not have access, and those values do not appear in the list of values for that segment or parameter. If you try to enter a value for which you do not have access, you see an error message defined by the person who

created the security rule. Note that if a segment default value or shorthand entry alias contains a value that you are restricted from using, that value disappears immediately and you must enter a different value in that segment.

Defining Values

If Flexfield Value Security is available for your value set and you are using a responsibility that has enabled security rules, you cannot define or update excluded values using the Segment Values window. See: Segment Values Window: page 4 – 65.

Understanding Flexfield Value Security

Defining Security Rules

You can define security rules for each segment or report parameter for which you want to restrict data entry. Within a rule, you specify ranges of segment values to include and exclude from use. You can create many rules for the same segment or parameter, and assign the rules to different responsibilities. You also define the error message you see if you try to enter a value for which you do not have access. If you define no security rules for a segment, you can enter any value you have defined into that segment.

Before you define your security rules, you should determine what segments you want to enable security on, and what types of access limits you want to place on segment values for the different responsibilities that use your flexfield.

Create Ranges of Approved Values

Since you include or exclude values by ranges, you should plan your segment values carefully to make security rules easy to define. Organizing your values in ranges or ”chunks” of related values helps you keep your security rules simpler (and helps keep cross–validation rules simpler as well).

Suggestion: We recommend that you define many rules that each have few rule elements rather than a few rules that each have many rule elements. The more rules you provide, the more specific you can make your message text.

You can only use flexfield value security rules on segments or report parameters that use value sets with a validation type of Independent, Dependent, or Table. You cannot use security rules for segments that use value sets with a validation type of None, Special, or Pair.

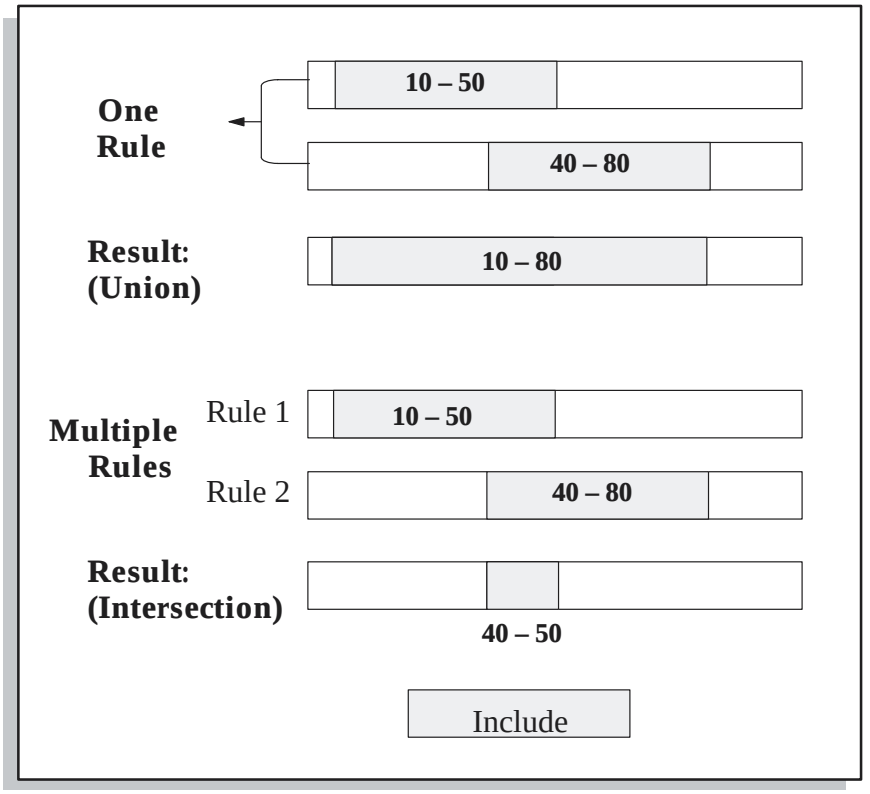
Interaction of Security Rules

It is important for you to understand how the rules interact before you define them. You can define many security rules for a segment. Each security rule is composed of one or more rule elements. A rule element specifies a range of values to include or exclude. If you create rule elements that have overlapping ranges, the result is that all values included in either range are included by the rule. However, if you define two different rules that have overlapping ranges and assign both rules to the same responsibility, the effect is that only the values included in the overlap of both rules are available to users of the responsibility. More rules restrict more, not less. All values must pass all security rules for it to appear in a segment or parameter list of values. The following examples (shown in the following diagrams) illustrates how your rules interact:

Suppose you have one rule with two rule elements. The first element includes values 10 through 50, and the second element includes values 40 through 80. The resulting rule includes the union of the two elements, values 10 through 80.

Suppose instead you have two separate rules. The first rule includes values 10 through 50, and the second rule includes values 40 through 80. The resulting effect of the two rules includes the intersection of the two rules, values 40 through 50.

Figure 5 – 3

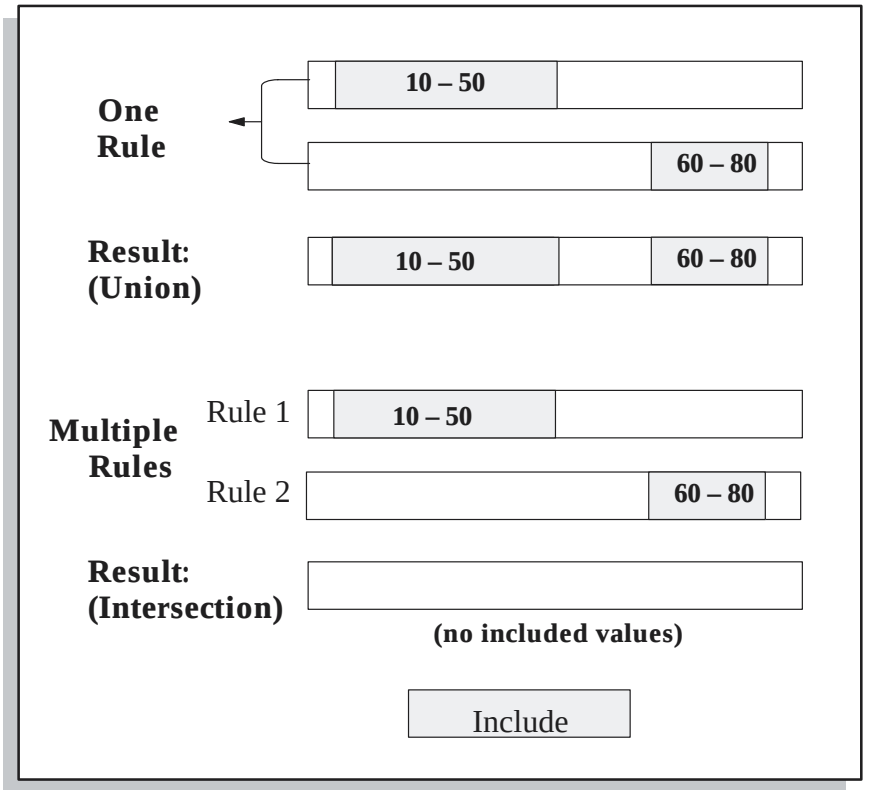


If you have multiple separate rules whose included values do not overlap, then no values will be allowed at all, because values must be included by *all* active security rules for that segment to be valid.

Now suppose you have one rule with two rule elements. The first element includes values 10 through 50, and the second element includes values 60 through 80. The resulting rule includes the union of the two elements, values 10 through 50 and values 60 through 80.

Suppose instead you have two separate rules. The first rule includes values 10 through 50, and the second rule includes values 60 through 80. The resulting effect of the two rules includes the intersection of the two rules, which is no values at all.

Figure 5 – 4



Assign Your Security Rules

Once you define your security rules, you can assign them to responsibilities. The rules are active for every user in that responsibility. You can assign different rules to different responsibilities, and you can share rules across responsibilities. So, you can create some responsibilities with access to all segment values, and others with limited access. You are free to change the assignments of your security rules or create new ones at any time. See: Assign Security Rules: page 5 – 18.

Hierarchical Value Security

With hierarchical value security, the features of flexfield value security and flexfield value hierarchy are combined. With this feature any security rule that applies to a parent value also applies to its child values.

With hierarchical security enabled, the system does the following for a given value:

- Checks if this value is excluded by any of the security rules.
- Checks if this value is not included by any of the security rules.
- Checks if any of the parents is excluded by any of the security rules.
- Checks if any of the parents is not included by any of the security rules.

Warning: If you have a large hierarchical tree of values, then a security rule that applies to a parent value will also apply to all its child values, regardless of how many levels below the child values are.

Defining Hierarchy and Qualifiers Information: page 4 – 70

Rollup Groups Window: page 4 – 83

Activating Flexfield Value Security

There are two levels where you must activate Flexfield Value Security, the value set level and the individual segment or parameter level. You make Flexfield Value Security available for your value set by choosing Hierarchical Security or Non-Hierarchical Security for the Security Type. When you make security available for a value set, all segments and report parameters that use that value set can use security. You then enable security for a particular segment or parameter.

Choose Non-Hierarchical Security if you do not want security on a parent value to ”cascade down” to its child values. Choose Hierarchical Security if you do want the hierarchical security feature enabled.

Security Available

With security available, you can create flexfield security rules, and you allow your rules to take effect for any segment or parameter that uses this value set and has security enabled. Otherwise, you disable all security rules for this value set.

You define security rules for this value set using the Define Security Rules window. Any security rules you define for this value set affect

every segment (in any flexfield) that uses this value set, if the segment has security enabled.

Using the Flexfield Value Security feature may negatively affect your application performance. If you have many security rules or a large value set with many secure values, you may notice that a list of values on a segment appears slower than it would if you do not use Flexfield Value Security. Users with responsibilities where security is not enabled should not notice any loss in performance.

If you are using a validation table with special arguments such as :$FLEX$.*Value_Set_Name* for your value set, you should specify No in this field, since any security rules you have for your value set would ignore the values of these special arguments, and your rules could have effects other than what you intend.

You then enable security for a particular segment or parameter by checking Enable Security for that segment or parameter. Once you enable security on a segment, you must freeze and recompile the flexfield definition for that flexfield structure. Flexfield Value Security activates for that segment after you freeze and recompile your flexfield definition using the Key Flexfield Segments window or Descriptive Flexfield Segments window.

Once you define your rule, you must assign your rule to a responsibility before the rule can be enforced. You assign your rule to a responsibility using the Assign Security Rules window. You may define rules for a segment that does not have security enabled, but your rule has no effect until you enable security for that segment and assign your rule to a responsibility.

After you define or make changes to your security rules, you and your users must either change responsibilities or exit from your application and sign on again in order for your changes to take effect.

Enabling Hierarchical Security

With hierarchical value security, the features of flexfield value security and flexfield value hierarchy are combined. With this feature any security rule that applies to a parent value also applies to its child values.

You enable the hierarchical security feature using the following steps:

- Set up your value hierarchy
- Set up your security rules
- Enable security for a particular segment or parameter

- Choose Hierarchical Security for the Security Type for your value set

See:

Key Flexfield Segments: page 2 – 16

Descriptive Flexfield Segments: page 3 – 31

Value Set Windows: page 4 – 50

Overview of Flexfield Value Security: page 5 – 9

Segment Values Window: page 4 – 65

Assign Security Rules: page 5 – 18

Defining Hierarchy and Qualifiers Information: page 4 – 70

Rollup Groups Window: page 4 – 83

Define Security Rules Window and Assign Security Rules Window

Use the Define Security Rules window to define value security rules for ranges of flexfield and report parameter values.

Then, use the Assign Security Rules window to assign the flexfield security rules to an application responsibility.

After you assign or change your security rules, you and your users must either change responsibilities or exit from your application and re–sign on in order for your changes to take effect. See: Overview of Flexfield Value Security: page 5 – 9.

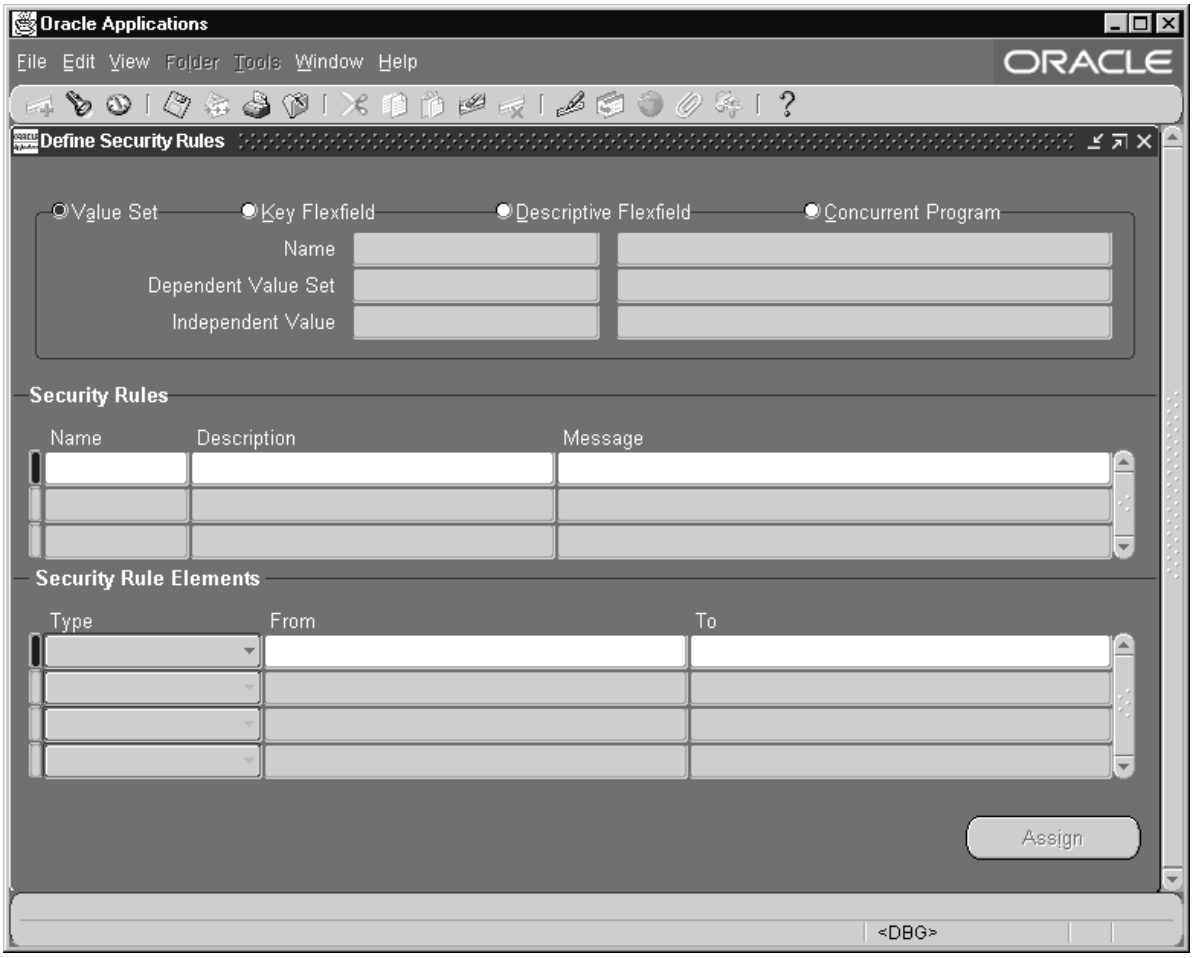
Tasks

Defining Security Rules: page 5 – 19

Defining Security Rule Elements: page 5 – 20

Assigning Security Rules: page 5 – 21

Defining Security Rules



▶ **To define security rules:**

1. Navigate to Define Security Rules window.
2. In the Segment Values block, identify the value set to which your values belong. You can identify your value set or by the flexfield segment or concurrent program parameter that uses the value set.
3. In the Security Rule region, enter a name and description for your security rule.

4. Enter a message for this security rule. This message appears automatically whenever a user enters a segment value that violates your security rule.
5. Define the security rule elements that make up your rule. See: Defining Security Rule Elements: page 5 – 20.
6. Save your changes.

Defining Security Rule Elements

You define a security rule element by specifying a value range that includes both a low and high value for your segment. A security rule element applies to all segment values included in the value range you specify.

You identify each security rule element as either Include or Exclude, where Include includes all values in the specified range, and Exclude excludes all values in the specified range. Every rule must have at least one Include rule element, since a rule automatically excludes all values unless you specifically include them. Exclude rule elements override Include rule elements.

You should always include any default values you use in your segments or dependent value sets. If the default value is secured, the flexfield window erases it from the segment as the window opens, and the user must enter a value manually.

If you want to specify a single value to include or exclude, enter the same value in both the Low and High fields.

Minimum and maximum possible values

The lowest and highest possible values in a range depend on the format type of your value set. For example, you might create a value set with format type of Number where the user can enter only the values between 0 and 100. Or, you might create a value set with format type of Standard Date where the user can enter only dates for the current year (a range of 01–JAN–2002 to 31–DEC–2002, for example). For example, if your format type is Char, then 1000 is less than 110, but if your format type is Number, 110 is less than 1000. The lowest and highest possible values in a range are also operating system dependent. When you use a Char format type for most platforms (ASCII platforms), numeric characters are ”less” than alphabetic characters (that is, 9 is less than A), but for some platforms (EBCDIC platforms) numeric characters are ”greater” than alphabetic characters (that is, Z is

less than 0). The window gives you an error message if you specify a larger minimum value than your maximum value for your platform.

If you leave the low segment blank, the minimum value for this range is automatically the smallest value possible for your segment's value set. For example, if the value set maximum size is 3 and Right–justify and Zero–fill Numbers is checked, the minimum value is 000. However, if the value set has a maximum size of 3, has Numbers Only checked and Right–justify and Zero–fill Numbers unchecked, the minimum value is 0.

If you leave the high segment blank, the maximum value for this range is automatically the largest value possible for your segment's value set. For example, if the value set maximum size is 3 and Numbers Only is checked, the maximum value is 999. However, if the value set maximum size is 5, and Numbers Only is checked, the maximum value is 99999.

Suggestion: Use blank segments to specify the minimum or maximum possible values for a range to avoid having operating system dependent rules.

Note that security rules do not check or affect a blank segment value (null value).

▶ **To define security rule elements:**

1. In the Security Rule Elements block, select the type of security rule element. Valid types are:

Include	Your user can enter any segment value that falls in the following range.
Exclude	Your user cannot enter any segment value that falls in the following range.

2. Enter the low (From) and high (To) ends of this value range. Your value does not have to be a valid segment value.

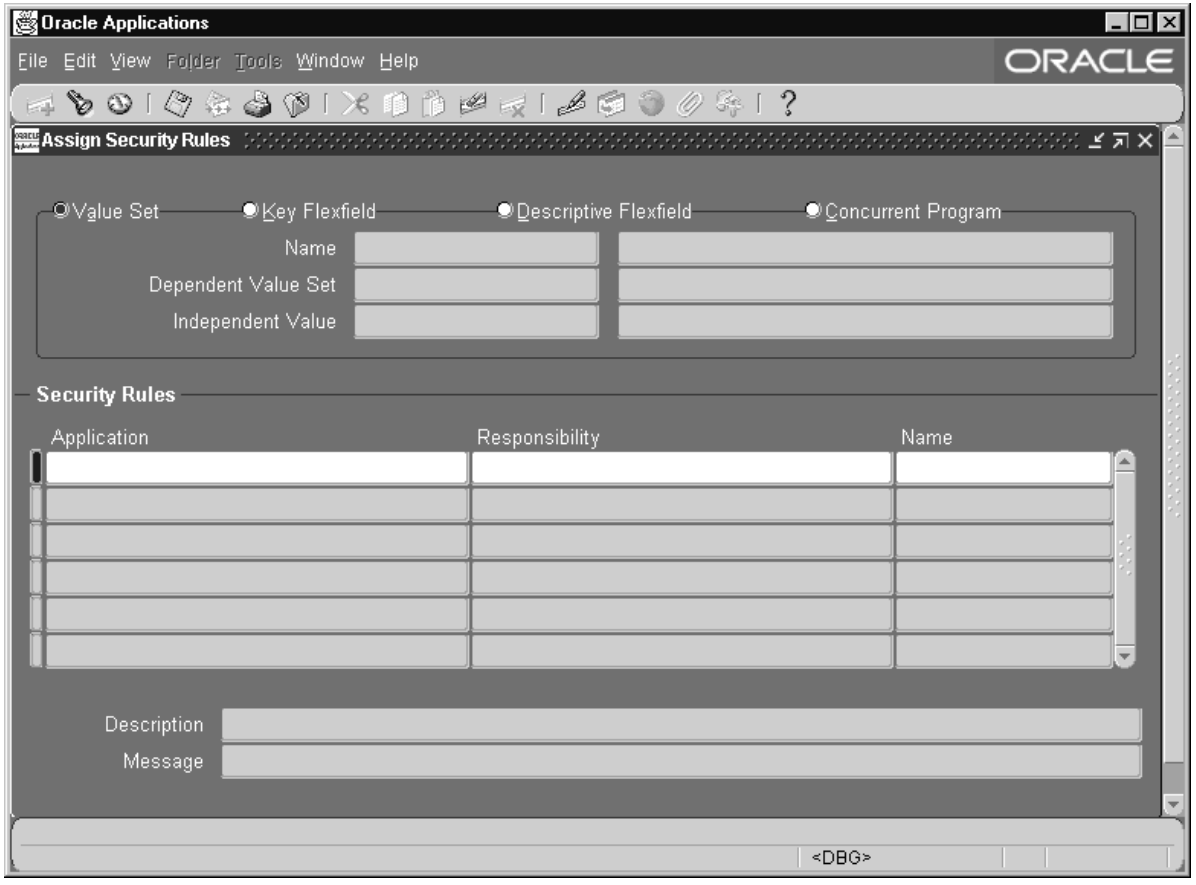
Assigning Security Rules

Prerequisites

❑ Use the Define Security Rules window to define your flexfield security rules. See: Defining Security Rules: page 5 – 19.

▶ **To assign security rules:**

1. Navigate to Assign Security Rules window.



2. In the Assign Security Rules block, identify the value set to which your values belong. You can identify your value set or by the flexfield segment or concurrent program parameter that uses the value set.
3. In the Security Rules block, enter the application and responsibility name that uniquely identifies the responsibility to which you want to assign security rules.
4. Enter the name of a security rule you want to assign to this responsibility.
5. Save your changes.

Cross–Validation Rules

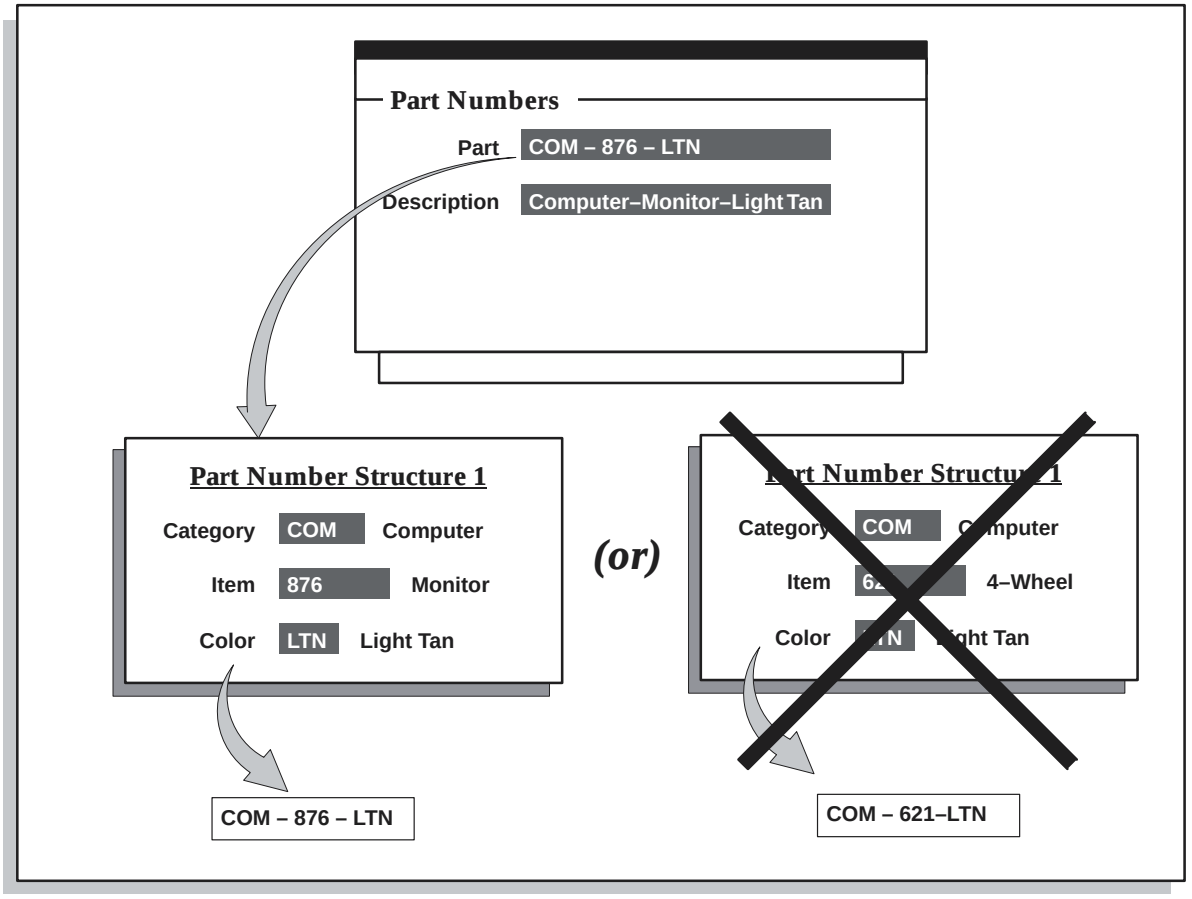
A key flexfield can perform automatic cross–validation of segment values according to rules your organization defines when you customize the key flexfield. You can use cross–validation to closely control the creation of new key flexfield combinations, and you can maintain a consistent and logical set of key flexfield combinations that you need to run your organization.

What is Cross–Validation?

Cross–validation (also known as cross–segment validation) controls the combinations of values you can create when you enter values for key flexfields. A cross–validation rule defines whether a value of a particular segment can be combined with specific values of other segments. Cross–validation is different from segment validation, which controls the values you can enter for a particular segment.

You use cross–validation rules to prevent the creation of combinations that should never exist (combinations with values that should not coexist in the same combination). For example, if your organization manufactures both computer equipment and vehicles such as trucks, you might want to prevent the creation of ”hybrid” part numbers for objects such as ”truck keyboards” or ”CPU headlights”.

Figure 5 – 5



As another example, if you use the Accounting Flexfield, you may decide that all revenue accounts must have a department. Therefore, all your ”revenue” account values (such as all values between 4000 and 5999) must have a corresponding department value other than 000 (which means ”non–specific”).

For example, suppose you have an Accounting Flexfield where you have a Company or Organization segment with two possible values, 01 and 02. You also have a Natural Account segment, with many possible values, but your company policy requires that Company or Organization 01 uses the natural account values 001 to 499 and Company or Organization 02 uses the natural account values 500 to

999. You can create cross–validation rules to ensure that users cannot create a GL account with combinations of values such as 02–342 or 01–750, for example.

How Cross–Validation Works

When a user finishes entering segment values in a flexfield pop–up window, the flexfield checks whether the values make up a valid combination before updating the database. If the user entered an invalid combination, a diagnostic error message appears, and the cursor returns to the first segment assumed to contain an invalid value.

Cross–validation rules control combinations of values within a particular key flexfield structure. Cross–validation applies to combinations users attempt to create using either the combinations form or foreign key forms (using dynamic inserts).

Cross–Validation Rules and Existing Combinations

Cross–validation rules have no effect on combinations that already exist when you define your cross–validation rules.

Suppose you define a new cross–validation rule, but have existing entries in your combinations table that violate the rule. Since the existing combinations pre–date the rule, your flexfield continues to treat them as valid. However, if your end user tries to create a new combination that violates your new rule, your flexfield returns an error message and rejects the combination.

If you want to prevent users from using previously–existing combinations that are no longer valid according to your cross–validation rules, you can always manually disable those combinations using the combinations form. See: Maintaining Your Cross–Validation Rules and Valid Combinations: page 5 – 33.

Dynamic Insertion and Cross–Validation

Your use of cross–validation is separate from (and in addition to) your use of dynamic inserts.

By allowing dynamic inserts, you can let users create new combinations automatically upon entering the combination in a foreign key form (any form other than the combinations form) and in the combinations form itself.

If you want greater control, you can disallow dynamic inserts. You can thus restrict the creation of new combinations to certain authorized people who have access to the combinations form on their menu. You simply turn dynamic insertion off using the Define Key Flexfield Segments form. Depending on the key flexfield you use, you can still create new combinations using one of your product setup forms (the combinations form). For example, if you use the Accounting Flexfield, you can enter new combinations using the Define Accounting Flexfield Combination form.

In either case, however, there is no inherent protection against a user creating an *invalid* new combination. Cross–validation rules ensure that *nobody* can create invalid new combinations from either foreign key forms or the combinations form, regardless of whether you allow dynamic inserts.

As you consider the controls you want over your key flexfield combinations, determine whether you need cross–validation rules at all. To provide an extra level of security, use cross–validation rules even if you turn dynamic insertion off. This allows you to double–check new combinations that even your authorized personnel enter using the combinations form.

See:

Defining Accounts
Oracle [Public Sector] General Ledger User's Guide

Key Flexfield Segments Window: page 2 – 16

Cross–Validation Rules Window: page 5 – 35

Changing your key flexfield structure after defining rules

Changing an existing key flexfield structure may adversely affect the behavior of any cross–validation rules you have for that structure, so you should be sure to manually disable or redefine any cross–validation rules to reflect your changed structure. Flexfield structure changes that make your existing rules invalid include:

- changing the order of segments
- adding a new segment
- disabling a segment
- changing segment lengths

For example, if you change a six–segment structure to contain only five segments, you would not be able to use any new five–segment code combinations since any rules existing for the old six–segment structure would be violated. See: Cross–Validation Rules: page 5 – 23, Key Flexfield Segments Window: page 2 – 16.

Designing Your Cross–Validation Rules

Oracle Applications provides many key flexfields, such as the Accounting Flexfield, Location Flexfield and System Items Flexfield. In this essay, we use the Accounting Flexfield to present suggestions for designing your cross–validation rules, but you can use cross–validation rules for any key flexfield structure that has cross–validation enabled.

You set up cross–validation by specifying rules that describe valid combinations for key flexfields. You can define new cross–validation rules anytime using the Define Cross–Validation Rules form. Your rules are effective only while you have Cross–Validate Multiple Segments set to Yes in the Define Key Flexfield Segments form.

Each cross–validation rule contains one or more rule elements, where each element is a key flexfield range that specifies low and high values for each segment. You identify a rule element as either Include or Exclude. Include means include all values in the specified segment ranges, and Exclude means exclude all values in the specified segment ranges. Every cross–validation rule must contain at least one Include rule element. Exclude rule elements override Include rule elements. See: Key Flexfield Segments: page 2 – 16, Cross–Validation Rules: page 5 – 35.

Determine Your Error Messages

You can define your own error messages for your validation rules. Define error messages to explain errors to users. Your flexfield automatically places the cursor next to the value your user needs to change to correct the error. Define error messages based on the frequency with which key flexfields errors are made.

For example, if you use the Accounting Flexfield, you might have a rule preventing revenue account values (values between 4000 and 9999) with the balance sheet department value 000. An incorrect combination can result from the user entering an incorrect department or an incorrect account. Maybe you intended to enter 100–4500 instead of 000–4500. Or, maybe you intended to enter 000–3500.

If you expect that most of the time the account will be wrong, define an error message such as, "Enter only balance sheet accounts with department 000." If you expect that most of the time the department will be wrong, define an error message such as, "Enter departments other than 000 with revenue accounts." If you expect that either segment is just as likely to be incorrect, define an error message that does not imply a particular segment is in error.

For example, "You have entered an incompatible department/account combination. Please re–enter."

Determine Your Error Segment

Determine in which segment you want to place the cursor when a key flexfield combination fails a validation rule. Choose the segment you feel will most likely be in error. If you have defined a good error message, the message and the segment to which the cursor returns should correspond.

For example, if your account segment is most likely to be in error, define your error message to be, "Please enter only balance sheet accounts with department 000," and specify the cursor to return to the account segment.

If either segment is as likely to be in error, specify the cursor to return to the first of the two segments. If the second segment is actually the one in error, it is more intuitive to move down to a subsequent segment than it is to move back to a previous segment.

Define Simple Rules

Avoid rules that control cross–validation across more than two segments, where possible.

For example, if you use the Accounting Flexfield, you may want to prevent using department 000 with accounts greater than 3999 for all balancing segment values except 99.

While you can define cross–validation rules that span two or more segments, keep in mind that it becomes more difficult to interpret cross–validation error messages and correct invalid key flexfield combinations as your rules encompass more segments.

Using Include and Exclude Ranges

Consider the following basics of cross–validation rules:

- Combinations must pass all cross–validation rules.

- Within each rule, combinations must be in at least one include range.
- Within each rule, combinations cannot be in any exclude ranges.

In summary, a key flexfield value must fall within at least one include range and outside all exclude ranges to pass your validation rule.

Using Include Ranges

Accomplish your control objectives primarily with include ranges when you have a stricter structure for your key flexfield structure. With include ranges, you list valid combinations instead of invalid combinations.

For example, if you use the Accounting Flexfield and want to allow users to enter only certain balancing segment values with certain products or projects, you can enumerate the possibilities:

Include:	**From**	**01–100**
	To	**01–199**
Include:	**From**	**02–200**
	To	**02–399**
Include:	**From**	**03–500**
	To	**03–699**

Using Exclude Ranges

Accomplish your control objectives primarily with exclude ranges when your key flexfield structure is less structured and your key flexfield segments do not have a lot of interdependencies. In this situation, you generally want to accept most combinations. You just want some exceptions to this general rule.

For example, if you use the Accounting Flexfield and want to prevent users from entering balancing segment values 01 and 02 with departments greater than 899, you can specify this exception:

Include:	**From**	**00–000**
	To	**99–999**
Exclude:	**From**	**01–900**
	To	**02–999**

Minimum and maximum possible values

The lowest and highest possible values in a range depend on the format type of your value set. For example, you might create a value set with format type of Number where the user can enter only the values between 0 and 100. Or, you might create a value set with format type of Standard Date where the user can enter only dates for the current year (a range of 01–JAN–2001 to 31–DEC–2001, for example). For example, if your format type is Char, then 1000 is less than 110, but if your format type is Number, 110 is less than 1000. The lowest and highest possible values in a range are also operating system dependent. When you use a Char format type for most platforms (ASCII platforms), numeric characters are ”less” than alphabetic characters (that is, 9 is less than A), but for some platforms (EBCDIC platforms) numeric characters are ”greater” than alphabetic characters (that is, Z is less than 0). The window gives you an error message if you specify a larger minimum value than your maximum value for your platform.

As discussed below, you can use blank segment values in your rules to make rules easier to define and maintain. A blank segment value means you want to include or exclude ”all the way to the end” of the range (either minimum or maximum).

Suggestion: Use blank segments to specify the minimum or maximum possible values for a range to avoid having operating system dependent rules.

Using Blank Segment Values

Blank segment values in your rules make the rules easier to define and maintain. A blank segment value means you want to include or exclude ”all the way to the end” of the range (either minimum or maximum).

If you leave a low segment blank, the minimum value for your Include or Exclude range is automatically the smallest value possible for your segment’s value set. For example, if the value set maximum size is 3 and Right–justify Zero–fill Numbers is set to Yes, the minimum value is 000. However, if the value set maximum size is 3, Alphabetic

Characters is set to No, and Right–justify Zero–fill Numbers is set to No, the minimum value is 0.

If you leave the high segment blank, the maximum value for your Include or Exclude range is automatically the largest value possible for your segment's value set. For example, if the value set maximum size is 3 and Alphabetic Characters is set to No, the maximum value is 999. However, if the value set maximum size is 5, and Alphabetic Characters is set to No, the maximum value is 99999.

Note that a blank segment value (null value) is considered to fall within a range that has one or both ends specified as a blank. However, if each of your segments require a value, you would not be able to create a combination with a blank segment anyhow.

You may use blank minimum or maximum segment values to create cross–validation rules that can test for blank segments (that are not already required to have a value). For example, if you allow a null value for your last optional segment but not the second–to–last optional segment, you would use a blank minimum or maximum value for the last segment but fill in a value (such as 000 or 999) for both the minimum and maximums for the second–to–last optional segment.

Using Blank Values in Your Ranges

You may create cross–validation rules for flexfield structures where you allow users to leave some segments blank (that is, where you set the Required field to No for one or more segments in a flexfield structure using the Define Key Flexfield Segments window). You may also create cross–validation rules for flexfield structures where you do not allow users to leave any segments blank.

Often you want to control the values in just one or two segments, and any valid segment values may be used in the remaining segments. For example, if you have a six–segment Accounting Flexfield of the form 00–000–0000–000–000–0000, you may want to allow (include) all possible combinations where the first segment contains 01 and the second segment contains values between 200 and 299, inclusive. You can specify the minimum and maximum values for each segment as follows (assuming that only numeric characters are allowed for these segments):

Include:	**From**	**01–200–0000–000–000–0000**
	To	**01–299–9999–999–999–9999**

Or, you could use blank values as both the minimum and maximum values for each of the unrestricted segments (the last four segments):

Include:	**From**	**01–200–____–___–___–____**
	To	**01–299–____–___–___–____**

Since the blank values clearly signify the ends of the ranges, you may find them easier to use than explicitly specifying the range ending values. Of course, you can always specify only one blank value in a range if the range has one fixed value:

Include:	**From**	**01–200–2000–___–___–____**
	To	**01–299–____–___–299–____**

Define Multiple Rules

You should use several simple validation rules instead of using one complex rule. Simple validation rules let you provide a more specific error message and return your cursor to the most appropriate key flexfield segment. Simple rules are also easier to maintain over time.

For example, if you use the Accounting Flexfield, you might want users to enter departments 100 to 199 and asset accounts 2000 to 2999 only for balancing segment value 01. While you can accomplish this objective with one rule, you can see that it is more cumbersome:

Include:	**From**	**00–000–0000–000–000–0000**
	To	**99–999–9999–999–999–9999**
Exclude:	**From**	**02–100–2000–000–000–0000**
	To	**99–199–2999–999–999–9999**

Error message: Incorrect department or account with this balancing segment value.

Error segment: Department? Account?

Here's how to express your control objective more clearly using two rules:

Rule #1

Include:	**From**	**00–000–0000–000–000–0000**
	To	**99–999–9999–999–999–9999**
Exclude:	**From**	**02–100–0000–000–000–0000**
	To	**99–199–9999–999–999–9999**

Error message: Please use departments 100–199 only with balancing segment value 01.

Error segment: Department

Rule #2

Include:	**From**	**00–000–0000–000–000–0000**
	To	**99–999–9999–999–999–9999**
Exclude:	**From**	**02–000–2000–000–000–0000**
	To	**99–999–2999–999–999–9999**

Error message: Please use accounts 2000–2999 only with balancing segment value 01.

Error segment: Account

Maintaining Your Cross–Validation Rules and Valid Combinations

Review existing key flexfields when you update your cross–validation rules to maintain consistent validation. Regardless of your current validation rules, Oracle Applications accepts a key flexfield combination if the combination already exists and is enabled. Therefore, to ensure accurate validation, you must review your existing combinations and disable any combinations that do not match the criteria of your new rules.

Suggestion: To keep this type of key flexfield maintenance to a minimum, decide upon your cross–validation rules when you first set up your key flexfield structure.

See: Defining Accounts
Oracle [Public Sector] General Ledger User's Guide

If you want to prevent users from using previously–existing combinations that are no longer valid according to your cross–validation rules, you can always disable those combinations using the combinations form.

Reports

Oracle Applications contains two reports you can use to help maintain a consistent and logical set of rules and key flexfield combinations. The two new flexfield cross–validation reports appear in the System Administration responsibility.

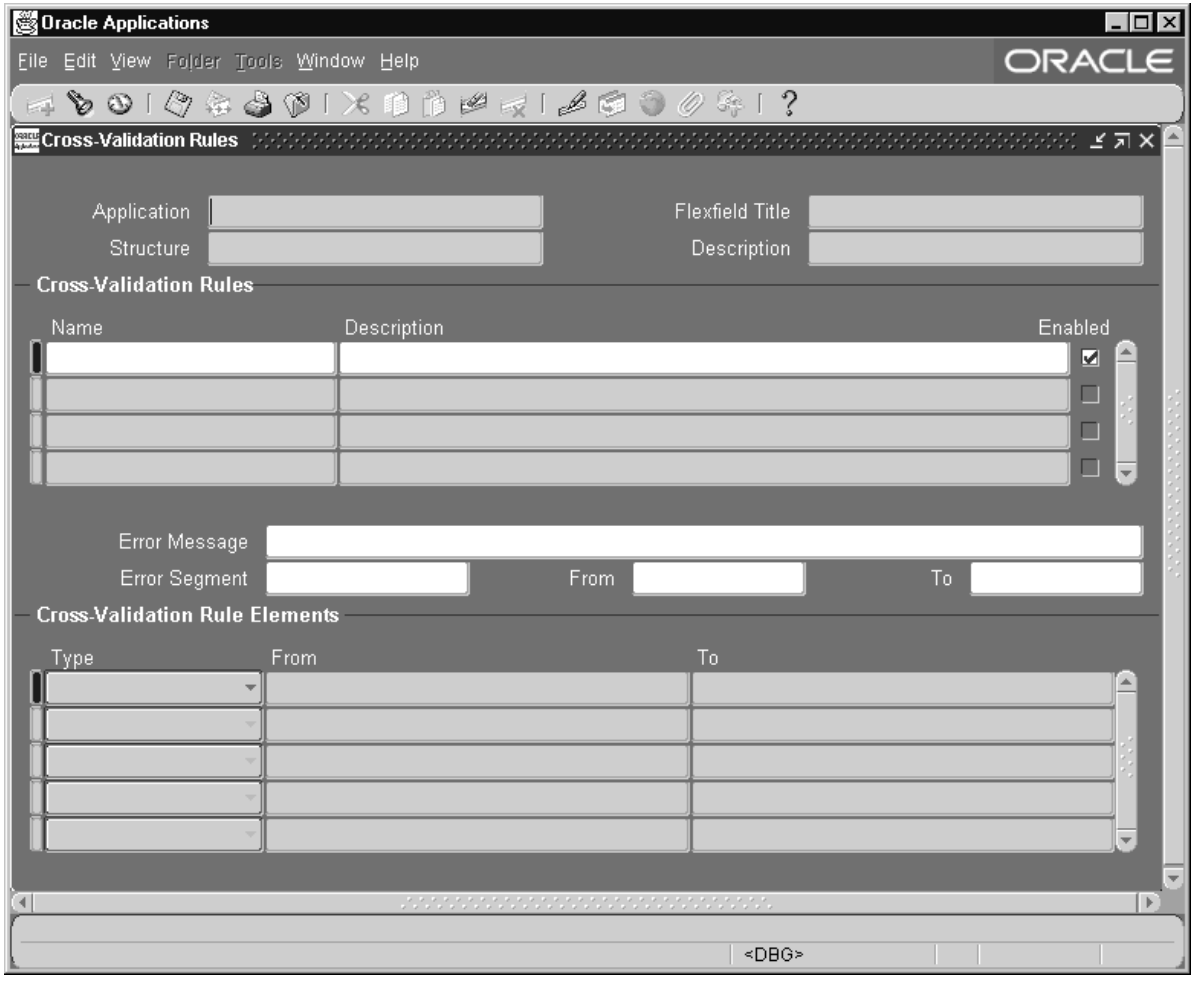
Cross–Validation Rule Violation Report

This report provides a listing of all the previously–created flexfield combinations that violate your cross–validation rules for a given flexfield structure. You can also choose to have the report program actually disable the existing combinations that violate your new rules.

Cross–Validation Rules Listing Report

This report lists all the cross–validation rules that exist for a particular flexfield structure. This is the information you define using the Define Cross–Validation Rules form, presented in a multiple–rule format you can review and keep for your records.

Cross–Validation Rules Window



Your flexfield checks cross–validation rules while attempting to create a new combination of flexfield values (for example, a new Accounting Flexfield combination). Your cross–validation rules have no effect on flexfield combinations that already exist. If you want to disable an existing combination, you must disable that combination specifically using the appropriate window. For example, you can disable an existing Accounting Flexfield combination using the Define Accounting Flexfield Combinations window.

Suggestion: We recommend that you define many rules that each have few rule elements rather than a few rules that each

have many rule elements. The more rules you provide, the more specific you can make your error message text.

Your flexfield checks cross–validation rules only if you set Cross–Validate Multiple Segments to Yes using the Define Key Flexfield Segments window.

If you make changes to your cross–validation rules, you need to either change responsibilities or exit from your application and sign on again in order for the changes to take effect.

Tasks

Defining Cross–validation Rules: page 5 – 36

Defining Cross–validation Rule Elements: page 5 – 37

Defining Cross–validation Rules

Prerequisites

- ❑ Use the Key Flexfield Segments window to define your flexfield structure and segments and specify Yes in the Cross–Validate Multiple Segments field for your flexfield structure.
- ❑ Define your values.

▶ **To define cross–validation rules:**

1. Select the name and structure of your key flexfield for which you wish to define cross–validation rules. Your list only contains structures with the field Cross–Validate Multiple Segments set to Yes on the Key Flexfield Segments window.
2. Enter a unique name and a description for your cross–validation rule.
3. Enter your error message text for this cross–validation rule.

   Your flexfield automatically displays this error message on the message line whenever a new combination of segment values violates your cross–validation rule. You should make your error messages as specific as possible so that your users can correct any errors easily.

4. Enter the name of the segment most likely to have caused this cross–validation rule to fail. Your flexfield leaves the cursor in this segment whenever a new segment combination violates this cross–validation rule to indicate where your user can probably correct the error. If you do not specify an error segment name, your flexfield leaves the cursor in the first segment of the flexfield window following a violation of this rule.
5. If you want to have the rule effective for a limited time, you can enter a start date and / or an end date for the rule. The rule is valid for the time including the From and To dates.
6. Define the cross–validation rule elements that make up your rule. See: Defining Cross–validation Rule Elements: page 5 – 37.
7. Save your changes.

Defining Cross–validation Rule Elements

Use this block to define the cross–validation rule elements that make up your cross–validation rule. You define a cross–validation rule element by specifying a value range that includes both a low and high value for each key segment. A cross–validation rule element applies to all segment values included in the value ranges you specify. You identify each cross–validation rule element as either Include or Exclude, where Include includes all values in the specified ranges, and Exclude excludes all values in the specified ranges. Every rule must have at least one Include rule element, since a rule automatically excludes all values unless you specifically include them. Exclude rule elements override Include rule elements.

Suggestion: We recommend that you define one all–encompassing Include rule element and several restricting Exclude rule elements.

Select the type of cross–validation rule element. Valid types are:

Include	Your user can enter any segment value combinations that fall in the following range.
Exclude	Your user cannot enter any segment value combinations that fall in the following range.

When you enter the From (low) field, this window automatically displays a window that contains a prompt for each segment in your flexfield structure. You enter both the low and high ends of your value range in this window. After you finish entering your ranges, this zone

displays your low segment values in concatenated window in the Low field and displays your high segment values similarly in the High field.

Enter the low end and the high end of your segment combination range. Neither the low nor the high combination has to be a valid key flexfield combination, nor do they need to be made up of valid segment values.

Note that a blank segment value (null value) is considered to fall within a range that has one or both ends specified as a blank. However, if all of your segments require a value, you would not be able to create a combination with a blank segment anyhow.

You may use blank minimum or maximum segment values to create cross–validation rules that can test for blank segments (that are not already required to have a value). For example, if you allow a null value for your last optional segment but not the second–to–last optional segment, you would use a blank minimum or maximum value for the last segment but fill in a value (such as 000 or 999) for both the minimum and maximums for the second–to–last optional segment.

If you want to specify a single combination to include or exclude, enter the same combination in both the Low and High fields.

Disabled rules are ignored when your key flexfield validates a combination of segment values. Deleting the rule has the same effect, but you can re–enable a disabled rule.

CHAPTER

6

Key Flexfields in Oracle Applications

The Oracle Applications products provide many key flexfields as integral parts of the products. This chapter contains tables with basic information for all the key flexfields in Oracle Applications.

Key Flexfields by Flexfield Name

Here is a table listing the key flexfields in Oracle Applications, ordered by the name of the key flexfield.

Name	Code	Owner
Account Aliases	MDSP	Oracle Inventory
Accounting Flexfield	GL#	Oracle General Ledger
Asset Key Flexfield	KEY#	Oracle Assets
Bank Details KeyFlexField	BANK	Oracle Payroll
Category Flexfield	CAT#	Oracle Assets
Cost Allocation Flexfield	COST	Oracle Payroll
Grade Flexfield	GRD	Oracle Human Resources
Item Catalogs	MICG	Oracle Inventory
Item Categories	MCAT	Oracle Inventory
Job Flexfield	JOB	Oracle Human Resources
Location Flexfield	LOC#	Oracle Assets
Oracle Service Item Flexfield	SERV	Oracle Service
People Group Flexfield	GRP	Oracle Payroll
Personal Analysis Flexfield	PEA	Oracle Human Resources
Position Flexfield	POS	Oracle Human Resources
Sales Tax Location Flexfield	MKTS	Oracle Receivables
SalesOrders	RLOC	Oracle Inventory
Soft Coded KeyFlexfield	SCL	Oracle Human Resources
Stock Locators	MTLL	Oracle Inventory
System Items	MSTK	Oracle Inventory
Territory Flexfield	CT#	Oracle Receivables
Training Resources	RES	Oracle Training Administration

Table 6 – 1 (Page 1 of 1)

You use the flexfield code and the owning application to identify a flexfield when you call it from a custom form.

Key Flexfields by Owning Application

Here is a table listing all the key flexfields in Oracle Applications, ordered by the application that ”owns” the key flexfield. Note that other applications may also use a particular flexfield.

Owner	Name	Code
Oracle Assets	Asset Key Flexfield	KEY#
Oracle Assets	Category Flexfield	CAT#
Oracle Assets	Location Flexfield	LOC#
Oracle General Ledger	Accounting Flexfield	GL#
Oracle Human Resources	Grade Flexfield	GRD
Oracle Human Resources	Job Flexfield	JOB
Oracle Human Resources	Personal Analysis Flexfield	PEA
Oracle Human Resources	Position Flexfield	POS
Oracle Human Resources	Soft Coded KeyFlexfield	SCL
Oracle Inventory	Account Aliases	MDSP
Oracle Inventory	Item Catalogs	MICG
Oracle Inventory	Item Categories	MCAT
Oracle Inventory	SalesOrders	RLOC
Oracle Inventory	Stock Locators	MTLL
Oracle Inventory	System Items	MSTK
Oracle Payroll	Bank Details KeyFlexField	BANK
Oracle Payroll	Cost Allocation Flexfield	COST
Oracle Payroll	People Group Flexfield	GRP
Oracle Receivables	Sales Tax Location Flexfield	MKTS
Oracle Receivables	Territory Flexfield	CT#
Oracle Service	Oracle Service Item Flexfield	SERV
Oracle Training Administration	Training Resources	RES

Table 6 – 2 (Page 1 of 1)

Tables of Individual Key Flexfields in Oracle Applications

The following sections contain a table for each key flexfield in the Oracle Applications products. These provide you with useful information, including:

- Which application owns the key flexfield
- The flexfield code (used by forms and routines that call a flexfield)
- The name of the code combinations table
- How many segment columns it has
- The width of the segment columns
- The name of the unique ID column (the CCID column)
- The name of the structure ID column
- Whether it is possible to use dynamic insertion with this key flexfield

Many of these key flexfield sections also contain information on the uses and purpose of the flexfield, as well as suggestions for how you might want to implement it at your site.

Account Aliases

The following table lists details for this key flexfield.

Owner	Oracle Inventory
Flexfield Code	MDSP
Table Name	MTL_GENERIC_DISPOSITIONS
Number of Columns	20
Width of Columns	40
Dynamic Inserts Possible	No
Unique ID Column	DISPOSITION_ID
Structure Column	ORGANIZATION_ID

Table 6 – 3 (Page 1 of 1)

This key flexfield supports only one structure.

Accounting Flexfield

The following table lists details for this key flexfield.

Owner	Oracle General Ledger
Flexfield Code	GL#
Table Name	GL_CODE_COMBINATIONS
Number of Columns	30
Width of Columns	25
Dynamic Inserts Possible	Yes
Unique ID Column	CODE_COMBINATION_ID
Structure Column	CHART_OF_ACCOUNTS_ID

Table 6 – 4 (Page 1 of 1)

The Accounting Flexfield is fully described in the *Oracle General Ledger User's Guide*.

Asset Key Flexfield

The following table lists details for this key flexfield.

Owner	Oracle Assets
Flexfield Code	KEY#
Table Name	FA_ASSET_KEYWORDS
Number of Columns	10
Width of Columns	30
Dynamic Inserts Possible	Yes
Unique ID Column	CODE_COMBINATION_ID
Structure Column	None

Table 6 – 5 (Page 1 of 1)

Oracle Assets uses the asset key flexfield to group your assets by non–financial information. You design your asset key flexfield to record the information you want. Then you group your assets by asset key so you can find them without an asset number.

Warning: Plan your flexfield carefully. Once you have started entering assets using the flexfield, you cannot change it.

Bank Details KeyFlexField

The following table lists details for this key flexfield.

Owner	Oracle Payroll
Flexfield Code	BANK
Table Name	PAY_EXTERNAL_ACCOUNTS
Number of Columns	30
Width of Columns	60
Dynamic Inserts Possible	Yes
Unique ID Column	EXTERNAL_ACCOUNT_ID
Structure Column	ID_FLEX_NUM

Table 6 – 6 (Page 1 of 1)

The Bank Details KeyFlexfield [*sic*] holds legislation specific bank account information. The Bank Details structure that you see is determined by the legislation of your Business Group.

Localization teams determine the data that is held in this flexfield. Each localization team defines a flexfield structure that allows you to record the bank account information relevant to each legislation.

If you are using a legislation for which a Bank KeyFlexfield structure has been defined you should not modify the predefined structure.

Warning: You should not attempt to alter the definitions of the Bank Details Flexfield which are supplied. These definitions are a fundamental part of the package. Any change to these definitions may lead to errors in the operating of the system.

It is possible that Oracle Human Resources will use the other segments of this flexfield in the future. Therefore, you should not try to add other segments to this Flexfield. This may affect your ability to upgrade the system in the future.

Consult your Oracle Human Resources National Supplement for the full definition of your Bank Details Flexfield.

Category Flexfield

The following table lists details for this key flexfield.

Owner	Oracle Assets
Flexfield Code	CAT#
Table Name	FA_CATEGORIES
Number of Columns	7
Width of Columns	30
Dynamic Inserts Possible	No
Unique ID Column	CATEGORY_ID
Structure Column	None

Table 6 – 7 (Page 1 of 1)

Oracle Assets uses the category flexfield to group your assets by financial information. You design your category flexfield to record the information you want. Then you group your assets by category and provide default information that is usually the same for assets in that category.

Warning: Plan your flexfield carefully. Once you have started entering assets using the flexfield, you cannot change it.

Cost Allocation Flexfield

The following table lists details for this key flexfield.

Owner	Oracle Payroll
Flexfield Code	COST
Table Name	PAY_COST_ALLOCATION_KEYFLEX
Number of Columns	30
Width of Columns	60
Dynamic Inserts Possible	Yes
Unique ID Column	COST_ALLOCATION_KEYFLEX_ID
Structure Column	ID_FLEX_NUM

Table 6 – 8 (Page 1 of 1)

You must be able to get information on labor costs from your payrolls, and send this information to other systems. Payroll costs must of course go to the general ledger. Additionally, you may need to send them to labor distribution or project management systems.

The Cost Allocation Flexfield lets you record, accumulate and report your payroll costs in a way which meets the needs of your enterprise.

Grade Flexfield

The following table lists details for this key flexfield.

Owner	Oracle Human Resources
Flexfield Code	GRD
Table Name	PER_GRADE_DEFINITIONS
Number of Columns	30
Width of Columns	60
Dynamic Inserts Possible	Yes
Unique ID Column	GRADE_DEFINITION_ID
Structure Column	ID_FLEX_NUM

Table 6 – 9 (Page 1 of 1)

Grades are used to represent relative status of employees within an enterprise, or work group. They are also used as the basis of many Compensation and Benefit policies.

Item Catalogs

The following table lists details for this key flexfield.

Owner	Oracle Inventory
Flexfield Code	MICG
Table Name	MTL_ITEM_CATALOG_GROUPS
Number of Columns	15
Width of Columns	40
Dynamic Inserts Possible	No
Unique ID Column	ITEM_CATALOG_GROUP_ID
Structure Column	None

Table 6 – 10 (Page 1 of 1)

This key flexfield supports only one structure.

Item Categories

The following table lists details for this key flexfield.

Owner	Oracle Inventory
Flexfield Code	MCAT
Table Name	MTL_CATEGORIES
Number of Columns	20
Width of Columns	40
Dynamic Inserts Possible	No
Unique ID Column	CATEGORY_ID
Structure Column	STRUCTURE_ID

Table 6 – 11 (Page 1 of 1)

You must design and configure your Item Categories Flexfield before you can start defining items since all items must be assigned to categories.

You can define multiple structures for your Item Categories Flexfield, each structure corresponding to a different category grouping scheme. You can then associate these structures with the categories and category sets you define.

Job Flexfield

The following table lists details for this key flexfield.

Owner	Oracle Human Resources
Flexfield Code	JOB
Table Name	PER_JOB_DEFINITIONS
Number of Columns	30
Width of Columns	60
Dynamic Inserts Possible	Yes
Unique ID Column	JOB_DEFINITION_ID
Structure Column	ID_FLEX_NUM

Table 6 – 12 (Page 1 of 1)

The Job is one possible component of the Employee Assignment in Oracle Human Resources. The Job is used to define the working roles which are performed by your employees. Jobs are independent of Organizations. With Organizations and Jobs you can manage employee assignments in which employees commonly move between Organizations but keep the same Job.

You use the Job Flexfield to create Job Names which are a unique combination of segments. You can identify employee groups using the individual segments of the Job whenever you run a report or define a QuickPaint.

Location Flexfield

The following table lists details for this key flexfield.

Owner	Oracle Assets
Flexfield Code	LOC#
Table Name	FA_LOCATIONS
Number of Columns	7
Width of Columns	30
Dynamic Inserts Possible	Yes
Unique ID Column	LOCATION_ID
Structure Column	None

Table 6 – 13 (Page 1 of 1)

Oracle Assets uses the location flexfield to group your assets by physical location. You design your location flexfield to record the information you want. Then you can report on your assets by location. You can also transfer assets that share location information as a group, such as when you move an office to a new location.

Warning: Plan your flexfield carefully. Once you have started entering assets using the flexfield, you cannot change it.

People Group Flexfield

The following table lists details for this key flexfield.

Owner	Oracle Payroll
Flexfield Code	GRP
Table Name	PAY_PEOPLE_GROUPS
Number of Columns	30
Width of Columns	60
Dynamic Inserts Possible	Yes
Unique ID Column	PEOPLE_GROUP_ID
Structure Column	ID_FLEX_NUM

Table 6 – 14 (Page 1 of 1)

The People Group flexfield lets you add your own key information to the Employee Assignment. You use each segment to define the different *groups* of employees which exist within your own enterprise. These may be groups which are not identified by your definitions of other Work Structures.

Personal Analysis Flexfield

The following table lists details for this key flexfield.

Owner	Oracle Human Resources
Flexfield Code	PEA
Table Name	PER_ANALYSIS_CRITERIA
Number of Columns	30
Width of Columns	60
Dynamic Inserts Possible	Yes
Unique ID Column	ANALYSIS_CRITERIA_ID
Structure Column	ID_FLEX_NUM

Table 6 – 15 (Page 1 of 1)

The Personal Analysis Key Flexfield lets you add any number of Special Information Types for people. Each Special Information Type is defined as a separate flexfield structure for the Personal Analysis Flexfield.

Some common types of information you might want to hold are:

- Qualifications
- Language Skills
- Medical Details
- Performance Reviews
- Training Records

Each structure can have up to 30 different segments of information.

See: Personal Information
(Oracle HRMS User's Guide)

Position Flexfield

The following table lists details for this key flexfield.

Owner	Oracle Human Resources
Flexfield Code	POS
Table Name	PER_POSITION_DEFINITIONS
Number of Columns	30
Width of Columns	60
Dynamic Inserts Possible	Yes
Unique ID Column	POSITION_DEFINITION_ID
Structure Column	ID_FLEX_NUM

Table 6 – 16 (Page 1 of 1)

Positions, like Jobs, are used to define employee roles within Oracle Human Resources. Like Jobs, a Position is an optional component of the Employee Assignment. However, unlike Jobs, a Position is defined within a single Organization and belongs to it.

Positions are independent of the employees who are assigned to those positions. You can record and report on information which is directly related to a specific position rather than to the employee.

See: Work Structures
(Oracle HRMS User's Guide)

Sales Orders

The following table lists details for this key flexfield.

Owner	Oracle Inventory
Flexfield Code	MKTS
Table Name	MTL_SALES_ORDERS
Number of Columns	20
Width of Columns	40
Dynamic Inserts Possible	Yes
Unique ID Column	SALES_ORDER_ID
Structure Column	None

Table 6 – 17 (Page 1 of 1)

The Sales Orders Flexfield is a key flexfield used by Oracle Inventory to uniquely identify sales order transactions Oracle Order Management interfaces to Oracle Inventory.

Your Sales Orders Flexfield should be defined as Order Number, Order Type, and Order Source. This combination guarantees each transaction to Inventory is unique.

You must define this flexfield before placing demand or making reservations in Oracle Order Management.

Sales Tax Location Flexfield

The following table lists details for this key flexfield.

Owner	Oracle Receivables
Flexfield Code	RLOC
Table Name	AR_LOCATION_COMBINATIONS
Number of Columns	10
Width of Columns	22
Dynamic Inserts Possible	Yes
Unique ID Column	LOCATION_ID
Structure Column	LOCATION_STRUCTURE_ID

Table 6 – 18 (Page 1 of 1)

The Sales Tax Location Flexfield is used to calculate tax based on different components of your customers' shipping addresses for all addresses in your home country.

Oracle Service Item Flexfield

The following table lists details for this key flexfield.

Owner	Oracle Service
Flexfield Code	SERV
Table Name	MTL_SYSTEM_ITEMS
Number of Columns	20
Width of Columns	40
Dynamic Inserts Possible	No
Unique ID Column	INVENTORY_ITEM_ID
Structure Column	ORGANIZATION_ID

Table 6 – 19 (Page 1 of 1)

The Service Item flexfield uses the same table as the System Item Flexfield. However, you can set up your segments differently with the Service Item Flexfield.

Soft Coded KeyFlexfield

The following table lists details for this key flexfield.

Owner	Oracle Human Resources
Flexfield Code	SCL
Table Name	HR_SOFT_CODING_KEYFLEX
Number of Columns	30
Width of Columns	60
Dynamic Inserts Possible	Yes
Unique ID Column	SOFT_CODING_KEYFLEX_ID
Structure Column	ID_FLEX_NUM

Table 6 – 20 (Page 1 of 1)

The Soft Coded KeyFlexfield holds legislation specific information. The Soft Coded KeyFlexfield structure that a user will see is determined by the legislation of the Business Group.

Localization teams determine the data that is held in this flexfield. Each localization team defines a flexfield structure and uses qualifiers to define the level at which each segment is visible. Segments can be seen at business group, payroll or assignment level. The type of information that is held in this key flexfield varies from legislation to legislation.

If you are using a legislation for which a Soft Coded KeyFlexfield structure has been defined you should not modify the predefined structure.

Stock Locators

The following table lists details for this key flexfield.

Owner	Oracle Inventory
Flexfield Code	MTLL
Table Name	MTL_ITEM_LOCATIONS
Number of Columns	20
Width of Columns	40
Dynamic Inserts Possible	Yes
Unique ID Column	INVENTORY_LOCATION_ID
Structure Column	ORGANIZATION_ID

Table 6 – 21 (Page 1 of 1)

You can use the Stock Locators Flexfield to capture more information about stock locators in inventory. If you do not have Oracle Inventory installed, or none of your items have locator control, it is not necessary to set up this flexfield.

If you keep track of specific locators such as aisle, row, bin indicators for your items, you need to configure your Stock Locators Flexfield and implement locator control in your organization.

This key flexfield supports only one structure.

System Items (Item Flexfield)

The following table lists details for this key flexfield.

Owner	Oracle Inventory
Flexfield Code	MSTK
Table Name	MTL_SYSTEM_ITEMS
Number of Columns	20
Width of Columns	40
Dynamic Inserts Possible	No
Unique ID Column	INVENTORY_ITEM_ID
Structure Column	ORGANIZATION_ID

Table 6 – 22 (Page 1 of 1)

You can use the System Items Flexfield (also called the Item Flexfield) for recording and reporting your item information. You must design and configure your Item Flexfield before you can start defining items.

All Oracle Applications products that reference items share the Item Flexfield and support multiple–segment implementations. However, this flexfield supports only one structure.

Territory Flexfield

The following table lists details for this key flexfield.

Owner	Oracle Receivables
Flexfield Code	CT#
Table Name	RA_TERRITORIES
Number of Columns	20
Width of Columns	25
Dynamic Inserts Possible	Yes
Unique ID Column	TERRITORY_ID
Structure Column	None

Table 6 – 23 (Page 1 of 1)

You can use the Territory Flexfield for recording and customized reporting on your territory information. Territory Flexfields are also displayed in the Transaction Detail and Customer Detail reports in Oracle Receivables.

CHAPTER

7

Standard Request Submission

This chapter contains information on how Standard Request Submission interacts with flexfields. It also contains suggestions for designing a report parameter window for your custom reports and integrating flexfields into your report parameters.

Overview of Flexfields and Standard Request Submission

Standard Request Submission uses a special descriptive flexfield on the Submit Requests window and related windows. This descriptive flexfield provides pop–up windows for users to enter reporting choices such as values they want to report on.

You may want to write a Standard Request Submission report that has several report parameters whose values are chosen by a user at submission time. Since the report parameter pop–up window is a descriptive flexfield, you must set up special descriptive flexfield segments even if your actual report has nothing to do with reporting on flexfield data. These special segments are your report parameters.

Attention: Since report parameters are a special type of descriptive flexfield segment, we use the terms ”report parameters” and ”segments” somewhat interchangeably, especially in descriptions of flexfield setup forms.

While many of the setup steps are similar, such as defining value sets, the Standard Request Submission descriptive flexfield differs from a normal descriptive flexfield in some important ways. The main difference is that you use the Concurrent Programs window to define your segments instead of using the Descriptive Flexfield Segments window. The other differences appear in the ways you define and use value sets, which are often more complex for Standard Request Submission report parameters than they would be for a normal descriptive flexfield.

See:

Concurrent Programs
(Oracle Applications System Administrator’s Guide)

Descriptive Flexfield Segments: page 3 – 31

Warning: You should never change or delete a predefined value set that Oracle Applications supply. Such changes may unpredictably affect the behavior of your application features such as reporting.

This section discusses how you set up report parameter segments to pass values to your report using the Submit Requests form. For a discussion of how you should write your actual report program once you have planned your report parameter pop–up window, see the *Oracle Applications Developer’s Guide*.

Planning Your Report Parameters

As with any flexfield, planning how your flexfield pop–up window should look and behave is the most important step. For Standard Request Submission reports, however, this planning is even more important because the arrangement of your parameters in the pop–up window affects the way parameter values or arguments are passed to your report. You should keep this arrangement in mind as you write your report program.

Simplify Passing Argument Values to Your Reports

Using descriptive flexfield segments as report parameters allows you to provide a very user–friendly report submission window while still passing specific values to your reports. You can use report parameters to ”translate” from end user–oriented values such as an application name (for example, Oracle Order Entry) to an ”ID” value (such as 12345). You can then write your report to use the ID value directly, rather than having to write extra program code to parse the end user terms yourself and translate them to your ID values. You can get most of this information from the Oracle Application Object Library tables, but that involves additional queries and trips to the database tables. You can also avoid the opposite effect using report parameters, that is, you need not force your end users to provide the ID values themselves just to make your program simpler.

Use Hidden Parameters to Simplify End User Report Submission

You can simplify users’ report submission by defining hidden parameters and defaulting values users would otherwise need to enter. For example, some reports might use the current date as a parameter. You can set up a hidden report parameter that defaults to the current date, and your users need not enter the date themselves or even see that parameter. Similarly, you could set up a hidden parameter that defaults to the value of a profile option such as the user’s set of books or organization ID number. You set up default values and hidden parameters when you define your concurrent program and report parameters using the Concurrent Program windows.

See: Define Concurrent Program
(Oracle Applications System Administrator’s Guide)

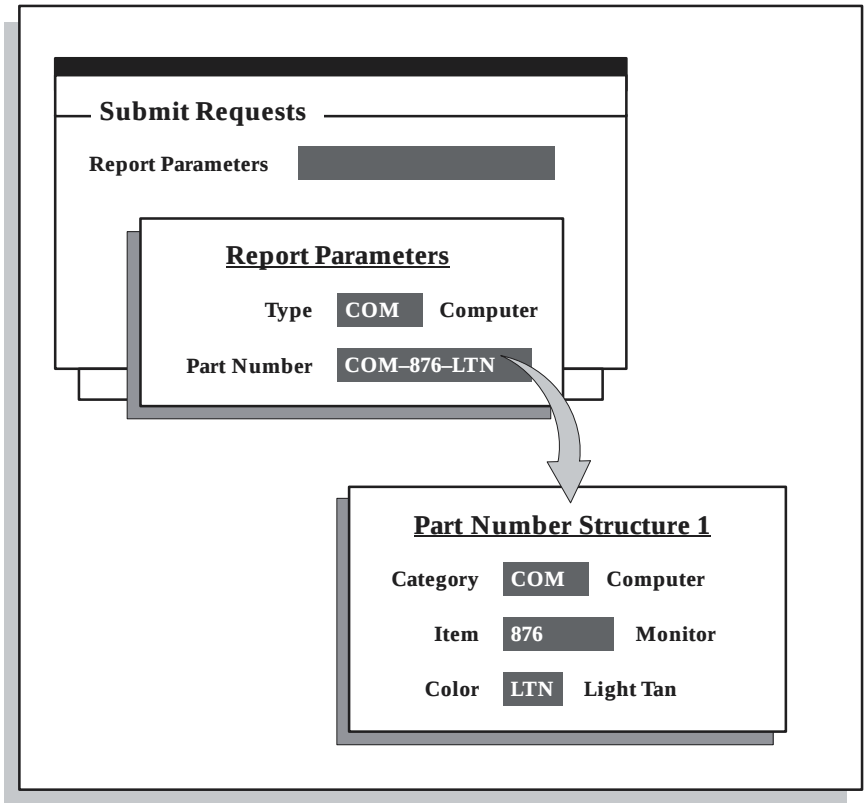
Limit Value Choices Based on Prior Segments

Another way you can simplify users' report submission is by making your parameter values depend on the values of previous parameters. You use the special bind variable $FLEX$ in a value set WHERE clause to make a report parameter depend on a prior report parameter. By carefully planning and defining your value sets, you can make your reports easier to use by presenting only a limited number of appropriate values from which your user can choose. See: Value Set Windows: page 4 – 50.

Using Flexfield Information in Your Report Parameters

Standard Request Submission lets you use value sets to pass key flexfield values and combinations to your reports. You use "Special" validation type value sets to provide a flexfield–within–a–flexfield. That is, you can define a single report parameter (a descriptive flexfield segment) to pop open a flexfield, such as the Accounting Flexfield, where your user can enter flexfield segment values as reporting criteria.

Figure 7 – 1



Using a flexfield pop–up window as a report parameter requires several steps:

- Design your report and report parameter window
- Determine your flexfield routine calls
- Define your special value set
- Build your report program
- Register your concurrent program and define report parameters

You can also use a flexfield range in your report parameters (”Pair” validation instead of Special validation). All the steps are the same except that you define your flexfield call arguments and your value set slightly differently.

Design Your Report and Report Parameter Window

First you design your report and your report parameter window. You must decide what your report requires as parameters from your user, and how those correlate to the way your user submits your report.

For example, if you are writing a report that provides information related to a specific Accounting Flexfield combination or group of Accounting Flexfield combinations, your report probably requires a code combination ID or a concatenated group of segment values. On the other hand, your user doesn't know the CCID number, and instead would prefer to fill in the usual Accounting Flexfield pop–up window. Since you can use value set mechanisms to translate between displayed end user–oriented values and hidden ID values, as well as to translate between flexfield pop–up windows your user sees and the CCID or concatenated values your report requires, you can design your report and its submission interface to satisfy both needs.

Determine Your Flexfield Routine Calls

Determine the flexfield routine calls you need to pop open and validate the appropriate flexfield. These calls are variations of the flexfield calls you code into a custom application form (POPID(R), VALID(R), and so on). You use special arguments to these routines so that they work within your report parameter window. See: Syntax for Key Flexfield Routines: page 9 – 2, Special Validation Value Sets: page 9 – 23.

Define Your Special Value Set

Define your special value set. Note that you define only one value set for your entire flexfield, though that single value set may have more than one flexfield routine call. For example, you might need both a POPID and a VALID call for your flexfield value set. Type in your special flexfield routine calls as functions for the appropriate events in the Special Validation region (same for Pair Validation) of the Define Value Set form. Be sure to type carefully, because it is often difficult to find errors later in the flexfield routine syntax if your report parameter doesn't behave as you expect. See: Value Set Windows: page 4 – 50.

Build Your Report Program

Build your report program to accept the resulting values that it will receive when a user submits your report. Follow the guidelines for building concurrent programs given in the *Oracle Applications Developer's Guide* and the *Oracle Applications System Administrator's Guide.*

Register Your Concurrent Program and Define Report Parameters

Register your concurrent program with Oracle Applications using the Concurrent Programs and Concurrent Program Executable windows, and define your report parameter to use your special value set. Note that you use only one value set per report parameter; one special value set contains the entire flexfield.

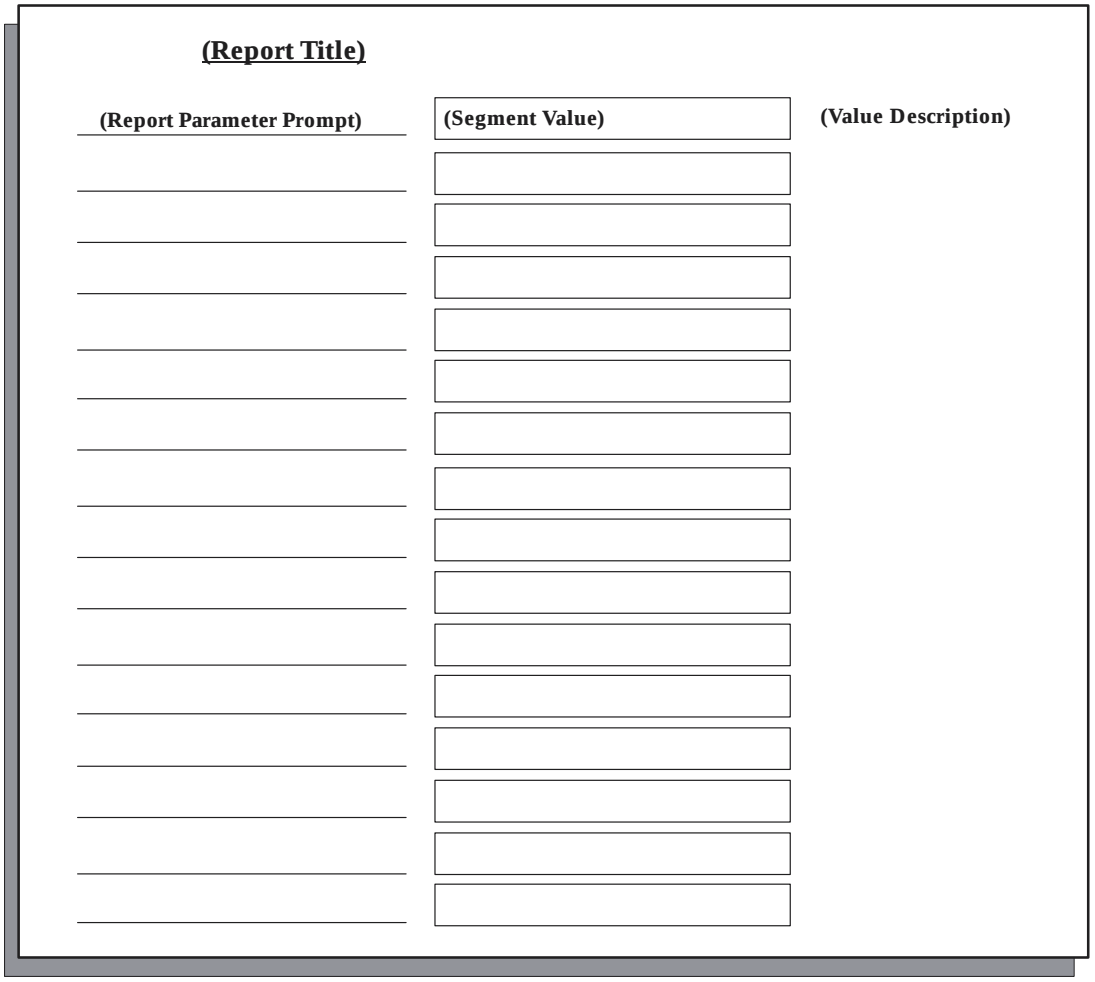
See: Concurrent Programs
(Oracle Applications System Administrator's Guide)

Report Parameter Window Planning Diagrams

You can use photocopies of the following diagrams to help you sketch out your report parameter window structures. Add or subtract segments as appropriate for your programs.

For each report, you can list your report parameter prompts, segment values, and value descriptions.

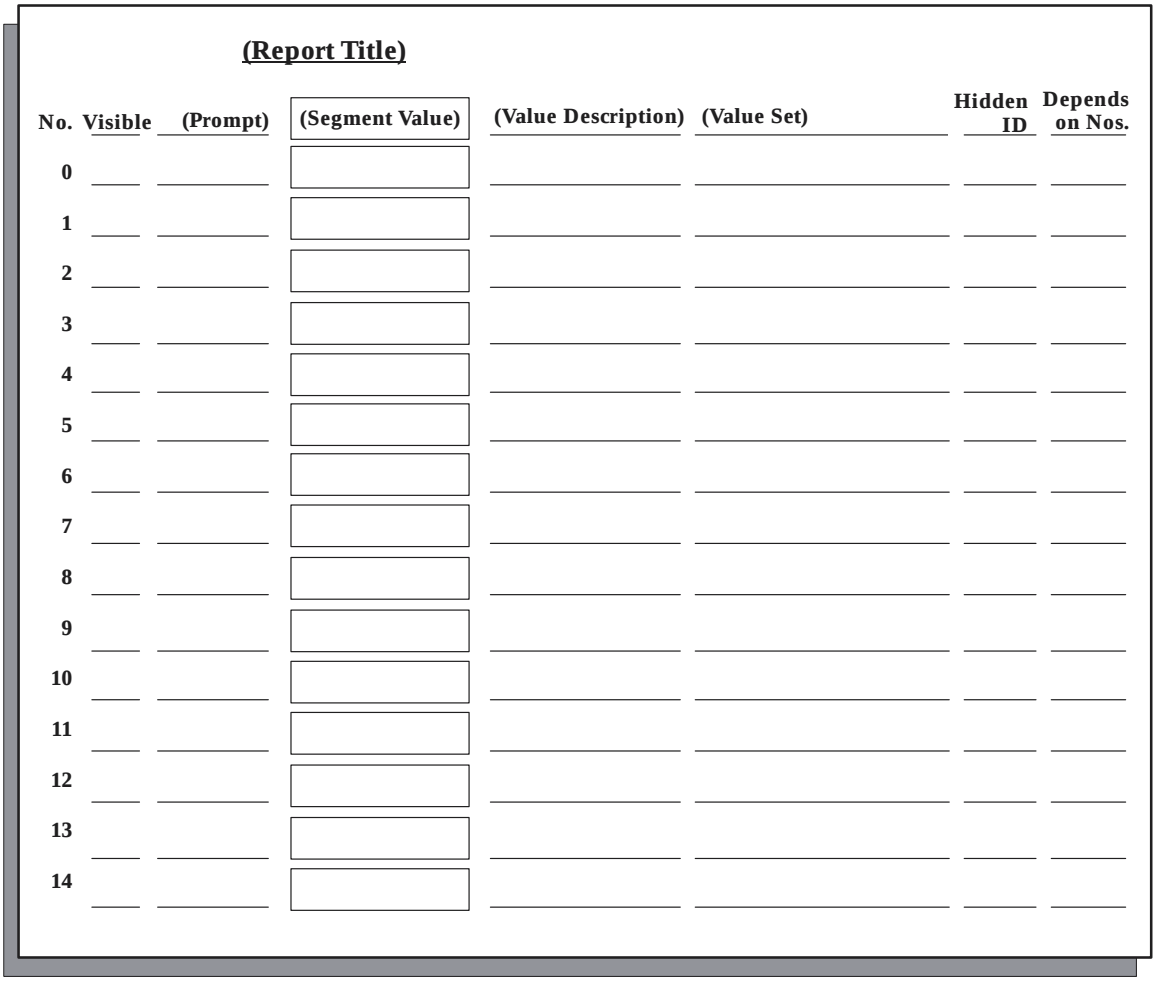
Figure 7 – 2



You can use copies of the following diagram to help you plan more complex report parameter setups.

For example, you can list the segment values, whether they are visible or hidden, their prompts, their value descriptions, their value sets, their hidden IDs, and any dependencies on other parameters.

Figure 7 – 3



(Report Title)

No.	Visible	(Prompt)	(Segment Value)	(Value Description)	(Value Set)	Hidden ID	Depends on Nos.
0							
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							

CHAPTER

8

Reporting on Flexfields Data

This chapter contains information on how you can report on flexfield data using flexfield views. It also contains worked examples of using these views.

This chapter also contains information on how you can report on flexfield data using special flexfield routines with the Oracle Reports product. It also contains worked examples of using these routines.

Overview of Reporting on Flexfields Data

The Oracle Applications products provide many predefined reports that you can use to report on your organization's financial, manufacturing, and human resources data. However, nearly every organization occasionally needs to create custom reports specific to that organization, and for most of the Oracle Applications products, that data includes flexfields data. Oracle Applications provides two primary methods you can use to report on your flexfields data.

Flexfield Views

When you freeze and compile a flexfield structure, Oracle Applications automatically generates one or more database views of the appropriate flexfield tables. These views use column names that match your segment names and make ad hoc reporting simpler. See: Overview of Flexfield Views: page 8 – 3.

Flexfields–Oracle Reports 6.0 API

Oracle Applications provides special flexfield user exits you can call from your custom Oracle Reports reports. See: Oracle Reports 6.0 Flexfield Support API: page 8 – 18.

Overview of Flexfield Views

When you freeze and compile a flexfield structure, Oracle Applications automatically generates one or more database views of the appropriate flexfield tables. These views make *ad hoc* reporting simpler by providing view columns that correspond directly to your flexfield segments. You can use these views for your reporting by joining them to other application tables that contain flexfield–related data such as code combination ID numbers (CCIDs).

The segment columns in the views use the segment names (not the segment prompts) you define using the (Key or Descriptive) Flexfield Segments forms. Each column has a data type that matches the segment's value set format type, regardless of whether the actual segment column matches that data type. Segments that do not use a value set or use a value set with a hidden ID use the same view column type as the underlying table column. See: Key Flexfield Segments: page 2 – 16, Descriptive Flexfield Segments: page 3 – 31.

Key Flexfields

Key Flexfields can have two views into the code combination table:

- Key Flexfield Concatenated Segments View
- Key Flexfield Structure View

Descriptive Flexfields

A descriptive flexfield has one view:

- Descriptive Flexfield View

Key Flexfield Concatenated Segment View

The key flexfield concatenated segment view name is obtained by adding "_KFV" to the code combination table name. The code combination table name is truncated if necessary so that the view name does not exceed the maximum permissible length of SQL object names (30).

The view shows the concatenated segment values of all the structures in the key flexfield as a single column in the view. This column is called "CONCATENATED_SEGMENTS". The view also includes a copy of the structure defining column to differentiate among

combinations for different structures. There exist no columns for individual segments.

The view also contains a column called ”PADDED_CONCATENATED_SEGMENTS”, which is similar to the CONCATENATED_SEGMENTS column except that all numeric segment values are right–justified and all other segments values are left justified (that is, the numeric segment values are left padded with blanks and the other values right padded with blanks to the maximum size specified in the value set definition). You can use this column to order by the concatenated segment values.

For example, if you have a 5–segment code combination where the maximum sizes of the segments are 2, 4, 4, 1 and 4, the values in the two columns would look something like this:

```
CONCATENATED_SEGMENTS      PADDED_CONCATENATED_SEGMENTS
2.20.ABCD.4.5000            2.  20.ABCD.4.5000
32.150.ST.4.300            32. 150.ST  .4.3000
2.1230.1000.6.300           2.1230.1000.6. 300
32.20.TGW.4.300            32.  20.TGW .4.3000
2.30.10.6.300               2.  30.10  .6. 300
```

In this example, the third segment uses character format, so the 10 in the last row is left justified like the alphabetic values for that segment.

Key Flexfield Structure View

For a key flexfield, Oracle Applications generates a separate view for each structure of your key flexfield. You specify the view name for your structure in the Key Flexfield Segments form when you define your key flexfield structure. You must specify a name for each structure for which you want to create a view. If you do not specify a view name, Oracle Applications does not generate a view for that structure.

The key flexfield structure view contains a column for each segment in your flexfield structure, and it uses the segment names, not the segment prompts, as view column names. In the view column names, underscores (_) replace all non–alphanumeric characters. For example, ”Segment Value” becomes ”SEGMENT_VALUE” and ”Manager’s Title” becomes ”MANAGER_S_TITLE”.

If the code combinations table contains columns for segment qualifiers, the segment qualifier columns will use the segment qualifier names as view column names, for example GL_ACCOUNT_TYPE.

In addition to the segment and qualifier columns, the view also contains the code combination ID column, START_DATE_ACTIVE, END_DATE_ACTIVE, SUMMARY_FLAG, ENABLED_FLAG, ROW_ID (not ROWID), and all other columns in the code combination table that are not enabled as flexfield columns. The Structure view does not have the structure defining column as all the information in this view pertains to one structure of the flexfield.

Descriptive Flexfield View

For a descriptive flexfield, Oracle Applications generates a view named *TABLE_NAME*_DFV, where *TABLE_NAME* is the name of the table that contains the descriptive flexfield segment columns. The table name is truncated if necessary so that the view name does not exceed the maximum permissible length of SQL object names (30). For example, the descriptive flexfield that appears on the Segment Values form uses the table FND_FLEX_VALUES, so its resulting view is named FND_FLEX_VALUES_DFV.

The descriptive flexfield view into the underlying table contains a column for each segment in your descriptive flexfield structure. Since this view contains columns for all the segments of all structures of the descriptive flexfield, the view also includes a copy of the structure defining column to differentiate among rows for different structures.

The view uses each structure's segment names as view column names. The context (structure) column uses the context prompt as the view column name (this may be something like "Context_Value" or "Client_Type"). In the view column names, underscores (_) replace all non–alphanumeric characters. For example, "Context Value" becomes "CONTEXT_VALUE" and "Manager's Title" becomes "MANAGER_S_TITLE".

If segments in different structures (contexts) have identical names, these segments share the same view column. If two or more segments share a view column, then these segments should use value sets of the same format type.

The Descriptive Flexfield View also shows the concatenated segment values in the flexfield as a single column in the view. That column also contains the context value as a "segment" value. The CONCATENATED_SEGMENTS column contains global segments (if

any are enabled), the context value, and any context–sensitive segments, in that order. The view does not contain any other columns from the underlying table except a ROW_ID (not ROWID) column, the context column and the columns that are used by enabled segments. The ROW_ID column in the view corresponds to ROWID in the actual table.

Creating a Flexfield View

Oracle Applications creates your flexfield views in the same Oracle ID as the original table. For example, if you have an Oracle General Ledger or Oracle Public Sector General Ledger Oracle ID called GL and you generate a flexfield view for the Accounting Flexfield, your view appears in the GL Oracle ID.

If you have more than one datagroup for your installation of Oracle Applications, then your flexfield view is created in each Oracle ID corresponding to an Oracle Applications product. For example, if you have two datagroups that use different Oracle IDs for your Oracle Payables product, AP1 and AP2, then a view for an Oracle Payables descriptive flexfield would be created in each of the two Oracle IDs. Because the two installations of Oracle Payables share a single descriptive flexfield definition, the structure of the two views would be the same, though the views would contain different data.

Occasionally an Oracle Applications form may use a ”fake” table for its descriptive flexfield. In this case, no view is created. Usually these special descriptive flexfields appear in a form block that contains more than one descriptive flexfield (normally a block may contain only one descriptive flexfield).

If the application to which the flexfield belongs is not an Oracle Applications installed or shared application, the view generator does not create a view. The view generator does not create views for non–Oracle Applications (custom) flexfields.

If the total number of uniquely–named segments (after segment names have been corrected for non–alphanumeric characters) for a descriptive flexfield exceeds 253, Oracle Applications cannot create your descriptive flexfield view and include columns for all of your segments (a view can contain only 256 columns). In this case, the flexfield view generator creates your descriptive flexfield view without columns for the individual segments, but does include the ROW_ID, CONCATENATED_SEGMENTS, and structure defining column (context column).

If you plan to use many segments (over all structures, both global and context–sensitive) for your descriptive flexfield, you should plan to use duplicate segment names. For example, if you define the Asset Category descriptive flexfield in Oracle Assets, you may have many structures (one for each category of asset, such as vehicles) that each have several segments. For this flexfield, you could easily exceed 253 uniquely–named segments.

However, you can intentionally share segment names among context–sensitive structures, and thus stay below 253 uniquely–named segments. For example, you might have a segment in a VEHICLE structure for vehicle type, and you might have a segment in a FURNITURE structure for furniture type. You could name both segments Type, and they would share a column in the view. Since the context (structure) column appears in the view, you can easily differentiate between the two uses of the column. Also, since the view uses the segment name, instead of the segment prompt, you can use different prompts for these segments and avoid confusing users. Be sure that none of the segment names for your context–sensitive segments duplicate the names for any global segments you have, however.

You should always verify that your view generation concurrent request completes successfully. If the concurrent request fails for some reason, such as duplicate column names, the view generator attempts to create a ”null view” so that any grants and synonyms from a previously–existing view are preserved. In these cases, you should identify and fix the problem and then regenerate your view. The report file for your concurrent request contains a description of your view.

Updating a Flexfield View

If you want to recreate a flexfield view, you refreeze and recompile your flexfield structure.

Segment Naming Conventions

The flexfield view generator will use your segment name as a column name and change all spaces and special characters to underscores (_). You should begin your segment name with a letter and avoid using special characters such as +, –, ., !, @, ’, or # as segment names. You should ensure that none of the segment names in your flexfield are the same once the flexfield view generator has changed all spaces and special characters to underscores (_). You should also ensure that

none of the segment names in your flexfield result in the same names as other column names in the code combinations table for the flexfield. For example, the name DESCRIPTION often appears as a column name, so you should avoid naming your segment "Description" (it is not case–sensitive). You should not use a non–alphabetic character as the first character of your segment name, since the first character of a database object name (that is, your view column name) must be a letter. For example, a segment name of "# of dependents" becomes "__of_dependents", which is an illegal column name.

If two or more segment names map to identical view column names, the flexfield view generator will not be able to create your view (it will fail with a "Duplicate Column" error), except in the case of segments belonging to different contexts in a descriptive flexfield. The view generator uses underscores (_) to replace all characters in the segment name that are other than alphanumeric characters and underscores. The segment names in a structure should not be identical after correction for non–alphanumeric characters. For example, the names "Segment 1's Name" and "Segment_1_s_Name" would be the same once the space and apostrophe become underscores (_).

You should avoid using segment names that become SQL reserved words such as NUMBER or DEFAULT.

For descriptive flexfields, the context prompt is used as the view column name for the context column, so you should not create a segment name that results in the same name as the context prompt.

Keep these conventions in mind while naming flexfield segments using the (Key or Descriptive) Flexfield Segments windows. See: Key Flexfield Segments: page 2 – 16, Descriptive Flexfield Segments: page 3 – 31.

Key Flexfields

The segment names in a structure and any qualifier names in the flexfield should not be identical after correction for non–alphanumeric characters.

Since the key flexfield view includes non–flexfield columns, your segment names should not match any other non–flexfield column in the code combination table. For example, a segment named DESCRIPTION and a non–flexfield column by the same name in the code combination table will conflict in the view. If there is a column named "CONCATENATED_SEGMENTS" or "ROW_ID" in the code combination table, the table column by this name would not be

included in the view since these names would conflict (the view generator creates the view columns as usual).

Descriptive Flexfields

The context prompt is used as the view column name for the context column, so the context prompt should not appear as a segment name. The global segment names should be unique. That is, other global segments and context sensitive segments should not have identical view column names.

Using Flexfield Views to Write a Report

When you want to write a report on Oracle Applications data, you typically want to report on information that is not directly related to flexfields, but that includes flexfields data as part of that information.

Example of a Simple SQL*Plus Report for a Key Flexfield

For example, suppose you wanted to write a report of your orders for the month of March. The information you want is about the orders themselves, such as the name of the client who placed the order, the date of the order, the number of objects ordered, and so on. However, part of the order is information about what objects your client ordered, and that information is in the form of a flexfield: your Part Number Key Flexfield.

In this example, your ORDER_LINES table would contain a column for QUANTITY and a column for ORDER_ID. It would also contain a column for the PART_ID (the CCID of your part number), and a column to hold the structure number for the Part Number Key Flexfield (our imaginary key flexfield). It would not contain columns for the individual segments of the key flexfield. However, your report would not be very meaningful to its readers without the segment values for your part number (and your readers are not likely to know the unique ID number associated with each part number flexfield combination). You need a way to display the part number combinations instead of the unique ID numbers in your report about orders. You use your key flexfield view for this purpose.

Here is a very simplified example of a SQL*Plus query you could write as your report (note that there is no formatting in this example and that the ORDER_ID, ORDER_DATE, and CLIENT_ID columns would print out for every order line):

```
SELECT O.ORDER_ID ORDER, O.CLIENT_ID CLIENT, O.ORDER_DATE,
       L.ORDER_LINE_ID LINE, QUANTITY,
       PN.CONCATENATED_SEGMENTS PART_NO
FROM ORDERS O, ORDER_LINES L, PART_ COMBINATIONS_KFV PN
WHERE O.ORDER_ID = L.ORDER_ID
AND O.ORDER_DATE BETWEEN '28-FEB-1994' AND '01-APR-1994'
AND L.PART_ID = PN.PART_ID
```

The report you would get as a result would be like:

```
ORDER  CLIENT  ORDER_DATE   LINE  QUANTITY  PART_NO
-----  ------  -----------  ----  --------  --------------------
    1  ABC     03-MAR-1994     1        15  PAD-YEL-8.5X11
    1  ABC     03-MAR-1994     2         9  CUT-SCISSOR-7 INCH
    1  ABC     03-MAR-1994     3        23  PEN-BALLPT-BLK
    2  XXYYZZ  14-MAR-1994     1         8  PAPER-COPY-WHT-A4-RM
    3  QRS2    24-MAR-1994     1         3  CUT-SCISSOR-7 INCH
    3  QRS2    24-MAR-1994     2        35  PAD-YEL-8.5X11
    3  QRS2    24-MAR-1994     3        15  PEN-BALLPT-BLU
```

Writing a Report for a Descriptive Flexfield

For a descriptive flexfield, you typically want to report on the information already contained in the descriptive flexfield table, but you want to include concatenated descriptive flexfield segment values in your report instead of individual values, or you want to include information from particular named segments (as opposed to ATTRIBUTEn columns). For these reports, you would use the ROW_ID column in the view to join with the ROWID of the descriptive flexfield base table.

```
SELECT T.VARIOUS_COLUMNS,
       V.CONTEXT_VALUE, V.CONCATENATED_SEGMENTS
FROM BASE_TABLE T, BASE_TABLE_DFV V
WHERE V.ROW_ID = T.ROWID
```

Examples of Flexfield Views

The following pages show examples of views created for the Accounting Flexfield and the Oracle Assets Asset Category Descriptive Flexfield. The columns shown in bold print are columns that particularly pertain to the flexfield itself. You should note the differences between the boldfaced columns in the underlying table and those in its view.

Key Flexfield Views Examples

The following pages show examples of views created for the Accounting Flexfield, which uses the GL_CODE_COMBINATIONS table. The columns shown in bold print are columns that particularly pertain to the flexfield itself. You should note the differences between the boldfaced columns in the underlying table and those in its view. The key flexfield columns in this table include thirty SEGMENTn columns, the CODE_COMBINATION_ID column, and the CHART_OF_ACCOUNTS_ID column (structure column). DETAIL_POSTING_ALLOWED_FLAG, DETAIL_BUDGETING_ALLOWED_FLAG, and ACCOUNT_TYPE are segment qualifier columns for the flexfield. The flexfield also uses ENABLED_FLAG, SUMMARY_FLAG, START_DATE_ACTIVE, END_DATE_ACTIVE to determine the status of a combination.

Note that the GL_CODE_COMBINATIONS table contains columns for the key flexfield, but it also contains many other columns. LAST_UPDATE_DATE and LAST_UPDATED_BY columns provide information for the Who feature. The ATTRIBUTEn and CONTEXT columns belong to a descriptive flexfield, and the SEGMENT_ ATTRIBUTEn columns belong to a special flexfield used by the Oracle Public Sector Financials products. These other columns all appear in your flexfield view because they are not columns used by the Accounting Flexfield directly.

Our example structure for the Accounting Flexfield contains segments for COMPANY, COST_CENTER, REGION, PRODUCT, ACCOUNT, and SUB_ACCOUNT, so those columns appear in the structure view.

Original Key Flexfield Code Combinations Table

```
SQL> DESCRIBE GL_CODE_COMBINATIONS
Name                            Null?    Type
------------------------------ -------- ----
CODE_COMBINATION_ID             NOT NULL NUMBER(15)
LAST_UPDATE_DATE                NOT NULL DATE
LAST_UPDATED_BY                 NOT NULL NUMBER(15)
CHART_OF_ACCOUNTS_ID            NOT NULL NUMBER(15)
DETAIL_POSTING_ALLOWED_FLAG     NOT NULL VARCHAR2(1)
DETAIL_BUDGETING_ALLOWED_FLAG   NOT NULL VARCHAR2(1)
ACCOUNT_TYPE                    NOT NULL VARCHAR2(1)
ENABLED_FLAG                    NOT NULL VARCHAR2(1)
SUMMARY_FLAG                    NOT NULL VARCHAR2(1)
SEGMENT1                                 VARCHAR2(25)
SEGMENT2                                 VARCHAR2(25)
  . . .                                    . . .
SEGMENT29                                VARCHAR2(25)
SEGMENT30                                VARCHAR2(25)
DESCRIPTION                              VARCHAR2(240)
TEMPLATE_ID                              NUMBER(15)
ALLOCATION_CREATE_FLAG                   VARCHAR2(1)
START_DATE_ACTIVE                        DATE
END_DATE_ACTIVE                          DATE
ATTRIBUTE1                               VARCHAR2(150)
ATTRIBUTE2                               VARCHAR2(150)
ATTRIBUTE3                               VARCHAR2(150)
ATTRIBUTE4                               VARCHAR2(150)
ATTRIBUTE5                               VARCHAR2(150)
ATTRIBUTE6                               VARCHAR2(150)
ATTRIBUTE7                               VARCHAR2(150)
ATTRIBUTE8                               VARCHAR2(150)
ATTRIBUTE9                               VARCHAR2(150)
ATTRIBUTE10                              VARCHAR2(150)
CONTEXT                                  VARCHAR2(150)
SEGMENT_ATTRIBUTE1                       VARCHAR2(60)
SEGMENT_ATTRIBUTE2                       VARCHAR2(60)
  . . .                                    . . .
SEGMENT_ATTRIBUTE41                      VARCHAR2(60)
SEGMENT_ATTRIBUTE42                      VARCHAR2(60)
```

View for the Entire Key Flexfield

```
View Name: GL_CODE_COMBINATIONS_KFV
Name                           Null?    Type
------------------------------ -------- ----
ALLOCATION_CREATE_FLAG                  VARCHAR2(1)
ATTRIBUTE1                              VARCHAR2(150)
ATTRIBUTE10                             VARCHAR2(150)
ATTRIBUTE2                              VARCHAR2(150)
ATTRIBUTE3                              VARCHAR2(150)
ATTRIBUTE4                              VARCHAR2(150)
ATTRIBUTE5                              VARCHAR2(150)
ATTRIBUTE6                              VARCHAR2(150)
ATTRIBUTE7                              VARCHAR2(150)
ATTRIBUTE8                              VARCHAR2(150)
ATTRIBUTE9                              VARCHAR2(150)
CHART_OF_ACCOUNTS_ID           NOT NULL NUMBER(22)
CODE_COMBINATION_ID            NOT NULL NUMBER(22)
CONCATENATED_SEGMENTS                   VARCHAR2(155)
PADDED_CONCATENATED_SEGMENTS            VARCHAR2(155)
CONTEXT                                 VARCHAR2(150)
DESCRIPTION                             VARCHAR2(240)
DETAIL_BUDGETING_ALLOWED       NOT NULL VARCHAR2(1)
DETAIL_POSTING_ALLOWED         NOT NULL VARCHAR2(1)
ENABLED_FLAG                   NOT NULL VARCHAR2(1)
END_DATE_ACTIVE                         DATE
GL_ACCOUNT_TYPE                NOT NULL VARCHAR2(1)
LAST_UPDATED_BY                NOT NULL NUMBER(22)
LAST_UPDATE_DATE               NOT NULL DATE
ROW_ID                                  ROWID
SEGMENT_ATTRIBUTE1                      VARCHAR2(60)
SEGMENT_ATTRIBUTE2                      VARCHAR2(60)
  . . .                                    . . .
SEGMENT_ATTRIBUTE41                     VARCHAR2(60)
SEGMENT_ATTRIBUTE42                     VARCHAR2(60)
START_DATE_ACTIVE                       DATE
SUMMARY_FLAG                   NOT NULL VARCHAR2(1)
TEMPLATE_ID                             NUMBER(22)
```

View for a Key Flexfield Structure

```
View Name: GL_AFF_STD_VIEW
Name                           Null?    Type
------------------------------ -------- ----
ACCOUNT                                 VARCHAR2(25)
ALLOCATION_CREATE_FLAG                  VARCHAR2(1)
ATTRIBUTE1                              VARCHAR2(150)
ATTRIBUTE10                             VARCHAR2(150)
ATTRIBUTE2                              VARCHAR2(150)
ATTRIBUTE3                              VARCHAR2(150)
ATTRIBUTE4                              VARCHAR2(150)
ATTRIBUTE5                              VARCHAR2(150)
ATTRIBUTE6                              VARCHAR2(150)
ATTRIBUTE7                              VARCHAR2(150)
ATTRIBUTE8                              VARCHAR2(150)
ATTRIBUTE9                              VARCHAR2(150)
CODE_COMBINATION_ID            NOT NULL NUMBER(22)
COMPANY                                 VARCHAR2(25)
CONTEXT                                 VARCHAR2(150)
COST_CENTER                             VARCHAR2(25)
DESCRIPTION                             VARCHAR2(240)
DETAIL_BUDGETING_ALLOWED       NOT NULL VARCHAR2(1)
DETAIL_POSTING_ALLOWED         NOT NULL VARCHAR2(1)
ENABLED_FLAG                   NOT NULL VARCHAR2(1)
END_DATE_ACTIVE                         DATE
GL_ACCOUNT_TYPE                NOT NULL VARCHAR2(1)
LAST_UPDATED_BY                NOT NULL NUMBER(22)
LAST_UPDATE_DATE               NOT NULL DATE
PRODUCT                                 VARCHAR2(25)
REGION                                  VARCHAR2(25)
ROW_ID                                  ROWID
SEGMENT_ATTRIBUTE1                      VARCHAR2(60)
SEGMENT_ATTRIBUTE2                      VARCHAR2(60)
  . . .                                    . . .
SEGMENT_ATTRIBUTE41                     VARCHAR2(60)
SEGMENT_ATTRIBUTE42                     VARCHAR2(60)
START_DATE_ACTIVE                       DATE
SUB_ACCOUNT                             VARCHAR2(25)
SUMMARY_FLAG                   NOT NULL VARCHAR2(1)
TEMPLATE_ID                             NUMBER(22)
```

Descriptive Flexfield View Example

Here is an example view and report created for the Oracle Assets Asset Category Descriptive Flexfield, which uses the table FA_ADDITIONS. The columns shown in bold print are columns that particularly pertain

to the flexfield itself. You should note the differences between the boldfaced columns in the underlying table and those in its view. The descriptive flexfield columns in this table include the ATTRIBUTEn columns and the CONTEXT column (structure column).

Original Underlying Descriptive Flexfield Table

```
SQL> describe FA_ADDITIONS
Name                            Null?    Type
------------------------------- -------- ----
ASSET_ID                        NOT NULL NUMBER(15)
ASSET_NUMBER                    NOT NULL VARCHAR2(15)
ASSET_KEY_CCID                           NUMBER(15)
CURRENT_UNITS                   NOT NULL NUMBER(4)
ASSET_TYPE                      NOT NULL VARCHAR2(11)
TAG_NUMBER                               VARCHAR2(15)
DESCRIPTION                     NOT NULL VARCHAR2(80)
ASSET_CATEGORY_ID               NOT NULL NUMBER(15)
PARENT_ASSET_ID                          NUMBER(15)
MANUFACTURER_NAME                        VARCHAR2(30)
SERIAL_NUMBER                            VARCHAR2(35)
MODEL_NUMBER                             VARCHAR2(40)
PROPERTY_TYPE_CODE                       VARCHAR2(10)
PROPERTY_1245_1250_CODE                  VARCHAR2(4)
IN_USE_FLAG                     NOT NULL VARCHAR2(3)
OWNED_LEASED                    NOT NULL VARCHAR2(6)
NEW_USED                        NOT NULL VARCHAR2(4)
UNIT_ADJUSTMENT_FLAG            NOT NULL VARCHAR2(3)
ADD_COST_JE_FLAG                NOT NULL VARCHAR2(3)
ATTRIBUTE1                               VARCHAR2(150)
ATTRIBUTE2                               VARCHAR2(150)
  . . .                                    . . .
ATTRIBUTE29                              VARCHAR2(150)
ATTRIBUTE30                              VARCHAR2(150)
ATTRIBUTE_CATEGORY_CODE         NOT NULL VARCHAR2(210)
CONTEXT                                  VARCHAR2(210)
LEASE_ID                                 NUMBER(15)
LAST_UPDATE_DATE                NOT NULL DATE
LAST_UPDATED_BY                 NOT NULL NUMBER(15)
CREATED_BY                               NUMBER(15)
CREATION_DATE                            DATE
LAST_UPDATE_LOGIN                        NUMBER(15)
```

This descriptive flexfield has three context–sensitive structures: VEHICLE.OWNSTD, VEHICLE.HEAVY, and BUILDING.OFFICE. The BUILDING.OFFICE structure has two segments, square footage and insurer. The VEHICLE.OWNSTD structure has five segments, as

shown. The VEHICLE.HEAVY structure has five segments as well, square footage cargo, number of axles, transmission type, insurance company, and insurance policy number. The two VEHICLE structures share the same segment name for the insurance company segment.

The resulting view contains a total of eleven segment columns, rather than twelve, for the three structures. The column CONTEXT_VALUE in the view corresponds to the column CONTEXT in the table (the context field prompt defined in the Descriptive Flexfield Segments window is "Context Value"). See: Descriptive Flexfield Segments: page 3 – 31.

Descriptive Flexfield View

```
SQL> describe FA_ADDITIONS_DFV
Name                            Null?    Type
------------------------------- -------- ----
ROW_ID                                   ROWID
CONTEXT_VALUE                            VARCHAR2(210)
SQUARE_FOOTAGE                           NUMBER
INSURER                                  VARCHAR2(150)
LICENSE_NUMBER                           VARCHAR2(150)
INSURANCE_COMPANY                        VARCHAR2(150)
INSURANCE_POLICY_NUMBER                  VARCHAR2(150)
SQ_FOOTAGE_CARGO                         NUMBER
NUMBER_OF_AXLES                          NUMBER
TRANSMISSION_TYPE                        VARCHAR2(150)
LICENSE_RENEWAL_DATE                     DATE
POLICY_RENEWAL_DATE                      DATE
POLICY_NUMBER                            VARCHAR2(150)
CONCATENATED_SEGMENTS                    VARCHAR2(1116)
```

Example of Reporting from a Descriptive Flexfield View

Here is a simple example of selecting some data from the table and its corresponding view.

```
SQL> select ADD.ASSET_NUMBER ASSET, ADD.DESCRIPTION,
            CONTEXT_VALUE, CONCATENATED_SEGMENTS
     from FA_ADDITIONS ADD, FA_ADDITIONS_DFV
     where ADD.rowid = ROW_ID;
```

Note that in this simple report, the structure name (BUILDING.OFFICE, VEHICLE.HEAVY, and VEHICLE.OWNSTD) appears in two columns: CONTEXT_VALUE (the structure column) and in the CONCATENATED_SEGMENTS column as the first

”segment” value (the context value appears first because there are no enabled global segments). Some context values do not have any enabled segments, so the CONCATENATED_SEGMENTS column is empty for those assets. Some assets, such as asset number 363, while they belong to structures with enabled segments, do not have values filled in for the descriptive flexfield. For those assets, the CONCATENATED_ SEGMENTS column contains the structure name and several periods (segment separators) that designate empty segment values.

ASSET	DESCRIPTION	CONTEXT_VALUE	CONCATENATED_SEGMENTS
334	Sales Vehicles	VEHICLE.LEASESTD	VEHICLE.LEASESTD.....
363	Management Vehicles	VEHICLE.OWNSTD	VEHICLE.OWNSTD.....
760	STANDARD VEHICLE	VEHICLE.OWNSTD	VEHICLE.OWNSTD.2FKA334.10-MAR-94. ALLSTATE.C-34879.21-SEP-93
325	Mahogany Desk	FURNITURE.DESKS	
343	Paris Sales Building	BUILDING.OFFICE	BUILDING.OFFICE.39200.Prudential
346	Paris Storage Building	BUILDING.STORAGE	BUILDING.STORAGE..
352	Desk Phone	COMM.PHONE	
315	486 PC w/20MB Memory	COMPUTER.COMPUTER	
340	9600 Baud Modem	COMPUTER.NETWORK	
365	4 Drawer File Cabinet	FURNITURE.CABINETS	
369	Management Vehicles	VEHICLE.OWNSTD	VEHICLE.OWNSTD.2FMA934.10-MAR-94. ALLSTATE.C-34878.21-SEP-93
348	Stuttgart Sales Building	BUILDING.OFFICE	BUILDING.OFFICE..
351	Stuttgart Storage Building	BUILDING.STORAGE	BUILDING.STORAGE..
338	Laptop Computer	COMPUTER.COMPUTER	
339	Color Monitor	COMPUTER.COMPUTER	
332	Sales Vehicles	VEHICLE.LEASESTD	VEHICLE.LEASESTD.....
333	Management Vehicles	VEHICLE.OWNSTD	VEHICLE.OWNSTD.2FOB834.10-MAR-94. ALLSTATE.C-34865.21-SEP-93
335	Management Vehicles	VEHICLE.OWNSTD	VEHICLE.OWNSTD.....
347	Stuttgart Sales Building	BUILDING.OFFICE	BUILDING.OFFICE..
310	4 Drawer File Cabinet	FURNITURE.CABINETS	
311	High-back Office Chair	FURNITURE.CHAIRS	
312	Conference Room Desk	FURNITURE.DESKS	
292	Management Vehicles	VEHICLE.OWNLUXURY	VEHICLE.OWNLUXURY.....
298	Management Vehicles	VEHICLE.OWNSTD	VEHICLE.OWNSTD.....
283	Flat Bed Trucks	VEHICLE.HEAVY	VEHICLE.HEAVY.2FOB837.ALLSTATE. C-34065.200.5-Speed Manual
276	Covered Trailers	VEHICLE.HEAVY	VEHICLE.HEAVY.2FOX537.ALLSTATE. C-34465.100.
157	Scramento Open Space	LAND.OPEN	
69	Conference Room Phone	COMM.PHONE	
21	Austin Manufacturing Building	BUILDING.MFG	BUILDING.MFG.60000.Prudential
43	New York Sales Building	BUILDING.OFFICE	BUILDING.OFFICE..
46	Sacramento HQ Building	BUILDING.OFFICE	BUILDING.OFFICE.78300.Fidelity Mutual
47	Austin Office Building	BUILDING.OFFICE	BUILDING.OFFICE.90000.Prudential
58	Austin Storage Building	BUILDING.STORAGE	BUILDING.STORAGE..
59	Sacramento Storage Building	BUILDING.STORAGE	BUILDING.STORAGE.85000.Fidelity Mutual

Oracle Reports 6.0 Flexfield Support API

Using Oracle Applications flexfields routines with Oracle Reports, you can build reports that display flexfields data easily and in a number of ways:

- Display any individual segment value, prompt, or description.
- Display segment values, prompts, or descriptions from multiple flexfield structures (or contexts) in the same report.
- Display segment values, prompts, or descriptions from different flexfields in the same report.
- Display two or more flexfield segment values, prompts, or descriptions, concatenated with delimiters, in the correct order. This includes description information for dependent, independent, and table validated segments.
- Restrict output based upon a flexfield range (low and high values).
- Prevent reporting on flexfield segments and values that users do not have access to (flexfield value security).
- Specify order by, group by, and where constraints using one or more, or all segment columns.

General Methodology

You use a two step method to report on flexfield values. The first step creates the appropriate SQL statement dynamically based upon the user's flexfield. The output of the first step is used as input to the second step. The second step formats this raw data for display.

Step 1 (Construction):

The first step requires you to include one or more lexical parameters (Oracle Reports variables that can be changed at runtime) in your SQL statement. You call the user exit FND FLEXSQL with different arguments to specify that part of the query you would like to build. The user exit retrieves the appropriate column names (SQL fragment) and inserts it into the lexical parameter at runtime before the SQL query is executed. The query then returns site– and runtime–specific flexfield information. For example, suppose you have the following query:

```
SELECT &LEXICAL1 alias, column
FROM table
WHERE &LEXICAL2
```

The preliminary calls to FND FLEXSQL replace values of LEXICAL1 and LEXICAL2 at execution time with the SQL fragments. For example, LEXICAL1 becomes ”SEGMENT1||'\n'||SEGMENT2” and LEXICAL2 becomes ”SEGMENT1 < 2” (assuming the user’s flexfield is made up of two segments and the user requested that the segment value of SEGMENT1 be less than 2). The actual executed SQL query might be:

```
SELECT SEGMENT1||'\n'||SEGMENT2 alias, column
FROM table
WHERE SEGMENT1 < 2
```

The SQL statement for a user with a different flexfield structure might be:

```
SELECT SEGMENT5||'\n'||SEGMENT3||'\n'||SEGMENT8
alias, column
FROM table
WHERE SEGMENT3 < 2
```

With this step you can alter the SELECT, ORDER BY, GROUP BY, or WHERE clause. You use this step to retrieve all the concatenated flexfield segment values to use as input to the user exit FND FLEXIDVAL in step 2 (described below).

You call this user exit once for each lexical parameter you use, and you always call it at least once to get all segments. This raw flexfield information is in an internal format and should never be displayed (especially if the segment uses a ”hidden ID” value set).

Step 2 (Display):

The second step requires you to call another user exit, FND FLEXIDVAL, on a ”post–record” basis. You create a new formula column to contain the flexfield information and include the user exit call in this column. This user exit determines the exact information required for display and populates the column appropriately. By using the flexfield routines the user exit can access any flexfield information. Use this step for getting descriptions, prompts, or values. This step derives the flexfield information from the already selected concatenated values and populates the formula column on a row by row basis.

You call FND FLEXIDVAL once for each record of flexfield segments.

The flexfield user exits for Oracle Reports are similar to their Oracle Application Object Library (using SQL*Forms) counterparts LOADID(R) or LOADDESC and POPID(R) or POPDESC; one to construct or load the values (FLEXSQL), the other to display them (FLEXIDVAL). The token names and meanings are similar.

Basic Implementation Steps

Step 1 Call FND SRWINIT from your Before Report Trigger

You call the user exit FND SRWINIT from your Before Report Trigger. FND SRWINIT fetches concurrent request information and sets up profile options. You must include this step if you use *any* Oracle Application Object Library features in your report (such as concurrent processing).

Step 2 Call FND SRWEXIT from your After Report Trigger

You call the user exit FND SRWEXIT from your After Report Trigger. FND SRWEXIT frees all the memory allocation done in other Oracle Applications user exits. You must include this step if you use *any* Oracle Application Object Library features in your report (such as concurrent processing).

Step 3 Call FND FLEXSQL from the Before Report Trigger

You need to pass the concatenated segment values from the underlying code combinations table to the user exit so that it can display appropriate data and derive any descriptions and values from switched value sets as needed. You get this information by calling the AOL user exit FND FLEXSQL from the Before Report Trigger. This user exit populates the lexical parameter that you specify with the appropriate column names/SQL fragment at run time. You include this lexical parameter in the SELECT clause of your report query. This enables the report itself to retrieve the concatenated flexfield segment values. You call this user exit once for each lexical to be set. You do not display this column in your report. You use this ”hidden field” as input to the FND FLEXIDVAL user exit call. This user exit can also handle multi–structure flexfield reporting by generating a decode on the structure column. If your report query uses table joins, this user exit can prepend your code combination table name alias to the column names it returns.

```
SELECT &LEXICAL alias, column
```

becomes, for example,

```
SELECT SEGMENT1||'\n'||SEGMENT2 alias, column
```

> **Note:** Oracle Reports needs the column alias to keep the name of column fixed for the lexicals in SELECT clauses. Without the alias, Oracle Reports assigns the name of the column as the initial value of the lexical and a discrepancy occurs when the value of the lexical changes at run time.

Step 4 Restrict report data based upon flexfield values

You call the user exit FND FLEXSQL with MODE="WHERE" from the Before Report Trigger. This user exit populates a lexical parameter that you specify with the appropriate SQL fragment at run time. You include this lexical parameter in the WHERE clause of your report query. You call this user exit once for each lexical to be changed. If your report query uses table joins, you can have this user exit prepend your code combination table name alias to the column names it returns.

```
WHERE tax_flag = 'Y' and &LEXICAL < &reportinput
```

becomes, for example,

```
WHERE tax_flag = 'Y' and T1.segment3 < 200
```

The same procedure can be applied for a HAVING clause.

Step 5 Order by flexfield columns

You call the user exit FND FLEXSQL with MODE="ORDER BY" from the Before Report Trigger. This user exit populates the lexical parameter that you specify with the appropriate SQL fragment at run time. You include this lexical parameter in the ORDER BY clause of your report query. You call this user exit once for each lexical to be changed. If your report query uses table joins, you can have this user exit prepend your code combination table name alias to the column names it returns.

```
ORDER BY column1, &LEXICAL
```

becomes, for example,

```
ORDER BY column1, segment1, segment3
```

Step 6 Display flexfield segment values, descriptions, and prompts

Create a Formula Column (an Oracle Reports 6.0 data construct that enables you to call a user exit). Call the user exit FND FLEXIDVAL as

the Formula for this column. This user exit automatically fetches more complicated information such as descriptions and prompts so that you do not have to use complicated table joins to the flexfield tables. Then you create a new field (an Oracle Reports 6.0 construct used to format and display Columns), assign the Formula Column as its source, and add this field to your report using the screen painter. You need to include this field on the same Repeating Frame (an Oracle Reports 6.0 construct found in the screen painter that defines the frequency of data retrieved) as the rest of your data, where data could be actual report data, boilerplate, column headings, etc. The user exit is called and flexfield information retrieved at the frequency of the Repeating Frame that contains your field. In the report data case, the user exit is called and flexfield information retrieved once for every row retrieved with your query.

All flexfield segment values and descriptions are displayed left justified. Segment values are not truncated, that is, the Display Size defined in Define Key Segments screen is ignored. Segment value descriptions are truncated to the description size (if one is displayed) or the concatenated description size (for concatenated segments) defined in the form.

FND FLEXSQL

Call this user exit to create a SQL fragment usable by your report to tailor your SELECT statement that retrieves flexfield values. This fragment allows you to SELECT flexfield values or to create a WHERE, ORDER BY, GROUP BY, or HAVING clause to limit or sort the flexfield values returned by your SELECT statement. You call this user exit once for each fragment you need for your select statement. You define all flexfield columns in your report as type CHARACTER even though your table may use NUMBER or DATE or some other datatype.

Syntax:

```
FND FLEXSQL
CODE="flexfield code"
APPL_SHORT_NAME="application short name"
OUTPUT=":output lexical parameter name"
MODE="{ SELECT | WHERE | HAVING | ORDER BY}"
[DISPLAY="{ALL | flexfield qualifier | segment
   number}"]
```

```
[SHOWDEPSEG="{Y | N}"]
[NUM=":structure defining lexical" |
   MULTINUM="{Y | N}"]
[TABLEALIAS="code combination table alias"]
[OPERATOR="{ = | < | > | <= | >= | != | "||" |
   BETWEEN | QBE}"]
[OPERAND1=":input parameter or value"]
[OPERAND2=":input parameter or value"]
```

Options:

CODE

Specify the flexfield code for this report (for example, GL#). You call FLEXSQL multiple times to set up SQL fragments when reporting on multiple flexfields in one report.

APPL_SHORT_NAME

Specify the short name of the application that owns this flexfield (for example, SQLGL).

OUTPUT

Specify the name of the lexical parameter to store the SQL fragment. You use this lexical later in your report when defining the SQL statement that selects your flexfield values. The datatype of this parameter should be character.

MODE

Specify the mode to use to generate the SQL fragment. Valid modes are:

SELECT Retrieves all segments values in an internal (non–displayable) format.

If you SELECT a flexfield qualifier, and that flexfield segment is a dependent segment, then flexfields automatically selects both the parent segment and the dependent segment. For example, if the qualifier references the Subaccount segment, then both the Account (the parent) and the Subaccount segment columns are retrieved.

Note: You reuse the lexicals you use in the SELECT clause in the GROUP BY clause.

WHERE Restrict the query by specifying constraints on flexfield columns. The fragment returned includes the correct decode statement if you specify MULTINUM.

You should also specify an OPERATOR and OPERANDS.

You can prepend a table alias to the column names using the TABLEALIAS token.

HAVING Same calling procedure and functionality as WHERE.

ORDER BY Order queried information by flexfield columns. The fragment orders your flexfield columns and separates them with a comma. The fragment returned includes the correct decode statement if you specify MULTINUM.

You use the MODE token with the DISPLAY token. The DISPLAY token specifies which segments are included in your SQL fragment in your lexical parameter. For example, if your MODE is SELECT, and you specify DISPLAY="ALL", then your SELECT statement includes all segments of the flexfield. Similarly, if your MODE is WHERE, and you specify DISPLAY="ALL", then your WHERE clause includes all segments. Frequently you would not want all segments in your WHERE clause, since the condition you specify for the WHERE clause in your actual query would then apply to all your segments (for example, if your condition is " = 3", then SEGMENT1, SEGMENT2, ... , SEGMENTn would each have to be equal to 3).

DISPLAY

You use the DISPLAY token with the MODE token. The DISPLAY parameter allows you to specify which segments you want to use. You can specify segments that represent specified flexfield qualifiers or specified segment numbers, where segment numbers are the order in that the segments appear in the flexfield window, not the segment number specified in the Define Key Segments form. Application developers normally use only flexfield qualifiers in the DISPLAY token, whereas users may customize the report and use a DISPLAY token that references a segment number once the flexfield is set up.

The default is ALL, which displays all segments. Alternatively, you can specify a flexfield qualifier name or a segment number.

If you specify a non–unique flexfield qualifier, then the routine returns the first segment with this qualifier that appears in the user's window, not all segments with this qualifier. Only unique segment qualifiers are supported for the WHERE clause.

You can use these parameters as toggle switches by specifying them more than once. For example, if you want to use all but the account segment, you specify:

```
DISPLAY="ALL"
DISPLAY="GL_ACCOUNT"
```

Or, if you want to use all but the first two segments, you specify:

```
DISPLAY="ALL"
DISPLAY="1"
DISPLAY="2"
```

Note that the order in that flexfield column values are used depends on the order in which they appear in the user's window, not the order in which you specify them in the report, nor the order in that they appear in the database table.

SHOWDEPSEG

SHOWDEPSEG="N" disables automatic addition of depended upon segments to the order criteria. The default value is "Y". This token is valid only for MODE="ORDER BY" in FLEXSQL.

NUM or MULTINUM

Specify the name of the lexical or source column that contains the flexfield structure information. If your flexfield uses just one structure, specify NUM only and use a lexical parameter to hold the value. If your flexfield uses multiple structures, specify MULTINUM only and use a source column to hold the value. In this case the user exit builds a decode statement to handle the possible changing of structures mid–report. The default is NUM="101".

TABLEALIAS

Specify the table alias you would like prepended to the column names. You use TABLEALIAS if your SELECT joins to other flexfield tables or uses a self–join.

OPERATOR

Specify an operator to use in the WHERE clause. The operators "= | < | > | <= | >= | != | QBE | BETWEEN" perform lexical comparisons, not numeric comparisons. With QBE (Query By Example) and BETWEEN operators, the user can specify partial flexfield values to match for one or more segments.

For example, if OPERAND1 is "01—CA%–" (assuming a four–segment flexfield with a delimiter of '–'), the first segment must match 01 and the third segment is like 'CA%'. The resulting SQL fragment is:

```
SEGMENT1='01' AND SEGMENT3 LIKE 'CA%'
```

For the BETWEEN operator, if OPERAND1 is "01—CA–" and OPERAND2 is "05—MA–" then the resulting SQL fragment is:

```
(SEGMENT1 BETWEEN '01' AND '05') AND  (SEGMENT3
BETWEEN 'CA' AND 'MA')
```

OPERAND1

Specify an operand to use in the WHERE clause.

OPERAND2

Specify a second operand to use with OPERATOR="BETWEEN".

FND FLEXIDVAL

Call this user exit to populate fields for display. You pass the key flexfields data retrieved by the query into this exit from the formula column. With this exit you display values, descriptions and prompts by passing appropriate token (any one of VALUE, DESCRIPTION, APROMPT or LPROMPT).

Syntax:

```
FND FLEXIDVAL
CODE="flexfield code"
APPL_SHORT_NAME="application short name"
DATA=":source column name"
[NUM=":structure defining source column/lexical"]
[DISPLAY="{ALL|flexfield qualifier|segment number}"]
```

```
[IDISPLAY="{ALL|flexfield qualifier|segment
   number}"]
[SHOWDEPSEG="{Y | N}"]
[VALUE=":output column name"]
[DESCRIPTION=":output column name"]
[APROMPT=":output column name"]
[LPROMPT=":output column name"]
[PADDED_VALUE=":output column name"]
[SECURITY=":column name"]
```

Options:

CODE

Specify the flexfield code for this report (for example, GL#). You call FLEXIDVAL multiple times, using a different CODE, to display information for multiple flexfields in one report.

APPL_SHORT_NAME

Specify the short name of the application that owns this flexfield (for example, SQLGL).

DATA

Specify the name of the field that contains the concatenated flexfield segment values retrieved by your query.

NUM

Specify the name of the source column or parameter that contains the flexfield structure information.

DISPLAY

The DISPLAY parameter allows you to display segments that represent specified flexfield qualifiers or specified segment numbers, where segment numbers are the order in that the segments appear in the flexfield window, not the segment number specified in the Define Key Segments form.

The default is ALL, which displays all segments. Alternatively, you can specify a flexfield qualifier name or a segment number. You can use

these parameters as toggle switches by specifying them more than once. For example, if you to display all but the first segment, you would specify:

```
DISPLAY="ALL"
DISPLAY="1"
```

IDISPLAY

You use this parameter to tell FLEXIDVAL what segments you used in your SELECT clause in the corresponding FLEXSQL call. FLEXIDVAL needs this information to determine the format of raw data retrieved by FLEXSQL. You set IDISPLAY to the same value as your DISPLAY parameter in your FLEXSQL call. The default value is ALL, so if you used DISPLAY="ALL" in FLEXSQL, you do not need to use IDISPLAY here.

SHOWDEPSEG

SHOWDEPSEG="N" disables automatic display of depended upon segments. The default value is Y.

VALUE

Specify the name of the column in which you want to display flexfield values.

DESCRIPTION

Specify the name of the column in which you want to display flexfield descriptions.

APROMPT

Specify the name of the column in which you want to display flexfield above prompts.

LPROMPT

Specify the name of the column in which you want to display flexfield left prompts.

PADDED_VALUE

Specify the name of the column in which you want to display padded flexfield values. The segment values are padded to the segment size with blanks.

SECURITY

Specify the name of the column into which flag ”S” will be placed if the segment values are secured. You then write logic to hide or display values based on this flag. This token is applicable only for segment values and does not apply to description, left prompt or above prompt.

Note: The datatype of the column as specified by VALUE, DESCRIPTION, APROMPT and LPROMPT is CHARACTER.

Oracle Reports and Flexfields Report–Writing Steps

These are the basic steps you use every time you write an Oracle Reports report that accesses flexfields data. This section assumes you already have a thorough knowledge of Oracle Reports. Though these examples contain only the Accounting Flexfield, you can use these methods for any key flexfield.

Step 1 Define your Before Report Trigger (this step is always the same)

You always call FND SRWINIT from the Before Report Trigger:

```
SRW.USER_EXIT('FND SRWINIT');
```

This user exit sets up information for use by flexfields, user profiles, the concurrent manager, and other Oracle Applications features. You must include this step if you use *any* Oracle Application Object Library features in your report (such as concurrent processing).

Step 2 Define your After Report Trigger (this step is always the same)

You always call FND SRWEXIT from the After Report Trigger:

```
SRW.USER_EXIT('FND SRWEXIT');
```

This user exit frees all the memory allocation done in other Oracle Applications user exits. You must include this step if you use *any* Oracle Application Object Library features in your report (such as concurrent processing).

Step 3 Define your required parameters

You define the parameters your report needs by using the Data Model Painter. You use these parameters in the user exit calls and SQL statements.

The following table lists lexical parameters:

Name	Data Type	Width	Initial Value	Notes
P_CONC_REQUEST_ID	Number	15	0	Always create
P_FLEXDATA	Character	approximately 600 (single structure) to 6000 (roughly ten structures)	Long string	Cumulative width more than expected width required to hold data

Table 8 – 1 (Page 1 of 1)

You must always create the P_CONC_REQUEST_ID lexical parameter. ”FND SRWINIT” uses this parameter to retrieve information about the concurrent request that started this report.

The P_FLEXDATA parameter holds the SELECT fragment of the SQL query. The initial value is used to check the validity of a query containing this parameter and to determine the width of the column as specified by the column alias. Its initial value is some string that contains columns with a cumulative width more than the expected width required to hold the data. Make sure the width of this column is sufficient. If there are total 30 segments in the table then the safest initial value will be:

```
(SEGMENT1||'\n'||SEGMENT2||'\n'||SEGMENT3   ...
SEGMENT30)
```

You determine the width by determining the length of that string. That length is roughly the number of characters in the table alias plus the length of the column name, times the number of segments your code combinations table contains, times the number of structures you expect, plus more for delimiter characters as shown in the string above.

Step 4 Define your other parameters

You define the rest of the parameters your report needs by using the Data Model Painter. You use these parameters in the user exit calls and SQL statements.

You can use the following table to guide you in listing your lexical parameters and their requirements:

Name	Data Type	Width	Initial Value	Notes
Other parameters				Parameters specific to your report

Table 8 – 2 (Page 1 of 1)

Step 5 Call FND FLEXSQL from your Before Report Trigger to populate P_FLEXDATA

Next, given that you want to display flexfield information like concatenated values and descriptions, and arrange them in order, you make one call to FND FLEXSQL from the Before Report Trigger specifying the lexical parameters. This call changes the value of the lexical parameter P_FLEXDATA at runtime to the SQL fragment that selects all flexfields value data. For example, the parameter changes to `(SEGMENT1||'\n'||SEGMENT2||'\n'||SEGMENT3||'\n'||SEGMENT4)`.

When you incorporate this lexical parameter into the SELECT clause of a query, it enables the query to return the concatenated segment values that are needed as input to other AOL user exits. These exits then retrieve the actual flexfield information for display purposes.

Here is an example FND FLEXSQL call. Notice that the arguments are very similar to other flexfield routine calls; CODE= and NUM= designate the key flexfield and its structure, respectively. For a report on a different key flexfield (such as the System Items flexfield), you would use a different CODE and NUM.

```
SRW.REFERENCE(:P_STRUCT_NUM);
SRW.USER_EXIT('FND FLEXSQL
CODE="GL#"
NUM=":P_STRUCT_NUM"
APPL_SHORT_NAME="SQLGL"
OUTPUT=":P_FLEXDATA"
MODE="SELECT"
DISPLAY="ALL"');
```

You should always reference any source column / parameter that is used as a source for data retrieval in the user exit. This guarantees that

this column / parameter will contain the latest value and is achieved by ”SRW.REFERENCE” call as shown above.

Step 6 Call FND FLEXSQL from your Before Report Trigger to populate other parameters

You call FND FLEXSQL once for every lexical parameter such as P_WHERE or P_ORDERBY.

Step 7 Define your report query or queries

Define your report query Q_1:

```
SELECT &P_FLEXDATA C_FLEXDATA
FROM CODE_COMBINATIONS_TABLE
WHERE
CODE_COMBINATIONS_TABLE.STRUCTURE_DEFINING_COLUMN
= &P_STRUCT_NUM
```

The query fetches the data required to be used as input for the FLEXIDVAL user exit later.

Note: Always provide a column alias (C_FLEXDATA in this example) in the SELECT clause that is the name of column. This name of the column is required in FND FLEXIDVAL.

When the report runs, the call to FND FLEXSQL fills in the lexical parameters. As a result the second query would look something like:

```
SELECT (SEGMENT1||'-'||SEGMENT2||'-'||SEGMENT3||'-'||
       SEGMENT4) C_FLEXDATA
FROM   CODE_COMBINATIONS_TABLE
WHERE
CODE_COMBINATIONS_TABLE.STRUCTURE_DEFINING_COLUMN =
101
```

Step 8 Create formula columns

Now create columns C_FLEXFIELD and C_DESC_ALL (and any others your report uses) corresponding to the values and descriptions displayed in the report. They all are in group G_1. Be sure to adjust the column width as appropriate for the value the column holds (such as a prompt, which might be as long as 30 characters).

Attention: Use word–wrapping for flexfield columns if necessary to avoid possible truncation of your values. Do this by setting Sizing to Expand.

Step 9 Populate segment values formula column

To retrieve the concatenated flexfield segment values and description, you incorporate the flexfields user exits in these columns. In the column definition of C_FLEXFIELD, you incorporate the FND FLEXIDVAL user exit call in the formula field. You pass the concatenated segments along with other information to the user exit, and the user exit populates the concatenated values in this column as specified by the VALUE token. A typical call to populate segment values in this column looks as follows:

```
SRW.REFERENCE(:P_STRUCT_NUM);
SRW.REFERENCE(:C_FLEXDATA);
SRW.USER_EXIT('FND FLEXIDVAL
CODE="GL#"
NUM=":P_STRUCT_NUM"
APPL_SHORT_NAME="SQLGL"
DATA=":C_FLEXDATA"
VALUE=":C_FLEXFIELD"
DISPLAY="ALL"');
RETURN(:C_FLEXFIELD);
```

Step 10 Populate segment descriptions

To populate the segment description use DESCRIPTION=":C_DESC_ALL" instead of VALUE=":C_FLEXFIELD" as in the previous call. The user exit call becomes:

```
SRW.REFERENCE(:P_STRUCT_NUM);
SRW.REFERENCE(:C_FLEXDATA);
SRW.USER_EXIT('FND FLEXIDVAL
CODE="GL#"
NUM=":P_STRUCT_NUM"
APPL_SHORT_NAME="SQLGL"
DATA=":C_FLEXDATA"
DESCRIPTION=":C_DESC_ALL"
DISPLAY="ALL"');
RETURN(:C_DESC_ALL);
```

You have created parameters and columns that are containers of all the values to be displayed. Now, in the following steps, you create the layout to display these values on the report.

Step 11 Create your default report layout

Use the Report Wizard to generate the default layout. Deselect C_FLEXDATA. Specify a ”Label” and a reasonable ”Width” for the columns you want to display.

The following table lists the default layout column settings:

Column	Label	Width
C_FLEXFIELD	Accounting Flexfield	30
C_DESC_ALL	Flexfield Description	50

Table 8 – 3 (Page 1 of 1)

Oracle Reports takes you to the layout painter. Generate and run the report.

Step 12 Finish your report

Adjust your report layout as needed.

Flexfield Report Examples

This section demonstrates how to include flexfield data in your report and how to build different types of reports on flexfields using Oracle Application Object Library (AOL) user exits. The following sample reports demonstrate the methodology involved in constructing five types of reports.

- Report 1: Simple Tabular Report: page 8 – 37
- Report 2: Simple Tabular Report With Multiple Flexfield Structures: page 8 – 41
- Report 3: Tabular Report: page 8 – 46
- Report 4: Master–Detail Report: page 8 – 56
- Report 5: Master–detail Report On Multiple Structures: page 8 – 68

The first two examples display elementary steps involved in building reports with flexfield support. The next two examples report on a single flexfield structure and show additional features of flexfield support. The fifth report demonstrates how to use these features with multiple flexfield structures.

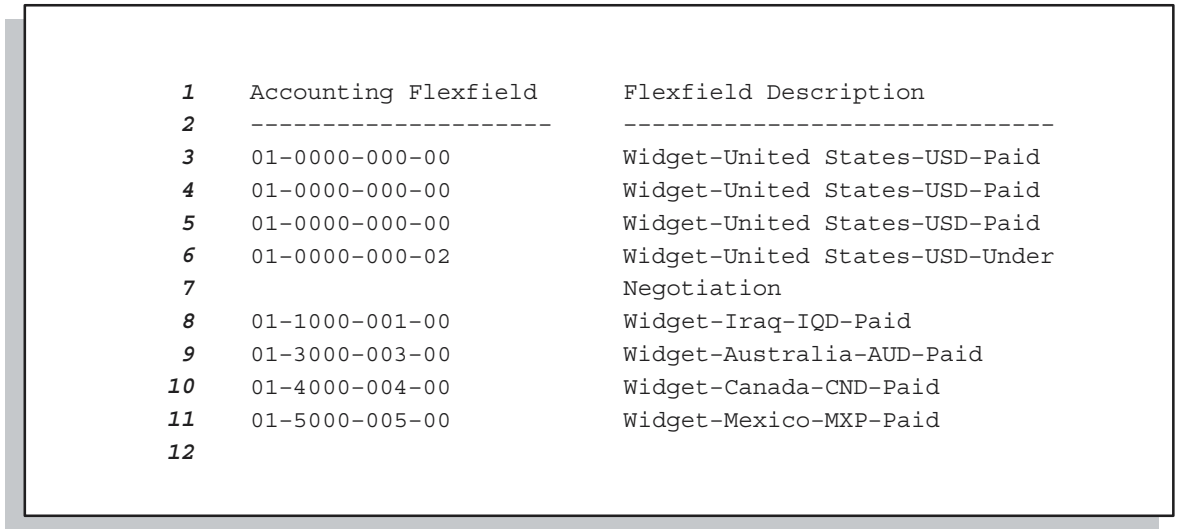
Attention: The previous section, ”Oracle Reports and Flexfields Report–Writing Steps”, provides additional explanatory detail for each step.

Report 1: Simple Tabular Report

This is a sample report that selects Accounting Flexfield values for a single structure for a single company. This report uses a simple WHERE clause and does not use an ORDER BY clause.

Sample Output

Figure 8 – 1



```
1   Accounting Flexfield      Flexfield Description
2   ----------------------    -------------------------------
3   01-0000-000-00            Widget-United States-USD-Paid
4   01-0000-000-00            Widget-United States-USD-Paid
5   01-0000-000-00            Widget-United States-USD-Paid
6   01-0000-000-02            Widget-United States-USD-Under
7                             Negotiation
8   01-1000-001-00            Widget-Iraq-IQD-Paid
9   01-3000-003-00            Widget-Australia-AUD-Paid
10  01-4000-004-00            Widget-Canada-CND-Paid
11  01-5000-005-00            Widget-Mexico-MXP-Paid
12
```

This report contains a list of Accounting Flexfield combinations and a description for each based on their segment values.

Note: Line numbers listed above are for explanation purposes only and do not appear in report output.

Report Writing Steps

Step 1 Define your Before Report Trigger

```
SRW.USER_EXIT('FND SRWINIT');
```

Step 2 Define your After Report Trigger

```
SRW.USER_EXIT('FND SRWEXIT');
```

Step 3 Define your parameters

Define the parameters in the following table using the Data Model Painter. You use these parameters in the user exit calls and SQL statements.

Name	Data Type	Width	Initial Value	Notes
P_CONC_REQUEST_ID	Number	15	0	Always create
P_FLEXDATA	Character	600	Long string	Cumulative width more than expected width required to hold data
P_STRUCT_NUM	Character	15	101	Contains structure number

Table 8 – 4 (Page 1 of 1)

Step 4 Call FND FLEXSQL from your Before Report Trigger to populate P_FLEXDATA

```
SRW.REFERENCE(:P_STRUCT_NUM);
SRW.USER_EXIT('FND FLEXSQL
CODE="GL#"
NUM=":P_STRUCT_NUM"
APPL_SHORT_NAME="SQLGL"
OUTPUT=":P_FLEXDATA"
MODE="SELECT"
DISPLAY="ALL"');
```

Step 5 Define your report query

Define your report query Q_1:

```
SELECT &P_FLEXDATA C_FLEXDATA
FROM CODE_COMBINATIONS_TABLE
WHERE
CODE_COMBINATIONS_TABLE.STRUCTURE_DEFINING_COLUMN
= &P_STRUCT_NUM
```

When the report runs, the call to FND FLEXSQL fills in the lexical parameters. As a result the second query would look something like:

```
SELECT (SEGMENT1||'-'||SEGMENT2||'-'||SEGMENT3||'-'||
       SEGMENT4) C_FLEXDATA
FROM   CODE_COMBINATIONS_TABLE
WHERE
CODE_COMBINATIONS_TABLE.STRUCTURE_DEFINING_COLUMN =
101
```

Step 6 Create formula columns

Now create columns C_FLEXFIELD and C_DESC_ALL (and any others your report uses) corresponding to the values and descriptions displayed in the report. They all are in group G_1. Be sure to adjust the column width as appropriate for the value the column holds (such as a prompt, which might be as long as 30 characters).

Step 7 Populate segment values formula column

To retrieve the concatenated flexfield segment values and descriptions, you incorporate the AOL user exits in these columns. In the column definition of C_FLEXFIELD, you incorporate the FND FLEXIDVAL user exit call in the formula field.

```
SRW.REFERENCE(:P_STRUCT_NUM);
SRW.REFERENCE(:C_FLEXDATA);
SRW.USER_EXIT('FND FLEXIDVAL
CODE="GL#"
NUM=":P_STRUCT_NUM"
APPL_SHORT_NAME="SQLGL"
DATA=":C_FLEXDATA"
VALUE=":C_FLEXFIELD"
DISPLAY="ALL"');
RETURN(:C_FLEXFIELD);
```

Step 8 Populate segment descriptions

To populate the concatenated segment descriptions use DESCRIPTION="C_DESC_ALL" instead of VALUE="C_FLEXFIELD" as in the previous step. The user exit call becomes:

```
SRW.REFERENCE(:P_STRUCT_NUM);
SRW.REFERENCE(:C_FLEXDATA);
SRW.USER_EXIT('FND FLEXIDVAL
CODE="GL#"
NUM=":P_STRUCT_NUM"
```

```
APPL_SHORT_NAME="SQLGL"
DATA=":C_FLEXDATA"
DESCRIPTION=":C_DESC_ALL"
DISPLAY="ALL"');
RETURN(:C_DESC_ALL);
```

You have created parameters and columns that are containers of all the values to be displayed. Now, in the following steps, you create the layout to display these values on the report.

Step 9 Create your default report layout

Use the Report Wizard to generate the default layout. Deselect C_FLEXDATA. Specify a "Label" and a reasonable "Width" for the columns you want to display.

The table below lists the default layout column settings:

Column	Label	Width
C_FLEXFIELD	Accounting Flexfield	30
C_DESC_ALL	Flexfield Description	50

Table 8 – 5 (Page 1 of 1)

Oracle Reports takes you to the layout painter. Generate and run the report.

The following table lists a report summary:

Lexical Parameters	Columns	FND User Exits
P_CONC_REQUEST_ID	C_FLEXDATA	FND FLEXIDVAL
P_FLEXDATA	C_DESC_ALL	FND FLEXSQL
P_STRUCT_NUM		FND SRWINIT
		FND SRWEXIT

Table 8 – 6 (Page 1 of 1)

Report 2: Simple Tabular Report With Multiple Structures

This is a sample report that selects Accounting Flexfield values for multiple flexfield structures (charts of accounts). This report uses a simple WHERE clause and does not use an ORDER BY clause, but differs from Report 1 in that this report selects a structure number.

Sample Output

Figure 8 – 2

```
 1   Accounting Flexfield  Flexfield Description
 2   --------------------- ------------------------------
 3   01-0000-000-00        Widget-United States-USD-Paid
 4   01-0000-000-00        Widget-United States-USD-Paid
 5   01-0000-000-02        Widget-United States-USD-Under
 6                         Negotiation
 7   01-3000-003-00        Widget-Australia-AUD-Paid
 8   01-4000-004-00        Widget-Canada-CND-Paid
 9   01-5000-005-00        Widget-Mexico-MXP-Paid
10   02-0000-000-00        Megabu-United States-USD-Paid
11   02-0000-000-00        Megabu-United States-USD-Paid
12   02-1000-001-00        Megabu-Iraq-IQD-Paid
13   02-3000-003-00        Megabu-Australia-AUD-Paid
14   02-4000-004-00        Megabu-Canada-CND-Paid
15   02-5000-005-00        Megabu-Mexico-MXP-Paid
16
```

This report contains a list of Accounting Flexfield combinations and a description for each based on their segment values.

Note: Line numbers listed above are for explanation purposes only and do not appear in report output.

Report Writing Steps

Step 1 Define your Before Report Trigger

```
SRW.USER_EXIT('FND SRWINIT');
```

Step 2 Define your After Report Trigger

```
SRW.USER_EXIT('FND SRWEXIT');
```

Step 3 Define your parameters

Define the parameters in the following table using the Data Model Painter. You use these parameters in the user exit calls and SQL statements.

Name	Data Type	Width	Initial Value	Notes
P_CONC_REQUEST_ID	Number	15	0	Always create
P_FLEXDATA	Character	600	Long string	Cumulative width more than expected width required to hold data
P_STRUCT_NUM	Character	15	101	Contains structure number

Table 8 – 7 (Page 1 of 1)

Step 4 Call FND FLEXSQL from your Before Report Trigger to populate P_FLEXDATA

```
SRW.REFERENCE(:P_STRUCT_NUM);
SRW.USER_EXIT('FND FLEXSQL
CODE="GL#"
NUM=":P_STRUCT_NUM"
APPL_SHORT_NAME="SQLGL"
OUTPUT=":P_FLEXDATA"
MODE="SELECT"
DISPLAY="ALL"');
```

Step 5 Define your report query

Define your report query Q_1:

```
SELECT &P_FLEXDATA C_FLEXDATA,
CHART_OF_ACCOUNTS_ID C_NUM
FROM CODE_COMBINATIONS_TABLE
```

Please note the difference in the query from the queries earlier. This query contains one extra column C_NUM. You use this column to supply the structure number in the user exit FND FLEXIDVAL.

When the report runs, the call to FND FLEXSQL fill in the lexical parameters. As a result the second query would look something like:

```
SELECT (SEGMENT1||'-'||SEGMENT2||'-'||SEGMENT3||'-'||
       SEGMENT4) C_FLEXDATA,
CHART_OF_ACCOUNTS_ID C_NUM
FROM   CODE_COMBINATIONS_TABLE
```

Step 6 Create formula columns

Now create columns C_FLEXFIELD and C_DESC_ALL (and any others your report uses) corresponding to the values and descriptions displayed in the report. They all are in group G_1. Be sure to adjust the column width as appropriate for the value the column holds (such as a prompt, which might be as long as 30 characters).

Attention: Use word–wrapping for flexfield columns if necessary to avoid possible truncation of your values. Do this by setting Sizing to Expand.

Step 7 Populate segment values formula column

To retrieve the concatenated flexfield segment values and description, you incorporate the AOL user exits in these columns. In the column definition of C_FLEXFIELD you incorporate the FND FLEXIDVAL call in the formula field.

```
SRW.REFERENCE(:C_NUM);
SRW.REFERENCE(:C_FLEXDATA);
SRW.USER_EXIT('FND FLEXIDVAL
CODE="GL#"
NUM=":C_NUM"
APPL_SHORT_NAME="SQLGL"
DATA=":C_FLEXDATA"
VALUE=":C_FLEXFIELD"
DISPLAY="ALL"');
RETURN(:C_FLEXFIELD);
```

Step 8 Populate segment descriptions

To populate segment description use DESCRIPTION=”C_DESC_ALL” instead of VALUE=”C_FLEXFIELD” as in the previous step. The user exit call becomes:

```
SRW.REFERENCE(:C_NUM);
SRW.REFERENCE(:C_FLEXDATA);
SRW.USER_EXIT('FND FLEXIDVAL
CODE="GL#"
NUM=":C_NUM"
APPL_SHORT_NAME="SQLGL"
DATA=":C_FLEXDATA"
DESCRIPTION=":C_DESC_ALL"
DISPLAY="ALL"');
RETURN(:C_DESC_ALL);
```

You have created parameters and columns that are containers of all the values to be displayed. Now, in the following steps, you create the layout to display these values on the report.

Step 9 Create your default report layout

Use the Report Wizard to generate the default layout. Deselect C_FLEXDATA and C_NUM. Specify ”Label” and reasonable ”Width” for these columns.

The following table lists the default layout column settings:

Column	Label	Width
C_FLEXFIELD	Accounting Flexfield	30
C_DESC_ALL	Flexfield Description	50

Table 8 – 8 (Page 1 of 1)

Oracle Reports takes you to the layout painter. Generate and run the report.

The following table lists a report summary:

Lexical Parameters	Columns	FND User Exits
P_CONC_REQUEST_ID	C_FLEXDATA	FND FLEXIDVAL
P_FLEXDATA	C_DESC_ALL	FND FLEXSQL
	C_NUM	FND SRWINIT
		FND SRWEXIT

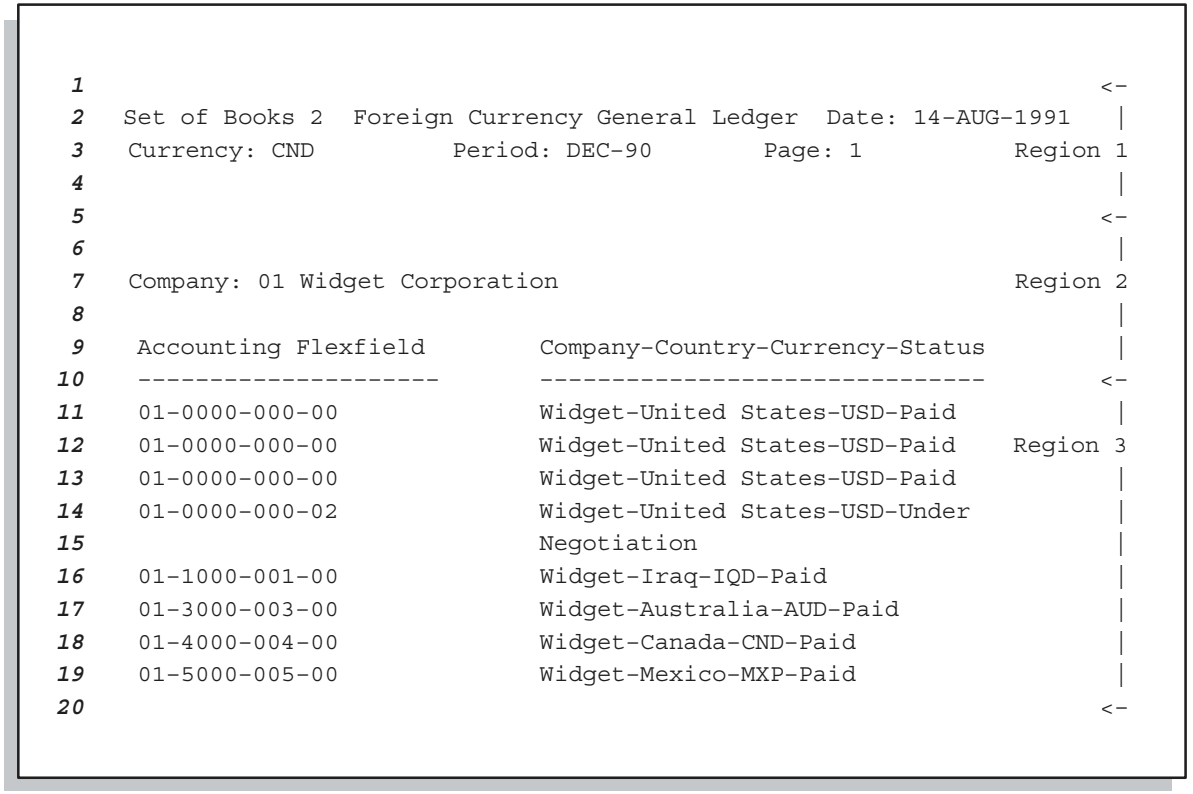
Table 8 – 9 (Page 1 of 1)

Report 3: Tabular Report

This is a sample report that selects Accounting Flexfield information for a single structure for a single company. This report uses a more complex WHERE clause with an ORDER BY clause. It also contains extra columns for the report header information.

Sample Output

Figure 8 – 3



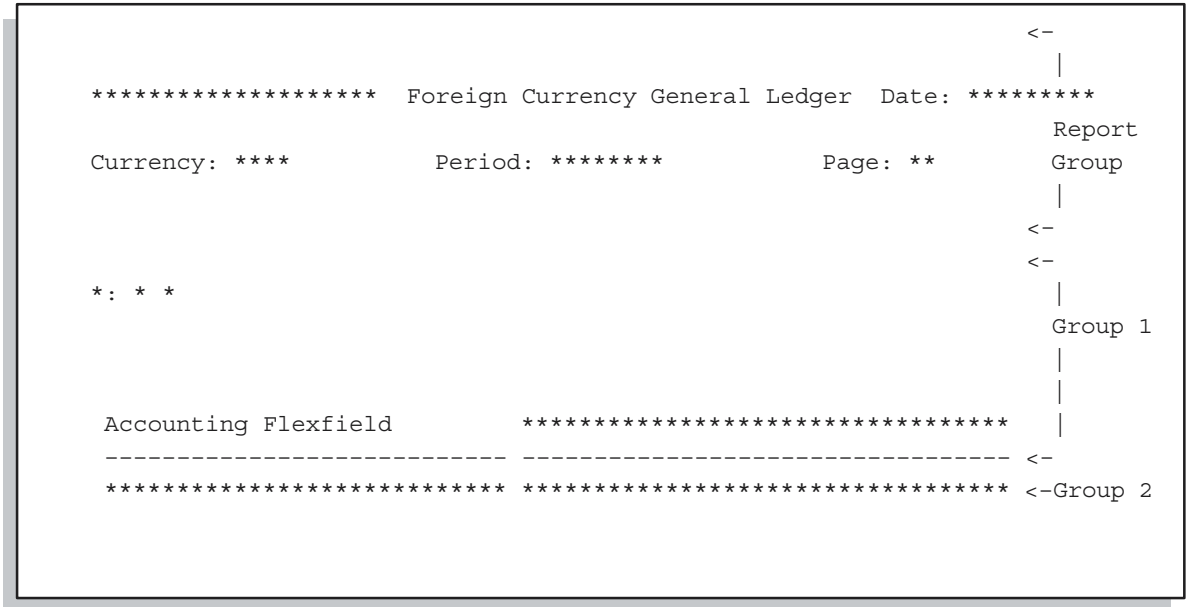
```
1                                                                    <-
2   Set of Books 2  Foreign Currency General Ledger  Date: 14-AUG-1991   |
3    Currency: CND          Period: DEC-90        Page: 1           Region 1
4                                                                        |
5                                                                    <-
6                                                                        |
7    Company: 01 Widget Corporation                                Region 2
8                                                                        |
9    Accounting Flexfield        Company-Country-Currency-Status         |
10   ---------------------       -------------------------------        <-
11   01-0000-000-00              Widget-United States-USD-Paid            |
12   01-0000-000-00              Widget-United States-USD-Paid    Region 3
13   01-0000-000-00              Widget-United States-USD-Paid            |
14   01-0000-000-02              Widget-United States-USD-Under           |
15                               Negotiation                              |
16   01-1000-001-00              Widget-Iraq-IQD-Paid                     |
17   01-3000-003-00              Widget-Australia-AUD-Paid                |
18   01-4000-004-00              Widget-Canada-CND-Paid                   |
19   01-5000-005-00              Widget-Mexico-MXP-Paid                   |
20                                                                   <-
```

This report contains a list of Accounting Flexfield combinations and a description for each based on their segment values. It has a more complex header that includes the set of books, date, currency, period, and page number.. The company name is also displayed.

Note: Line numbers listed above are for explanation purposes only and do not appear in report output.

Sample Layout

Figure 8 – 4



This diagram shows the layout for this report. It has a header region with the report title, the set of books, date, currency, period, and page number, another region for the organization name, and a third region for the Accounting Flexfield combinations and their descriptions.

Note: *'s indicate displayed fields.

Report Writing Steps

Step 1 Define your Before Report Trigger

```
SRW.USER_EXIT('FND SRWINIT');
```

Step 2 Define your After Report Trigger

```
SRW.USER_EXIT('FND SRWEXIT');
```

Step 3 Define your parameters

Define the following parameters using the Data Model Painter. You use these parameters in the user exit calls and SQL statements.

The following table lists the lexical parameters:

Name	Data Type	Width	Initial Value	Notes
P_CONC_REQUEST_ID	Number	15	0	Always create
P_FLEXDATA	Character	600	Long string	Cumulative width more than expected width required to hold the data
P_STRUCT_NUM	Character	15	101	Contains structure number
P_WHERE	Character	200	Valid WHERE clause	(4)
P_ORDERBY	Character	298	Valid ORDER BY clause	(5)
P_OPERAND1	Character	15		Used to construct the P_WHERE parameter
P_SET_OF_BOOKS	Character	Obtain from GL		Use in the report header
P_CURRENCY	Character	15		Use in the report header
P_PERIOD	Character	Obtain from GL		Use in the report header

Table 8 – 10 (Page 1 of 1)

Note (4): This parameter contains the WHERE clause in the SELECT statement to enforce condition(s) on the data retrieved from the database. The initial value is used to check the validity of query containing this parameter.

Note (5): This parameter contains the ORDER BY clause for the SELECT statement that orders the display of flexfield data. The initial value is used to check the validity of query containing this parameter.

Step 4 Call FND FLEXSQL from your Before Report Trigger to populate P_FLEXDATA

```
SRW.REFERENCE(:P_STRUCT_NUM);
SRW.USER_EXIT('FND FLEXSQL
CODE="GL#"
NUM=":P_STRUCT_NUM"
APPL_SHORT_NAME="SQLGL"
OUTPUT=":P_FLEXDATA"
MODE="SELECT"
DISPLAY="ALL"');
```

Step 5 Call FND FLEXSQL from your Before Report Trigger to populate P_WHERE

The second call populates the value of lexical P_WHERE to the restriction you wish to apply at run time. You wish this parameter to contain the value "(SEGMENT1 = '01')" if GL_BALANCING segment is segment 1 and value of P_OPERAND1 is "01".

```
SRW.REFERENCE(:P_STRUCT_NUM);
SRW.USER_EXIT('FND FLEXSQL
CODE="GL#"
NUM=":P_STRUCT_NUM"
APPL_SHORT_NAME="SQLGL"
OUTPUT=":P_WHERE"
MODE="WHERE"
DISPLAY="GL_BALANCING"
OPERATOR="="
OPERAND1=":P_OPERAND1"');
```

Step 6 Call FND FLEXSQL from your Before Report Trigger to populate P_ORDERBY

The third call changes the value of lexical P_ORDERBY to the SQL fragment (for example to SEGMENT3, SEGMENT2, SEGMENT4, SEGMENT1) at run time. When this lexical parameter is incorporated into the ORDER BY clause of a query, it enables the query to order by flexfield segments. The user exit call is same as first one except for MODE="ORDER BY" as follows:

```
SRW.REFERENCE(:P_STRUCT_NUM);
SRW.USER_EXIT('FND FLEXSQL
CODE="GL#"
NUM=":P_STRUCT_NUM"
APPL_SHORT_NAME="SQLGL"
OUTPUT="P_ORDER_FLEX"
MODE="ORDER BY"
DISPLAY="ALL"');
```

Step 7 Define your report queries

Define your report queries Q_1 and Q_2:

```
SELECT &P_FLEXDATA C_FLEXDATA_H [, NORMALCOLUMNS...]
FROM CODE_COMBINATIONS_TABLE
WHERE
CODE_COMBINATIONS_TABLE.STRUCTURE_DEFINING_COLUMN
= &P_STRUCT_NUM
      AND ROWNUM < 2

SELECT &P_FLEXDATA C_FLEXDATA [, NORMALCOLUMNS...]
FROM CODE_COMBINATIONS_TABLE
WHERE
CODE_COMBINATIONS_TABLE.STRUCTURE_DEFINING_COLUMN
= &P_STRUCT_NUM
ORDER BY &P_ORDERBY
```

The first query fetches the data required for region 2 and the second one for region 3.

Note: "ROWNUM < 2" because we want only one record in that region.

When the report runs, the three calls to FND FLEXSQL fill in the lexical parameters. As a result the second query would look something like:

```
SELECT (SEGMENT1||'-'||SEGMENT2||'-'||SEGMENT3||'-'||
         SEGMENT4) C_FLEXDATA,
         NORMALCOLUMNS...
FROM   CODE_COMBINATIONS_TABLE
WHERE
CODE_COMBINATIONS_TABLE.STRUCTURE_DEFINING_COLUMN
```

```
= 101
ORDER BY SEGMENT3, SEGMENT2, SEGMENT4, SEGMENT1
```

Step 8 Create formula columns

Now create columns corresponding to the values displayed in Region 2. They all are in group G_1. Be sure to adjust the column width as appropriate for the value the column holds (such as a prompt, which might be as long as 30 characters).

First create column C_BAL_LPROMPT (for columns corresponding to ”Company” in the sample output). In this column incorporate FND FLEXIDVAL calls in the formula field. You pass the concatenated segments along with other information to the user exit:

```
SRW.REFERENCE(:P_STRUCT_NUM);
SRW.REFERENCE(:C_FLEXDATA_H);
SRW.USER_EXIT('FND FLEXIDVAL
CODE="GL#"
NUM=":P_STRUCT_NUM"
APPL_SHORT_NAME="SQLGL"
DATA=":C_FLEXDATA_H"
LPROMPT=":C_BAL_PROMPT"
DISPLAY="GL_BALANCING"');
RETURN(:C_BAL_LPROMPT);
```

The user exit populates ”Company” in the column ’C_BAL_LPROMPT’.

Similarly create columns C_BAL_VAL and C_BAL_DESC (displaying ”01” and Widget Corporation) with the following calls.

C_BAL_VAL:

```
SRW.REFERENCE(:P_STRUCT_NUM);
SRW.REFERENCE(:C_FLEXDATA_H);
SRW.USER_EXIT('FND FLEXIDVAL
CODE="GL#" NUM=":P_STRUCT_NUM"
APPL_SHORT_NAME="SQLGL"
DATA=":C_FLEXDATA_H"
VALUE=":C_BAL_VAL"
DISPLAY="GL_BALANCING"');
RETURN(:C_BAL_VAL);
```

C_BAL_DESC:

```
SRW.REFERENCE(:P_STRUCT_NUM);
SRW.REFERENCE(:C_FLEXDATA_H);
SRW.USER_EXIT('FND FLEXIDVAL
CODE="GL#"
NUM=":P_STRUCT_NUM"
APPL_SHORT_NAME="SQLGL"
DATA=":C_FLEXDATA_H"
DESCRIPTION=":C_BAL_VAL"
DISPLAY="GL_BALANCING"');
RETURN(:C_BAL_DESC);
```

Create the above prompt (displaying "Company–Country–Currency–Status") in the sample output by the following call.

```
SRW.REFERENCE(:P_STRUCT_NUM);
SRW.REFERENCE(:C_FLEXDATA_H);
SRW.USER_EXIT('FND FLEXIDVAL
CODE="GL#" NUM=":P_STRUCT_NUM"
APPL_SHORT_NAME="SQLGL"
DATA=":C_FLEXDATA_H"
APROMPT=":C_APROMPT"
DISPLAY="GL_BALANCING"');
RETURN(:C_APROMPT);
```

Step 9 Create formula columns

Now you construct columns corresponding to the region 3 of the report. All columns now correspond to G_2. Be sure to adjust the column width as appropriate for the value the column holds (such as a prompt, which might be as long as 30 characters).

You create formula columns C_FLEXFIELD and C_DESC_ALL to display concatenated segment values and description respectively.

Attention: Use word–wrapping for flexfield columns if necessary to avoid possible truncation of your values. Do this by setting Sizing to Expand.

Step 10 Populate segment values formula column

To retrieve the concatenated flexfield segment values and description, you incorporate the AOL user exits in these columns. In the column definition of C_FLEXFIELD, you call the user exit FND FLEXIDVAL in the formula field.

```
SRW.REFERENCE(:P_STRUCT_NUM);
SRW.REFERENCE(:C_FLEXDATA);
SRW.USER_EXIT('FND FLEXIDVAL
CODE="GL#"
NUM=":P_STRUCT_NUM"
APPL_SHORT_NAME="SQLGL"
DATA=":C_FLEXDATA"
VALUE=":C_FLEXFIELD"
DISPLAY="ALL"');
RETURN(:C_FLEXFIELD);
```

Step 11 Populate segment descriptions

To populate segment description use DESCRIPTION=”C_DESC_ALL” instead of VALUE=”C_FLEXFIELD” as in the previous step. The user exit call becomes:

```
SRW.REFERENCE(:P_STRUCT_NUM);
SRW.REFERENCE(:C_FLEXDATA);
SRW.USER_EXIT('FND FLEXIDVAL
CODE="GL#"
NUM=":P_STRUCT_NUM"
APPL_SHORT_NAME="SQLGL"
DATA=":C_FLEXDATA"
DESCRIPTION=":C_DESC_ALL"
DISPLAY="ALL"');
RETURN(:C_DESC_ALL);
```

You have created parameters and columns that are containers of all the values to be displayed. Now, in the following steps, you create the layout to display these values on the report.

Step 12 Create your default report layout

Use the Report Wizard to generate the default layout. Deselect C_FLEXDATA, C_FLEXDATA_H. Specify reasonable widths for these columns.

The following table lists the default column settings:

Column	Label	Width
C_FLEXFIELD	Accounting Flexfield	30
C_DESC_ALL	Flexfield Description	50
C_APROMPT		100
C_BAL_DESC		40
C_BAL_LPROMPT		20
C_BAL_VAL		4

Table 8 – 11 (Page 1 of 1)

Oracle Reports takes you to the layout painter. Before modifying the default layout in the painter, you may want to generate and run the report with the current layout to test the previous steps.

Step 13 Finish your report

Now you modify the default locations of the fields and create new fields in the layout painter. First [SELECT ALL] and move all the fields to the desired location as shown in the Region 2 & 3.

You modify fields to display ”Company”, ”01” and ”Widget Corporation” in the Group 1 (region 2). As shown in the Sample Layout, modify F_BAL_LPROMPT, F_BAL_VAL and F_BAL_DESC fields so that they are side by side with the unit length. Specify ”Horizontal Sizing” as ”Variable”. This ensures that the fields always be apart by fixed amount and adjust due to their variable sizing. Sources of these fields are C_BAL_LPROMPT, C_BAL_VAL and C_BAL_DESC respectively.

Resize and move the field F_APROMPT as shown in the sample layout to display above prompt as displayed in the sample output. Add all the boilerplate text ”Accounting Flexfield”, underline below and above the above prompt.

In this step you build the layout for Region 1. At the top of report, ’Foreign Currency General Ledger’ is a boiler plate that can be added using layout painter. ’Currency:’ and ’Period:’ are also Boiler plates and the corresponding fields (’CND’ and DEC–90) are filled by lexical input parameters P_CURRENCY, P_PERIOD. ’Set of Books 2’ is filled by input lexical parameter P_SET_OF_BOOKS. Similarly, the ’Date’

and 'Page' fields are filled by system parameters 'Current Date' and 'Logical Page Number'.

Enter in the Field Definition property sheet of F_FLEXFIELD and specify "Vertical Sizing" as "Variable". This ensures that when the data is larger than the field width, the value wraps and it is not truncated. This can be seen in the descriptions of flexfield values in lines 15 and 16 of the sample output.

The following table lists a report summary:

Lexical Parameters	Columns	FND User Exits
P_CONC_REQUEST_ID	C_APROMPT	FND FLEXIDVAL
P_FLEXDATA	C_BAL_DESC	FND FLEXSQL
P_CURRENCY	C_BAL_LPROMPT	FND SRWINIT
P_OPERAND1	C_BAL_VAL	FND SRWEXIT
P_ORDERBY	C_DESC_ALL	
P_PERIOD	C_FLEXDATA	
P_SET_OF_BOOKS	C_FLEXDATA_H	
P_STRUCT_NUM	C_FLEXFIELD	
P_WHERE		

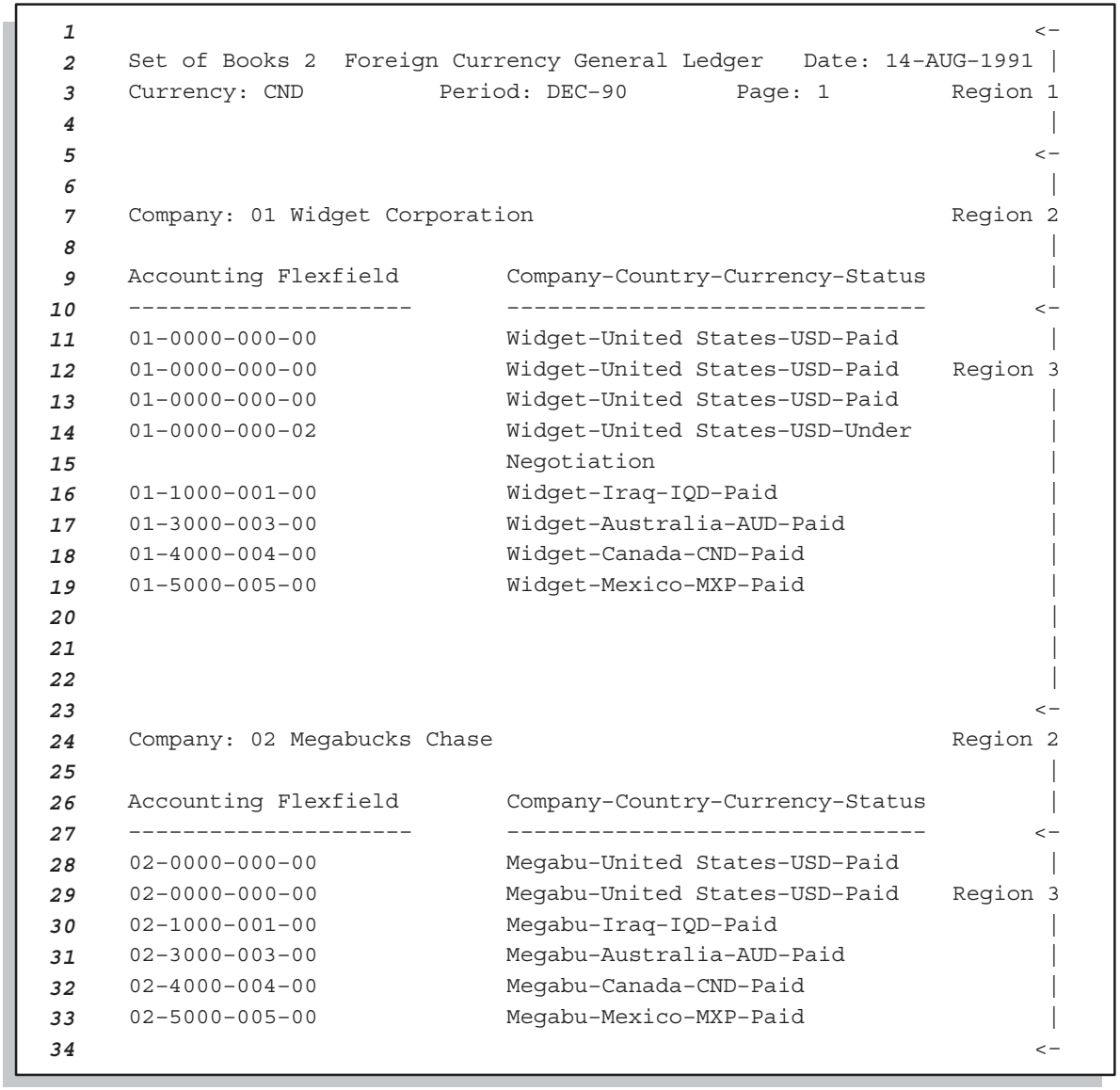
Table 8 – 12 (Page 1 of 1)

Report 4: Master–Detail Report

This example illustrates how to build a master / detail report. In this sample report detailed flexfields data is fetched corresponding to each company (master record). This report uses a more complex WHERE clause with an ORDER BY clause. It also contains extra columns for the report header information.

Sample Output

Figure 8 – 5



```
1                                                                          <-
2   Set of Books 2  Foreign Currency General Ledger   Date: 14-AUG-1991    |
3   Currency: CND          Period: DEC-90        Page: 1          Region 1
4                                                                          |
5                                                                          <-
6                                                                          |
7   Company: 01 Widget Corporation                                 Region 2
8                                                                          |
9   Accounting Flexfield        Company-Country-Currency-Status            |
10  ---------------------       -------------------------------        <-
11  01-0000-000-00              Widget-United States-USD-Paid              |
12  01-0000-000-00              Widget-United States-USD-Paid     Region 3
13  01-0000-000-00              Widget-United States-USD-Paid              |
14  01-0000-000-02              Widget-United States-USD-Under             |
15                              Negotiation                                |
16  01-1000-001-00              Widget-Iraq-IQD-Paid                       |
17  01-3000-003-00              Widget-Australia-AUD-Paid                  |
18  01-4000-004-00              Widget-Canada-CND-Paid                     |
19  01-5000-005-00              Widget-Mexico-MXP-Paid                     |
20                                                                         |
21                                                                         |
22                                                                         |
23                                                                         <-
24  Company: 02 Megabucks Chase                                    Region 2
25                                                                         |
26  Accounting Flexfield        Company-Country-Currency-Status            |
27  ---------------------       -------------------------------        <-
28  02-0000-000-00              Megabu-United States-USD-Paid              |
29  02-0000-000-00              Megabu-United States-USD-Paid     Region 3
30  02-1000-001-00              Megabu-Iraq-IQD-Paid                       |
31  02-3000-003-00              Megabu-Australia-AUD-Paid                  |
32  02-4000-004-00              Megabu-Canada-CND-Paid                     |
33  02-5000-005-00              Megabu-Mexico-MXP-Paid                     |
34                                                                         <-
```

This report is similar to Report 3 with a complex header that includes the set of books, date, currency, period, and page number. However,

the Accounting Flexfield combinations and descriptions are listed under their company names.

Note: Line numbers listed above are for explanation purposes only and do not appear in report output.

Sample Layout

Same as sample layout in the ”Tabular Report”

Report Writing Steps

Step 1 Define your Before Report Trigger

```
SRW.USER_EXIT('FND SRWINIT');
```

Step 2 Define your After Report Trigger

```
SRW.USER_EXIT('FND SRWEXIT');
```

Step 3 Define your parameters

Define the following parameters using the Data Model Painter. You use these parameters in the user exit calls and SQL statements.

The following table lists the lexical parameters:

Name	Data Type	Width	Initial Value	Notes
P_CONC_REQUEST_ID	Number	15	0	Always create
P_FLEXDATA	Character	600	Long string	Initial value is some string that contains columns with cumulative width more than expected width required to hold the data
P_STRUCT_NUM	Character	15	101	Contains structure number
P_WHERE	Character	200	Valid WHERE clause	Used to construct WHERE clause

Name	Data Type	Width	Initial Value	Notes
P_ORDERBY	Character	298	Valid ORDER BY clause	Used to construct ORDER BY clause
P_OPERAND1	Character	15		Used to construct the P_WHERE parameter
P_COMPANY	Character	300	Long string	Use to construct SELECT clause
P_SET_OF_BOOKS	Character	Obtain from GL		Use in the report header
P_CURRENCY	Character	15		Use in the report header
P_PERIOD	Character	Obtain from GL		Use in the report header

Step 4 Build query parameters

Now you build parameters for three queries. The first query Q_COMPANY retrieves all the companies. The second query Q_MASTER fetches one record of flexfield data for each company to build company left prompt, above prompts, etc. Thus the first two queries are used to build the master record. The third query fetches all the flexfield data for each company.

First you populate all the parameters to be used in the first query for getting all the companies (Q_COMPANY). Call FND FLEXSQL to populate P_COMPANY. Use this parameter to retrieve all the master records.

```
SRW.REFERENCE(:P_STRUCT_NUM);
SRW.USER_EXIT('FND FLEXSQL
CODE="GL#"
NUM=":P_STRUCT_NUM"
APPL_SHORT_NAME="SQLGL"
OUTPUT=":P_COMPANY"
MODE="SELECT"
DISPLAY="GL_BALANCING"');
```

The second call populates the value of lexical P_WHERE with the restriction you want to apply at run time. You want this parameter to contain the value "(SEGMENT1 < '04')" if GL_BALANCING segment is segment 1 and the value of P_OPERAND1 is "04". You call the user exit as follows:

```
SRW.REFERENCE(:P_STRUCT_NUM);
SRW.USER_EXIT('FND FLEXSQL
CODE="GL#"
NUM=":P_STRUCT_NUM"
APPL_SHORT_NAME="SQLGL"
OUTPUT=":P_WHERE"
MODE="WHERE"
DISPLAY="GL_BALANCING"
OPERATOR="<"
OPERAND1=":P_OPERAND1"');
```

Step 5 Call FND FLEXSQL from your Before Report Trigger

Next, you build all the parameters of the next two queries for obtaining flexfield data. You make two calls to FND FLEXSQL from the Before Report Trigger to specify the lexical parameters.

Step 6 Call FND FLEXSQL from your Before Report Trigger to populate P_FLEXDATA

```
SRW.REFERENCE(:P_STRUCT_NUM);
SRW.USER_EXIT('FND FLEXSQL
CODE="GL#"
NUM=":P_STRUCT_NUM"
APPL_SHORT_NAME="SQLGL"
OUTPUT=":P_FLEXDATA"
MODE="SELECT"
DISPLAY="ALL"');
```

Step 7 Call FND FLEXSQL from your Before Report Trigger to populate P_ORDERBY

The second call changes the value of lexical P_ORDERBY to the SQL fragment (for example to SEGMENT3, SEGMENT2, SEGMENT4, SEGMENT1) at run time. When this lexical parameter is incorporated into the ORDER BY clause of a query, it enables the query to order by flexfield segments. The FLEXSQL call is the same as the first one except for MODE="ORDER BY" as follows:

```
SRW.REFERENCE(:P_STRUCT_NUM);
SRW.USER_EXIT('FND FLEXSQL
CODE="GL#"
NUM=":P_STRUCT_NUM"
APPL_SHORT_NAME="SQLGL"
OUTPUT=":P_ORDERBY"
MODE="ORDER BY"
DISPLAY="ALL"');
```

Step 8 Define your report queries

Then you define your report's first master query (Q_COMPANY) to fetch all the different companies.

```
SELECT DISTINCT &P_COMPANY C_MASTER
FROM CODE_COMBINATIONS_TABLE
WHERE
CODE_COMBINATIONS_TABLE.STRUCTURE_DEFINING_COLUMN
      = &P_STRUCT_NUM
AND &P_WHERE
```

When the report runs, the two calls to FND FLEXSQL fill in the lexical parameters to look something like:

```
SELECT  DISTINCT (SEGMENT1) C_MASTER
FROM   CODE_COMBINATIONS_TABLE
WHERE
CODE_COMBINATIONS_TABLE.STRUCTURE_DEFINING_COLUMN
= 101
AND SEGMENT1 < '04'
```

The second master query (Q_MASTER) fetches one record of flexfield data for each company to build company left prompt and description. It is also used for constructing the above prompt for displaying concatenated flexfield value descriptions retrieved in the detail query.

```
SELECT  &P_COMPANY C_MASTER2,
&P_FLEXDATA C_FLEXDATA_MASTER
FROM CODE_COMBINATIONS_TABLE
   WHERE
CODE_COMBINATIONS_TABLE.STRUCTURE_DEFINING_COLUMN
      = &P_STRUCT_NUM
AND &P_COMPANY = :C_MASTER
AND ROWNUM < 2
```

This query has G_COMPANY as its parent group.

You use ”ROWNUM < 2” because you want only one record in that region. You use the parent–child relationship ”AND &P_COMPANY = :C_MASTER” within your query, instead of using ”link”, so that Oracle Reports can recognize that the columns specified by your parameters are related. You create an ”empty link” to G_COMPANY to make G_COMPANY the parent group.

Now you define your report’s detail query (Q_FLEX):

```
SELECT &P_COMPANY C_DETAIL,
&P_FLEXDATA C_FLEXDATA [, NORMALCOLUMNS...]
FROM CODE_COMBINATIONS_TABLE
WHERE
CODE_COMBINATIONS_TABLE.STRUCTURE_DEFINING_COLUMN
= &P_STRUCT_NUM
AND &P_COMPANY = :C_MASTER
ORDER BY &P_ORDERBY
```

When the report runs, the two calls to FND FLEXSQL fill in the lexical parameters to look something like:

```
SELECT (SEGMENT1) C_DETAIL,
(SEGMENT1||'-'||SEGMENT2||'-'||SEGMENT3||'-'||
       SEGMENT4) C_FLEXDATA [, NORMALCOLUMNS...]
FROM   CODE_COMBINATIONS_TABLE
WHERE
CODE_COMBINATIONS_TABLE.STRUCTURE_DEFINING_COLUMN
= 101
AND (SEGMENT1) = :C_MASTER
ORDER BY SEGMENT3, SEGMENT2, SEGMENT4, SEGMENT1
```

This query has G_MASTER as its parent group.

Step 9 Create Region 2 formula columns

Now create columns corresponding to the values displayed in Region 2. They all are in Q_MASTER group. To retrieve the flexfield segment value, left prompt and description, you incorporate FLEXIDVAL in the corresponding columns. Be sure to adjust the column width as appropriate for the value the column holds (such as a prompt, which might be as long as 30 characters).

First create column C_BAL_LPROMPT (for columns corresponding to ”Company” in the sample output). In this column incorporate FND FLEXIDVAL calls in the formula field.

```
SRW.REFERENCE(:P_STRUCT_NUM);
SRW.REFERENCE(:C_FLEXDATA_MASTER);
SRW.USER_EXIT('FND FLEXIDVAL
CODE="GL#"
NUM=":P_STRUCT_NUM"
APPL_SHORT_NAME="SQLGL"
DATA=":C_FLEXDATA_MASTER"
LPROMPT=":C_BAL_LPROMPT"
DISPLAY="GL_BALANCING"');
RETURN(:C_BAL_LPROMPT);
```

The user exit populates ”Company” in the column 'C_BAL_LPROMPT'.

Similarly, you create columns C_BAL_DESC (displaying Widget Corporation) with the following call:

```
SRW.REFERENCE(:P_STRUCT_NUM);
SRW.REFERENCE(:C_FLEXDATA_MASTER);
SRW.USER_EXIT('FND FLEXIDVAL
CODE="GL#"
NUM=":P_STRUCT_NUM"
APPL_SHORT_NAME="SQLGL"
DATA=":C_FLEXDATA_MASTER"
DESCRIPTION=":C_BAL_DESC"
DISPLAY="GL_BALANCING"');
RETURN(:C_BAL_DESC);
```

Create the above prompt (”Company–Country–Currency–Status”) in the sample output by the following call:

```
SRW.REFERENCE(:P_STRUCT_NUM);
SRW.REFERENCE(:C_FLEXDATA_MASTER);
SRW.USER_EXIT('FND FLEXIDVAL
CODE="GL#"
NUM=":P_STRUCT_NUM"
APPL_SHORT_NAME="SQLGL"
DATA=":C_FLEXDATA_MASTER"
APROMPT=":C_APROMPT"
```

```
DISPLAY="GL_BALANCING"');
RETURN(:C_APROMPT);
```

You construct columns corresponding to the region 3 of the report in the next few steps.

Step 10 Create formula columns

You create formula columns C_FLEXFIELD and C_DESC_ALL to display concatenated segment values and description respectively. These columns have same group as C_FLEXDATA. Be sure to adjust the column width as appropriate for the value the column holds (such as a prompt, which might be as long as 30 characters).

Attention: Use word–wrapping for flexfield columns if necessary to avoid possible truncation of your values. Do this by setting Sizing to Expand.

Step 11 Populate segment values formula column

To retrieve the concatenated flexfield segment values and description, you incorporate the AOL user exits in these columns. In the column definition of C_FLEXFIELD incorporate AOL user exit (FND FLEXIDVAL) call in the formula field.

```
SRW.REFERENCE(:P_STRUCT_NUM);
SRW.REFERENCE(:C_FLEXDATA);
SRW.USER_EXIT('FND FLEXIDVAL
CODE="GL#"
NUM=":P_STRUCT_NUM"
APPL_SHORT_NAME="SQLGL"
DATA=":C_FLEXDATA"
VALUE=":C_FLEXFIELD"
DISPLAY="ALL"');
RETURN(:C_FLEXFIELD);
```

Step 12 Populate segment descriptions

To populate segment descriptions use DESCRIPTION="C_DESC_ALL" instead of VALUE="C_FLEXFIELD" as in the previous step. The user exit call becomes:

```
SRW.REFERENCE(:P_STRUCT_NUM);
SRW.REFERENCE(:C_FLEXDATA);
SRW.USER_EXIT('FND FLEXIDVAL
CODE="GL#"
```

```
NUM=":P_STRUCT_NUM"
APPL_SHORT_NAME="SQLGL"
DATA=":C_FLEXDATA"
DESCRIPTION=":C_DESC_ALL"
DISPLAY="ALL"');
RETURN(:C_DESC_ALL);
```

You have created parameters and columns that are containers of all the values to be displayed. Now, in the following steps, you create the layout to display these values on the report.

Step 13 Create your default report layout

Use the Report Wizard to generate the default layout. Deselect group G_COMPANY and columns C_FLEXDATA_MASTER, C_DETAIL, C_FLEXDATA. Delete all the labels of C_BAL_LPROMPT, C_MASTER2, C_BAL_DESC, C_APROMPT as these labels are not required. Specify reasonable widths for these columns.

The following table lists the default column settings:

Column	Label	Width
C_FLEXFIELD	Accounting Flexfield	30
C_DESC_ALL	Flexfield Description	50
C_APROMPT		100
C_BAL_DESC		40
C_BAL_LPROMPT		20
C_MASTER2		4

Table 8 – 13 (Page 1 of 1)

Oracle Reports takes you to the layout painter. Before modifying the default layout in the painter, you may want to generate and run the report with the current layout to test the previous steps.

Step 14 Finish your report

Now you modify the default locations of the fields and create new fields in the layout painter. First [SELECT ALL] and move all fields to the desired location as shown in the sample layout of Regions 2 and 3. Remove M_MASTER_HDR. Enlarge M_MASTER_GRPFR (that is the

header and group frames for Master) by three lines so that it can contain boiler plate text ”Accounting Flexfield” and the underline. Resize and move the field F_APROMPT as shown in the sample layout to display above prompt as displayed in the sample output. Add all the boiler plate text ”Accounting Flexfield”, underline below and underline below the above prompt.

You modify fields to display ”Company”, ”01” and ”Widget Corporation” in the Group 1 (region 2). As shown in the Sample Layout, modify F_BAL_LPROMPT, F_MASTER2 and F_BAL_DESC fields so that they are side by side with the unit length. Specify ”Horizontal Sizing” as ”Variable”. This ensures that the fields always be apart by fixed amount and adjust due to their variable sizing. Sources of these fields are C_BAL_LPROMPT, C_MASTER2 and C_BAL_DESC respectively.

In this step you build the layout for Region 1. At the top of report, ’Foreign Currency General Ledger’ is a boiler plate that can be added using layout painter. ’Currency:’ and ’Period:’ are also Boiler plate and the corresponding fields (’CND’ and DEC–90) are filled by lexical input parameters P_CURRENCY, P_PERIOD. ’Set of Books 2’ is filled by input lexical parameter P_SET_OF_BOOKS. Similarly, the ’Date’ and ’Page’ fields are filled by system parameters ’Current Date’ and ’Logical Page Number’.

Enter the Field Definition property sheet of F_FLEXFIELD and specify ”Vertical Sizing” as ”Variable”. This ensures that when the data is larger than the field width, the value wraps and it is not truncated. This can be seen in the description of flexfield value in line 15 of the sample output.

The following table lists a report summary:

Lexical Parameters	Columns	FND User Exits
P_CONC_REQUEST_ID	C_APROMPT	FND FLEXIDVAL
P_FLEXDATA	C_BAL_DESC	FND FLEXSQL
P_CURRENCY	C_BAL_LPROMPT	FND SRWINIT
P_OPERAND1	C_BAL_VAL	FND SRWEXIT
P_ORDERBY	C_DESC_ALL	
P_PERIOD	C_FLEXDATA	

Table 8 – 14 (Page 1 of 2)

Lexical Parameters	Columns	FND User Exits
P_SET_OF_BOOKS	C_FLEXDATA_MASTER	
P_COMPANY	C_DETAIL	
P_STRUCT_NUM	C_FLEXFIELD	
P_WHERE	C_MASTER	
	C_MASTER2	

Table 8 – 14 (Page 2 of 2)

Report 5: Master–detail Report on Multiple Structures

This example illustrates how to build a master / detail report on multiple flexfield structures.

Sample Output

Same as sample output in the ”Master–Detail Report”

Sample Layout

Same as sample layout in the ”Tabular Report”

Report Writing Steps

Step 1 Define your Before Report Trigger

```
SRW.USER_EXIT('FND SRWINIT');
```

Step 2 Define your After Report Trigger

```
SRW.USER_EXIT('FND SRWEXIT');
```

Step 3 Define your parameters

Define the following parameters using the Data Model Painter. You use these parameters in the user exit calls and SQL statements.

The following table lists the parameters:

Name	Data Type	Width	Initial Value	Notes
P_CONC_REQUEST_ID	Number	15	0	Always create
P_FLEXDATA	Character	6000	Very long string	Cumulative width more than expected width required to hold the data
P_STRUCT_NUM	Character	15	101	Contains structure number
P_WHERE	Character	200	Valid WHERE clause	Used to construct WHERE clause

Name	Data Type	Width	Initial Value	Notes
P_ORDERBY	Character	16000	Valid ORDER BY clause	Used to construct ORDER BY clause
P_OPERAND1	Character	15		Used to construct the P_WHERE parameter
P_COMPANY	Character	16000	Very long string	
P_SET_OF_BOOKS	Character	Obtain from GL		Use in the report header
P_CURRENCY	Character	15		Use in the report header
P_PERIOD	Character	Obtain from GL		Use in the report header

P_ORDERBY and P_COMPANY are very long strings because they contain long DECODE statements for multiple structures.

Step 4 Build query parameters

Now you build parameters for three queries. First query Q_COMPANY retrieves all the companies, The second query Q_MASTER fetches one record of flexfield data for each company to build company left prompt, above prompts etc. Thus the first two queries are used to build the master record. The third query (Q_DETAIL) fetches all the flexfield data for each company.

First you populate all the parameters to be used in the first query for getting all the companies (Q_COMPANY) . Call FND FLEXSQL to populate P_COMPANY. Use this parameter to retrieve all the master records. Call this user exit as follows–

```
SRW.USER_EXIT('FND FLEXSQL
CODE="GL#"
MULTINUM="YES"
APPL_SHORT_NAME="SQLGL"
OUTPUT=":P_COMPANY"
```

```
MODE="SELECT"
DISPLAY="GL_BALANCING"');
```

Attention: In a multi–structure flexfield report MODE="WHERE" is invalid.

Step 5 Call FND FLEXSQL from your Before Report Trigger

Next, you build all the parameters of the next two queries for obtaining flexfield data. You make two calls to FND FLEXSQL from the Before Report Trigger specifying the lexical parameters.

Step 6 Call FND FLEXSQL from your Before Report Trigger to populate P_FLEXDATA

```
SRW.USER_EXIT('FND FLEXSQL
CODE="GL#"
MULTINUM="YES"
APPL_SHORT_NAME="SQLGL"
OUTPUT=":P_FLEXDATA"
MODE="SELECT"
DISPLAY="ALL"');
```

Step 7 Call FND FLEXSQL from your Before Report Trigger to populate P_ORDERBY

The second call changes the value of lexical P_ORDERBY to the SQL fragment (for example to SEGMENT3, SEGMENT2, SEGMENT4, SEGMENT1) at run time. When this lexical parameter is incorporated into the ORDER BY clause of a query, it enables the query to order by flexfield segments. The AOL call is same as first one except for MODE="ORDER BY" as follows:

```
SRW.USER_EXIT('FND FLEXSQL
CODE="GL#"
MULTINUM="YES"
APPL_SHORT_NAME="SQLGL"
OUTPUT=":P_ORDERBY"
MODE="ORDER BY"
DISPLAY="ALL"');
```

Step 8 Define your report queries

Define your report's first query (Q_COMPANY) to fetch all the different companies and flexfield structure numbers.

```
SELECT  DISTINCT &P_COMPANY C_MASTER,
CHART_OF_ACCOUNTS_ID C_NUM_C
FROM CODE_COMBINATIONS_TABLE
```

Please note the difference in the query from the queries earlier. This query contains one extra column C_NUM_C. You use this column to supply the structure number in the user exit FND FLEXIDVAL.

When the report runs, the call to FND FLEXSQL fills in the lexical parameter to look something like:

```
SELECT  DISTINCT (SEGMENT1) C_MASTER,
CHART_OF_ACCOUNTS_ID C_NUM_C
FROM   CODE_COMBINATIONS_TABLE
```

The second query (Q_MASTER) fetches one record of flexfield data for each company to build the company left prompt and description. It is also used for constructing the above prompt for displaying concatenated flexfield value descriptions retrieved in the detail query.

```
SELECT  &P_COMPANY C_MASTER2,
STRUCTURE_DEFINING_COLUMN C_NUM_M,
&P_FLEXDATA C_FLEXDATA_MASTER
FROM CODE_COMBINATIONS_TABLE
WHERE ROWNUM < 2
AND &P_COMPANY = :C_MASTER
AND STRUCTURE_DEFINING_COLUMN = :C_NUM_C
```

This query has Q_COMPANY as its parent group.

You use ”ROWNUM < 2” because you want only one record in that region. You use the parent–child relationship ”AND &P_COMPANY = :C_MASTER” within your query, instead of using ”link”, so that Oracle Reports can recognize that the columns specified by your parameters are related. You create an ”empty link” to G_COMPANY to make G_COMPANY the parent group.

Now you define your report detail query (Q_FLEX):

```
SELECT &P_COMPANY C_DETAIL,
CHART_OF_ACCOUNTS_ID C_NUM_D,
&P_FLEXDATA C_FLEXDATA [, NORMALCOLUMNS...]
FROM CODE_COMBINATIONS_TABLE
WHERE &P_COMPANY = :C_MASTER
AND STRUCTURE_DEFINING_COLUMN = :C_NUM_C
ORDER BY &P_ORDERBY
```

When the report runs, the four calls to FND FLEXSQL fill in the lexical parameters to look something like:

```
SELECT (SEGMENT1) C_DETAIL,
CHART_OF_ACCOUNTS_ID C_NUM_D
(SEGMENT1||'-'||SEGMENT2||'-'||SEGMENT3||'-'||
       SEGMENT4) C_FLEXDATA [, NORMALCOLUMNS...]
FROM   CODE_COMBINATIONS_TABLE
WHERE (SEGMENT1) = :C_MASTER
AND STRUCTURE_DEFINING_COLUMN = :C_NUM_C
ORDER BY SEGMENT3, SEGMENT2, SEGMENT4, SEGMENT1
```

This query has G_MASTER as its parent group.

Step 9 Create Region 2 formula columns

Now create columns corresponding to the values displayed in Region 2. They all are in Q_MASTER group. To retrieve the flexfield segment value, left prompt and description, you incorporate the AOL user exits in the corresponding columns. Be sure to adjust the column width as appropriate for the value the column holds (such as a prompt, which might be as long as 30 characters).

First create column C_BAL_LPROMPT (for columns corresponding to "Company" in the sample output). In this column incorporate FND FLEXIDVAL calls in the formula field. You pass the concatenated segments along with other information to the user exit:

```
SRW.REFERENCE(:C_NUM_M);
SRW.REFERENCE(:C_FLEXDATA_MASTER);
SRW.USER_EXIT('FND FLEXIDVAL
CODE="GL#"
NUM=":C_NUM_M"
APPL_SHORT_NAME="SQLGL"
DATA=":C_FLEXDATA_MASTER"
LPROMPT=":C_BAL_LPROMPT"
DISPLAY="GL_BALANCING"');
RETURN(:C_BAL_LPROMPT);
```

The user exit populates "Company" in the column 'C_BAL_LPROMPT'.

Similarly create columns C_BAL_DESC (displaying Widget Corporation) with the following calls:

```
SRW.REFERENCE(:C_NUM_M);
SRW.REFERENCE(:C_FLEXDATA_MASTER);
SRW.USER_EXIT('FND FLEXIDVAL
CODE="GL#"
NUM=":C_NUM_M"
APPL_SHORT_NAME="SQLGL"
DATA=":C_FLEXDATA_MASTER"
DESCRIPTION=":C_BAL_DESC"
DISPLAY="GL_BALANCING"');
RETURN(:C_BAL_DESC);
```

Create the above prompt ("Company–Country–Currency–Status") in the sample output by the following call:

```
SRW.REFERENCE(:C_NUM_M);
SRW.REFERENCE(:C_FLEXDATA_MASTER);
SRW.USER_EXIT('FND FLEXIDVAL
CODE="GL#"
NUM=":C_NUM_M"
APPL_SHORT_NAME="SQLGL"
DATA=":C_FLEXDATA_MASTER"
APROMPT=":C_APROMPT"
DISPLAY="GL_BALANCING"');
RETURN(:C_APROMPT);
```

You construct columns corresponding to the region 3 of the report in the following steps.

Step 10 Create formula columns

Create formula columns C_FLEXFIELD and C_DESC_ALL to display concatenated segment values and description respectively. These columns have same group (G_DETAIL) as C_FLEXDATA. Be sure to adjust the column width as appropriate for the value the column holds (such as a prompt, which might be as long as 30 characters).

Attention: Use word–wrapping for flexfield columns if necessary to avoid possible truncation of your values. Do this by setting Sizing to Expand.

Step 11 Populate segment values formula column

To retrieve the concatenated flexfield segment values and description, you incorporate the AOL user exits in these columns. In the column

definition of C_FLEXFIELD incorporate AOL user exit (FND FLEXIDVAL) call in the formula field.

```
SRW.REFERENCE(:C_NUM_D);
SRW.REFERENCE(:C_FLEXDATA);
SRW.USER_EXIT('FND FLEXIDVAL
CODE="GL#"
NUM=":C_NUM_D"
APPL_SHORT_NAME="SQLGL"
DATA=":C_FLEXDATA"
VALUE=":C_FLEXFIELD"
DISPLAY="ALL"');
RETURN(:C_FLEXFIELD);
```

Step 12 Populate segment descriptions

To populate segment descriptions use DESCRIPTION="C_DESC_ALL" instead of VALUE="C_FLEXFIELD" as in the previous step. The user exit call becomes:

```
SRW.REFERENCE(:C_NUM_D);
SRW.REFERENCE(:C_FLEXDATA);
SRW.USER_EXIT('FND FLEXIDVAL
CODE="GL#"
NUM=":C_NUM_D"
APPL_SHORT_NAME="SQLGL"
DATA=":C_FLEXDATA"
DESCRIPTION=":C_DESC_ALL"
DISPLAY="ALL"');
RETURN(:C_DESC_ALL);
```

You have created parameters and columns that are containers of all the values to be displayed. Now, in the following steps, you create the layout to display these values on the report.

Step 13 Create your default report layout

Use the Report Wizard to generate the default layout. Deselect group G_COMPANY and columns C_FLEXDATA_MASTER, C_DETAIL, C_FLEXDATA. Delete all the labels of C_BAL_LPROMPT, C_MASTER2, C_BAL_DESC, C_APROMPT as these labels are not required. Specify reasonable widths for these columns.

The following table lists the default column settings:

Column	Label	Width
C_FLEXFIELD	Accounting Flexfield	30
C_DESC_ALL	Flexfield Description	50
C_APROMPT		100
C_BAL_DESC		40
C_BAL_LPROMPT		20
C_MASTER2		4

Table 8 – 15 (Page 1 of 1)

Oracle Reports takes you to the layout painter. Before modifying the default layout in the painter, you may want to generate and run the report with the current layout to test the previous steps.

Step 14 Finish your report

Now you modify the default locations of the fields and create new fields in the layout painter. First [SELECT ALL] and move all fields to the desired location as shown in the sample layout of Regions 2 and 3. Remove M_MASTER_HDR. Enlarge M_MASTER_GRPFR (that is the header and group frames for Master) by three lines so that it can contain boiler plate text ”Accounting Flexfield” and the underline. Resize and move the field F_APROMPT as shown in the sample layout to display above prompt as displayed in the sample output. Add all the boiler plate text ”Accounting Flexfield”, underline below and underline below the above prompt.

You modify fields to display ”Company”, ”01” and ”Widget Corporation” in the Group 1 (region 2). As shown in the Sample Layout, modify F_BAL_LPROMPT, F_MASTER2 and F_BAL_DESC fields so that they are side by side with the unit length. Specify ”Horizontal Sizing” as ”Variable”. This ensures that the fields always be apart by a fixed amount and adjust due to their variable sizing. Sources of these fields are C_BAL_LPROMPT, C_MASTER2 and C_BAL_DESC respectively.

In this step you build the layout for Region 1. At the top of report, ’Foreign Currency General Ledger’ is boilerplate that can be added using the layout painter. ’Currency:’ and ’Period:’ are also Boiler plates

and the corresponding fields ('CND' and DEC–90) are filled by lexical input parameters P_CURRENCY, P_PERIOD. 'Set of Books 2' is filled by input lexical parameter P_SET_OF_BOOKS. Similarly, the 'Date' and 'Page' fields are filled by system parameters 'Current Date' and 'Logical Page Number'.

Use the Field Definition property sheet of F_FLEXFIELD to specify "Vertical Sizing" as "Variable". This ensures that when the data is larger than the field width, the value wraps and it is not truncated. This can be seen in the description of flexfield values in line 15 of the sample output.

The following table lists a report summary:

Lexical Parameters	Columns	FND User Exits
P_CONC_REQUEST_ID	C_APROMPT	FND FLEXIDVAL
P_FLEXDATA	C_BAL_DESC	FND FLEXSQL
P_CURRENCY	C_BAL_LPROMPT	FND SRWINIT
P_OPERAND1	C_BAL_VAL	FND SRWEXIT
P_ORDERBY	C_DESC_ALL	
P_PERIOD	C_FLEXDATA	
P_SET_OF_BOOKS	C_FLEXDATA_MASTER	
P_COMPANY	C_DETAIL	
P_STRUCT_NUM	C_FLEXFIELD	
P_WHERE	C_MASTER	
	C_MASTER2	
	C_NUM_C	
	C_NUM_M	
	C_NUM_D	

Table 8 – 16 (Page 1 of 1)

CHAPTER

9

Key Flexfield Routines for Special Validation

This chapter contains information on using special validation to provide flexfields as report parameters and includes syntax for flexfields routines.

Syntax for Key Flexfield Routines

If you want to create a special value set (for a report parameter) that uses key flexfield routines, see the section on Special Validation Value Sets for additional arguments and argument options you use for special value sets (in addition to this section).

Use the argument list appropriate for the type of flexfield you want as a value set for a report parameter (foreign key reference, or range flexfield).

See:

Special Validation Value Sets: page 9 – 23

For further information on how an application developer creates a new key flexfield and builds a combinations form, see the *Oracle Applications Developer's Guide*.

See:

Implementing Key Flexfields
(Oracle Applications Developer's Guide)

Foreign Key Reference Flexfield

The POPID / LOADID / VALID calling sequence for a foreign key reference flexfield (for most flexfield report parameters) is:

Syntax

```
#FND {POPID|LOADID|VALID}
CODE="flexfield code"
APPL_SHORT_NAME="application_short_name"
VALIDATE="{FULL|PARTIAL|NONE|QUERY}"
SEG="block.concatenated values field name"
[BLOCK="block_name"]
[FIELD="field_name"]
[DERIVED=":block.field\nSegment qualifier"]
[READ_ONLY="{Y|N}"]
[DINSERT="{Y|N}"]
[WINDOW="{Y|N}"]
[ID="block.unique ID field"]
[REQUIRED="{Y|N}"]
[DISPLAY="{ALL | flexfield qualifier |
       segment number}"]
[UPDATE="{ALL | flexfield qualifier |
```

```
      segment number}"]
[INSERT="{ALL | flexfield qualifier |
      segment number}"]
[DATA_FIELD="concatenated hidden IDs field"]
[DESC="block.concatenated description field name"]
[TITLE="window title"]
[VDATE="date"]
[NAVIGATE="{Y|N}"]
[AUTOPICK="{Y|N}"]
[NUM=":structure defining field"]
[COPY=":block.field\n{ALL | flexfield qualifier}"]
[VRULE="flexfield qualifier\n
      segment qualifier\n
      {I[nclude]|E[xclude]}\n APPL=shortname;
      NAME=Message Dictionary message name\n
      validation value1\n
      validation value2..."]
[VALATT=":block.field\n
      flexfield qualifier\n
      segment qualifier"]
[USEDBFLDS="{Y|N}"]
[COLUMN="{column1(n) | column1 alias(n)
      [, column2(n), ...]}]
[WHERE="where clause"]
[SET="set number"]
[ALLOWNULLS="{Y|N}"]
[QUERY_SECURITY="{Y|N}"]
[QBE_IN="{Y|N|B}"]
[LONGLIST="{Y|N}"]
[NO_COMBMSG="MESG_NAME"]
```

CODE The flexfield code you specify when you set up this flexfield using the Register Key Flexfield form. This code ***must*** match the code you registered.

APPL_SHORT_NAME The application short name with which your flexfield is registered.

VALIDATE Use a validation type of FULL to validate all segment values and generate a new code combination and dynamically insert it into the combinations table when necessary. If you specify FULL, Oracle Application Object Library checks the values your user enters against the existing code combinations in the code combinations. If the

combination exists, Oracle Application Object Library retrieves the code combination ID. If the combination does not exist, Oracle Application Object Library creates the code combination ID and inserts the combination into the combinations table. If you (or an installer) define the flexfield structure with Dynamic Inserts Allowed set to No, then Oracle Application Object Library issues an error message when a user enters a combination that does not already exist. In this case, Oracle Application Object Library does not create the new code combination. FULL is the usual argument for a form with a foreign key reference.

Use PARTIAL to validate each individual segment value but *not* create a new valid combination or check the combinations table for an existing combination. You would use PARTIAL when you want to have application logic that requires flexfield segment values but does not require an actual code combination. For example, Oracle Application Object Library's Define Shorthand Aliases form requires that a user enters valid values for each segment, but does not require (or check) that the actual code combination already exists in the combinations table. The Define Shorthand Aliases form does not create the combination, either.

Use NONE if you wish no validation. Use QUERY (not QUERY_BASE) for POPID in a FND_PRE_QUERY trigger. The default value is FULL.

Use the same value in your LOADID and VALID as you use in your POPID in your KEY_PREFIELD trigger. Do not use FOR_INSERT for a form with a foreign key reference.

If you wish to implement shorthand flexfield entry for your form with a foreign key reference, you must use FULL for POPID in your KEY_PREFIELD trigger (as well as LOADID and VALID).

SEG

block.concatenated values field name is a displayed, non–database form field that contains your concatenated segment values plus delimiters.

DERIVED

Use DERIVED to get the derived value of segment qualifiers for a combination that someone types in. Use *block.field* to specify the block and field you want Oracle Application Object Library to load the derived value into. Use *Segment qualifier* to specify the segment qualifier name you want. Note: do not put spaces around \n, and \n must be lowercase.

Oracle Application Object Library uses the following rules to get the derived qualifier value from the individual segment qualifier values: if the segment qualifier is unique, the derived value is the segment qualifier value; for non–unique segment qualifiers, if any segment's qualifier value = N, then the derived value is N, otherwise, the derived value is Y. The only exception to this rule is for the internal SUMMARY_FLAG segment qualifier; the rule for this is if any segment value is a parent, then the derived value of SUMMARY_FLAG is Y. Oracle Application Object Library loads derived values into the combinations table qualifier column that you specify when you define your qualifier.

You do not need the three DERIVED=":*block*.SUMMARY_FLAG\n SUMMARY_FLAG", DERIVED=":*block*.START_DATE_ACTIVE\n START_DATE_ACTIVE", and DERIVED=":*block*. END_DATE_ACTIVE\nEND_DATE_ACTIVE" parameters for a form with a foreign key reference.

READ_ONLY

This parameter prevents any updating of your flexfield, whether from shorthand alias, copy, or any other method.

DINSERT

The DINSERT parameter turns dynamic inserts off or on for this form. You must set this parameter to N for flexfields within flexfields such as flexfields in a Special validation value set.

WINDOW

Specify N if your flexfield contains only a single display segment and you want your users to type directly into the field, instead of into an invisible pop–up window.

ID

Specify the *block.field* that contains the unique ID for this flexfield. The default value is "*block.ID column name*" where *block* is the current block and *ID column name* is the Unique ID Column Name specified for this flexfield using the Register Key Flexfield form.

REQUIRED

Specify whether your user can exit the flexfield window without entering segment values.

You should specify the same value for REQUIRED in your POPID, LOADID, and VALID triggers. You do not need the REQUIRED parameter for POPID in an FND_PRE_QUERY trigger. The default value is Y.

If you specify Y, then Oracle Application Object Library prevents your user from leaving any required segment (a segment whose value set has Value Required set to Yes) without entering a valid value for that segment. Also, if your user tries to save a row without ever entering the flexfield pop–up window, VALID attempts to use default values to fill in any required segments and issues an error message if not all required segments can be filled.

If you specify Y and VALIDATE="FULL", then when your user queries up a row with no associated flexfield (the foreign key flexfield ID column contains NULL), Oracle Application Object Library issues an error message to warn the user that a NULL ID has been returned for a required flexfield. The LOADID routine also returns failure.

If you specify N, Oracle Application Object Library allows your user to save a row without ever entering the flexfield pop–up window. If you specify N, Oracle Application Object Library also lets your user navigate (without stopping) through a flexfield window without entering or changing any values. However, if a user enters or changes any segment value in the flexfield, Oracle Application Object Library prevents the user from leaving the flexfield window until all required segments contain valid values. If you specify N and a user does not open or enter values in the

window, VALID allows the user to save the row whether the flexfield has required segments. In this case, VALID does not save default values as segment values for the required segments, and it does not issue an error message.

If you specify N and VALIDATE="FULL", then when your user queries up a row with no associated flexfield (the foreign key flexfield ID column contains NULL), Oracle Application Object Library validates the individual segment values returned by the query. Specify N if you want to query up non–required flexfields without getting an error message.

Note that even if REQUIRED="N", a user who starts entering segment values for this flexfield must either fill out the flexfield in full, or abandon the flexfield.

DISPLAY

The DISPLAY parameter allows you to display segments that represent specified *flexfield qualifiers* or specified *segment numbers*, where *segment numbers* are the order in which the segments appear in the flexfield window, not the segment number specified in the Define Key Segments form. For example, if you specify that you want to display only segment number 1, your flexfield displays only the first segment that would normally appear in the pop–up window (for the structure you specify in NUM).

If you include the DISPLAY parameter in your POPID, you must include the DISPLAY parameter with the exact same argument in your LOADID and VALID calls.

The default value for DISPLAY is ALL, which makes your flexfield display all segments. Alternatively, you can specify a *flexfield qualifier name* or a *segment number*.

You can use DISPLAY as a toggle switch by specifying it more than once. For example, if you want your flexfield to display all but the first segment, you would specify:

```
DISPLAY="ALL"
DISPLAY="1"
```

If you do not display all your segments, but you use default values to fill in your non–displayed segments, you must also have hidden SEGMENT1 through SEGMENTn fields in your form. You need these hidden fields because Oracle Application Object Library writes the values for all displayed fields to the concatenated values field, but does not write the values for the non–displayed defaulted fields. Since Oracle Application Object Library normally uses the values in the concatenated values field to update and insert to the database, the default values for the non–displayed fields are not committed. However, if you have the extra hidden fields (similar to a combinations form), Oracle Application Object Library writes flexfield values to those fields as well as to the concatenated segment values field. The non–displayed values are written only to the hidden fields, but are used to update and insert to the database.

UPDATE
INSERT

The UPDATE / INSERT parameters determine whether your users can update or insert segments that represent specified unique *flexfield qualifiers* or *segment numbers*, where *segment numbers* are the order in which the segments appear in the flexfield window, not the segment number specified in the Define Key Segments form.

You do not need the UPDATE and INSERT parameters for LOADID or VALID.

The default value for each is ALL, which allows your user to update / insert all segments. Alternatively, you can specify a *flexfield qualifier name* or a *segment number*. You can enter UPDATE="" or INSERT="" to prevent your user from updating or inserting values for **any** segments.

You can use these parameters as toggle switches by specifying them more than once. For example, if you want your user to be able to update all but the first segment, you would specify:

UPDATE="ALL"
UPDATE="1"

If you use INSERT="" to prevent your user from inserting values for any segments, Shorthand Flexfield Entry is disabled for that form.

DATA_FIELD The *concatenated hidden IDs field* is a non–displayed form field that contains the concatenated segment hidden IDs.

DESC *block.concatenated description field name* is a displayed, non–database, non–enterable field that contains concatenated descriptions of your segment values. If you do not specify the DESC parameter, Oracle Application Object Library does not display concatenated segment descriptions.

TITLE *window title* appears at the top of the pop–up window. The default value is the Flexfield Name you specify when you set up this flexfield using the Define Key Segments form.

VDATE *date* is the validation date against which the Start Date and End Date of individual segment values is checked. You enter a Start Date and End Date for each segment value you define using the Define Key Segment Values form. See: Define Segment Values: page 4 – 65.

For example, if you want to check values against a date that has already passed (say, the closing date of an accounting period), you might specify that date as VDATE using a field reference (VDATE=:*block.field*) and compare your segment values against that date.

The default value is the current date.

NAVIGATE Specify Y if flexfields should automatically determine the navigation out of the flexfield pop–up window (that is, if your user exits the window by pressing [Next Field], then the cursor appears in the field after flexfield. Alternatively, if your user exits the flexfield by pressing [Previous Field], then the cursor appears in the field before the flexfield).

This value should be Y for POPID in a KEY_PREFIELD trigger, but is not needed for LOADID or VALID. Omit this argument for a POPID in an FND_PRE_QUERY trigger. The default value is N for backward compatibility.

AUTOPICK Specify N if flexfields should not pop up a list of values window when a user enters an invalid value.

You do not need the AUTOPICK parameter for LOADID or VALID. The default value is Y.

NUM The non–displayed database *:block.field* that holds the identification number of your flexfield structure. You may also specify :$PROFILES$.*your_profile_option_name* to retrieve a value you set in a user profile option. You can "hardcode" a structure number, such as 101, into this parameter instead of providing a field reference, but such a number prevents you from using multiple structures for your flexfield. You must use this option if you are using multiple structures.

You can use the following SQL statement to retrieve the structure identification numbers for your flexfield:

```
SELECT ID_FLEX_NUM, ID_FLEX_STRUCTURE_NAME
FROM FND_ID_FLEX_STRUCTURES
WHERE ID_FLEX_CODE = 'flexfield code';
```

where *flexfield code* is the code you specify when you register your flexfield.

The default value for NUM is 101.

COPY Copies a non–null value from *:block.field* into the segment representing the specified flexfield *qualifier* or *segment number* before the flexfield window pops up. Alternatively, if you specify ALL, COPY copies a set of non–null, concatenated set of segment values (and their segment separators) that you have in *:block.field* into all of your segments. For example, if you have a three–segment flexfield, and your *:block.field* contains 001.ABC.05, COPY puts 001 into the first segment, ABC into the second segment, and 05 into the third segment.

The value you COPY into a segment must be a valid value for that segment. The value you COPY overrides any default value you set for your segment(s) using the Define Key Segments form. However, shorthand flexfield entry values override COPY values. COPY does not copy a NULL value over an existing (default) value. However, if the value you copy is not a valid value for that segment, it gives the appearance of overriding a default value with a NULL value: the invalid value overrides the default value, but Oracle Application Object Library then erases the copied value because it is invalid. You should ensure that the field you copy from contains valid values.

When the flexfield window closes, Oracle Application Object Library automatically copies the value in the segment representing the specified *flexfield qualifier* or *segment number* into *:block.field*. Alternatively, if you specify ALL, Oracle Application Object Library automatically copies the concatenated values of all your segments into *:block.field*.

You can specify one or more COPY parameters. Later COPY parameters override earlier COPY parameters. For example, assume you have a field that holds concatenated flexfield values, called Concatenated_field, and it holds the string 01–ABC–680. You also have a field, Value_field, that holds a single value that you want to copy into your second segment, and it holds the value XYZ. You specify:

```
COPY="block.Concatenated_field\nALL"
COPY="block.Value_field\n2"
```

When your user opens the flexfield window, Oracle Application Object Library executes the two COPY parameters in order, and your user sees the values in the window as:

```
01
XYZ
680
```

After the flexfield window closes, Oracle Application Object Library copies the values back

into the two fields as 01–XYZ–680 and XYZ respectively. Note that XYZ overrides ABC in this case.

You do not need the COPY parameter for LOADID or VALID, or in POPID in an FND_PRE_QUERY. The delimiter \n must be lowercase.

VRULE

Use VRULE to put extra restrictions on what values a user can enter in a flexfield segment based on the values of segment qualifiers (which are attached to individual segment values). You can specify the name of a *flexfield qualifier* and a *segment qualifier*, whether to Include or Exclude the *validation values*, and the *Message Dictionary message name* for the message Oracle Application Object Library displays if the user enters an improper value. The delimiter \n must be lowercase.

For example, suppose you build a form where you want to prevent your users from entering segment values for which detail posting is not allowed into all segments of Oracle General Ledger's Accounting Flexfield.
DETAIL_POSTING_ALLOWED is the segment qualifier, based on the global flexfield qualifier GL_GLOBAL, that you want to use in your rule. You want to exclude all values where the value of DETAIL_POSTING_ALLOWED is N (No). Your message name is "GL Detail Posting Not Allowed", and it corresponds to a message that says "you cannot use values for which detail posting is not allowed." You would specify your rule as:

```
VRULE="GL_GLOBAL\nDETAIL_POSTING_ALLOWED\nE
\nNAME=GL Detail Posting Not Allowed\nN"
```

When your user enters an excluded value in one of the segments affected by this qualifier, your user gets the message you specify. In addition, the excluded values do not appear in the Lists of Values on your segments. All other values, not being specifically excluded, are included.

You can specify one or more VRULE parameters. Oracle Application Object Library checks multiple VRULE parameters bottom–up relative to the order

you list them. You should order your rules carefully so that your user sees the most useful error message first.

VALATT

VALATT copies the *segment qualifier* value of the segment representing the **unique** *flexfield qualifier* into *:block.field* when the flexfield window closes. The delimiter \n must be lowercase.

Include the same value for the VALATT parameter in your POPID (KEY_PREFIELD), LOADID, and VALID. You do not need this parameter in POPID in FND_PRE_QUERY.

USEDBFLDS

Specify this parameter if your form is based on a table that has foreign key references to two or more flexfields, and if you have non–database SEGMENT1 through N fields on your form (where N is the number of segments in your combinations table). If such fields exist, Oracle Application Object Library by default will load values into them that correspond to the combination of segment values in the current flexfield. If you set this parameter to N, Oracle Application Object Library will not load the segment fields for the current flexfield. If you have more than one flexfield on your form, use this parameter to specify which one should use the segment fields (specify Y for one flexfield's routine calls, and specify N for other flexfields' routine calls). The default value is Y.

COLUMN

Use COLUMN to display other columns from the combinations table in addition to the current segment columns, where *n* is the display width of the column. You can place the values of the other columns into fields on the current form. The value is automatically copied into the field when the user selects an existing flexfield.

For example, to display a description column called SEG_DESC and an error message from E_FLAG with the column headings DESCRIPTION and ERROR FLAG, you could set COLUMN="SEG_DESC DESCRIPTION(15), E_FLAG \"ERROR FLAG \"(*)". The (*) sets a dynamic column width, with the size determined

by the value selected. If you wanted to place the description into the field block_1.field_1 and the error message into block_1.field_2, you would set

COLUMN=”SEG_DESC DESCRIPTION(15) INTO BLOCK_1.FIELD_1, E_FLAG \” ERROR FLAG \”(*) into BLOCK1_FIELD_2”

You may only use 32 distinct INTO columns in your COLUMN= clause. Your maximum width for additional columns is 240 characters.

WHERE

Specify a WHERE clause to customize which code combinations to display in the combination–level List of Values pop–up window. Normally, the List of Values displays a combination–level List of Values of all current valid combinations, instead of a single–segment List of Values, when the validation type of the segment’s value set is NONE.

This argument also prevents a user from selecting a combination that does not fit the WHERE clause. In the case of a single–segment flexfield where the segment uses a validated value set, this may have the effect that a user will initially see all values in the List of Values (the segment–level List of Values), but then will get an error message if the value chosen is not already an existing combination (as well as being a valid individual segment value) if dynamic inserts are not allowed.

You should use this token with flexfields that do not allow dynamic inserts, either using DINSERTS=”N” or preventing dynamic inserts at the structure level. Do not specify the word ”WHERE” in this where clause argument.

SET

Specify the *:block.field* that holds the set identifier for your flexfield. SET specifies which set of code combinations to use for this flexfield. For each flexfield structure, you can divide code combinations in your combinations table into sets (for example, parts with high prices, medium prices, and low prices). You can only use SET if you implement a structure defining column (that is, you *must* specify NUM). The default for SET is your structure number (as specified in NUM). If

you use SET, your application must maintain a separate table that contains the correspondences between sets and key flexfield structures. For example, your correspondences table could contain values such as:

If you use SET, Oracle Application Object Library stores the set number in the structure defining column instead of the structure number. Note that you cannot have duplicate set numbers in your correspondences table, though you can have more than one set number for a given structure number. You must derive SET and NUM from different :block.fields (or profile options, or "hardcoded" numbers) since they are distinctly different numbers.

Structure	Set	Set Description
101	1	Low priced truck parts
101	2	Medium priced truck parts
101	3	High priced truck parts
102	4	Low priced car parts
102	5	High priced car parts
103	6	Low priced motorcycle parts
103	7	High priced motorcycle parts

If you have a flexfield query–by–example POPID in a FND_PRE_QUERY trigger, you should add an extra step to copy the set number (SET) in addition to the step that copies the structure number (NUM).

Specify the same value for SET in POPID, LOADID, and VALID.

ALLOWNULLS Determines whether NULLs should be allowed into any segment. ALLOWNULLS overrides the value set definition (Value Required is Yes) for each segment only if you specify PARTIAL or NONE for the VALIDATE parameter.

QUERY_ SECURITY Determines whether flexfield value security applies to queries as well as inserts and updates. If you specify Y, your users cannot query up existing code combinations that contain restricted values. If you specify N, your users can query and look at code combinations containing restricted values. Users

can update the restricted values to non–restricted values, but they cannot enter restricted values or update values to restricted values. The default value is N. This option has no effect unless your users have enabled and defined flexfield value security for your flexfield's value sets (using the Define Value Sets form, the Define Flexfield Security Rule form, and the Assign Flexfield Security Rules form).

Put this option in your LOADID call only. You do not need QUERY_SECURITY in POPID or VALID.

QBE_IN

Controls the type of subquery Oracle Application Object Library uses to select the desired rows in flexfield query–by–example.

Use this option only in a POPID in an FND_PRE_QUERY trigger. Do not use in POPID in your KEY_PREFIELD trigger or in LOADID or VALID. The default value is N.

If you specify N, Oracle Application Object Library generates a correlated subquery. This query is effectively processed once for each row returned by the main query (generated by the rest of the form), and it uses the code combination ID as a unique index. Choose N if you expect your main query to return a small number of rows and you expect your flexfield query–by–example to return many rows.

If you specify Y, Oracle Application Object Library generates a non–correlated subquery using the "IN" SQL clause. Oracle Application Object Library processes the query only once, but returns all the rows in your combinations table that match your flexfield query–by–example criteria. Choose Y when you expect your main query to return many rows and you expect your flexfield query–by–example to return a small number of rows (less than about 100). Such a condition usually corresponds to a small number of rows in the combinations table and many rows in the application table. For example, assume you have a Part Flexfield, where your company handles only a limited number of parts (say, 75), but you have

thousands of orders for your parts (and a correspondingly large Orders table). For this case, choosing Y would greatly improve your application performance on flexfield queries–by–example.

You can specify B if your Forms block is based on the combinations table. No subquery is used. If you set QBE_IN to B, you must also set USEDBFLDS to Y.

LONGLIST Specify Y or N to allow using LongList with this flexfield. LongList allows users to specify a partial value when querying a flexfield combination.

NO_COMBMSG If you wish to display your own message when a user enters an invalid combination, specify the message name here. Otherwise flexfields uses the standard Application Object Library Message.

Range Key Flexfield

The POPIDR / LOADIDR / VALIDR calling sequence for a parameter with a range key flexfield is:

Syntax

```
#FND {POPIDR|LOADIDR|VALIDR}
CODE="flexfield code"
APPL_SHORT_NAME="application_short_name"
VALIDATE="{PARTIAL|NONE}"
[REQUIRED="{Y|N}"]
[DISPLAY="{ALL | flexfield qualifier |
       segment number}"]
[UPDATE="{ALL | flexfield qualifier |
       segment number}"]
[INSERT="{ALL | flexfield qualifier |
       segment number}"]
[SEG=":block.concatenated values field name"]
[DESC=":block.concatenated description field name"]
[TITLE="window title"]
[VDATE="date"]
[NAVIGATE="{Y|N}"]
[AUTOPICK="{Y|N}"]
[NUM="structure defining field"]
[VRULE="flexfield qualifier\n
```

```
        segment qualifier\n
        {I[nclude]|E[xclude]} APPL=shortname;
        NAME=Message Dictionary message name\n
        validation value1\n
        validation value2..."]
[ALLOWNULLS="{Y|N}"]
```

CODE The *flexfield code* you specify when you set up this flexfield using the Register Key Flexfield form. This code ***must*** match the code you registered.

APPL_SHORT_NAME The application short name with which your flexfield is registered.

VALIDATE Use a validation type of PARTIAL to validate each individual segment value a user enters. PARTIAL validation does not create a new valid combination or check the combinations table to determine if a code combination already exists. Use NONE if you wish no validation (this is the usual argument for a range flexfield). Do not use FULL or FOR_INSERT for a range flexfield.

Use the same value in your LOADIDR and VALIDR as you use in your POPIDR.

REQUIRED Specify whether your user can exit the flexfield window without entering a value.

You should specify the same value for REQUIRED in both your POPIDR and VALIDR triggers. You do not need the REQUIRED parameter for LOADIDR. The default value is Y.

Note: Even if REQUIRED="N", a user who starts entering segment values for this flexfield must either: a) fill out the flexfield in full, or b) abandon the flexfield.

DISPLAY The DISPLAY parameter allows you to display segments that represent specified *flexfield qualifiers* or specified *segment numbers*, where *segment numbers* are the order in which the segments appear in the flexfield window, not the segment number specified in the Define Key Segments form. For example, if you specify that you want to display only segment number 1, your flexfield

displays only the first segment that would normally appear in the pop–up window (for the structure you specify in NUM).

If you include the DISPLAY parameter in your POPIDR, you must include the DISPLAY parameter with the exact same argument in your LOADIDR and VALIDR calls.

The default value for DISPLAY is ALL, which makes your flexfield display all segments. Alternatively, you can specify a *flexfield qualifier name* or a *segment number*.

You can use DISPLAY as a toggle switch by specifying it more than once. For example, if you want your flexfield to display all but the first segment, you would specify:

```
DISPLAY="ALL"
DISPLAY="1"
```

UPDATE
INSERT

The UPDATE / INSERT parameters determine whether your users can update or insert segments that represent specified unique *flexfield qualifiers* or *segment numbers*, where *segment numbers* are the order in which the segments appear in the flexfield window, not the segment number specified in the Define Key Segments form.

You do not need the UPDATE and INSERT parameters for LOADIDR or VALIDR.

The default value for each is ALL, which allows your user to update / insert all segments. Alternatively, you can specify a *flexfield qualifier name* or a *segment number*. You can enter UPDATE="" or INSERT="" to prevent your user from updating or inserting values for **any** segments.

You can use these parameters as toggle switches by specifying them more than once. For example, if you want your user to be able to update all but the first segment, you would specify:

```
UPDATE="ALL"
UPDATE="1"
```

SEG

:block.concatenated values field name is a displayed, non–database form field that contains your concatenated segment values plus delimiters. If you do not specify the SEG parameter, Oracle Application Object Library does not display concatenated segment values. You do not need to specify _LOW and _HIGH, however, since Oracle Application Object Library adds the suffixes for you.

DESC

:block.concatenated description field name is a displayed, non–database, non–enterable field that contains concatenated descriptions of your segment values. If you do not specify the DESC parameter, Oracle Application Object Library does not display concatenated segment descriptions. You do not need to specify _LOW and _HIGH, however, since Oracle Application Object Library adds the suffixes for you.

TITLE

window title appears at the top of the pop–up window. The default value is the Flexfield Name you specify when you set up this flexfield using the Define Key Segments form.

VDATE

date is the date against which the Start Date and End Date of individual segment values is checked. You enter a Start Date and End Date for each segment value you define using the Define Key Segment Values form.

For example, if you want to check values against a date that has already passed (say, the closing date of an accounting period), you might specify that date as VDATE using a field reference (VDATE=:*block.field*) and compare your segment values against that date.

The default value is the current date.

NAVIGATE

Specify Y if flexfields should automatically determine the navigation out of the flexfield pop–up window (that is, if your user exits the window by pressing [Next Field], then the cursor appears in the field after the flexfield. Alternatively, if your user exits the flexfield by pressing [Previous Field], then the cursor appears in the field before the flexfield).

This value should be Y for POPID, but is not needed for LOADID or VALID. The default value is N for backward compatibility.

AUTOPICK Specify N if flexfields should not pop up a list of values window when a user enters an invalid value.

You do not need the AUTOPICK parameter for LOADIDR or VALIDR. The default value is Y.

NUM The non–displayed database *:block.field* that holds the identification number of your flexfield structure. You may also specify :$PROFILES$.*your_profile_option_name* to retrieve a value you set in a user profile option. You can "hardcode" a structure number, such as 101, into this parameter instead of providing a field reference, but such a number prevents you from using multiple structures for your flexfield. You must use this option if you are using multiple structures.

You can use the following SQL statement to retrieve the structure identification numbers for your flexfield:

```
SELECT ID_FLEX_NUM, ID_FLEX_STRUCTURE_NAME
FROM FND_ID_FLEX_STRUCTURES
WHERE ID_FLEX_CODE = 'flexfield code';
```

where *flexfield code* is the code you specify when you register your flexfield.

The default value for NUM is 101.

VRULE Use VRULE to put extra restrictions on what values a user can enter in a flexfield segment based on the values of segment qualifiers (which are attached to individual segment values). You can specify the name of a *flexfield qualifier* and a *segment qualifier*, whether to Include or Exclude the *validation values*, and the *Message Dictionary message name* for the message Oracle Application Object Library displays if the user enters an improper value. The delimiter \n must be lowercase.

For example, suppose you build a form where you want to prevent your users from entering segment

values for which detail posting is not allowed into all segments of Oracle General Ledger's Accounting Flexfield. DETAIL_POSTING_ALLOWED is the segment qualifier, based on the global flexfield qualifier GL_GLOBAL, that you want to use in your rule. You want to exclude all values where the value of DETAIL_POSTING_ALLOWED is N (No). Your message name is "GL Detail Posting Not Allowed", and it corresponds to a message that says "you cannot use values for which detail posting is not allowed." You would specify your rule as:

```
VRULE="GL_GLOBAL\nDETAIL_POSTING_ALLOWED\nE
\nNAME=GL Detail Posting Not Allowed\nN"
```

When your user enters an excluded value in one of the segments affected by this qualifier, your user gets the message you specify. In addition, the excluded values do not appear in the Lists of Values on your segments. All other values, not being specifically excluded, are included.

You can specify one or more VRULE parameters. Oracle Application Object Library checks multiple VRULE parameters bottom–up relative to the order you list them. You should order your rules carefully so that your user sees the most useful error message first.

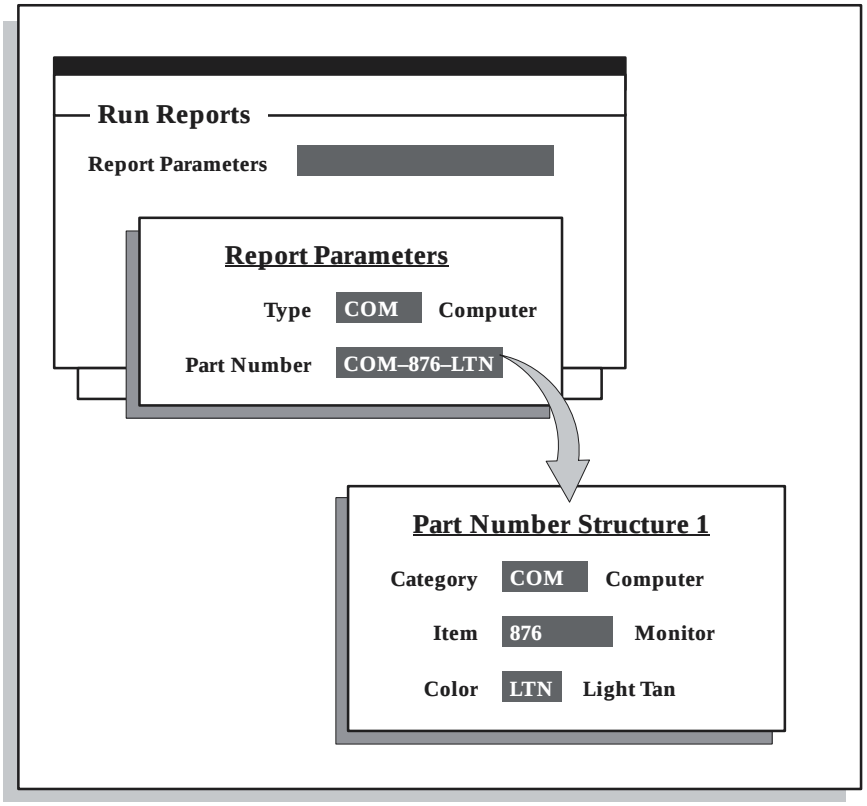
ALLOWNULLS Determines whether NULLs should be allowed into any segment. ALLOWNULLS overrides the value set definition (Value Required is Yes) for each segment only if you specify PARTIAL or NONE for the VALIDATE parameter.

Special Validation Value Sets

Special validation value sets allow you to call key flexfield user exits to validate a flexfield segment or report parameter using a flexfield–within–a–flexfield mechanism. You can call flexfield routines and use a complete flexfield as the value passed by this value set.

See: Using Flexfield Information in Your Report Parameters: page 7 – 4

Figure 9 – 1



Warning: You should never change or delete a predefined value set that Oracle Applications supply. Such changes may unpredictably affect the behavior of your application features such as reporting.

You use the Special Validation Routines window of the Value Set form to define special user exit validation for a Special value set. You also use that region to define validation routines for a Pair value set.

When you define a special validation value set, you specify two things: an event and a function. The event is the time when your function occurs, and your function is your call to a key flexfield user exit. For example, the Validate event occurs once a user enters a value, and your function would validate that value.

You can use a special validation value set to let your users enter an entire key flexfield combination within a single segment of a descriptive flexfield or report parameter. For example, you may want to pass concatenated key flexfield segments as a parameter to a report. With this type of value set, a user can enter the descriptive flexfield segment or report parameter and then see the "normal" behavior of a key flexfield, such as the key flexfield pop–up window and segment Lists of Values associated with that key flexfield. You can use Oracle Application Object Library flexfield routines to perform flexfield data entry and validation functions on segment values or report parameters.

Warning: You should take special care to avoid a situation where you have a value set that contains a flexfield which in turn contains a flexfield (as a value set of one of its segments). There are two situations where this could cause a problem. The first situation (recursion) is where a flexfield calls itself as one of its segments, leading to an infinite chain of pop–up windows. Such a loop may also be indirect. The second potential problem may lead to data truncation and data corruption problems: since a flexfield is often passed as its concatenated flexfield values, the length of these concatenated flexfields can quickly exceed the maximum size of the value set and the underlying segment column in the flexfield table. This is less likely to cause a problem for key flexfields than for descriptive flexfields or range flexfields, because key flexfields are usually passed as a single code combination ID number instead of as concatenated segment values and therefore take less space. Though the Define Value Set form and the Define Segments forms do not prevent you from defining flexfield loops or multiple flexfields within flexfields, you can cause serious truncation problems and possible data corruption problems in your application by allowing this to occur. Plan and define your value sets carefully to avoid these value sets within value sets.

See:

Value Set Windows: page 4 – 50

Key Flexfield Segments: page 2 – 16

Special Validation Events

You specify the event at which your special validation routine should fire. Valid events include:

- Edit
- Validate
- Load

The following events are present in Oracle Applications for compatibility with future versions, and you should not use them.

- Insert/Update
- Query
- Edit/Edit
- ListVal

You may have only one of each type of event. Usually, you use special validation to call an existing key flexfield, and you should usually define one of each type of event. However, you should *not* define a Load event if you do not use either an ID field (a field that contains the code combination ID number) or a data field (a field that contains the hidden ID numbers corresponding to the values of value sets that use hidden ID columns).

Edit

Calls your special validation routine when your user's cursor enters the segment in a data entry mode. You usually use POPID(R) for your Edit event.

Load

Calls your special validation routine immediately after a query to populate your segment. You usually use LOADID(R) for your Load event.

The user exit you define for Load obtains a value and description based on a stored hidden ID, and fires when your user queries data into the flexfield segment. You should define a Load event if and only if you use a hidden ID. If you have a Load event, you must have a non–null

ID field (a field that contains the code combination ID number) or data field (a field that contains the hidden ID numbers corresponding to the values of a value set that uses a hidden ID column). If you have a Load event, you must use :!ID (described below) with either an ID field or data field. Your user exit passes the contents of :!ID to your report or flexfield instead of the contents of :!VALUE (described below).

Validate

Calls your special validation routine whenever the user's cursor leaves the segment or closes the pop–up window, or whenever a default value is copied into the segment or report parameter. The Validate event also fires after a query to generate value descriptions for queried values. You usually use VALID(R) for your Validate event.

You must have a Validate event.

Defining Your Special Validation Function

Enter your user exit syntax exactly as you would call it from a form trigger, except that you need not include the # sign (that is, instead of entering #FND, you may enter just FND).

Special validation provides several special arguments you can use to pass values to and from your user exits:

- :!ID
- :!VALUE
- :!MEANING
- !DIR

:!ID

You can use :!ID to pass different information depending upon the circumstances. For flexfield routines, :!ID can pass either a combination ID number of an entire combination of segment values (key flexfields only), or it can pass a concatenated string of the individual flexfield segment values (either key or descriptive flexfields).

When you use :!ID to pass a concatenated string of individual segment values, :!ID should contain the hidden ID values, if any, of the values in your value sets. If your value set does not use a hidden ID column,

:!ID contains the actual value from the value column of your value set.

For a foreign key flexfield where you are using the VALIDATE=FULL argument, you should use the ID=:!ID argument, and you should not use the DATA_FIELD=:!ID argument. If you are coding a foreign key flexfield where you are using the VALIDATE=PARTIAL (or NONE) argument, you should use the DATA_FIELD=:!ID argument and you must not use the ID=:!ID argument. Note that if you use the DATA_FIELD=:!ID argument for a key flexfield, you must ensure that the total length of the concatenated segments and their separators is less than 240 characters.

You cannot use ID=:!ID with the #FND POPIDR, LOADIDR, or VALIDR routines for range flexfields, but you may use the DATA_FIELD=:!ID argument.

If you have a Load event, you must use :!ID with either an ID field or data field. Your user exit passes the contents of :!ID to your report or flexfield instead of the contents of :!VALUE.

:!VALUE

You use :!VALUE to access the user's input. :!VALUE refers to the displayed values that appear in the flexfield window and in the concatenated values field. :!VALUE contains the concatenated values for the flexfield your value set uses. If you do not specify a value for :!ID, then :!VALUE is passed to your report or stored in your segment column.

If you have a Load event, you must use :!ID with either an ID field or data field. Your user exit passes the contents of :!ID to your report or flexfield instead of the contents of :!VALUE.

:!MEANING

You use :!MEANING to pass the concatenated descriptions of your flexfield values. The value description appears as usual next to the flexfield segment value and in the concatenated description field. If you are writing your own function, you should code your user exit to write the value description into :!MEANING.

!DIR

Use !DIR for the NAVIGATE argument of key and descriptive flexfields routines. !DIR allows the flexfields routines to determine the proper navigation direction when you use a flexfield as a segment value set.

Do not use a colon when you specify !DIR for POPID or other flexfield routines.

Additional Arguments for Pair Value Sets

If you are defining validation for a Pair type value set but you are not using the flexfield routines #FND POPIDR, LOADIDR, or VALIDR for range flexfields, you may use special forms of these arguments: :!ID_LOW and :!ID_HIGH, :!VALUE_LOW and :!VALUE_HIGH, and :!MEANING_LOW and :!MEANING_HIGH. However, usually you should use the key flexfield routines for a range flexfield (POPIDR, LOADIDR, and VALIDR), and these routines add the _LOW and _HIGH suffixes to :!ID, :!VALUE and :!MEANING for you automatically.

DINSERT and Dynamic Inserts

When you use a key flexfield user exit for special validation, you *must* include the token DINSERT=N in your Edit, Load, and Validate events. You cannot perform dynamic inserts from a flexfield within a flexfield, even if the flexfield has dynamic inserts allowed.

Using Hidden IDs

Though you must use the ID=:!ID argument when you want to pass a key flexfield combination ID number, you could use either the DATA_FIELD=:!ID argument or the SEG=:!VALUE argument to pass concatenated key segment values. Even if the value sets your flexfield uses do not use hidden ID columns and values, you may want to write explicitly to the :!ID field (and define a Load event) so that it is clear which values you are storing in the database or passing to your report. If your value sets do not use hidden ID columns, :!ID contains the actual values from the value columns of your value sets. You can have a mixture of displayed values and hidden ID values (depending on which value sets your flexfield segments use) concatenated in :!ID. If you are passing information to an Oracle Reports report that uses flexfield routines, you must have a data field and use the DATA_FIELD=:!ID argument.

Hints for Using Special Validation

If your special (or pair) value set does not behave the way you expect, you should check your value set definition to be sure that you typed your function correctly. Common errors include misplaced exclamation marks (!) and colons (:). You should check that these

punctuation marks are not missing or in the wrong order or present when they should not be. Other common problems include misspelling token names, missing or extra apostrophes (’), and missing or extra quotation marks (”).

Example of Special Validation

Here is an example of how to use Special validation (an example for Pair validation follows this example). Suppose you want to let your users pass a single combination of concatenated Accounting Flexfield segments as a parameter to a report. To let your user choose a single combination, you must provide a key flexfield window from within the report parameters window on the Run Reports form. To do this, you simply define a value set with Special validation and use your familiar flexfield user exits. Since you want to pass an existing combination (that is, you want to pass the ID number of the combination) and this is a foreign key flexfield, you use VALIDATE=FULL and the ID=:!ID argument. You do not use the DATA_FIELD=:!ID argument. This example uses structure 101 of the Accounting Flexfield (though normally you might get your structure number from a prior segment or a profile option, depending on how you use your value set). You define your Events and Functions in this field as follows:

For data entry validation (Event = Edit), you would enter:

```
FND POPID
    APPL_SHORT_NAME=SQLGL
    CODE=”GL#”
    NUM=101
    REQUIRED=Y
    VALIDATE=FULL
    ID=:!ID
    SEG=:!VALUE
    DESC=:!MEANING
    NAVIGATE=!DIR
    DINSERT=N
```

For data query (Event = Load), you would enter:

```
FND LOADID
    APPL_SHORT_NAME=SQLGL
    CODE=”GL#”
    NUM=101
    REQUIRED=Y
```

```
    VALIDATE=FULL
    ID=:!ID
    SEG=:!VALUE
    DESC=:!MEANING
    DINSERT=N
```

For data validation (Event = Validate), you would enter:

```
FND VALID
    APPL_SHORT_NAME=SQLGL
    CODE="GL#"
    NUM=101
    REQUIRED=Y
    VALIDATE=FULL
    ID=:!ID
    SEG=:!VALUE
    DESC=:!MEANING
    DINSERT=N
```

Example of Special Validation for a Single Segment

Here is an example of how to use Special validation when you want to let your users pass a single Accounting Flexfield segment value as a parameter to a report. To let your user choose a single segment, you must provide a key flexfield window from within the report parameters window on the Run Reports form. Since you want to pass an existing segment value and this is a foreign key flexfield, you use VALIDATE=PARTIAL. You do not use the DATA_FIELD=:!ID or ID=:!ID argument in this case because you do not use hidden ID value sets with the Accounting Flexfield. You do not use a Load event because you are not using :!ID. This example uses structure 101 of the Accounting Flexfield (though normally you might get your structure number from a prior segment or a profile option, depending on how you use your value set), and the flexfield qualifier FA_COST_CTR identifies which segment it passes. You define your Events and Functions in this field as follows.

For data entry validation (Event = Edit), you would enter:

```
FND POPID
    APPL_SHORT_NAME=SQLGL
    CODE="GL#"
    NUM=101
    REQUIRED=N
    VALIDATE=PARTIAL
    DISPLAY="FA_COST_CTR"
    SEG=:!VALUE
    DESC=:!MEANING
    NAVIGATE=!DIR
    DINSERT=N
```

For data validation (Event = Validate), you would enter:

```
FND VALID
    APPL_SHORT_NAME=SQLGL
    CODE="GL#"
    NUM=101
    REQUIRED=N
    VALIDATE=PARTIAL
    DISPLAY="FA_COST_CTR"
    SEG=:!VALUE
    DESC=:!MEANING
    DINSERT=N
```

Example of Pair Validation

Here is an example of how to use Pair validation. Suppose you want to let your users pass a range of concatenated Accounting Flexfield segments as parameters to a report. For example, you want to let your users request a report on all combinations where the second segment value is between 001 and 101, inclusive. To let your user choose such a range, you must provide a key flexfield range window from within the report parameters window on the Run Reports form. To do this, you simply define a value set with Pair validation and use your familiar range flexfield user exits to pass a range of concatenated segment values. For a range flexfield, you use VALIDATE=PARTIAL (or NONE). Since you use a range flexfield, you cannot use the ID=:!ID argument. You do not use DATA_FIELD=:!ID in this example (hidden ID value sets are not allowed with the Accounting Flexfield), so you do

not need a Load event. This example uses structure 101 of the Accounting Flexfield. You define your Events and Functions in this field as follows:

For data entry validation (Event = Edit), you would enter:

```
FND POPIDR
    APPL_SHORT_NAME=SQLGL
    CODE="GL#"
    NUM=101
    VALIDATE=PARTIAL
    SEG=:!VALUE
    DESC=:!MEANING
    NAVIGATE=!DIR
```

For data validation (Event = Validate), you would enter:

```
FND VALIDR
    APPL_SHORT_NAME=SQLGL
    CODE="GL#"
    NUM=101
    VALIDATE=PARTIAL
    SEG=:!VALUE
    DESC=:!MEANING
```

Using Variables with Special and Pair Validation

You can use bind variables in your special validation user exit calls:

:$FLEX$. *value_set_name*
: Retrieves a value (the hidden ID value, if a hidden ID value is defined) in a prior segment.

:$PROFILES$. *profile_option*
: Retrieves the current value of a profile option. You must specify the option name of the profile option, such as GL_SET_OF_BKS_ID (which does *not* contain the Accounting Flexfield structure number).

  Note that your profile option must be set wherever you use this value set (including the View Requests form if this value set is used as a report parameter and the user tries to view the status of the report after submission), or your user will see error messages.

:block.field Gets the current value in a field. You must ensure that this value set is only used for forms that have the same *block.field*.

For example, the following user exit on a Validate event obtains the Structure (NUM) of the key flexfield from a profile option:

```
FND VALID
    APPL_SHORT_NAME=SQLGL
    CODE="GL#"
    NUM=:$PROFILES$.MY_STRUCTURE_ID
    REQUIRED=Y
    VALIDATE=FULL
    ID=:!ID
    SEG=:!VALUE
    DESC=:!MEANING
    DINSERT=N
```

See:

Bind Variables: page 4 – 34

CHAPTER

10 Account Generator

This chapter contains information on using the Oracle Applications Account Generator feature, including:

- An overview of the Account Generator
- Account Generator terminology
- An explanation of how Oracle Applications products use the Account Generator
- How you can customize an Account Generator process for your site

This chapter also contains a description of the window you use to choose which Account Generator process to use for your flexfield.

- Account Generator Process Window

Overview of the Account Generator

Applications need to construct Accounting Flexfield combinations automatically for various purposes. The Account Generator feature uses Oracle Workflow technology to provide applications with the ability to construct key flexfield combinations automatically using customized construction criteria. Each site can customize how they want to build key flexfield combinations.

The Account Generator replaces the Release 10 FlexBuilder feature. Information on upgrading from FlexBuilder is covered later in this chapter.

For information on implementing and using Oracle Workflow, see the *Oracle Workflow Guide*.

Benefits of the Account Generator using Oracle Workflow

Automatic construction of key flexfield combinations speeds users' data entry.

Automatic construction of key flexfield combinations improves accuracy of data entry because users do not need to determine what key flexfield combination to enter.

Each site can customize rules for the construction of key flexfield combinations to match the existing way of doing business.

By using Oracle Workflow features, the Account Generator provides greater flexibility for creating customized rules to create account combinations.

Attention: Before using or customizing the Account Generator, you should familiarize yourself with the basic concepts of Oracle Workflow. For more information, see the *Oracle Workflow Guide*.

See:

Oracle Workflow Guide

Terms

The following are some of the Oracle Workflow terms for objects used in the Account Generator feature, along with descriptions of how they relate to the Account Generator. You should read about these terms in

the *Oracle Workflow Guide* first. See: Overview of the Oracle Workflow Builder, *Oracle Workflow Guide.*

Item Type

An item type represents a grouping of a particular set of processes and components. Within an item type there can be up to six types of components: Attributes, Processes, Notifications, Functions, Messages, and Lookup Types. In an Account Generator, the most relevant components are Attributes, Processes, and Functions.

If you are upgrading from Release 10 FlexBuilder, you can think of an item type as corresponding to a FlexBuilder function.

Attribute

In general, an attribute is a feature of an item type. For an Account Generator item type, these attributes include features of the Accounting Flexfield structure. For example, one attribute stores the structure number of the flexfield for which the combination is being built. Other attributes may be input values to the Account Generator process.

If you are upgrading from FlexBuilder, raw parameters for a flexfield would be included here, and possibly some derived parameters.

Function

A function is a PL/SQL stored procedure which accepts standard arguments and returns a completion result. For example, a function can retrieve a value for a particular segment for a code combination.

Process

A process is a set of activities in a specific relationship. In the Account Generator, the process specifies the sequence of activities that are performed to create a code combination. A process activity can be part of a larger process, in which case it is called a sub–process. For example, the Oracle Assets FA Account Generator item type could contain a Generate Default Account process, which in turn contains three sub–processes: Generate Book Level Accounts, Generate Category Level Accounts, and Generate Asset Level Accounts.

If you are upgrading from FlexBuilder, the logic in FlexBuilder rules corresponds to the logic in Account Generator processes.

Lookup Type

A lookup type is a static list of values. This list can be referenced by activities and by item type, message or activity attributes. For example, an activity can reference a lookup type for its possible result values.

See:

Oracle Workflow Guide

Account Generator Process Diagram : page 10 – 5

Account Generator Process Diagram

A basic Account Generator process contains the following function activities, in the order:

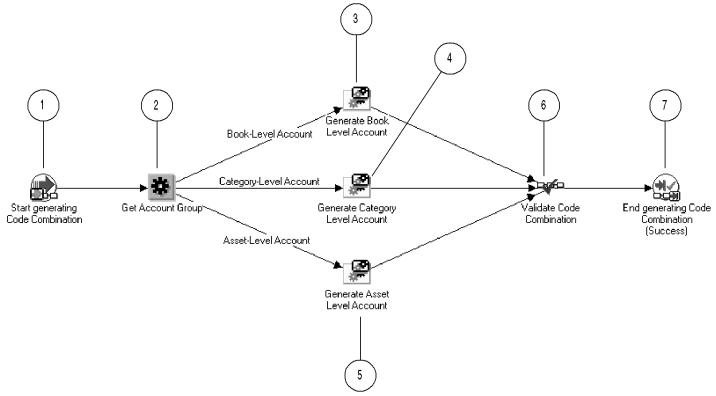
- Start Generating Code Combination function
- Functions to generate the code combination, for example, Assign Value to Segment, as well as functions to check if the code combination is complete. Some of these functions may be product–specific
- Validate Code Combination function
- End Generating Code Combination function

Oracle provides standard Account Generator process function activities that are described later in this chapter, in addition to standard Workflow activities described in the *Oracle Workflow Guide*. Each product's Account Generator process may also include additional product–specific functions. See your *Oracle [Product] User's Guide* for details on a particular process.

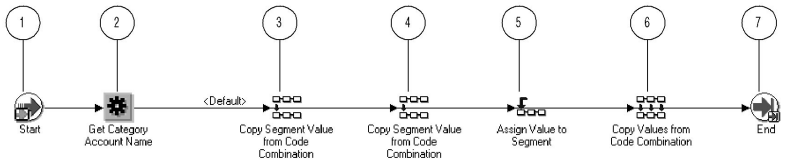
A process may contain process activities (subprocesses). For example, the following Account Generator top–level process contains three process activities: Generate Book Level Accounts (3), Generate Category Level Accounts (4), and Generate Asset Level Accounts (5). These subprocesses contain the functions that create the code combination.

Note that this process also contains:

- Start Generating Code Combination function (1)
- A product–specific function, Get Account Group (2)
- Validate Code Combination function (6)
- End Generating Code Combination function (7)



Each of the three subprocesses has its own diagram. For example, the Generate Category Accounts process diagram is shown below:



This subprocess contains the activities that actually build the combination. The activities of the subprocess are as follows:

- (1) Start: every process has to have a Start activity.
- (2) Get Category Account Name: this function gets the category account name. This is a product–specific function.
- (3) Copy Segment Value from Code Combination: this function copies a segment value from a given code combination to a segment of the combination being built.
- (4) Copy Segment Value from Code Combination: this function copies a different segment value from a given code combination to another segment of the new combination.
- (5) Assign Value to Segment: this function assigns a specified value to another segment of the new combination.
- (6) Copy Values from Code Combination: this function copies values from a default code combination to any remaining

segments of the new combination. This function activity has the attribute 'Replace Existing Value' set to "False" to prevent values assigned elsewhere from being overwritten.

- (7) End: every process has an End activity.

Note that after the code combination is created within the subprocess, the flow returns to the main process where the combination is validated by the function Validate Code Combination.

> **Note:** A top–level runnable Account Generator process is represented by an icon called "flexproc.ico", which has the image of two gears on a yellow background with a representation of a flexfield combination at the bottom. A subprocess is shown by the "process.ico" icon, which has two gears in a yellow background. You can differentiate between the two types of processes using these icons.

Attention: These process diagrams are examples only. To learn about your particular product's processes, see your *Oracle [Product] User's Guide*.

See:

Standard Flexfield Workflow: page 10 – 20

How the Account Generator Works

- A server–side PL/SQL function calls the Account Generator process to create an account. This function can be called from a form or from C or PL/SQL programs. This function takes several input arguments: the structure number of the key flexfield structure for which the combination is to be generated, and the values for all the item attributes that must be set before starting the workflow process.

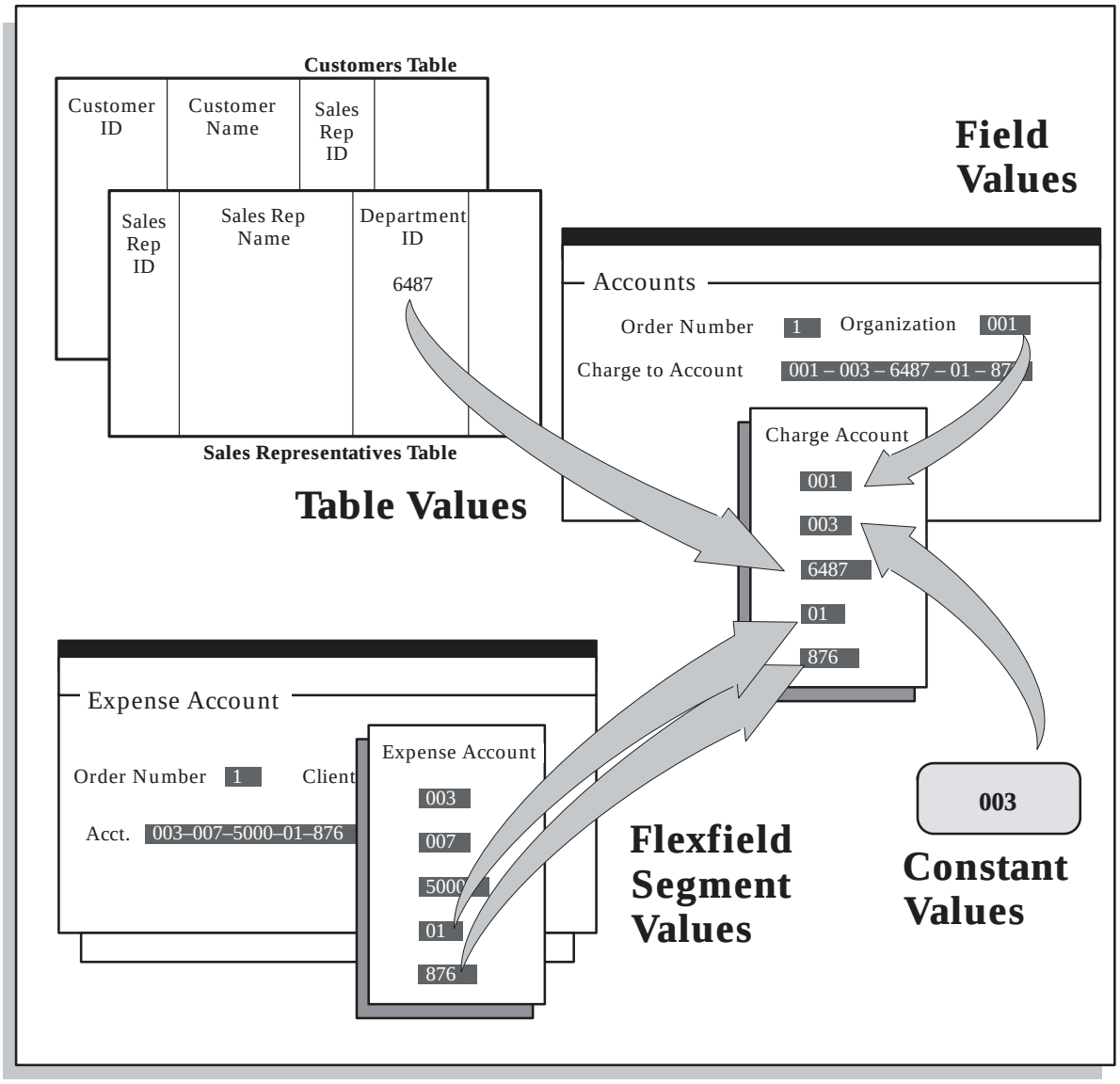
Suggestion: See your *Oracle [Product] User's Guide* for information on how the Account Generator is called.

- The Account Generator process creates a combination using the values of the attributes and the function activities.
- The function returns a value of TRUE if the Account Generator ends in success, and a value of FALSE otherwise. If the function ends in success, the function also returns the code combination ID, concatenated segments, concatenated IDs, and concatenated descriptions as output parameters.
- The function returns its output to the calling program or form. Note that the Account Generator is only called from particular forms and programs, so if you change your accounting data via another form or program your accounts may not be automatically updated.

Where the Account Generator Derives Segment Values

The Account Generator can derive segment values from form fields, other Accounting Flexfield combinations, flexfield segments, application tables, and constants.

Figure 10 – 1



Form Fields

These are usually predefined by the application.

Same Accounting Flexfield Structure

You can get values from individual segments of Accounting Flexfield combinations whose structure matches the one you are building. You can specify which segment supplies the value using either the segment name or its flexfield qualifier, if any. You can assign such segment values to your key flexfield structure directly.

For example, you can get a segment value from one combination of an Accounting Flexfield structure and use it to build another combination for the same Accounting Flexfield structure.

Other Accounting Flexfield Structures

You can get values from individual segments of Accounting Flexfield structures other than the one you are building. You need to specify the structure number, and you can specify which segment supplies the value using either the segment name or its flexfield qualifier, if any.

Application Tables

You can get values from an application table.

Constants

You can specify a constant value for a segment of the key flexfield structure you want to build.

The Account Generator in Oracle Applications

Several Oracle Applications use the Account Generator to create combinations for the Accounting Flexfield.

- Oracle Assets
- Oracle Order Management
- Oracle Purchasing
- Oracle Receivables
- Oracle Projects (with Oracle Purchasing and Oracle Payables)

Each of these applications provides a default Account Generator process. You can view and customize the Account Generator processes through the Oracle Workflow Builder. Some products' default processes may require customization before they can be used to create flexfield combinations. Your *Oracle [Product] User's Guide* contains detailed information on implementing the Account Generator for your particular product. The *Oracle [Product] User's Guide* also contains information on the product's default Account Generator process as well as information on how you may want to customize the default process.

Overview of Implementing the Account Generator

Implementing an Account Generator process involves several steps:

- Oracle provides a product–specific Account Generator item type, which may contain predefined attributes, functions, processes, and subprocesses. Oracle also provides the Standard Flexfield Workflow item type, which contains standard Account Generator functions.
- On–site implementors can customize the Account Generator process as explained later in this chapter.
- Implementors test the Account Generator process to confirm that it generates the desired combination correctly.

See:

Customizing the Account Generator: page 10 – 13

Test Your Account Generator Setup: page 10 – 19

Customizing the Account Generator

If you need to customize your application's default Account Generator, you should complete the following steps:

Step 1. Prerequisite: Define your Accounting Flexfield structure(s) completely.

Step 2. Determine the characteristics of the Accounting Flexfield combination you want the Account Generator to construct (determine how the resulting flexfield combination should be populated).

Step 3. Work backwards from your resulting Accounting Flexfield combination to determine what values you need and how to obtain them.

Step 4. Specify additional attributes or functions you need, if any, and their properties, within the Oracle Workflow Navigator window.

Step 5. If necessary, modify the default Account Generator process(es) in the Oracle Workflow Process window. Alternatively, you could create a new process entirely. Which approach you take depends on the extent of your modifications. In either case, you should save a copy of your workflow process definition as a flat file (a .wft file) and check that file into a source control system.

Warning: If you have upgraded from FlexBuilder in Release 10.7, you should not modify the Generate Account using FlexBuilder Rules process in any way, nor modify the PL/SQL functions. Oracle does not support modifications to this process. If you used FlexBuilder in Release 10 and now would like to add customizations beyond what you had in FlexBuilder, you should start from the default Account Generator process.

Attention: If you have modified the default Account Generator process directly, you should ensure that your customizations are not overwritten when you upgrade to a future release. For more information, see: Overview of Oracle Workflow Protection, *Oracle Workflow Guide*; and Creating Process Definitions in Oracle Workflow Builder, *Oracle Workflow Guide*.

Step 6. Test your Account Generator process, as outlined in your *Oracle [Product] User's Guide*. Determine if you get the expected resulting Accounting Flexfield combination.

Step 7. Assign the appropriate process to your Accounting Flexfield structure in the Account Generator Process window in Oracle Applications.

Determine Characteristics of Combination

Start by determining the characteristics of the Accounting Flexfield combination you want to obtain as your result. Then work backwards from your resulting Accounting Flexfield combination to determine what values you need and how to obtain them.

What is the purpose of this combination? For example:

- Oracle Order Entry transfers this combination to Oracle Inventory, via the Inventory Interface program, for use in cost of goods sold (COGS) analyses.
- Oracle Assets uses this combination to create journal entries for asset transactions.
- Oracle Purchasing uses this combination to specify accounts for individual distributions for purchase orders and requisitions.

What are the properties of this combination? For example:

- This is an Accounting Flexfield combination with particular characteristics, such as a particular type of value for the balancing segment or the account segment.
- Your resulting combination is "just like that other combination but with a different value for the second segment".
- Each segment has some prescribed value.

Decide From Where Each Segment Derives Its Value

Did a segment value come from a form field, another combination of the same Accounting Flexfield structure, a segment of another key flexfield, an application table, a constant, or somewhere else?

Modify Your Account Generator Process

In customizing your Account Generator setup, you make modifications to the default process or create a new process using the Oracle Workflow Builder. For details on working within the Oracle Workflow Builder, see the *Oracle Workflow Guide*.

See your *Oracle [Product] User's Guide* for limitations on what you can and cannot customize. For example, you may not be allowed to customize a top level process, but only the subprocesses within it. Also, see if your product's Account Generator item type already includes attributes or functions you can use. Using pre–defined attributes and functions will save you time in your customization.

Save a copy of the original item type in a source control area as a flat file (.wft file) before beginning customizations. By saving the original as a flat file you can limit access to it, thus ensuring that you will always have a copy of the original file.

Attention: If you have modified the default Account Generator process directly, you should ensure that your customizations are not overwritten when you upgrade to a future release. For more information, see: Overview of Oracle Workflow Protection, *Oracle Workflow Guide*; and Creating Process Definitions in Oracle Workflow Builder, *Oracle Workflow Guide*.

Warning: You should never create a new item type as your Account Generator. Instead, start from the default Account Generator item type or a copy of it.

Attention: You cannot modify the attributes or functions given to you in your default Account Generator item type. That is, you cannot select an attribute or function within the Navigator window and modify it. You can, however, modify the attributes of a function activity that is part of a process.

Warning: Do not change the threshold level of the Oracle Workflow Engine. All of your Account Generator functions should have low costs, so you should never need to change the threshold level.

See Also

Overview of Oracle Workflow Builder
Oracle Workflow Guide

Create a New Attribute

You can create a new attribute for your Account Generator item type, which you can then use in your custom process. Note that custom attributes cannot be ”input” attributes, that is, their values cannot be set by the calling form or program. After you create a new attribute, you need to set its value by adding a function activity to your process. For example, if the value comes from another code combination you could use the Get Value from Code Combination function activity from the Standard Flexfield Workflow.

Modify Attributes of a Function Activity

You can modify the values passed to a function activity.

For example, suppose your default Account Generator process uses the standard function Copy Segment Value from Code Combination to copy a segment value from the default code combination. This function thus has ”Default CCID” as the value for the attribute ”Code Combination ID”. However, suppose you want to use ”Distribution CCID” instead of the ”Default CCID”. Assuming the Distribution CCID is available to the workflow, you would change function activity’s attributes to use the Distribution CCID.

Add a Function Activity to a Process

You can change the logic of the process by adding functions to the process diagram. Predefined standard Account Generator functions are described later in this chapter. Your product may have additional predefined functions that you can use. For information on these, see: *Oracle [Product] User’s Guide*.

For example, suppose that you are working within the Oracle Assets Account Generator item type. In your process, you want to check to see if any account is a Category Account. You would then add the Check Category Account function activity in the appropriate place in the process diagram. If a function requires values to be passed in as arguments, you need to ensure the proper values are set for the attributes of the function. Also, make sure that if you expect a result from the function, the result type is set properly, and any transitions from the function branch appropriately.

Warning: Oracle Workflow provides activities that in general, you should not add to your Account Generator, namely, Notification and Block activities, since these halt the process.

Warning: In general, avoid using parallel branches in your Account Generator process diagram. The Oracle Workflow Engine processes activities sequentially. If your process includes parallel branches that converge on a single function, you should ensure that that function is an AND function, so that all required activities are completed before the Engine continues to the next activity in the process.

Create a New Function Activity

You can create a new function activity and add it to your Account Generator item type. The *Oracle Workflow Guide* contains information on how to create new function activities and any associated PL/SQL stored procedures.

See:

To Create a Function Activity
Oracle Workflow Guide

Create a New Process

You can create an entirely new Account Generator process in the Workflow Builder.

Select the item type that you want to create the process for. For example, for Oracle Assets you would choose the FA Account Generator item type. From the Edit Menu choose New Process. Within the property sheet that appears, specify an internal name, display name and description. The display name will appear in the Navigator window for the process, and it would be the name used in the Account Generator Process window. If your process itself will create a code combination specify "Flexfield Result". If this is the top–level process that you will actually run, specify "Runnable".

Suggestion: Examine your product's default Account Generator process diagram first to see how a process works.

Your start activity for the top–level process must be the Start Generating Code Combination function activity, which you can copy from the Standard Flexfield Workflow item type. Designate this as a Start activity in the process Properties page, under "Start/End."

You can then add activities to the process. See the *Oracle Workflow Guide* for details on how to add activities to a process, as well as details on standard Workflow activities.

See the section on the Standard Flexfield Workflow for generic Account Generator function activities you might want to add. For example, the activity Is Code Combination Complete? checks to see if all segments have values. The Validate Code Combination activity is useful for validating your combination after it has been generated. You can add the Abort Generation of Code Combination activity to terminate the process in the case of a fatal error. You should pass in an error message to this activity if you use it. This activity should be marked in the properties page as an ”End” activity with the Result of ”Failure”.

In addition, your product’s Account Generator may also contain function activities particular to your product that you may want to use. See your *Oracle [Product] User’s Guide* for more information on these activities.

Once the combination has been generated and validated, your process should end with the End Generation of Code Combination standard flexfield workflow activity. This activity should be marked in the Properties page as an ”End” activity with the Result of ”Success”.

If your custom process has a result type of ”Flexfield Result,” make sure your ”End” activity(ies) give a result of ”Success” or ”Failure,” since these are the possible values for ”Flexfield Result.”

See Also

Overview of Oracle Workflow Builder
Oracle Workflow Guide

Standard Activities
Oracle Workflow Guide

Process Window
Oracle Workflow Guide

Test Your Account Generator Setup

To test your setup, make sure that the correct process is assigned to your structure in the Account Generator Process form. See: Choosing the Process for a Flexfield Structure: page 10 – 27.

Test your Account Generator setup as described in your *Oracle [Product] User's Guide*. In some products, you can test your setup within Oracle Applications; in others, you can test using a PL/SQL statement. Always test your setup on a test database before using it on a production database.

Set the profile option Account Generator:Debug Mode to "Yes" if you are using the Oracle Workflow Monitor to view your results during testing. This profile option will ensure that the runtime data is saved for debugging.

After you are finished testing, you can set Account Generator:Debug Mode to "No" to improve the performance of the Account Generator.

Standard Flexfield Workflow

The Standard Flexfield Workflow item type provides special function activities for generating and validating key flexfield code combinations. These functions are in addition to the predefined Workflow activities described in the *Oracle Workflow Guide*. Also, your product may provide you with product–specific Account Generator functions. See your *Oracle [Product] User's Guide* for details on these additional functions.

The Standard Flexfield Workflow only provides you with function activities you can use to customize your own Account Generator workflow. The Standard Flexfield Workflow does not contain any attributes or processes to run. The following is a description of each of the Standard Flexfield Workflow function activities.

Start Generating Code Combination

This function is used as the start activity of the top–level process that generates the code combination, and should be used only in the top–level process. It should not be used as a start activity of any subprocess the top level process may invoke. This function should be marked as a "Start" activity after copying it to the process window. This function does not have any attributes.

The Workflow Engine uses this function to get values from the calling form or program for attributes ("input attributes") that are used to build the combination.

> **Note:** Do not use the Oracle Workflow Standard Start activity as the start activity of a top–level Account Generator process. The Account Generator may need to obtain attribute values that cannot be obtained using the Standard Start activity.

Assign Value to Segment

This function assigns a value to a specific segment of the combination. This function has the following attributes:

- Segment Identifier: How the segment is identified, either "Qualifier" or "Name".
- Segment: The flexfield qualifier name or segment name of the specific segment.
- Value: The value to be assigned to the segment.

- Replace existing value: Has the value of ”False” if the value should be assigned only if the segment currently has no value, ”True” if the value should be assigned even if the segment already has one.

Copy Segment Value from Code Combination

This function copies a segment value from a given code combination to the combination that is being generated. This function has the following attributes:

- Code Combination ID: The code combination ID for the combination from which the segment value will be copied.
- Segment Identifier: How the segment is identified, either ”Qualifier” or ”Name”.
- Segment: The flexfield qualifier name or segment name.
- Replace existing value: Has the value of ”False” if the value should be copied only if the segment currently does not have a value, ”True” if the value should be copied even if the segment already has one.

Copy Segment Value from Other Structure Code Combination

This function copies a segment value from a given code combination of a different accounting flexfield structure to the combination that is being generated. This function has the following attributes:

- Structure Number: The structure number of the source combination.
- Code Combination ID: The code combination ID for the combination from which the segment value will be copied.
- Segment Identifier: How the segment is identified, either ”Qualifier” or ”Name”.
- Segment: The flexfield qualifier name or segment name.
- Replace existing value: Has the value of ”False” if the value should be copied only if the segment currently does not have a value, ”True” if the value should be copied even if the segment already has one.

Copy Values from Code Combination

This function copies all the values from a given code combination to the combination that is being generated. If you set the ”Replace existing value” attribute to ”False”, you can use this function to copy values from a default code combination to segments without values. This function has the following attributes:

- Code Combination ID: The code combination ID for the combination from which values will be copied.
- Replace existing value: Has the value of ”False” if the value should be copied only if the segment currently does not have a value, ”True” if the value should be copied even if the segment already has one.

Get Value from Code Combination

This function retrieves a segment value from a given code combination and assigns it to an attribute of the current workflow item. This function has the following attributes:

- Code Combination ID: The code combination ID for the combination from which values will be copied.
- Segment Identifier: How the segment is identified, either ”Qualifier” or ”Name”.
- Segment: The flexfield qualifier name or segment name.
- Attribute to assign value: The internal name of the item attribute to which the value should be assigned.

Get Value from Other Structure Code Combination

This function retrieves a segment value from a given code combination of another accounting flexfield structure and assigns it to an attribute of the current workflow item. This function has the following attributes:

- Structure Number: The structure number of the source combination.
- Code Combination ID: The code combination ID for the combination from which values will be copied.
- Segment Identifier: How the segment is identified, either ”Qualifier” or ”Name”.
- Segment: The flexfield qualifier name or segment name.

- Attribute to assign value: The internal name of the item attribute to which the value should be assigned.

Is Code Combination Complete?

This function checks to see if values have been assigned to all segments in the code combination. This function returns ”True” if all segments have values and ”False” if one or more segments do not have values. This function has the following attribute:

- Check only for required segments: If this attribute is set to ”True” then the function only checks if the required segments have values. If this attribute is set to ”False”, then the function checks that all segments have values.

Validate Code Combination

This function validates the code combination that has been generated. It has the following attributes:

- New code combinations are allowed: If this attribute is set to ”True” AND the key flexfield has ’Dynamic Inserts Allowed’ set to ”True”, then the validation will not generate an error if the combination does not exist in the code combination table.
- Validation Type: Either use ”Generate Code Combination ID” to do a full validation and generate a code combination ID, or use ”Validate Segments with Values only” to do value validation on only segments with values. Full validation applies to the entire combination to see if it is a valid combination. ”Validate Segments with Values” only validates the values for segments with values.

  Note: If the code combination in question is new (that is, it does not already exist in the code combinations table), this function activity does not insert it into the database or generate a new CCID for it. If the combination is successfully validated and dynamic inserts are allowed, then the function will set the CCID to –1, and this will be the value that will be returned to the calling form or program.

Abort Generating Code Combination

This function is used to end the Account Generator process when a fatal error occurs. An error message in the encoded format is passed to the function and that message is displayed in the calling form or

program. This function should be marked as an ”End” activity and should return a value of ”Failure”.

- Error message: The error message for the failure condition. The message should be in the Message Dictionary encoded format.

End Generating Code Combination

This function ends the top level process of the account generation, after the combination has been generated and validated. This function should normally follow immediately after the Validate Code Combination activity. This function should be marked as an ”End” activity and should return a value of ”Success”. It does not have any attributes.

For the functions listed above with the attributes Segment Identifier and Segment, ”Qualifier” refers to the segment qualifier name that appears in the Qualifier window, for example, ”GL_BALANCING”. The segment ”Name” refers to the Name specified in the Segments window. For information on segments, segment qualifiers, and validation see the following sections:

Defining Segments: page 2 – 22

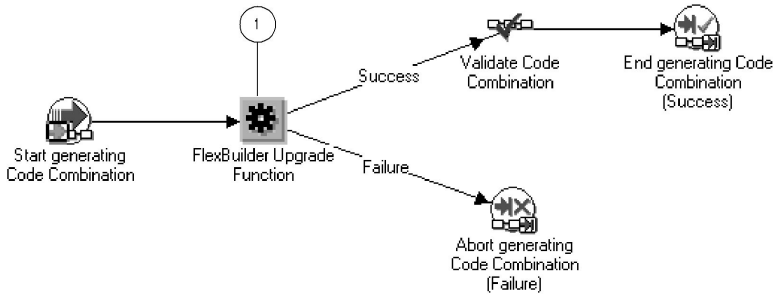
Qualifiers: page 2 – 5

Flexfield Qualifiers: page 2 – 32

Converting from FlexBuilder

In Release 10.7, you could create Accounting Flexfield code combinations automatically using the FlexBuilder feature. If you used FlexBuilder in Release 10.7, you can use your FlexBuilder configuration in the Account Generator. As part of the upgrade process, Rapid Install automatically creates an Account Generator process from your FlexBuilder configuration. This Account Generator process contains any customizations you had in FlexBuilder, and is called "Generate Account Using FlexBuilder Rules."

Generate Account Using FlexBuilder Rules Process



This process contains the logic from FlexBuilder. The process contains a function that retrieves the necessary item attribute values (corresponding to raw parameters in FlexBuilder) and calls PL/SQL functions to create the code combination.

The logic from FlexBuilder is called from the FlexBuilder Upgrade Function activity (1). In addition to this function, the process contains the following functions:

- Start Generating Code Combination
- Validate Code Combination – if the FlexBuilder Upgrade Function returns Success, the code combination is validated
- End Generating Code Combination – after the code combination is validated
- Abort Generating Code Combination – if the FlexBuilder Upgrade Function returns Failure, the process is aborted

Warning: This process is provided for converting an existing FlexBuilder configuration only. You should not modify this process in any way, nor modify the PL/SQL functions. Oracle does not support modifications to this process. If you used FlexBuilder in Release 10.7 and now would like to add customizations to your Account Generator, you should do so by starting from the default Account Generator process.

Attention: If you used FlexBuilder in Release 10.7 but did not customize the default configuration, you do not need to use the Generate Account Using FlexBuilder Rules process, since the default Account Generator process gives you the same result as the default configuration in FlexBuilder.

To use the Generate Account Using FlexBuilder Rules process, you need to associate that process with the appropriate Accounting Flexfield structure in the Account Generator Processes window, explained in the next section.

A Note on Terminology

For those converting from FlexBuilder, this section explains how the terminology "maps" between the two features.

Raw parameters in FlexBuilder appear as attributes in the Account Generator. These "input" attributes are set when the Account Generator program is called.

Derived parameters in FlexBuilder appear either as attributes or function activities in the Account Generator.

A sequence of assignment rules in FlexBuilder corresponds to an Account Generator process.

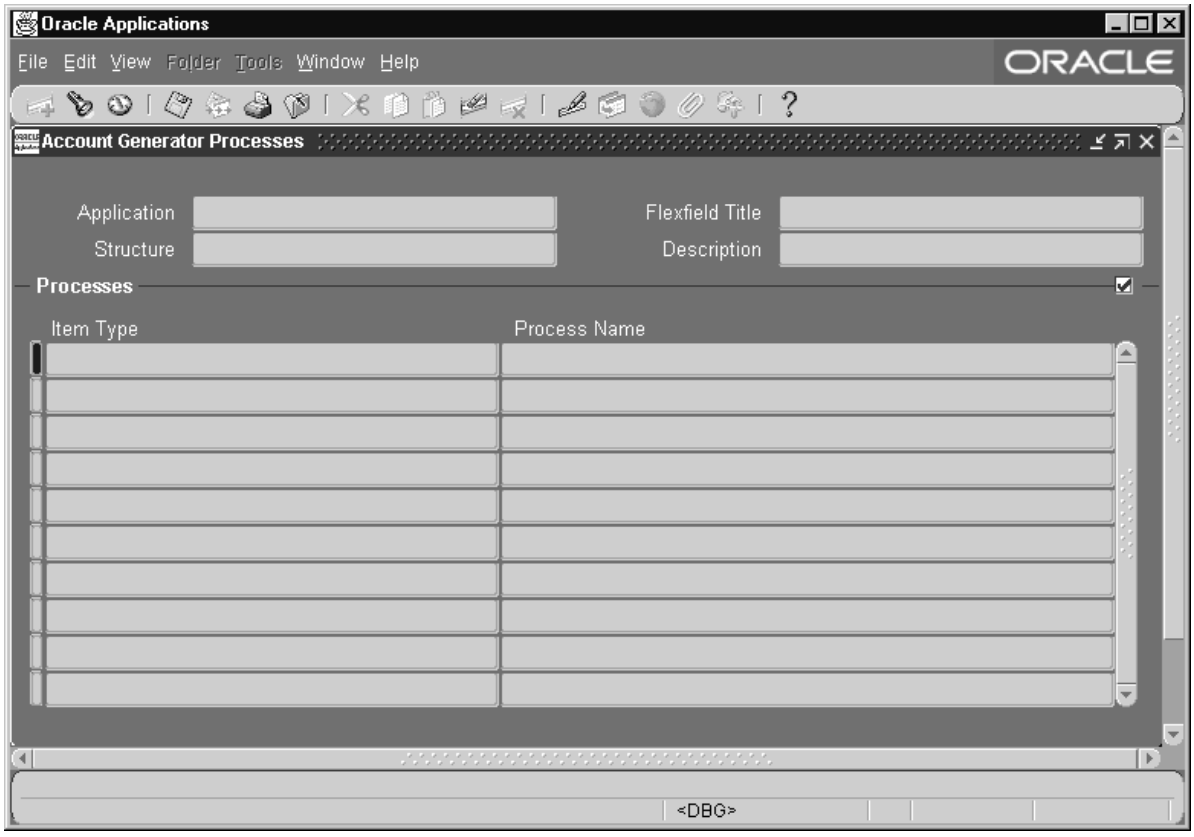
The default Account Generator process for a particular Accounting Flexfield structure corresponds to seeded assignment rules in FlexBuilder.

Finally, a FlexBuilder function corresponds to an item type in the Account Generator.

See:

Choosing the Process for a Flexfield Structure: page 10 – 27

Choosing the Process for a Flexfield Structure



Use the Account Generator Processes window to assign Account Generator processes to Accounting Flexfield structures.

This window is under the navigation path Application > Flexfield > Accounts in the ”System Administrator” responsibility.

▶ **To choose your Account Generator process:**

1. Select the structure to which you want to assign a process. You can choose the application, flexfield title, structure, and description using View > Find...
2. Specify the Oracle Workflow Item Type containing the process.
3. Specify the process you want to use to generate the accounts.

The default process, as specified in your *Oracle [Product] User's Guide*, will default in. If you want to use a different process, enter the name of the process you wish to use. For example, if you want to use the process derived from FlexBuilder, specify "Generate Account Using FlexBuilder Rules" instead.

APPENDIX

A

Business View Generator

This appendix describes the Business View Generator used in setting up Oracle Business Intelligence System.

Business View Generator for Oracle Business Intelligence System

Oracle Business Intelligence System (BIS) uses business views to access information about your business applications. Business Views are created using the Business View Generator. Business Views are set up after you have completed the setup for the other Oracle Applications Products you have installed.

For additional setup information, see the *Oracle Business Intelligence System Implementation Guide.*

Prerequisites

Business Views should be set up after you have completed the setup for the other Oracle Applications products you have installed. Ensure that:

- All the key flexfields have been set up and frozen.
- The desired descriptive flexfields have been set up and frozen.
- The values for user updateable lookup codes have been set up.

Generating Business Views

You run the Business View Generator to include information specific to your setup in the Business Views templates and to generate your Business Views.

To run the Business View Generator, perform the following:

1. Connect to Oracle Applications and assume the Business Views Setup responsibility.

   Note: We recommend you restrict the access to this responsibility to the system administrators performing your installation.

2. In the Navigator, choose Reports > Run menu options to open the Submit Requests window.

3. Run the concurrent program Generate Business Views by Applications for each licensed application product at your site.

   If all the products are licensed, alternatively, you can run the Generate All Business Views program.

Concurrent programs are also available to generate Business Views by descriptive flexfield, key flexfield, lookup, or view name. You should regenerate Business Views by lookup type, descriptive flexfield, or key flexfield (as appropriate) if any new lookups or flexfields have been defined since the views were last generated.

> **Note:** Due to the large number of Business Views delivered with Oracle Business Intelligence Systems, the execution of these concurrent programs could be a lengthy process (approximately 13 hours).

4. In the Navigator, choose Reports > View to open the View Requests window.
5. Verify that all the submitted programs completed successfully and that all the views were generated without errors by clicking the View Output button for each program.

Index

Symbols

A

B

C

D

E

F

T

U

V

W

Reader's Comment Form

Oracle Applications Flexfields Guide, Release 11*i*
A75393–03

Oracle Corporation welcomes your comments and suggestions on the quality and usefulness of this publication. Your input is an important part of the information we use for revision.

- Did you find any errors?
- Is the information clearly presented?
- Do you need more information? If so, where?
- Are the examples correct? Do you need more examples?
- What features did you like most about this manual? What did you like least about it?

If you find any errors or have any other suggestions for improvement, please indicate the topic, chapter, and page number below:

_____

_____

_____

_____

_____

_____

_____

_____

Please send your comments to:

Oracle Applications Documentation Manager
Oracle Corporation
500 Oracle Parkway
Redwood Shores, CA 94065 USA
Phone: (650) 506–7000 Fax: (650) 506–7200

If you would like a reply, please give your name, address, and telephone number below:

_____

_____

_____

Thank you for helping us improve our documentation.