

# Oracle® Key Flexfields – Security, Tips, and Tricks

By Melanie Cameron

*Editor's Note: Ever have one of those months when, despite best efforts, month end does not go as planned? Or there are two or three pieces of additional information your company needs to track but no place exists within the Oracle module to capture it. If you have been there, done that, then this article is for you. First time ORAtips contributor Melanie Cameron provides real life solutions that are easy and practical to implement to make your system more usable and maintainable. Interested? Read on!*

## Introduction

Key Flexfields are widely used in Oracle applications. In general, they house the codes used by organizations to identify part numbers and General Ledger accounts, amongst other things. A list of the most commonly used key flexfields is shown in Figure 1. Setting up these segments can affect the usability of Oracle, decreasing the workload of the users and increasing the accuracy of the data in the system. This article will review the options available, and recommends some best practices.

## Defining Flexfields: Segments

When first setting up a Key Flexfield, there are some features available that will greatly affect the usability and amount of maintenance required with the flexfield.

**Allowing dynamic insertion will reduce the need for creating combinations manually...**

For example, as shown in Figure 2, the segment separator can increase or decrease data entry time. For the Accounting Key Flexfield, a period is common because it is faster during data entry. Other options include dash and pipe, or a custom separator can be defined. Allowing dynamic insertion will reduce the need for cre-

ating combinations manually, and is recommended for Fixed Assets and required for Projects Costing and Billing. When using dynamic insertion, it is recommended that the cross validation segments be enabled and defined as well, which will be covered later in this paper. Freezing rollup groups will prevent the rollup groups from being modified. And lastly, a flexfield must be frozen and enabled in order for it to be used.

**Tip:** When performing maintenance on a Key Flexfield, you must first unfreeze it. This can have some negative consequences if done when transactions are being processed in the Oracle system. Before unfreezing a key flexfield, know what transactions are going on at that time, and wait till after business hours if needed to perform your maintenance.

## Common Key Flexfields

- ▼ Assets:
  - Asset Key Flexfield
  - Asset Category
  - Location
- ▼ General Ledger
  - Accounting
- ▼ Receivables
  - Sales Tax Location
  - Territory
- ▼ Service
  - Service Item
- ▼ Human Resources
  - Grade
  - Job
  - Position
- ▼ Inventory
  - Account Alias
  - Item Catalogs
  - Item Categories
  - System Items
- ▼ Payroll
  - Cost Allocation
  - People Group

\*This list is not all inclusive

Figure 1: Common Key Flexfields

Figure 2: Key Flexfield Segments Form

Once the structure is set up, the segments and their flexfield qualifiers can be defined as shown in Figure 3.

When setting up your segments, don't forget that some structures have required segments that must be set up. For example, when setting up your Accounting Flexfield, you must set up a segment for Company, Cost Center, and Account. All the other segments are optional.

**Tip:** Ensure that you think about future growth when setting up key flexfields. Though it is not supported by Oracle, you can add segments to your Accounting Flexfield – it will require a very talented, and most likely expensive, programmer. Adding a segment called FUTURE when you set up the flexfield is a much safer way to go, if the requirements are known up front. You can default it to Zeros, change the name, and add

the numbers once the use is required. If adding a segment does become a requirement, you have two options: Oracle's solution, which is setting up a new book and operating units and moving everything over there, or going rogue and having it added via code. Both have pros and cons and should be carefully considered prior to going down either path.

The sequence number you assign a segment is the order the segment will appear in on the user's screen. This is important, because if at some point, a company decides they want to see the Cost Center before the Account, simply changing the number on this screen can do it. It is not necessary to change the column number as well. But be aware – this can invalidate any Cross Validation Rules you have set up as well as the Account Alias for this flexfield, and they will need to be re-examined after the

Number	Name	Window Prompt	Column	Value Set	Enabled	Displayed
1	Company	Company	SEGMENT1	ADB Company	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2	Branch	Branch	SEGMENT2	ADB Branch	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3	Account	Account	SEGMENT3	ADB Account	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
4	Cost Center	Cost Center	SEGMENT4	ADB Cost Center	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
5	Product	Product	SEGMENT5	ADB Product	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
					<input type="checkbox"/>	<input type="checkbox"/>
					<input type="checkbox"/>	<input type="checkbox"/>
					<input type="checkbox"/>	<input type="checkbox"/>
					<input type="checkbox"/>	<input type="checkbox"/>
					<input type="checkbox"/>	<input type="checkbox"/>

Figure 3: Segments

change. (Do this in a test instance first, to see what the impact will be on your environment.)

**Tip:** It is common practice to define your sequence numbers as increments of 10, that way if you need to add a segment, you simply insert 11, 12, 21, 31, etc., rather than having to delete and re-order your segments.

Name	Description	Enabled
Cost Center Segment	This attribute is used to identify the cost center segment.	<input type="checkbox"/>
Natural Account Segment	This attribute is used to identify the natural account segment.	<input type="checkbox"/>
Balancing Segment	This attribute is used to identify the balancing segment. This i	<input checked="" type="checkbox"/>
Intercompany Segment	This attribute is used to identify the intercompany segment	<input checked="" type="checkbox"/>
Secondary Tracking Segment	This attribute is used to identify the secondary tracking segment	<input type="checkbox"/>
		<input type="checkbox"/>
		<input type="checkbox"/>
		<input type="checkbox"/>

Figure 4: Flexfield Qualifiers

The Name is the name of the Key Flexfield segment, and the Window Prompt is the prompt that appears to the users. To eliminate confusion, I set them both up as the same so the technical and function users are all referring to the same name. In fact when you type the name, it automatically defaults in the Window Prompt field for easy and rapid setup.

The Value Set is the value set used to validate the data entered on the Key Flexfields. For Descriptive Flexfields, the value sets can be left null and the data free formed in, but there should be a value set assigned to all Key Flexfields for data validation.

**Though it is not supported by Oracle, you can add segments to your Accounting Flexfield - it will require a very talented, and most likely expensive, programmer.**

All Key Flexfields need to be displayed and enabled, even if they are defined for future use. Future use segments can have the segments default in as preset values.

### Defining Flexfields: Qualifiers

Once the segments are set up, the flexfield qualifiers should be set up if they are applicable as shown in Figure 4.

In the General Ledger, the Flexfield Qualifiers are used for specific segments as follows:

#### Cost Center Qualifier

- Required in all Charts of Accounts
- Used in Assets, Payables, Receivables, Order Management, and General Ledger for Cost Center Analysts.
- Used for Revaluations by Cost Center

#### Natural Account Segment Qualifier

- Required in all Charts of Accounts
- Identifies a segment as Asset, Liability, Owners Equity, Income, or Expense

- Determines if an accounts rolls into Retained Earnings at the fiscal year end
- Used as part of XBRL Taxonomy standards for integrations with other systems and reporting

**Tip:** Misclassified accounts cannot be corrected by just changing the Natural Account flexfield qualifier. See Oracle MetaLink Note 1050920.6 for detailed instructions on how to correct accounts that have been set up wrong.

#### Balancing Segment Qualifier

- Required in all Charts of Accounts
- All debits and credits within a balancing segment must equal (either with an offsetting entry or with automatic intercompany offsets)
- Security can be added by balancing segment to prevent unauthorized access to specific balancing segments

#### Intercompany Segment Qualifier

- Available only in 11i – this was not backported to 10.7 or 11.0
- Used to balance intercompany journals, and works with the

Global Intercompany System (GIS)

- Eliminates the need for Natural Accounts for intercompany balancing, and reduces balancing time

### Secondary Tracking Segment

- Optionally used for Revaluations, Translations, and Year End closing entries by tracking Unrealized Gains and Losses, Cumulative Translation Adjustments, and Retained Earnings
- Aides in detailed analysis of currencies with step down allocations

### Defining Flexfields: Segment Options

To set up the segment options, click on the open button on the segment you want to set up as shown in Figure 5.

The first region of the form will default from the previous page (segments summary) with the exception of Description, which can be added here. It does not display anywhere and is for informational purposes only.

**Tip:** Some modules are “buggy” when it comes to description, especially some of the self-service applications, so, as a rule of thumb, I always type in the name as the description to prevent problems down the road.

Again, all Key Flexfields need to be enabled and displayed. Indexing will improve reporting speed and is recommended for Key Flexfields.

The validation region will default from the previous page, and should be reviewed and modified as needed. This is where you can set up default types and values for your flexfields.

Default Types available are:

#### Segment

This will copy the value in another segment of the same flexfield. Enter the segment number in the default value field.

#### Constant

Enter the actual value of the segment in the default value field

#### Field

Defaults the value to another field on the same form. The format is :block.field

#### Profile

Defaults to the value of a profile option; enter the profile short name in the default value field.

#### SQL Statement

Defaults the value to the result of a SQL statement. Enter the SQL in the default value field. Ensure that your SQL will return one row and one value EVERY time.

***It is common practice to define your sequence numbers as increments of 10.***

### Defining Flexfields: Value Sets

The value set and description will default in – if they are incorrect and need modification, or you need to set up a new one, click on the Value Set button.

Oracle comes pre-seeded with a large number of value sets that you can use. You can also set up custom ones for your company.

**Tip:** When setting up custom Value Sets for your company, you may want to consider beginning the name of the Value Set with a unique Identifier so they are segregated from the seeded value sets, such as a three-letter abbreviation for your company. A detailed description will

Figure 5: Segments (Open)

help future users understand what that value set was designed to do without having to look at the details.

There are three options on the List Type:

### List of Values

This requires that the value be set up before it can be used, and the users can select it from a list with the mouse or by typing in the first few characters of the value. Only the short name will appear.

### Long List of Values

This works exactly the same as the List of Values (LOV) except the short name and the description will appear.

### Poplist

Again, this works like the List of Values (LOV), but is limited to ten characters per value

The Security Type also has three options:

### No Security

There is no security on this value set

### Hierarchical Security

Security is based on the parent value set

### Non-Hierarchical Security

Security is based on the rules assigned to the child values only

Setup defined for the format validation section determines what format of data will be accepted into this value set. The format type options are: CHAR, Date, DateTime, Number, Standard Date, Standard DateTime, and Time. The right justify and zero fill options are only available with Number.

The maximum size determines the maximum size of the data that can be

entered – data that is smaller will be accepted. You can also assign minimum and maximum values for the value set.

Validation Types determine how and if the value is validated. The options are:

### Dependent

Restricts options based on another segment's values (Departments A, B, and C are the only valid options for Company 1)

### Independent

Validates based on values set up within the value set

### None

No Validation

### Pair

Used in running concurrent processes where segments within segments are used – an example would be an item, where the item value set is two segments, but shows to the user as one segment with the separator

### Special

Works same as Pair

### Table

Works similar to Independent, but validates off a table using a SELECT statement as opposed to off a value set

### Translatable Independent

Works just like Independent, but uses a translated value instead of an entered value

### Translated Dependent

Works just like Dependent, but uses a translated value instead of an entered value

Once you have your value setup defined or modified, you can resume setting up your Validation region of

the segments (refer back to Figure 5).

The Default Type and Default Value are used together to default a segments value. These can be used to decrease data entry time, either for future use segments or for segments that are 90% always the same values – but use care when defaulting value. What users do not have to enter, they often will not look at, leaving room for errors.

**TIP:** All segments will default to being required – and this is correct functionality for Key Flexfields. If you are working with a Descriptive flexfield, you may want to uncheck this field.

Security Enabled must be checked if you plan on setting up Security Rules for this segment. Enter a Range to build intelligence into your record keeping. For example, if you want a low and high account to know that the high account must be greater than the low account, then under Range, the low account would be low and the high account would be high.

Size determines how the data will appear to the users and makes the flexfield more usable. The Display Size must be at least as large as the Value Set maximum value. The Description Size is sometimes set to less than actual descriptions, which will cut off the descriptions and can make them less meaningful, so keep this in mind when you set up both the size and the descriptions. The Concatenated Description Size is how large the concatenated flexfields will appear on some reports and all the forms. For example, if your account number has three segments, the concatenation of the descriptions of the three segments is what this controls.

Prompts are what the users see when engaging a List of Values (LOV), or in a window. Again, I like to keep them the same whenever possible to eliminate confusion.

**TIP:** Best Practices for Key Flexfield Combinations are:

1. Use begin and end dates! Know when the flexfields were in use. In some versions of Oracle, disabled segments and combinations that are used in setup forms just DISAPPEAR from the setup form and cause errors. (They do still exist in the database, so beware when troubleshooting this problem!)
2. Using dates also allows you to prepare for a change ahead of time – the accounts can begin and end at a date in the future, and you can work on the maintenance during your slow period as opposed to the middle of month end, when it always needs to take effect.
3. Use the Qualifiers on the GL Accounts for additional security as shown in Figure 6.

If you do not budget or post to this account, then tag it as such to prevent mis-postings during budgeting and journal entries.

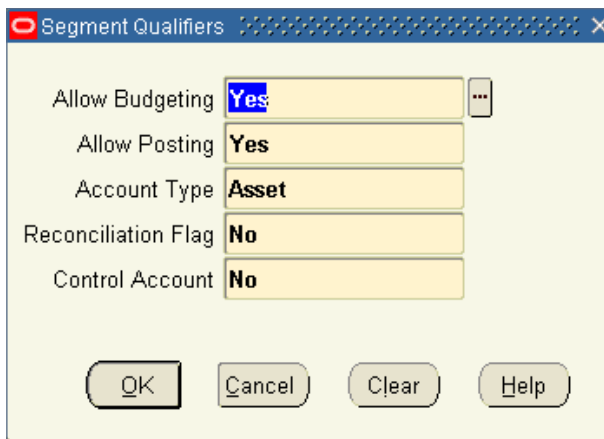


Figure 6: Segment Qualifiers

If it is not a reconciled account in Europe, or a control account for your Global Accounting Engine, again, it should be tagged as No.

### Parent Child Relationships

Not using ADI? You should be!

ADI (Application Desktop Integrator) provides a GUI interface for you to see your parent child relationships easily. It is under View Account Hierarchy (Figure 7), and you must have access to set up account flexfields in the GL in order to see this in ADI. You can add or remove parents and children from the hierarchy, add and maintain accounts and their attributes from here.

**Account Alias** – These are short names for a Key Flexfield combination. It can either be a full combination or a partial combination where the user has to fill in the rest of the segments as shown in Figure 8.

Account Aliases can help reduce data entry for large flexfields, as well as learning curves when non-accounting people are entering data into Oracle. The one thing to remember is Aliases are NOT available in the i-modules, like iProcurement and iExpense, but are available in ADI (Application Desktop Integrator)

**Cross Validation Rules (CVR)** (Figure 9) are important to have set up if you have dynamic insertion turned on. When every Oracle user

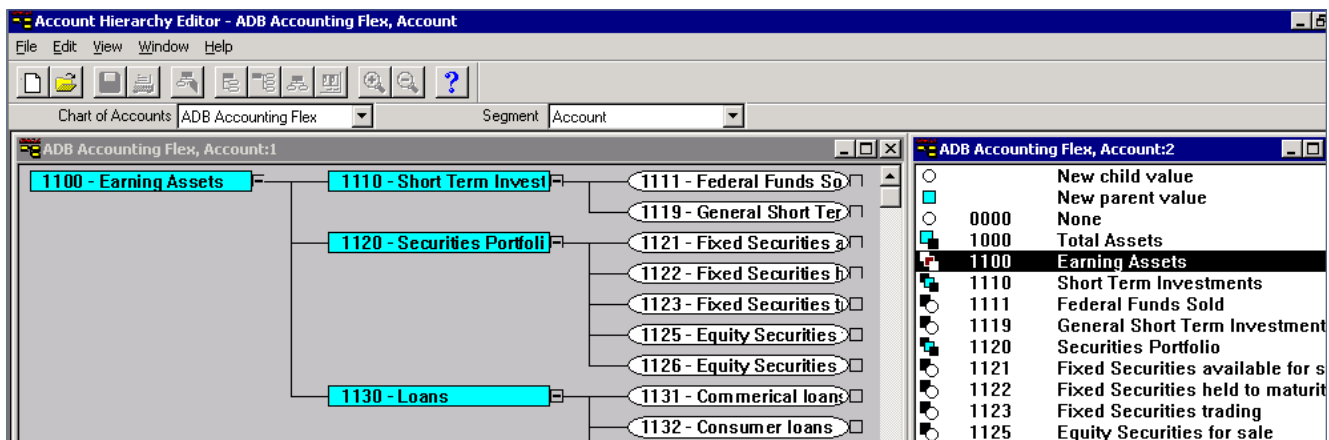


Figure 7: ADI - View Account Hierarchy

has the ability to set up account combinations, it is better to tell the system what is valid and what is not than to expect the users to remember or understand. They can prevent mis-postings to the General Ledger, and reclasses at month end, reducing the close cycle and reconciliation time.

Some simple rules to follow for easily maintainable and easy-to-trouble-shoot cross-validation rules are:

1. KISS – Keep it Simple, Silly! Write more simple rules than fewer complex ones. They are easier to trouble-shoot.
2. Under the name, assign the rule a number. Use this number in the error message. When a user calls up about a CVR violation, have them give you the number and you know exactly which one is the problem.
3. Make the error messages simple and self-explanatory. The better written they are, the less calls you will get on valid violations.

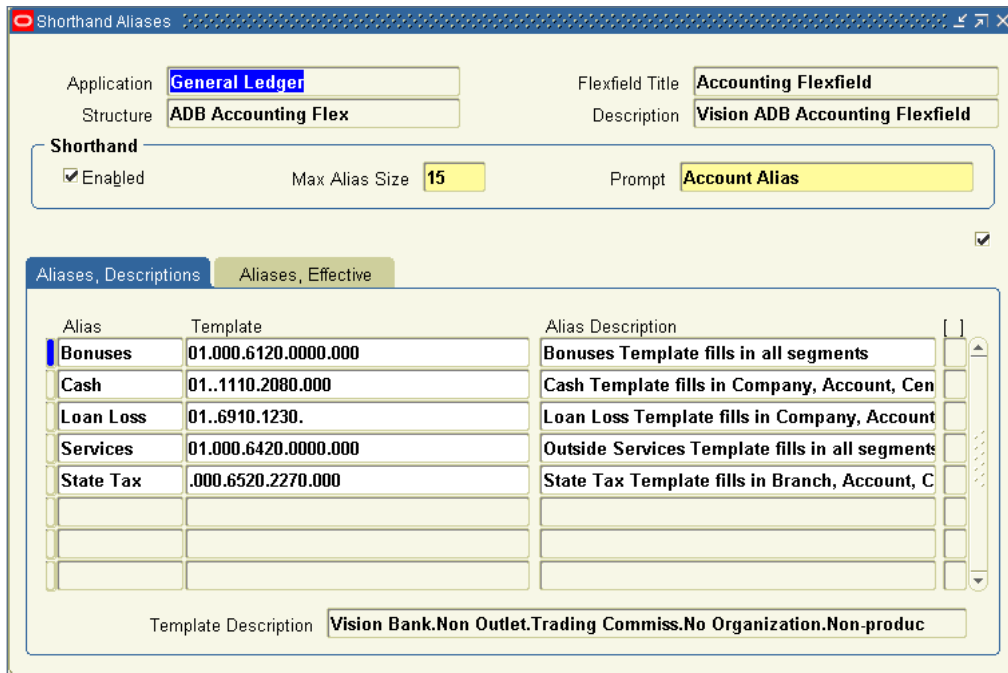


Figure 8: Account Alias

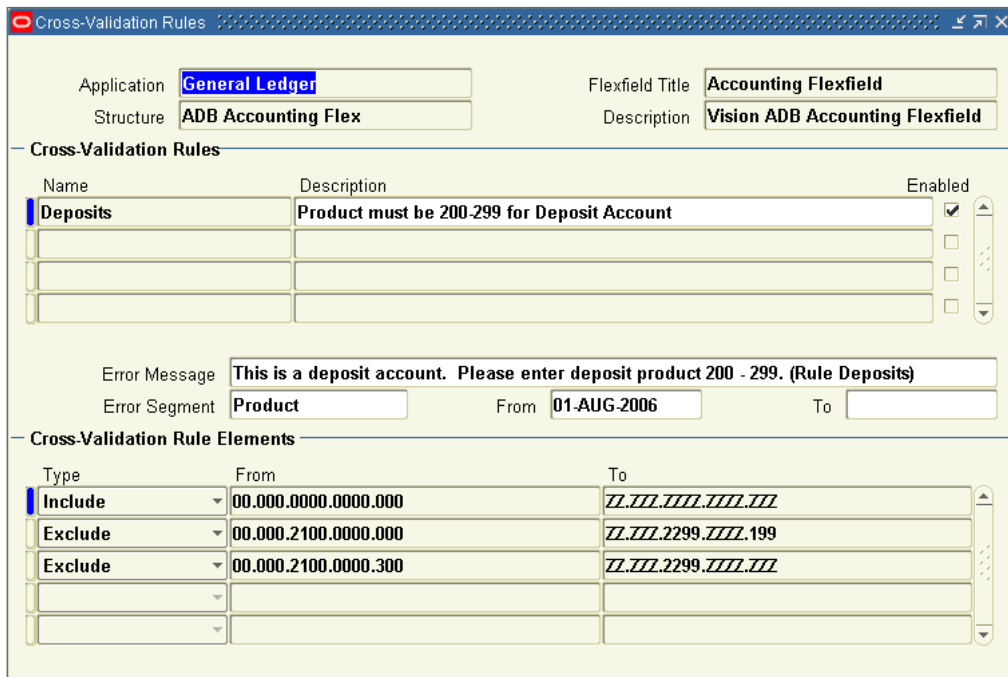


Figure 9: Cross-Validation Rules

4. Make your descriptions descriptive – three years from now, no one will remember why this rule was written
5. The error segment will highlight which segment is wrong for the users.
6. Again, use the from and to dates as opposed to just the enabled flag...
7. Always include ALL valid combinations. This prevents problems. Then exclude the invalid combinations, using ranges where you can.
8. Test your rule – can you enter a combination you are trying to pre-

vent? Will it allow a combination you want to allow?

- After each time you do maintenance on CVR's, run the Cross Validation Rule Violation report to see if any existing combinations violate any rules. Run it first in view mode, then once you validate it, you can rerun it and disable all the violating accounts. This report is traditionally found in System Administrator responsibility.

**Security Rules** can add a layer of security above the responsibilities, as well as prevent additional mis-postings to the General Ledger. Commonly, they are used to either prevent users from reviewing financial information for a division or department they do not work for, or to prevent a responsibility, such as Purchasing or iProcurement, from posting to an account such as Asset - Computer Equipment as opposed to the Asset Clearing account.

Security Rules as shown in Figure 10, can be set up for a Key or Descriptive Flexfields, a Value Set or a Concurrent Program. Using the navigation path: Navigate to Setup > Financial > Flexfield > Key > Security: Define and query up the Key Flexfield you want to add security to.

Assign the rule a Name, Description, and a Message. The message will appear in the core applications when someone tries to access the account, but in the Web applications, such as iProcurement, the segments excluded with the security rule no longer appear as an option. Again,

you will need to include all values in the segment, then exclude the ranges you do not want this rule to have access to. If the rule is complex, write multiple rules as opposed to multiple exclusions to keep the troubleshooting simple.

**Security Rules, when added and maintained properly, make month-end close faster by reducing mispostings to the General Ledger, and can aid in your SOX audits for sensitive accounts.**

Save your record and click on the Assign button.

Figure 11 (Assign Security Rules) is where you assign the rule to a given responsibility. You must know what application a responsibility is set up under - this can be determined under the System Administrator responsibility under Responsibilities. Sign into this responsibility and test your rule to ensure you are restricted access to the accounts you want to limit and still have access to the accounts you should.

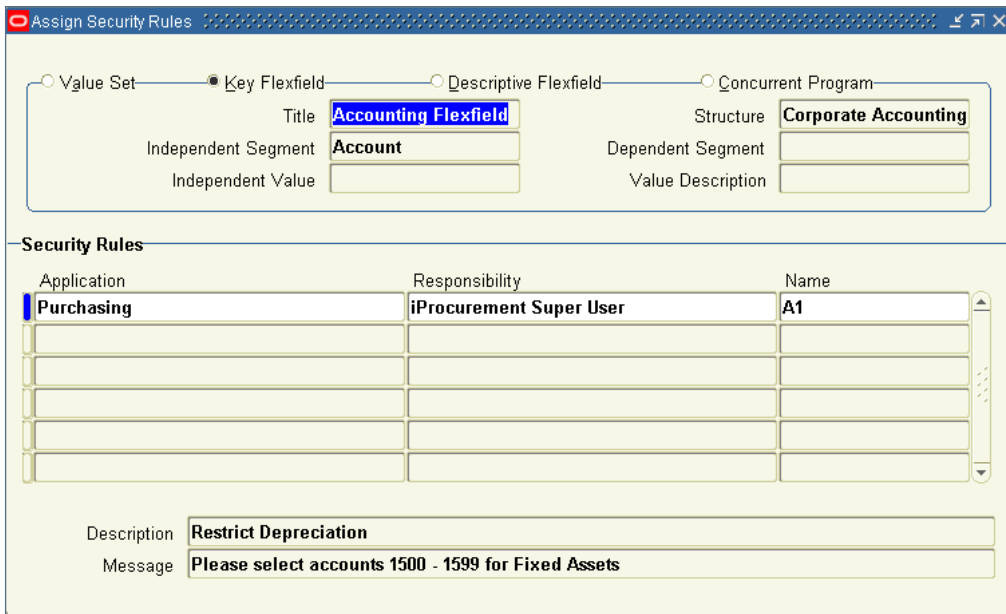
Security Rules, when added and maintained properly, make month-end close faster by reducing mispostings to the General Ledger, and can aid in your SOX audits for sensitive accounts.

### Conclusion

All the features covered in this article will make your General Ledger more accurate at month end and your system more usable and maintainable. It takes some thought to

Figure 10: Security Rules





Assign Security Rules

Value Set
  Key Flexfield
  Descriptive Flexfield
  Concurrent Program

Title: Accounting Flexfield  
 Structure: Corporate Accounting  
 Independent Segment: Account  
 Dependent Segment:  
 Independent Value:  
 Value Description:

Application	Responsibility	Name
Purchasing	iProcurement Super User	A1

Description: Restrict Depreciation  
 Message: Please select accounts 1500 - 1599 for Fixed Assets

Figure 11: Assign Security Rules

set up and some time to maintain, but the rewards of accurate financial statements are worth it!

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