



Comverse Training Group  
*Delivering Knowledge*

## Section 3

# Offers and Bundles

# Agenda

3.1 Data Model

3.2 Balance Management

# Module Objectives

- Define the purpose of each of the data entities in Comverse ONE, and provide examples for each
- Given a business scenario, identify the data entities involved
- Explain the differences between the three types of offers, and identify when each is used
- List the advantages of bundling
- Explain the differences between the two types of bundles, and identify when each is used
- Explain the impact of bundling overrides on terms and rules
- Define the five types of payment modes for offers
- Explain how subscribers and usage are impacted by payment mode
- List the data entities that are instantiated (copied) when applied to a customer's account

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## Data Model

Data Model Basics

Primary Offers and Building Blocks

Other Offer Types

Bundles



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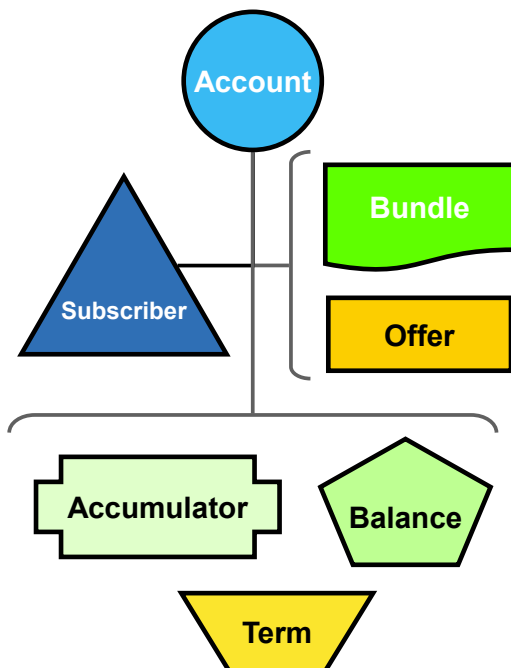
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## Data Model Basics

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## Instantiated Account Model



### Account

- The liable party. Owns A/R, receives invoice/statement
- New accounts can be added to account hierarchies

### Subscriber

- Represents service delivery point
- Requires association with a Primary Offer

### Offers and Bundles

- Saleable entities that can be assigned to Accounts and Subscribers
- Offers provide grouping of Plans, Terms, Balances, Accumulators, etc.
- Bundles provide grouping of Offers and/or Bundles

### Balances & Accumulators

- Balances manage available amounts that can be consumed
- Balance instances can be monetary or non-monetary, shadow or real
- Accumulators count specific units
- Thresholds on accumulators trigger real-time bonuses or discounts

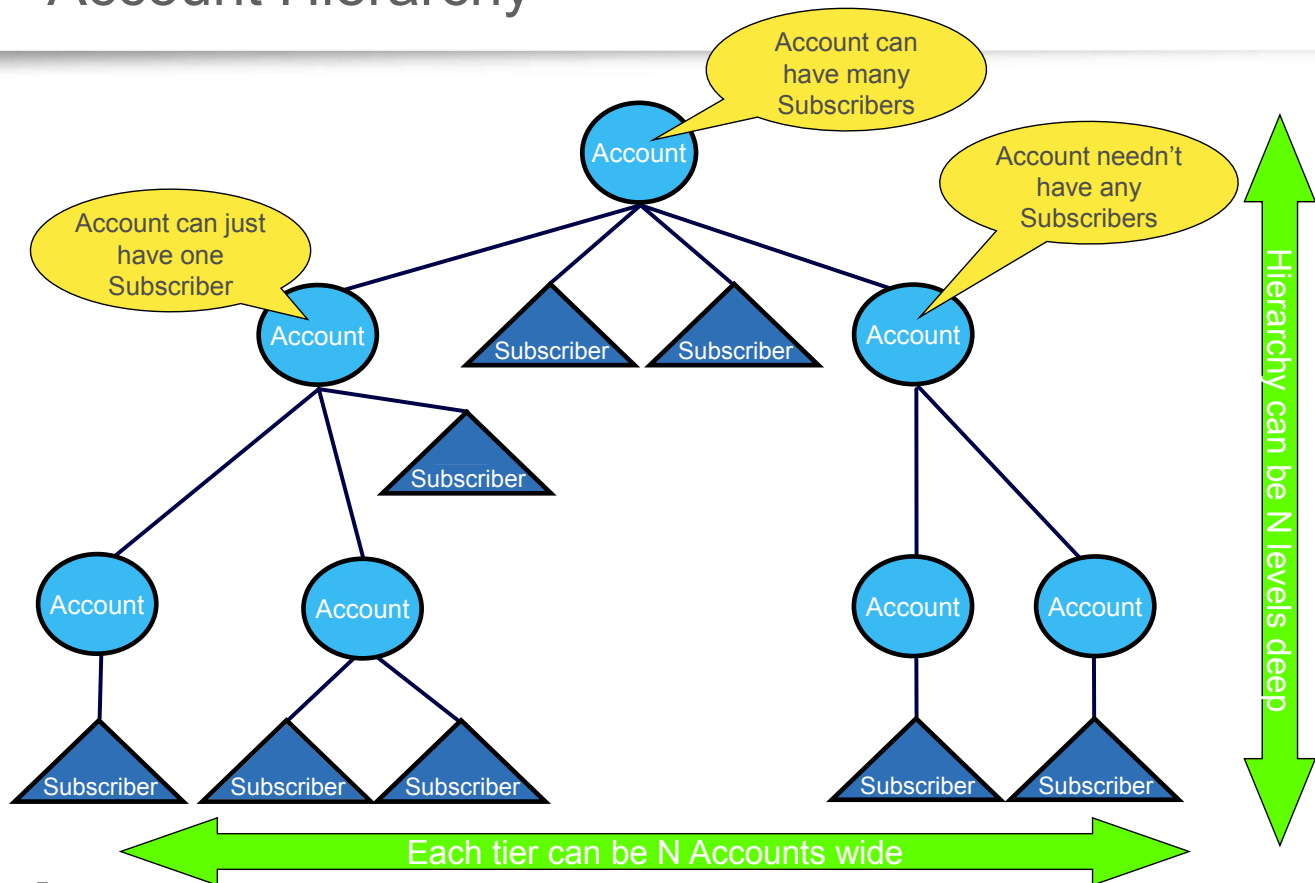
### Terms

- Represent one-time or cyclical charges

Not shown: Plans, Rules, Templates, Promotions

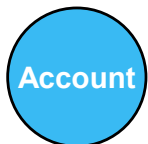
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# Account Hierarchy



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## Main Data Entities



- Represents a customer of an operator; has financial responsibility for delivered services. Accounts can be added to account hierarchies



- Represents the service delivery point, but can reflect more than one service category. Requires association with a Primary Offer (2 types)

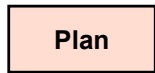


- Minimum sellable entity delivered to a subscriber for the consumption of service (3 types)



- Enables the grouping of offers for marketing purposes (and can include promotional pricing) (2 types)

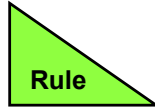
# Main Data Entities – “Building Blocks”



- Groups items to associate them with an offer, which enables specific activities, rates, discounts or bonuses for the subscriber (3 types)



- Defines some pricing aspect of the agreement that is represented by the bundle or offer (3 types)



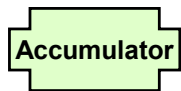
- A condition or constraint for delivering a bundle or offer (4 types)



- Entities that are configured to aid in the instantiation of customer accounts or drive configuration of catalog entities (4 types)



- Monetary or unit value that is consumed by charges associated with an offer



- Register capable of counting or measuring chargeable activity

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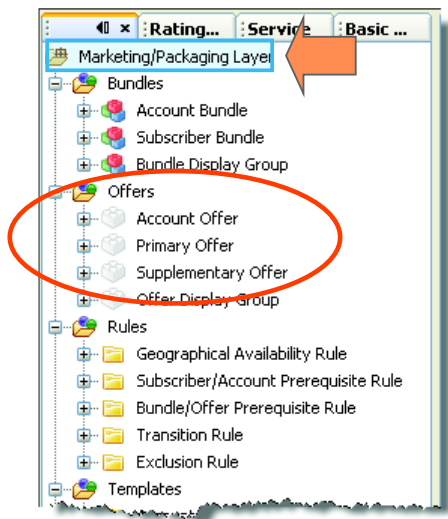
Primary Offers and Building  
Blocks



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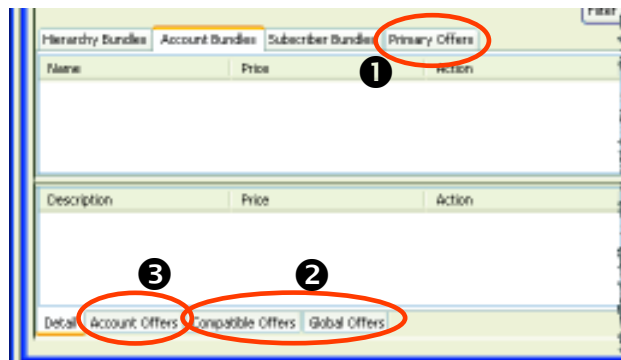
# 3 Types of Offers

## Product Catalog



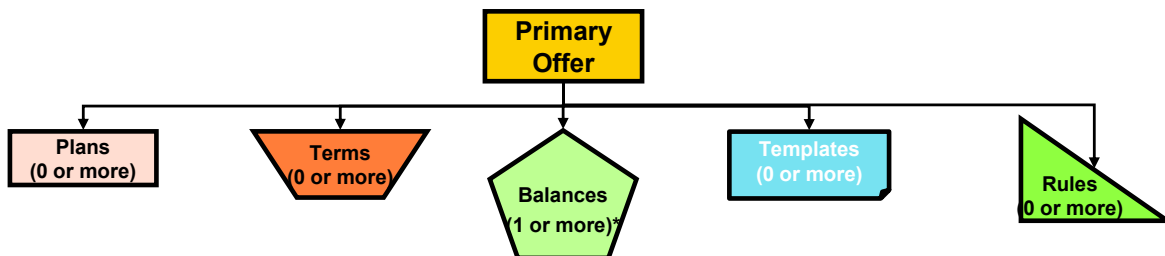
1. **Primary Offer** — Defines the core aspects of the Subscriber. Every Subscriber must have one Primary Offer
2. **Supplementary Offer** — Used to extend service provisioning or impact usage rating
3. **Account Offer** — Used to deliver additional balances and promotions to the account

## Customer Center



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## Primary Offer

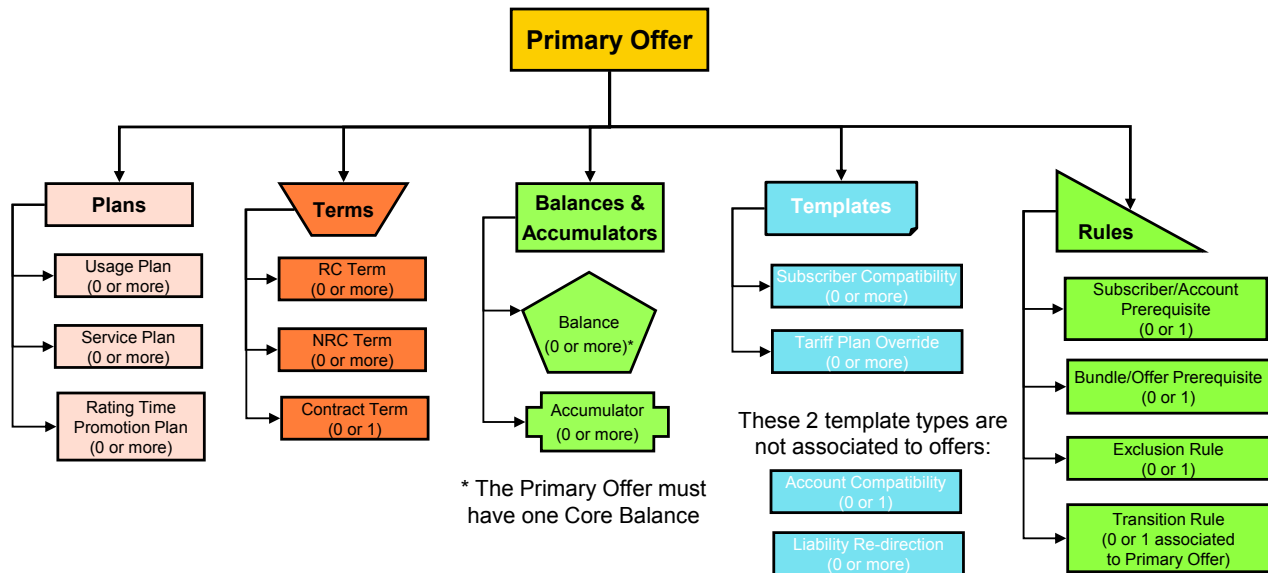


- Most of the service behavior is defined as part of the Primary Offer (e.g., billable activities, tariff structure, account balances, promotion plans)
- Only a few personal configuration attributes, such as the subscriber's default language, are kept in the Subscriber records
- The rest are defined in the Primary Offer and are shared by all the subscribers assigned to it

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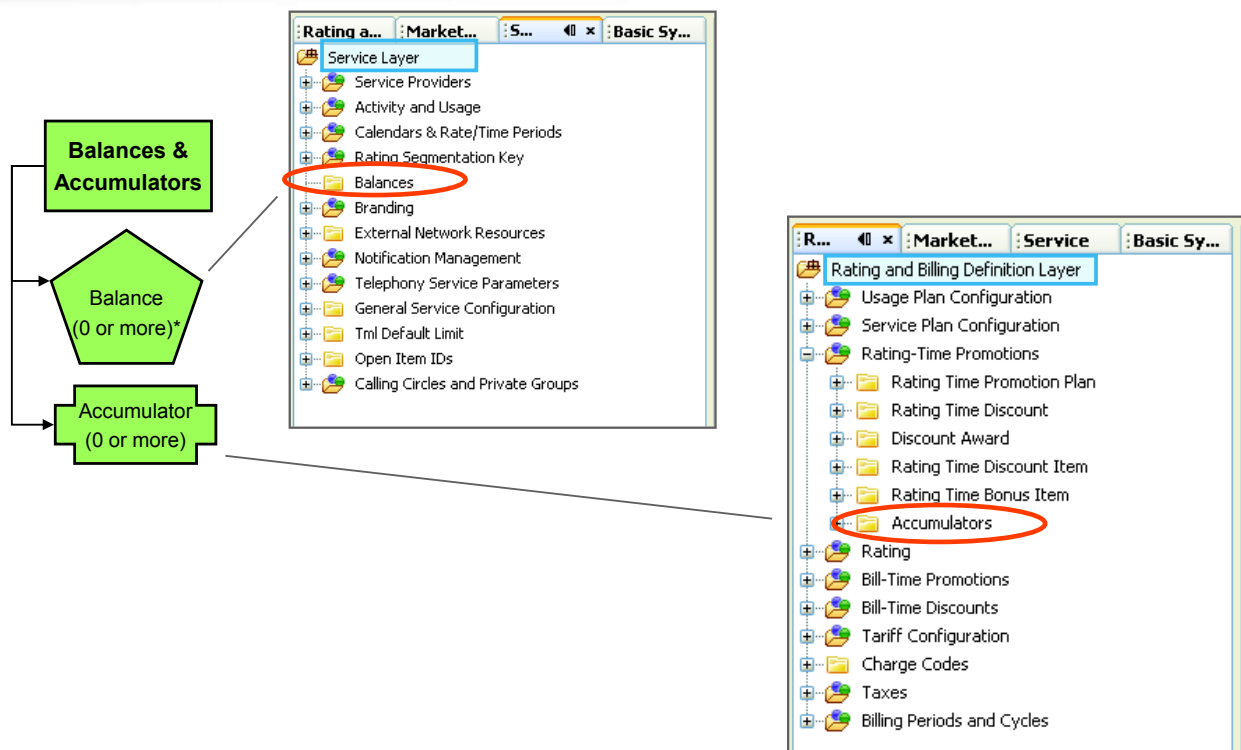


# Hierarchical View of Offers



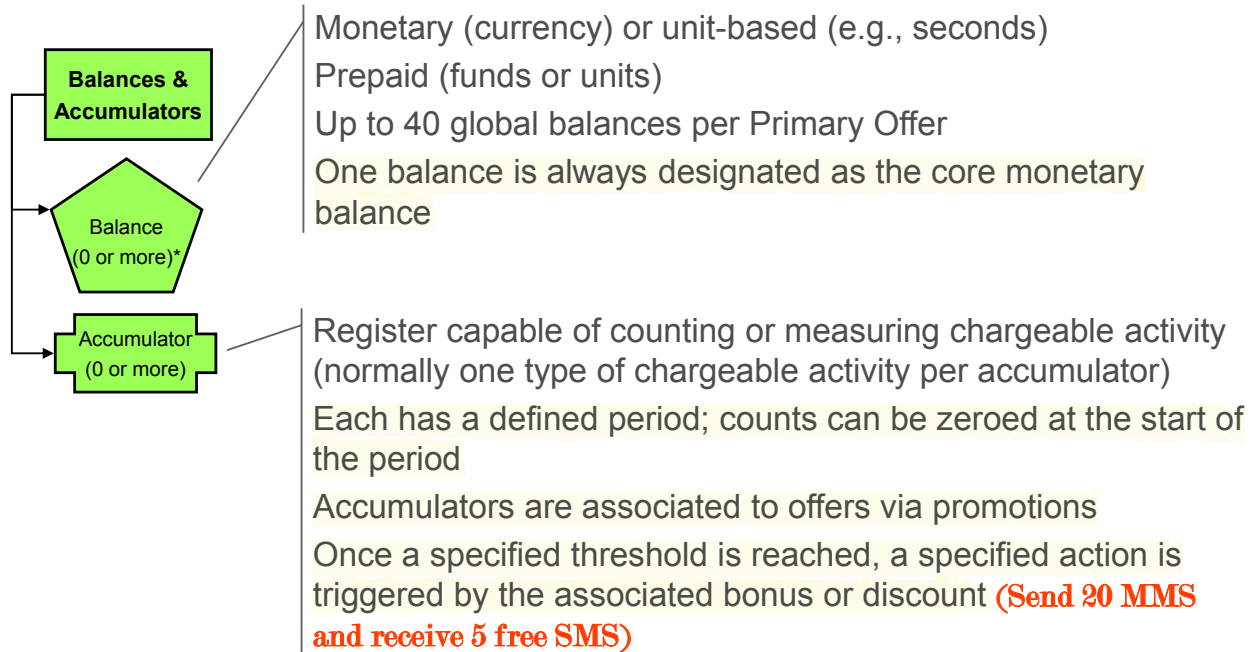
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## Balances & Accumulators



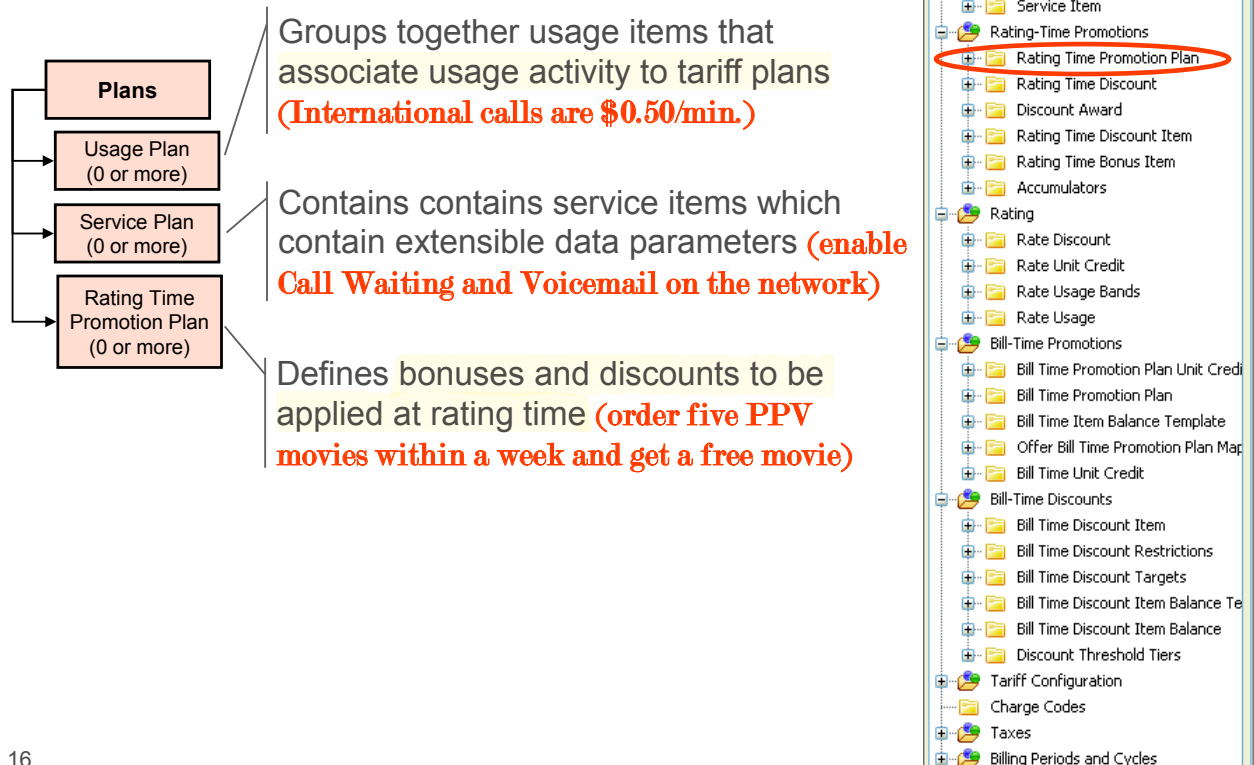
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# Balances & Accumulators



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# Plans



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# Examples of Rating-Time Promotions

## Rating-Time Tiered Discounts:

- For example:  
5% off 0 to 100 SMSs, and 10% off of more than 100 SMSs



## Rating-Time Bonuses:

- For example:
  - 10 SMS free after sending 100 SMS in a month
  - One free movie after ordering five PPV movies within a week
  - One free video clip after purchasing two ringtones in one day

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# Rating-Time Promotions: Offers, Plans & Items

## Offer

- Sellable entity

## Rating Promotion Plan

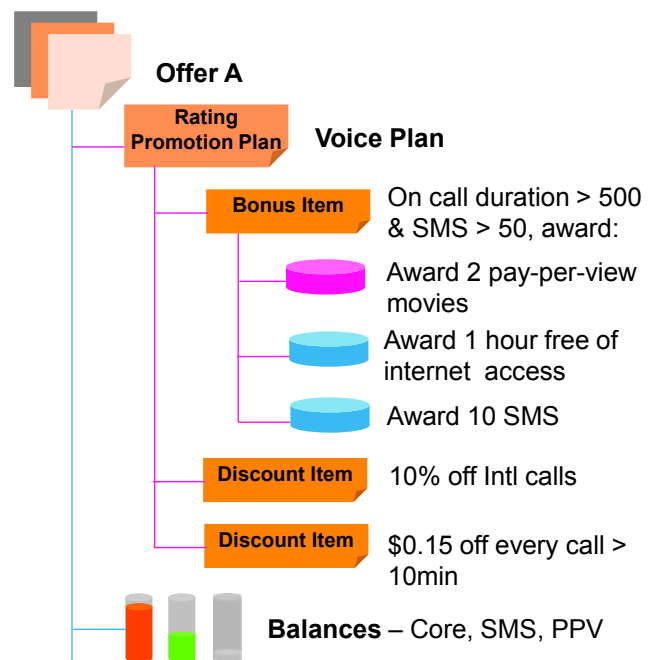
- A Plan that reduces a charged amount, allocates free services, or credits a balance
- One or more rating promotion plans can be included in the Offer

## Rating Bonus Item

- An Item that defines a bonus/ award based on subscriber's usage
- One or more bonus items can be included in rating promotion plan

## Rating Discount Item

- An Item that defines a monetary discount that is applied at rating time per event
- One or more discount items can be included in the promotion plan



Accumulators & other entities are not shown here

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# Usage: Offers, Plans & Items

## Offer

- Sellable entity

## Usage Plan

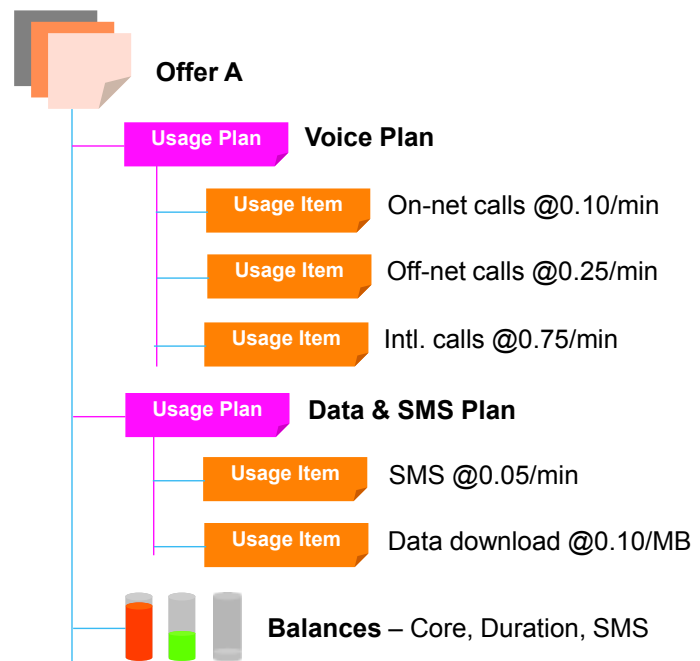
- Defines available and permitted usage activities and their rates
- One or more Usage Plans can be included in Offer

## Usage Item

- An Item that defines the available and permitted Usage Activities and their associated default tariff
- Consists of Activity Usage Type (AUT) and Tariff Plan

## Tariff Plan/Tariff

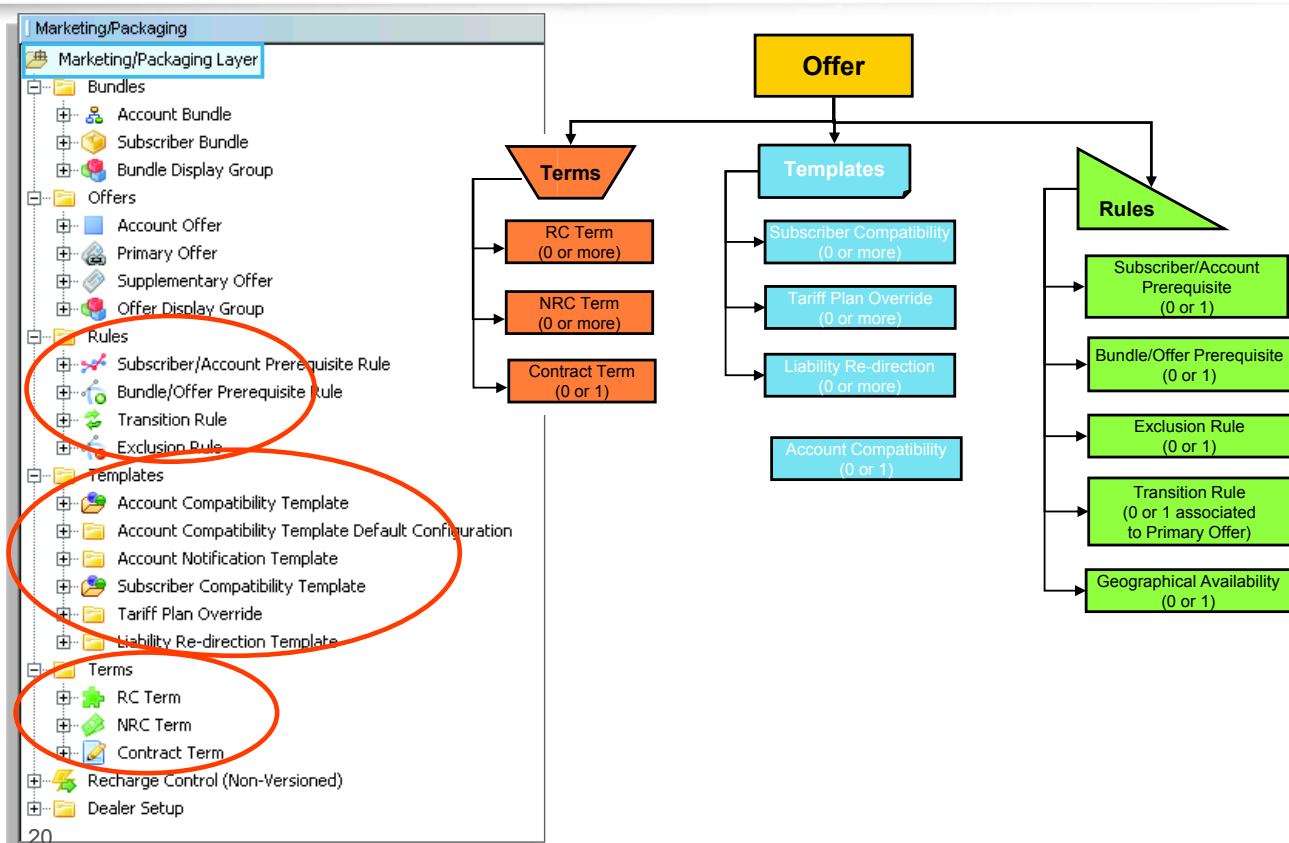
- Defines rates for the usage events
- Rates can vary based on various criteria



A number of usage entities are not shown here

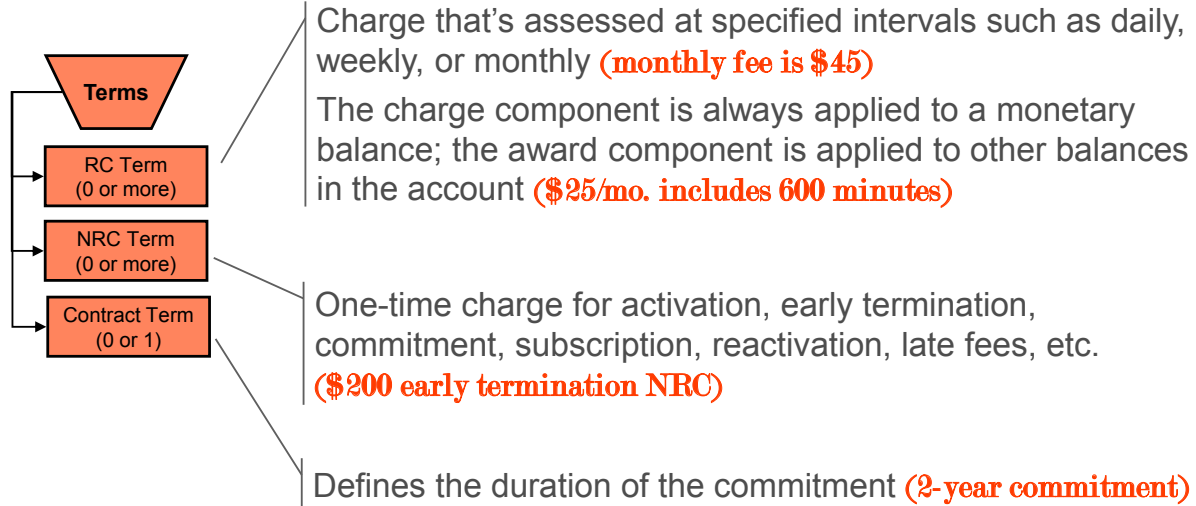
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# More Offer Configuration



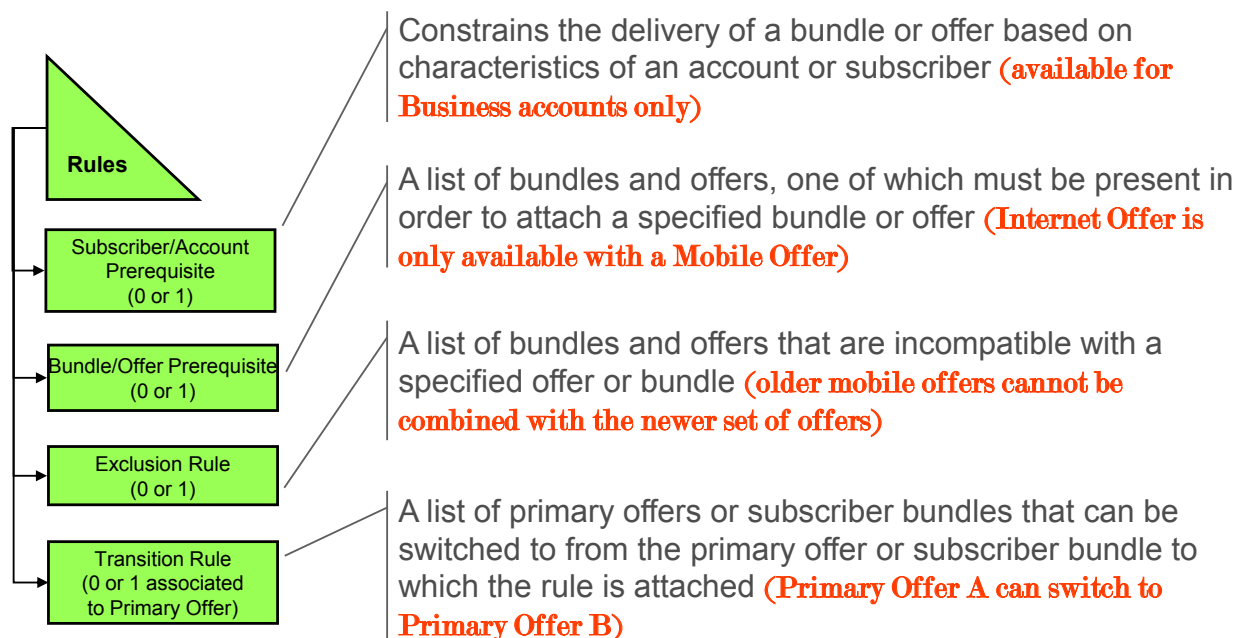
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# Terms



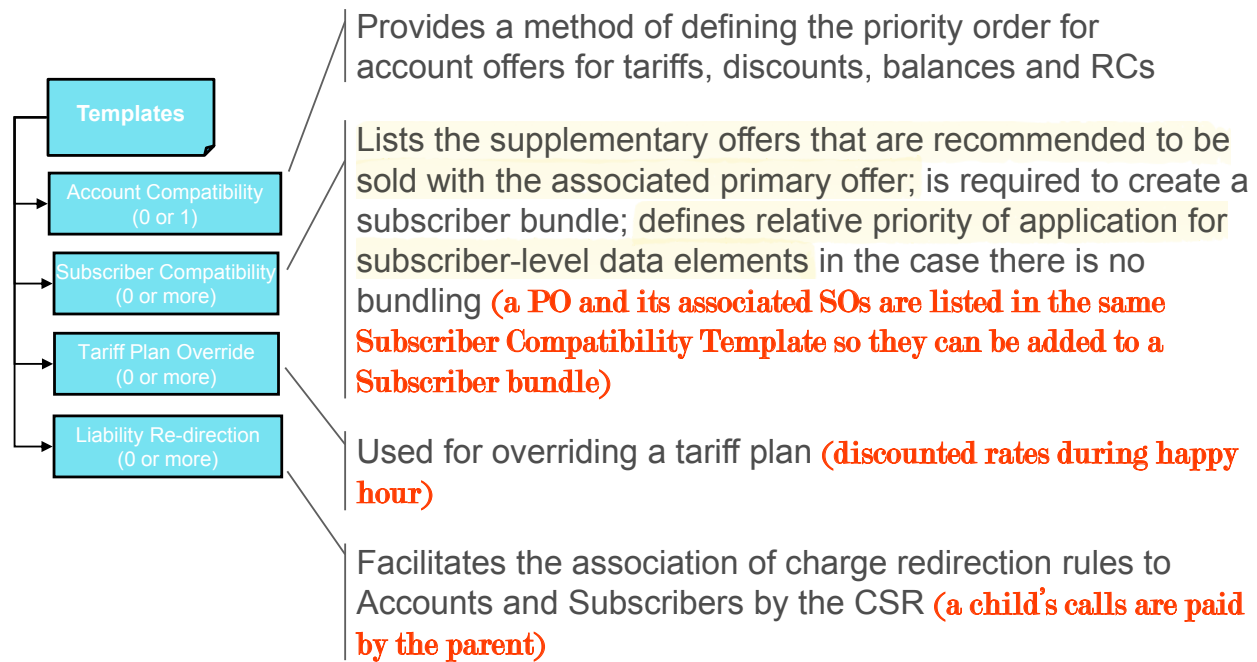
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# Rules



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# Templates



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Other Offer Types



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# Supplementary Offer – Detail View

Supplementary Offer Version 3.0

Name\* ks Wireless Web

Description

Short Display

Language English Add/Remove

Keywords

Type or choose from list of standard keywords

Keywords

Select "Can be sold outside of Compatibility Template" if you want this offer to be available with other POs in the catalog (not just the ones listed in the subscriber compatibility template)

This offer is **NOT** generally available

General Terms & Conditions Advanced Settings

☒ Can be sold outside of Compatibility Template

☐ Regional ☒ Global

Region

Service Category\* GSM Mobile

Payment Mode\* Prepaid

Currency Code\* US Dollars

RC Insufficient Balance Handling\* Allow partial charge

Auto Activation\* Real-time

Offset Days

Sales Effective Date\* Thu 01/28/2010

Sales Expiration Date

Automatic Expiration Date

☒ Date:

☐ Duration:

Note that SOs have dates associated with them

Details Graph

# Account Offer – Detail View

Account Offer Version 3.0

Name\* Residential Family Account Offer

Description

Short Display

Language English Add/Remove

Keywords

Type or choose from list of standard keywords

Keywords

This offer is **NOT** generally available

General Terms & Conditions Advanced Settings

☒ Regional ☐ Global

Region

Service Category\* GSM Mobile

Payment Mode\* Either (Default Prepaid)

Currency Code\* US Dollars

Auto Activation\* Real-time

☒ Suppress Offer State Notification

☐ Unit Pack

Offset Days

Sales Effective Date\* Mon 01/01/2001

Sales Expiration Date

Automatic Expiration Date

☒ Date:

☐ Duration:

RC Insufficient Balance Handling\* Allow partial charge

Details Graph

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## Bundles

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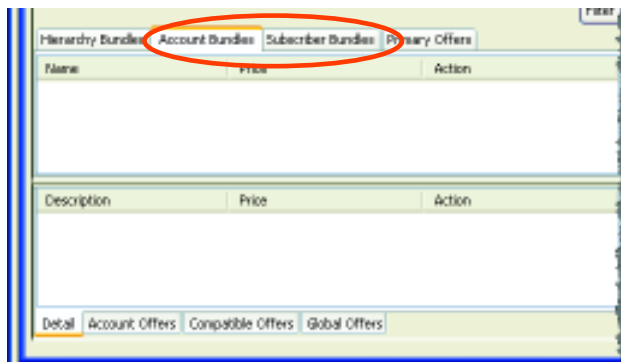
## Why Bundle?

1. Enable the grouping of Offers for marketing purposes. Account Bundles can include Offers from multiple lines of business
2. Promote speed and accuracy during order-taking
3. Provide promotional pricing

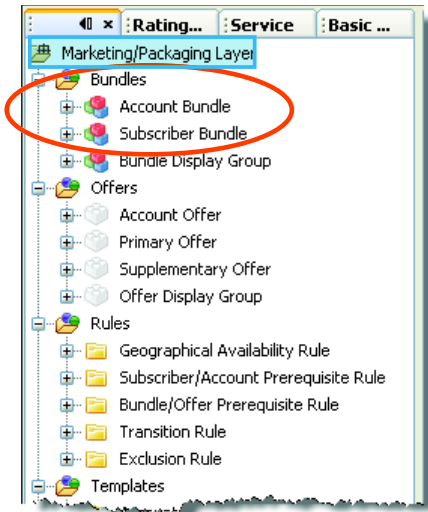


## 2 Types of Bundles

1. **Subscriber Bundle** – Includes a Primary Offer and one or more Supplementary Offers
2. **Account Bundle** – Includes Subscriber Bundles and Account Offers



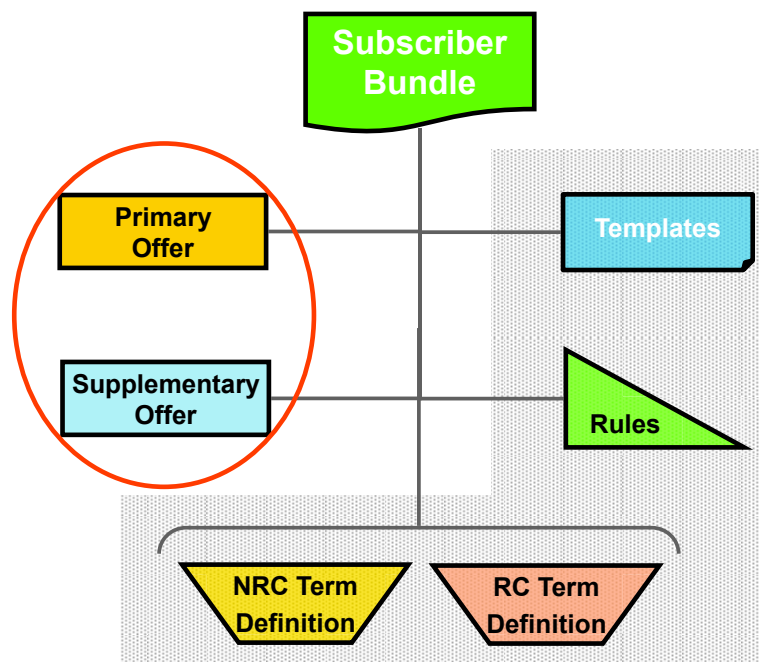
### Product Catalog



Customer  
Center

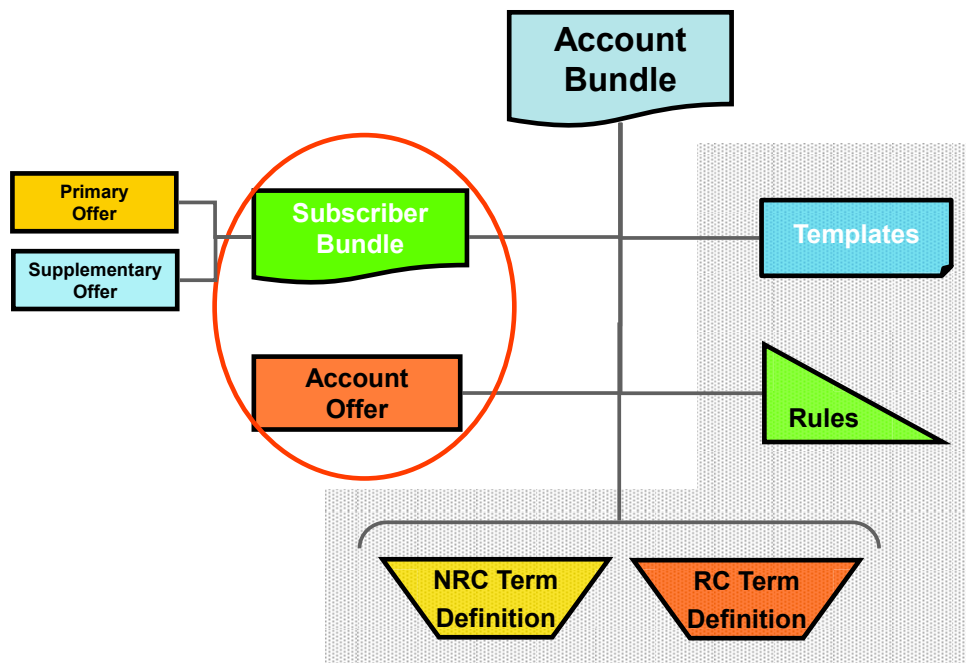
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## Subscriber Bundle



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# Account Bundle



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## Bundle Selection – Creating Bundles

### Adding a Subscriber Bundle to an Account Bundle

**New Bundle/Member Relationship**

Subscriber Bundles

Selection Type\*

- Mandatory
- Selective
- Optional
- Selective and Optional

### Creating a Subscriber Bundle

**General** | Terms & Conditions | CSR Information

☐ Regional ☒ Global

Region: [Dropdown]

Sales Effective Date\*: Tue 01/26/2010

Sales Expiration Date: [Dropdown]

Auto Activation\*: Real-time

**Required Number of Selective Offers**: [Text Input]

RC Insufficient Balance Handling\*: Allow full charge

☒ Suppress Bundle State Notification

### Creating an Account Bundle

**General** | Terms & Conditions | CSR Information

☐ Regional ☒ Global

Region: [Dropdown]

Sales Effective Date\*: Tue 01/26/2010

Sales Expiration Date: [Dropdown]

Auto Activation\*: Real-time

**Required Number of Selective Subscriber Bundles**: [Text Input]

**Required Number of Selective Account Offers**: [Text Input]

RC Insufficient Balance Handling\*: Allow full charge

☒ Suppress Bundle State Notification

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## Bundle Selection – Selection Type

Selection Type	Definition	Details/Examples
Mandatory*	Subscriber must take the entity	Only one can be ordered
Selective*	Subscriber must choose the number specified	Example: “Required number of selective offers=2” (let’s say out of 5 options); then exactly 2 can be ordered
Optional	Subscriber can accept or decline the entity; always priced separately	Many can be ordered
Selective and Optional	Subscriber must take the required number of selective offers, and may be able to take more, as optional	Example: “Required number of selective offers=1”; then 1 must be ordered but more can be ordered too, and will be subscribed as optional

\* There are implications for bundle-level overrides of terms and templates.  
See the next slides.

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## Bundle Overrides – Terms

### Terms

- Bundle-level Term overrides pertain only to **Mandatory** and **Selective** Offers or Subscriber Bundles (not to Optional Offers or Subscriber Bundles)
- **RC Terms** – 2 options:
  - Do not override RC Offer Terms
  - Override all RC Terms for Mandatory and Selective Offers in the Bundle
- **NRC Terms** – 2 options:
  - Do not override NRC Offer Terms
  - Override the equivalent NRC Terms for Mandatory and Selective Offers in the Bundle
- Bundle-level **Contract Terms** always override Offer Contract Terms

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# Bundle Overrides – Rules and Templates

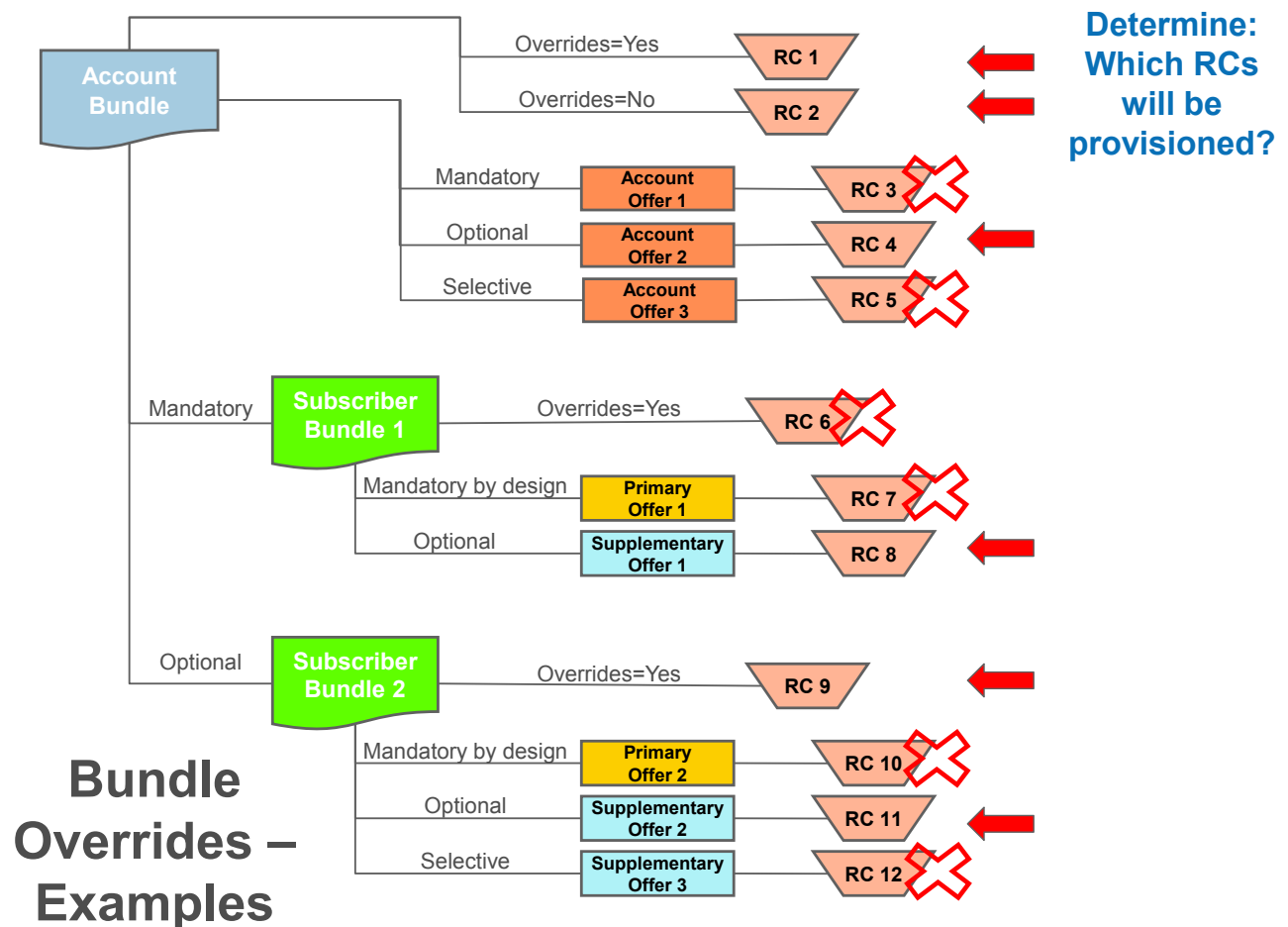
## Rules

- Bundle Rules override Offer Rules (e.g., for product compatibility and availability)

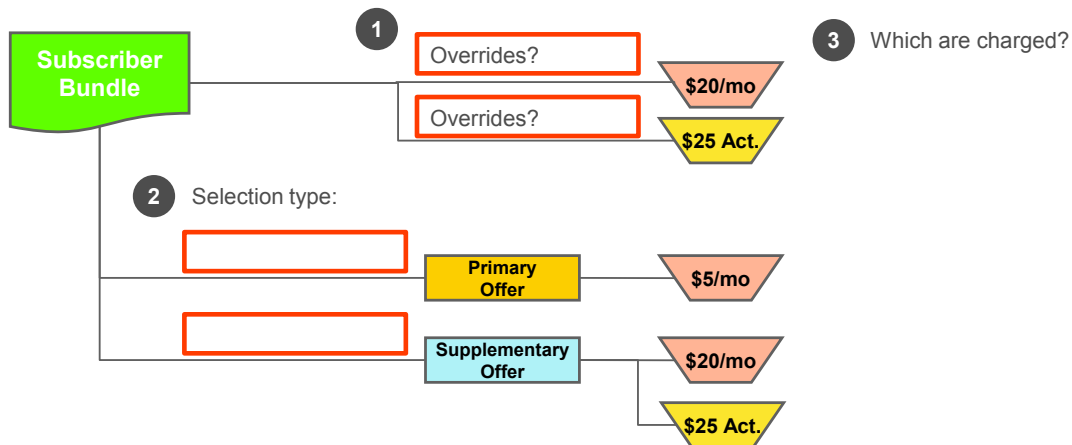
## Templates

- The Bundle-level Tariff Plan Override Template is evaluated first, then the Offer-level Template

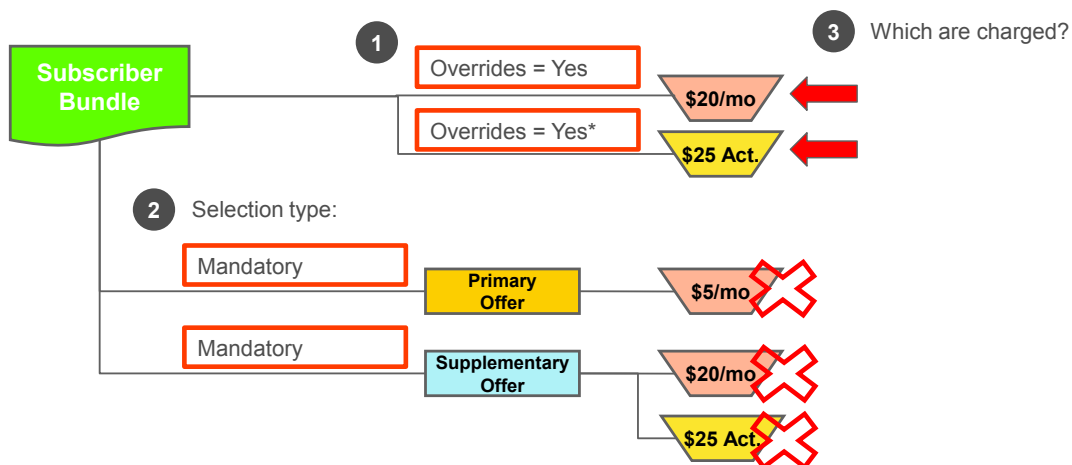
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## Exercise Workbook: Bundle Overrides – Scenario #1



## Bundle Overrides – Scenario #1 Solution



\* Another option is not to include this Activation NRC on the Subscriber Bundle, and the NRC from the Supplementary Offer will be provisioned.

# Bundle and Offer Display Groups

- You can group bundles and offers for display purposes, to make it easier for end users to make their selection
- The groups are not arranged in any hierarchy
- A bundle or offer can belong to more than one group
- The groups are reseller-specific

The screenshot shows a 'Bundle Display Group' form with the following fields:

- Name\* (text input)
- Description (text input)
- Short Display (text input)
- Language (text input, currently 'English')
- Bundle Display Group Order\* (text input, currently '0')
- Keywords (text input, with a prompt 'Type or choose from list of standard keywords')
- Keywords (text input)

Below the form is a 'Bundles' list:

- (1) Basic Internet Package
- (2) Heavy User Internet Package
- (3) Heavy User Internet Quarterly Package
- (4) Business Internet Package
- 14 More...

To the right of the bundles list is a box labeled 'Internet Package Group' with 'Display Order: 8'. An arrow points from this box to the bundles list.

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## Summary

### Main data entities:

- Account – Represents a customer of an operator; has financial responsibility for delivered services
- Service – Represents the service delivery point
- Offer – Minimum sellable entity delivered to a subscriber for the consumption of service
- Bundle – Enables the grouping of offers for marketing purposes and can include promotional pricing
- Plan – Groups items to associate them with an offer, which enables specific activities, rates, discounts or bonuses for the subscriber

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# Summary

- Terms – Defines some pricing aspect of the agreement that is represented by the bundle or offer
- Rule – A condition or constraint for delivering a bundle or offer
- Template – Entities that are configured to aid in the instantiation of customer accounts or drive configuration of catalog entities
- Balance – Monetary or unit value that is consumed by charges associated with an offer
- Accumulator – Register capable of counting or measuring chargeable activity

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Entity Lifecycle



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# Intro to Entity Lifecycle

- Assume that an entity is created in Reseller Version 1
- After that version is propagated to the Production system, the entity cannot be deleted from the catalog
- Whether changes can be made to the entity, what kinds of changes are allowed, and how the changes affect existing users, depends on whether the entity is **instantiated** or **referenced** (see the next slides)
- This is true as soon as the version is propagated, not whether the entity has been applied to a customer account

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## Instantiated vs. Referenced Data

- **Instantiated** – A **copy** (an instance) is created when the entity is applied to a customer's account.  
*These entities **cannot** be edited.*
- **Referenced** – The original entity definition is **pointed to** (rather than storing a copy in the Customer database).  
*These entities **can** be edited, **and will impact existing accounts and subscribers.***

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# Instantiated Entities

- Product Catalog prevents you from modifying the most critical attributes of instantiated entities (the fields are inactive in the GUI)
- The following entities are instantiated:
  - Offers
  - Bundles
  - RC/NRC terms
  - Balances
  - Accumulators
- Not all attributes of instantiated entities are stored in the instantiated copy (such as rates)
  - For example, for RC Terms the **level** (subscriber or account) and **schedule** are instantiated, but **rates** are not
  - This, an RC's rate can be changed, and will impact existing subscribers

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## ACCOUNT\_SUBSCRIBER Table

This is from the [Database Reference](#) document, which defines the fields in the database tables. Instantiated fields are stored in the ACCOUNT\_SUBSCRIBER table.

For example, fields for each of the 40 possible subscriber-level balances are included.

Field Name	Data Type		Comments
balance1_id	number	10	Balance N ID.
balance1_type	number	1	Balance N type.
payment_mode1	number	3	Payment mode: 1 = prepaid 2 = postpaid
total_balance1	number	22,8	Total balance N.
available_balance1	number	22,8	Available balance N, which is used during the lifetime of the activity.
limit_type1	number	3	Determines the limit type. Values are: 1 = Spending Limit 2 = Credit Limit
balance1_target_bal_id	number	10	Target Account's Real Balance ID for this shadow balance.
max_limit1	number	22,8	Maximum limit for Spending or Credits used by the Subscriber.
acct_expire_date	date		Date when the account is expected to expire (unless activity is extended) and move to the Suspended state. Format is YYYY-MM-DD HH24:MI:SS.
reset_period1	number	3	Days between resets.
cyclic_billing_day1	number	6	Day on which the Cyclic limit will be reset.
next_reset_date1	date		Next reset date for the cyclic limit.
balance2_id	number	10	Balance N ID.
balance2_type	number	1	Balance N type.

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## Referenced Data

- Product Catalog allows changes to referenced data
- **These changes impact existing users!**
- Examples of entities that are referenced (not instantiated):
  - Plans
  - Rules
  - Templates
  - Promotions

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## RC Term Example

- As of the first of next month, offers containing international usage plans will increase in cost by 10%
- To accomplish this:
  - Create a new Reseller Version
  - Change the rate for the RC Term that is used in those offers
  - Propagate the version – *All existing subscribers are impacted*
- If you do **not** wish to change the RC rate for existing subscribers:
  - Create a new Reseller Version
  - Create a new RC Term with the new rate
  - Include it in a new offer
  - Propagate the version – Assign the offer to new subscribers (*Existing subscribers are not impacted, because they have a different offer altogether*)

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## Changes to Offers

- Modifying the offering itself *does not* impact existing subscribers
  - Adding a term to an offer or an offer to a bundle does not automatically provision these entities to existing subscribers
- Modifying the correlated configuration of the offering *does* impact existing subscribers
  - Changing the configuration of a promotion, usage, or service plan automatically impacts existing subscribers



Use caution when making changes to anything that impacts the behavior of an entity – Remember that “building blocks” can be included in multiple offers

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## Offers – Selected Fields

- The **Payment Mode** is instantiated, and so cannot subsequently be changed in Product Catalog
- **Usage types** are not instantiated, so new usage types can be added (and will impact existing subscribers)
- Most of the **balances**’ attributes are instantiated
  - A new balance can’t be added to an offer
  - Existing inclusion/exclusion rules can be changed (and will impact existing subscribers)

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# Balance Example

After a new Reseller Version was created, notice that very few of the balance fields can be changed. Also, new balances cannot be added to an offer.

Balance Order and Inclusion/Exclusion rules **can** be changed.

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## Association Restrictions

- The following associations cannot be changed:
  - Bundle members (offers or other bundles mapped to bundles)
  - RC and NRC terms mapped to bundles
  - RC and NRC terms mapped to offers

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# Agenda

3.1 Data Model

3.2 Balance Management

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## Module Objectives

- Discuss the attributes of balances (unit type, real or shadow, balance priority, inclusion/exclusion rules, expiration method, minimum/maximum, etc.)
- Explain how currencies are handled in Comverse ONE
- Describe the purpose of grants
- Given a business scenario, configure the required balances and add them to an offer

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## Balance Management

Balance Basics

More about Balances

Currencies

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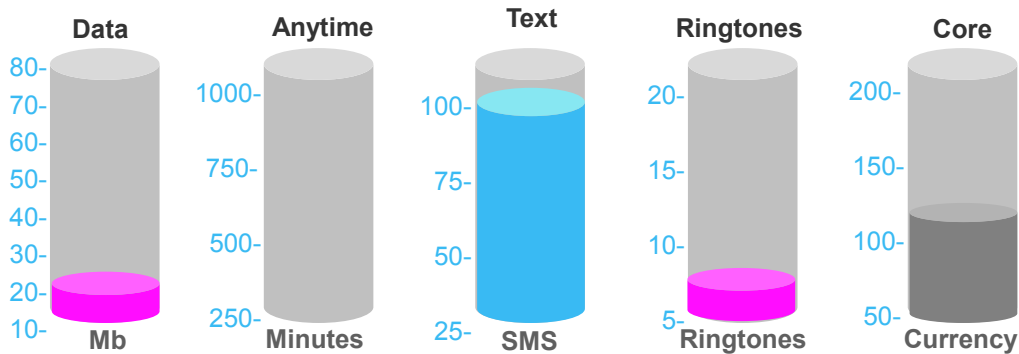
## Balance Basics

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# Introduction to Balances

- A balance represents a monetary or unit value that is consumed by charges associated with an offer
- Subscribers can have up to 40 balances



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## Balance Definition

- Defining a new balance type requires only two fields, the important one being **Unit Type**
- When a balance type is added to an offer, all other balance attributes are defined (and so are offer-specific)

The screenshot shows a software window titled 'Balances' with a blue header bar containing three icons (checkmark, lock, and key). The window contains several input fields and a dropdown menu. The 'Unit Type\*' field is highlighted with a red circle. Below it is the 'Announcement Type\*' field. At the bottom, there is a checkbox labeled 'Externally Exposable'.

Fields and values visible:

- Name\*: (empty)
- Description: (empty)
- Short Display: (empty) ☐ Is Default
- Language: English
- Balance ID: 1207
- Unit Type\*: (empty) [Red Circle]
- Announcement Type\*: (empty)
- ☐ Externally Exposable

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# Currency or Non-currency (Unit-based)

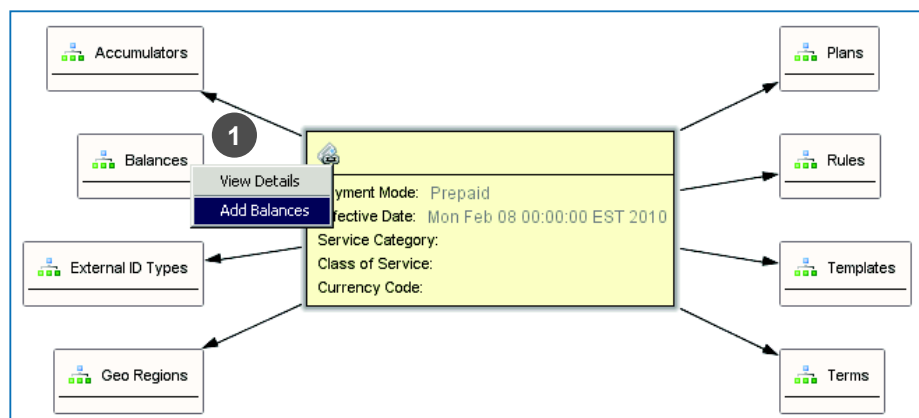
- Units can be defined as anything the operator needs:
  - Money/Currency
  - SMS
  - Events
  - Seconds
  - MMS
  - Quantity
  - Minutes
  - Bytes
  - Pounds
  - Hours
  - MBs
  - etc.
  - Days
  - Centimeters
- The unit type is one of the variables that determines whether the balance can be used for a particular usage activity
- Currency is the most commonly-used unit type, and can be used to pay for any usage

See additional information on the use of currencies at the end of this section

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## Associate a Balance with an Offer (1)

- Drag the required balances to the **Graph** view for the offer



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List - Balances	
Balance Name	
Bonus Money	
CORE BALANCE	
FZ - Voice Call balance	
GPRS WAP-INTERNET	

2

Note: Balances are only associated with offers, not bundles

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## Associate a Balance with an Offer (2)

- The **New Offer/Balance Relationship** window opens

**New Offer/Balance Relationship**

General | Real/Shadow Configuration | Usage Inclusion/Exclusion | RC Inclusion/Exclusion | NRC Inclusion/Exclusion

**General Settings**

☒ Core Balance

Balance Name: CORE BALANCE

Balance Units: Money/Currency

Balance Order\*: 2

Payment Mode: Prepaid

**Values Settings**

Initial Value: 20

Minimum Value\*: 0

☐ Set To Unlimited

Maximum Value\*: 99999999.9999

**Default Limits Settings**

Limit Type: [Dropdown]

☐ Set To Unlimited

Limit Value: [Field]

Limit Period: [Dropdown]

**Balance Expiration Settings**

Expiry Extension Method\*: From Date

Default Offset (days)\*: 10

Balance Expiration Date: [Dropdown]

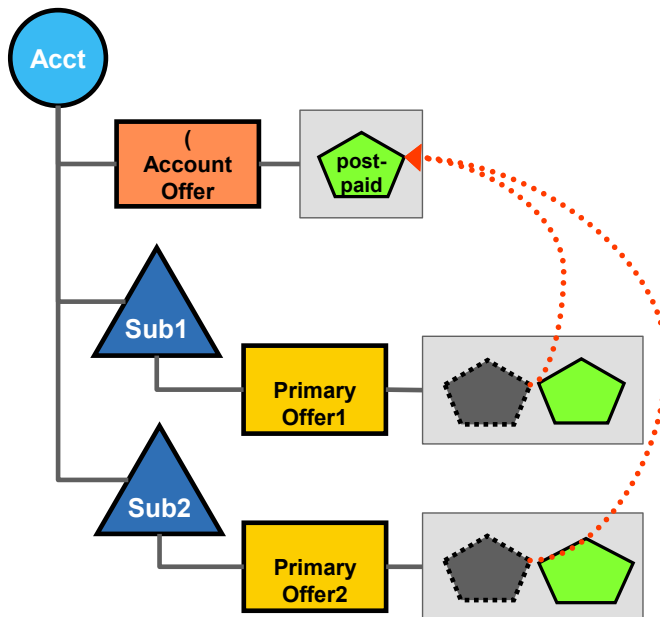
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## Shared and Shadow Balances

- Shadow balances don't have a payment mode, but its target – the Shared balance (at the account level) – does have a payment mode
- A shadow balance on a subscriber can point to a shared balance
- Thus, different usage can consume from the same shared balance (See the following example)

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# Shadow Balances Example



This account contains two subscribers:

- Sub1 has PO1
- Sub2 has PO2

The account has an account offer with a shared balance  
All balances are monetary

**Both shadow balances can consume from the same shared balance**

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## Real or Shadow (1)

- **Real balance** – Holds actual funds (currency or units)
- **Shadow balance** – (always at the subscriber level: S/L)  
A pointer to a real balance (always at the account level: A/L)

All 3 types of offers can contain real balances:

- Primary offer (S/L)
- Supplementary offer (S/L)
- Account offer (A/L)

When defining a shadow balance, indicate which real balance it is associated with

Shadow balances are only associated with subscriber-level offers:

- Primary offer
- Supplementary offer

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## Real or Shadow (2)

A real balance in an Account Offer is defined as a Shared balance (the balance to which a shadow balance points)

The screenshot shows the 'Edit Offer/Balance Relationship' dialog box with the 'Real/Shadow Configuration' tab selected. The 'Balance Classification\*' dropdown menu is set to 'Real' and is circled in red. Below it, the 'Shared Balance' checkbox is checked. To the right, the 'Shadow Balance Default Configuration' section contains two dropdown menus: 'Account Offer' and 'Account Offer Real Balance'.

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## Core Balance

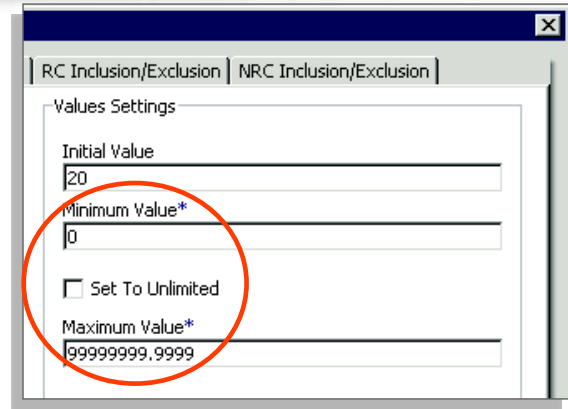
- All subscribers have a “core” balance, and it must be monetary
- This is the mechanism that controls the subscriber lifecycle (more on this later)

The screenshot shows the 'New Offer/Balance Relationship' dialog box with the 'General Settings' tab selected. The 'Core Balance' checkbox is checked and circled in red. Below it, the 'Balance Name' field is set to 'CORE BALANCE', 'Balance Units' is 'Money/Currency', 'Balance Order\*' is '2', and 'Payment Mode' is 'Prepaid'.

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# Balance Minimum and Maximum / Available Amount

- Balances have offer-defined minimum and maximum values
- Balances start from a value and count down
  - Consumption decrements balances
  - Credits increment balances
- Available amount = Current Value – Balance Minimum (see example on the following slide)



RC Inclusion/Exclusion | NRC Inclusion/Exclusion

Values Settings

Initial Value: 20

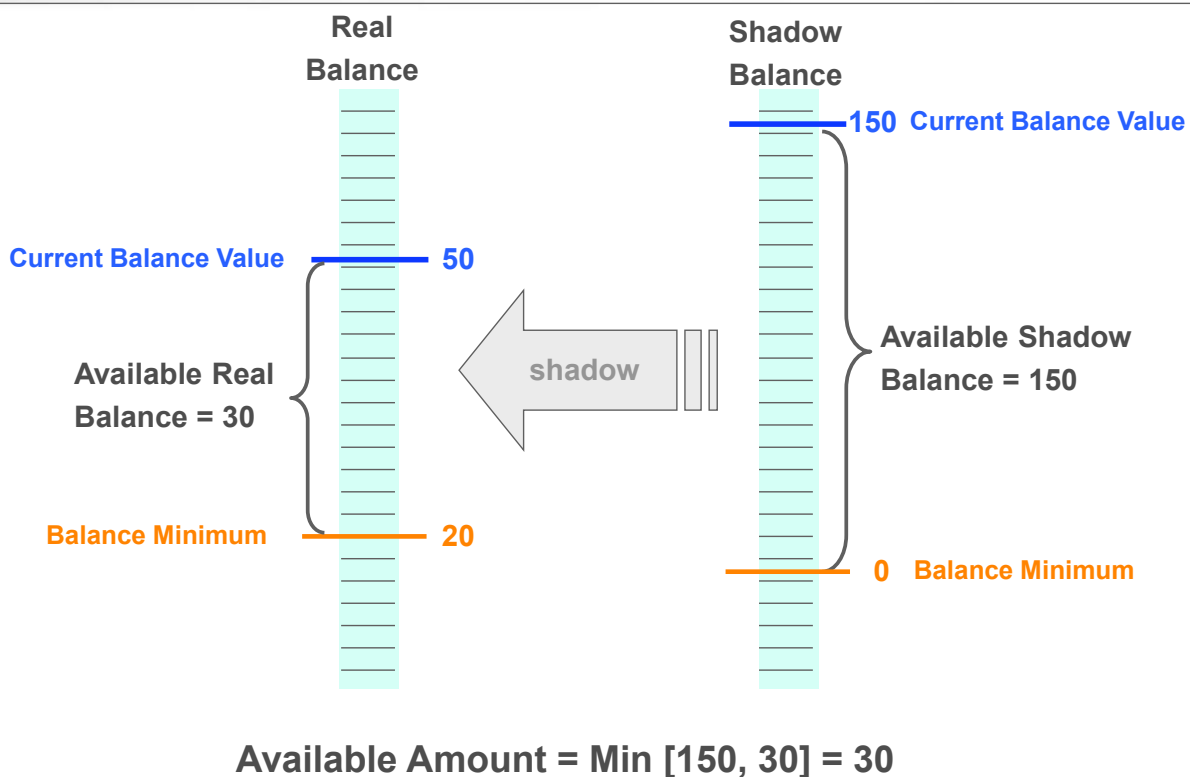
Minimum Value\*: 0

☐ Set To Unlimited

Maximum Value\*: 99999999.9999

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## Available Amount: Shadow Balance Example



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# Initial Value

- Specifying an **Initial Value** is optional
- The amount entered as the **Initial Value** is given on the initial activation of the subscriber
- Be sure to add some **Default Offset days**, or the balance will expire on the day it is instantiated to a subscriber or account
- When an existing subscriber swaps offers or adds an offer with an **Initial Value**, that amount is not provided

RC Inclusion/Exclusion | NRC Inclusion/Exclusion

Values Settings

Initial Value  
20

Minimum Value\*  
0

☐ Set To Unlimited

Maximum Value\*  
99999999.9999

Balance Expiration Settings

Expiry Extension Method\*  
From Date

Default Offset (days)\*  
10

Balance Expiration Date

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## Inclusion / Exclusion rules (1)

- Balances have inclusion and exclusion rules, which is the way to dictate whether the balance can be used for a particular usage activity, RC, or NRC

New Offer/Balance Relationship

General | Real/Shadow Configuration | Usage Inclusion/Exclusion | RC Inclusion/Exclusion | NRC Inclusion/Exclusion

Inclusion/Exclusion Provisioning\*  
All included

☒ Inclusion ☐ Exclusion

Time Type	AUT Group	Final AUT	Inclusion/Exclusion
-----------	-----------	-----------	---------------------

When a balance can be used to pay for any usage, RC, or NRC, simply select **All included**

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## Inclusion / Exclusion rules (2)

**New Offer/Balance Relationship**

General Real/Shadow Configuration **Usage Inclusion/Exclusion** RC Inclusion/Exclu

Inclusion/Exclusion Provisioning\*  
Refer to detailed configuration

☒ Inclusion ☐ Exclusion

Time Type	AUT Group	Final AUT	Inclusion/Exclusion
ANY	Mobile Usage Type Group		<input type="checkbox"/>

Add Edit Type Filter Here

**New Usage Inclusion**

Time Type\*  
ANY

AUT Group  
Mobile Usage Type Group

Final AUT

To specifically add usage types that are to be included in (or excluded from) this balance, select **Refer to detailed configuration**

Final AUTs are often grouped into AUT Groups for the purpose of inclusion/exclusion lists

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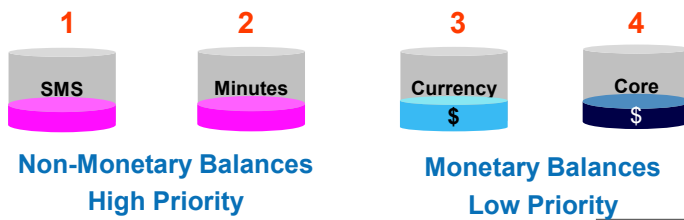
## Balance Eligibility

- Balance eligibility defines which balances can be charged for usage events, as well as RCs and NRCs
- The overriding principle is:  
*Any balance instantiated by any offer must be available to any usage, based on balance attributes:*
  - Unit type
  - Inclusions/exclusions
  - etc.

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# Balance Priority

- For consumption purposes, non-monetary balances have a higher priority than currency balances



In this example, the SMS and Minutes balances must have a higher priority than the monetary balances

- For balances *within* an offer, the priority is defined by the **Balance Order** field
- See a later slide to learn how balance priority *between* offers is handled

The screenshot shows the 'New Offer/Balance Relationship' form. The 'General' tab is selected. Under 'General Settings', the 'Core Balance' checkbox is checked. The 'Balance Name' field contains 'CORE BALANCE'. The 'Balance Units' field contains 'Money/Currency'. The 'Balance Order' field is circled in red and contains the value '2'. The 'Payment Mode' field is set to 'Prepaid'.

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# Cyclical Balances & Credit/Spending Limits

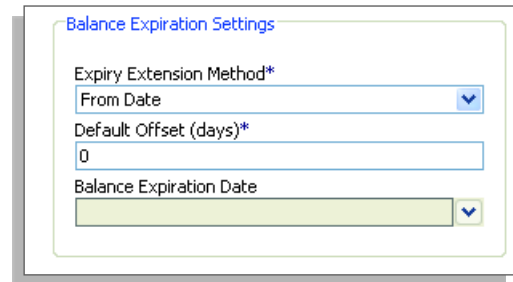
- On a specified schedule, a cyclical balance is automatically reset to its **Limit Value**, regardless of the current balance value
- Shadow balances are always cyclical:
- A cyclical balance can have either Credit limit or Spending limit (shadow balances have a spending limit)
- The main purpose of these limits are to provide a cyclical limit for the usage of the balance
- Credit and spending limits operate the same; the only difference is that a Credit limit value is operator-defined, while a Spending limit value is customer-defined

The screenshot shows the 'Default Limits Settings' form. The 'Limit Type' dropdown is set to 'Spending Limit'. The 'Limit Value' field is circled in red. The 'Limit Period' dropdown is set to a value.

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# Balance Expiration

- The **Expiry Extension Method** gives the operator some flexibility in how recharges extend balance expiration date
- There are two options:
  - Extend From Today
  - Extend from (current expiration) Date



Balance Expiration Settings

Expiry Extension Method\*  
From Date

Default Offset (days)\*  
0

Balance Expiration Date

Example:



Current expiration = **10-Mar**

Subscriber does a \$10 recharge on 01-Mar; expiration extension = 15 days

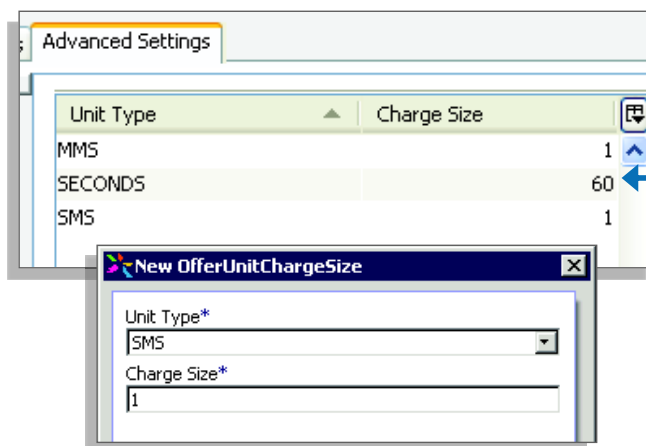
If set to Extend from Today = **16-Mar**

If set to Extend From Current Expiration Date = **25-Mar**

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# Charge Sizes

- There are several **primary offer** settings related to balances, located under the **Advanced Settings** tab
- The purpose of **Charge Sizes** is “always consume by chunks of X size”
- A charge size is set for each unique unit type (except Money/Currency) that corresponds to an associated balance



Advanced Settings

Unit Type	Charge Size
MMS	1
SECONDS	60
SMS	1

New OfferUnitChargeSize

Unit Type\*  
SMS

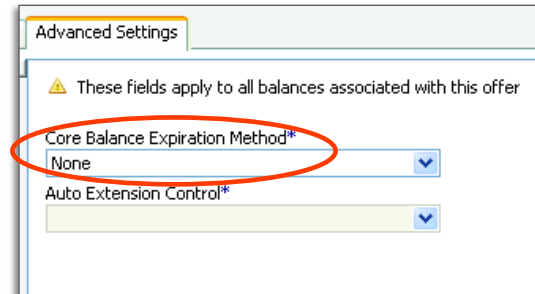
Charge Size\*  
1

Example: If Voice calls are to be charged by the minute but the balance unit is in seconds, set a Charge Size of 60

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# Core Balance Expiration Method

- The **primary offer** setting **Core Balance Expiration Method** (under the **Balance Rules** tab) controls the core balance expiration date, which controls the subscriber expiration



The screenshot shows the 'Advanced Settings' tab in a software interface. A warning icon and text state: 'These fields apply to all balances associated with this offer'. Below this, there are two dropdown menus. The first is labeled 'Core Balance Expiration Method\*' and has 'None' selected. The second is labeled 'Auto Extension Control\*' and is currently empty. A red circle highlights the 'Core Balance Expiration Method\*' dropdown.

Be sure to change this for prepaid balances, or they will never expire.

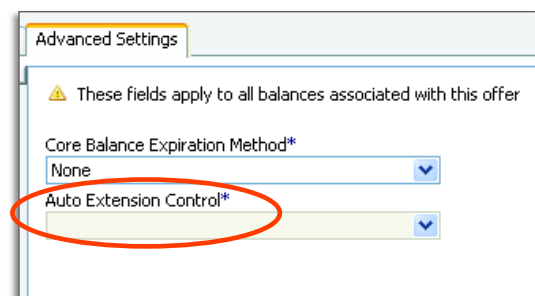
- Expiration Methods:
  - Dynamic**: The core balance expiration date can be extended by replenishment, usage, RCs, etc. (most common)
  - Fixed**: The core balance expires on a fixed date, which can only be adjusted by a CSR (rarely used)
  - None**: The core balance never expires

Note: **Dynamic** is typically used for prepaid

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# Core Balance Auto Extension Control

- The **primary offer** setting **Auto Extension Control** controls how the core balance is auto-extended for each core balance expiration method



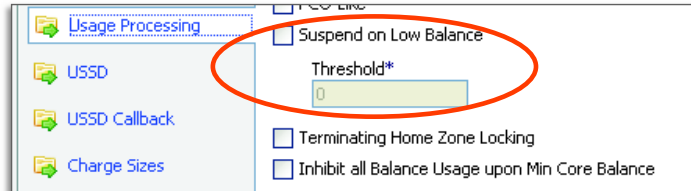
The screenshot shows the 'Advanced Settings' tab in a software interface. A warning icon and text state: 'These fields apply to all balances associated with this offer'. Below this, there are two dropdown menus. The first is labeled 'Core Balance Expiration Method\*' and has 'None' selected. The second is labeled 'Auto Extension Control\*' and is currently empty. A red circle highlights the 'Auto Extension Control\*' dropdown.

- If the **Core Balance Expiration Method** is set to:
  - None**: The Auto Extension control does not apply
  - Fixed**: The Auto Extension control always applies
  - Dynamic**: Set Auto Extension Control to one of these:
    - Never extend
    - Extend every recharge or billable call
    - Extend every recharge

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# Suspend on Low Balance

- The **primary offer** setting **Suspend on Low Balance** (under the **Usage Processing** tab) controls if the subscriber should be suspended when the CORE balance reaches the defined Threshold
- A suspended subscriber can be configured to allow or not allow usage while suspended (see next slide)

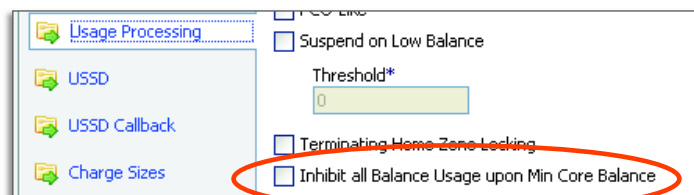


- Note that this threshold may be different from the defined Core balance Minimum Value
- For example, if the offer contains a \$25 RC Term, you may want to set the threshold to 25.00 to ensure that it can be paid

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# Inhibit all Balance Usage upon Min Core Balance

- The **primary offer** setting **Inhibit all Balance Usage upon Min Core Balance** (under the **Usage Processing** tab) controls whether the rest of the subscriber's balances can be used when the CORE balance reaches the Minimum Value



- For example, if the Core balance Minimum Value is set to \$0 and this option is selected, when the balance reaches \$0 the subscriber cannot use any of their services

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# Subscriber Lifecycle

- The settings under the **primary offer Life Cycle** tab are used to define the actions that will be taken when subscribers enter one of the suspension states
- Providers define the states, typically with increasing restrictions
- Some examples:
  - **S1** – The subscriber cannot make billable calls
  - **S2** – The subscriber cannot make free calls
  - **S3** – The subscriber is limited to accessing Customer Care to recharge
  - **S4** – The subscriber is suspended (the terminal state)

General | Terms & Conditions | **Advanced Settings**

Usage-initiated Active to S1 - tasks execution  
☒ Nightly ☐ Real-time

Account State ▲	Days In This State	Reactivation Fee	Primary Offer	Terminal State
Suspended(S1)	1000	0		<input type="checkbox"/>
Suspended(S2)	1000	0		<input type="checkbox"/>
Suspended(S3)	1000	0		<input type="checkbox"/>
Suspended(S4)	1000	0		<input checked="" type="checkbox"/>

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## How balances are decreased

- Subscriber makes a transaction
- An RC term or NRC term is deducted from the balance
- Balance reaches expiration date and is no longer active\*
- Subscriber transfers funds to another subscriber





## How balances are increased

- Subscriber recharges the balance, with or without a voucher
- Subscriber earns a bonus or award, such as an RC award
- CSR makes a adjustment: monetary or units
- Another subscriber transfers funds in
- Some usage actually has negative charges  
(Sometimes used for incoming calls from a landline, where the operator gets an interconnect payment from the landline operator; the user may get \$0.01 per incoming call from a landline)

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## Grants

- A grant is an amount with an associated **Activate Date** and **Expiration Date** that can be used in non-cyclical balances
- The objective is to enable pieces of the balance to become effective and to expire on different dates
- Grants can be effective immediately when awarded, or on a future date (deferred award)
- Grants may have a specific expiration date or may be configured to expire on the corresponding balance expiration date

SMS Balance	SMS Grants	Grant Value	Effective Date	Expiration Duration	Source of Grant
		5 SMS	01/01/2008	10 days	RC \$2
		15 SMS	01/15/2008	30 days	Bonus on reaching 500 min
		30 SMS	03/10/2008	60 days	Recharge \$10

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# Key Takeaways

## Balances:

- Can be currency or unit-based\*
- Real or shadow
- Have a minimum and maximum amount
  - Available amount = Current value – Balance minimum
- Can have inclusion and exclusion rules
- Have a priority (order of application)
- Are always instantiated through offers
- Can have either a credit limit or spending limit (cyclical)
- Can be made up of grants that have their own expiration dates (non-cyclical balances)

\* The only attribute actually handled by balance definition itself, all the rest are offer-specific

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## Balances Summary

	Real		Shadow	
	Monetary	Non-Monetary	Monetary	Non-Monetary
Can be Non-cyclical?	Y Must be non-cyclical	Y Must be non-cyclical	N	N
Can be cyclical?	N	N	Y Must be cyclical	Y Must be cyclical
Can have Credit /Spending Limit (cyclical)?	N	N	Y Must have Spending Limit	Y Must have Spending Limit
Can be Core in subscriber?	Y	N	N	N
Can be Core in account	N	N	N	N
Can be recharged?	Y	Y	N	N
Uses Grants	Y	Y	N	N
Can be awarded via RCs?	Y	Y	N	N
Can be awarded via Bonuses?	Y	Y	N	N
Can be optionally confiscated in sub post-active state	Y	Y	N	N
Can receive Cycle-Time Promotions	Y	N	N	N

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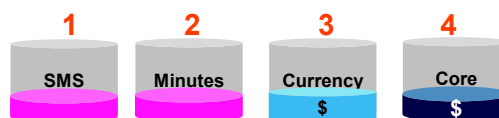
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## More about Balances

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## Balance Priority, Part 2

- In order to resolve conflicts between balances, they must be ranked in a priority order



- Remember that for balances *within* an offer, the priority is defined by the **Balance Order** field
- For balances *across* offers, balances from the guided-to offer have the highest priority
  - When processing the usage, the URE determines the Final AUT, then based on offer priority, finds the highest priority offer that contains this Final AUT: this is the guided-to offer (see screen on next slide)
  - The balance order of the guided-to offer determines the relative priority of these balances

A screenshot of a software interface titled "New Offer/Balance Relationship". The interface has three tabs: "General", "Real/Shadow Configuration", and "Usage Inclusion/Exclusion". The "General" tab is selected. Under "General Settings", there is a checkbox for "Core Balance" which is checked. Below it are fields for "Balance Name" (containing "CORE BALANCE"), "Balance Units" (containing "Money/Currency"), "Balance Order\*" (containing "2" and circled in red), and "Payment Mode" (containing "Prepaid").

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## Balance Priority, Part 3

- The remaining balances are taken in the relative offer priority order, based on whether the offer is in the subscriber compatibility template:
  - Offers that are *not* part of the compatibility template have higher priority than offers from within the template
    - The more recent the instantiation, the higher the priority
    - If *multiple* offers outside the template are instantiated at the same time, the higher the offer ID, the higher the priority
  - Offers that are *within* the subscriber compatibility template are then prioritized, based on the priority order listed in the template
    - Within each offer, the **Balance Order** is used to determine priority

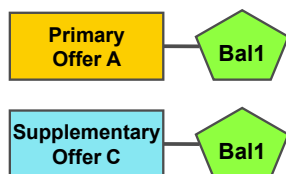
Offer	Offer Type	Balance Priority Order	Tariff Plan Priority Order	Discount Priority
CUR-BON Chippie Culture_Haiti	Subscriber	4	4	
CUR-BON Chippie Culture_India	Subscriber	5	5	
CUR-BON Chippie Culture_Jamaica	Subscriber	6	6	
CUR-BON Chippie Culture_China	Subscriber	1	1	
CUR-BON Chippie Culture_Colombia	Subscriber	2	2	
CUR-BON Chippie Culture_Dominican_Rep	Subscriber	3	3	

90 Subscriber Compatibility Template example

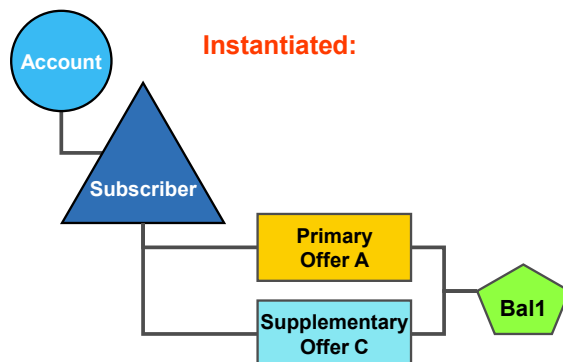
## Balance Instantiation (1)

- Balances are always instantiated through offers
- The same Balance ID may only be instantiated once for an account or subscriber

In Product Catalog:



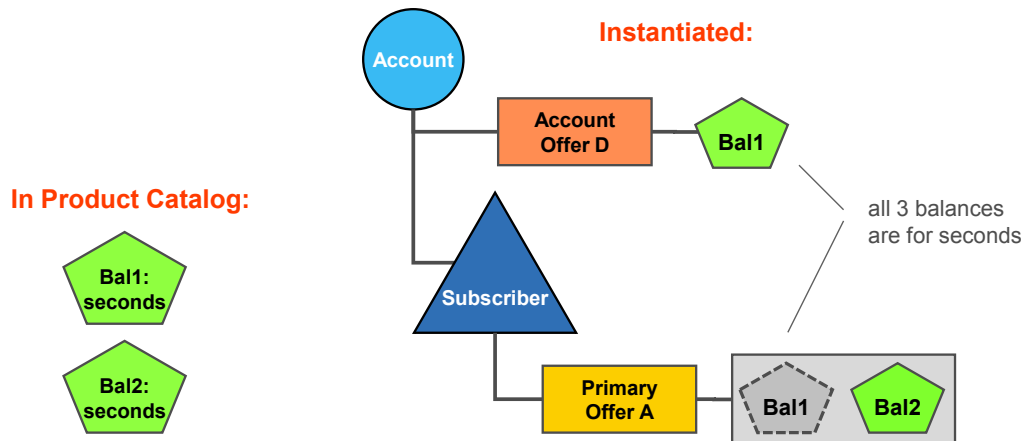
Instantiated:



- Even if a balance is referenced in multiple offers, that balance is only instantiated once at the subscriber/account, and there is only one current value for that balance
- However, other balance-related attributes, like Min/Max, Initial Value, Inclusion/Exclusion, and relative Balance Priority are referenced to the offer, meaning that these attributes change depending on which offer is using the balance.

## Balance instantiation (2)

- Because the same Balance ID can only be instantiated once for an account or subscriber, multiple balances with the same unit may need to be created in the catalog
- Different balances may be needed to represent:
  - Real / Shadow



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## Balance Instantiation/Eligibility Example

Offer_A	Offer_B
<ul style="list-style-type: none"> <li>• Prepaid offer supporting all voice &amp; SMS</li> <li>• <b>Bal_Common</b> has inclusion/ exclusion allowing all usage</li> </ul>	<ul style="list-style-type: none"> <li>• Prepaid offer for Off-peak Voice &amp; SMS</li> <li>• <b>Bal_Common</b> has inclusion/ exclusion supporting off-peak voice only</li> <li>• <b>Bal_OP_SMS</b> has inclusion/ exclusion supporting off-peak voice and SMS</li> </ul>

- Subscriber\_123 is configured with Offer\_A and Offer\_B, so has two balances: Bal\_Common and Bal\_OP\_SMS
  - Peak voice or SMS usage is guided to Offer\_A and can use Bal\_Common
  - Off-peak voice usage guided to Offer\_A can use Bal\_Common and/or Bal\_OP\_SMS
  - Off-peak SMS usage guided to Offer\_A can use Bal\_Common and/or Bal\_OP\_SMS
  - Off-peak voice usage guided to Offer\_B can use Bal\_Common and/or Bal\_OP\_SMS
  - Off-peak SMS usage guided to Offer\_B can use BAL\_OP\_SMS only

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# Balances and Reservations

- A reservation is an allocation of money and/or data types set aside from the subscriber's balance to ensure that sufficient funds are available from the start of a chargeable data session or event through to its completion
- Balances are managed by a reservation mechanism that charges a subscriber multiple times during a transaction instead of once at the end
- When a reservation amount runs out, another reservation is taken
- The amount of unused reservations is returned to the available amount

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Currencies



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## Currencies in Comverse ONE (1)

- Monetary balances don't have a currency code attached to them when they are configured
- Offers have a currency code
- When a balance is associated to an offer, it takes on the offer's currency type
- If a provider has customers who use multiple currencies, every offer must be cloned so that one is created for each currency code that is necessary
- A separate RC is not required to define the rates in multiple currencies, they can all be added:
  - USD: \$1.00
  - Euros: \$0.80

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## Currencies in Comverse ONE (2)

- Each account has its own billing currency, determined when the account is created
- Each subscriber has its own currency, determined when the primary offer is associated to it (and all supplementary offers for the subscriber must have the same currency code)
- The subscriber's currency and its account's currency do not need to be the same
- URE does automatic currency conversions
- BIP does automatic currency conversions

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# Summary

- Understanding balances is key to the Comverse ONE solution
- Some important attributes are: unit type, real or shadow, balance priority, inclusion/exclusion rules, expiration method, minimum/maximum, (and others)
- Except for unit type, all are defined when a balance is associated with an offer
- The URE and BIP perform automatic currency conversion, when required