

Nasdaq Calypso Intex Integration Guide

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This document describes how to install and use the Intex Database of Mortgage Backed and Asset Backed Securities (MBS and ABS) within Calypso.

Note: The Calypso License to use this Calypso Integration Module does not include a license for any third-party data services to which this module can interface. Clients are responsible for contracting with the appropriate third-party data service(s) prior to using this Calypso Integration Module.



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Overview

The structured finance security market is characterized by a voluminous amount of static and dynamic data to define the securities and to derive cash flows for the securities. Intex Solutions, Inc. is a major supplier of security data and subroutines that may be employed to both define the securities and to derive cash flows under user-supplied assumptions. Intex has amassed a database of over 20,000 structured deals and has been a leader in this field since starting business in 1985. Intex coverage includes the following asset classes:

- Residential Collateralized Mortgage Obligations (Agency and Non-Agency CMO)
- Asset Backed Securities (ABS)
- Commercial Mortgage-Backed Securities (CMBS)
- Pass-through Securities (Ginnie Mae, Freddie Mac and Fannie Mae MBS)
- Collateralized Debt Obligations (CDOs, CBOs and CLOs)

1.1 Organization of Intex Database

Storage and management of the Intex database is the client's responsibility. The database is typically stored locally on the client's network. The actual content of asset classes and individual bonds in the client's Intex database is negotiated between the client and Intex. Intex will deliver the agreed upon current data at the outset of your contractual arrangement and then decide to setup a Data Download process to obtain new deals and updates to existing deals. Typically, the client configures the Intex Data Download to take place daily before the commencement of any Scheduled Tasks that are dependent on Intex data. The Data Download is a relatively simple ftp process that also checks the integrity of the database to prevent the client from having an incomplete database from a missed download.

There are two main directories in the Intex database. These are cmo_cdi and cmo_cdu. The cmo_cdi directory contains all the files that are created to describe a deal at its inception. This directory is organized into subdirectories that utilize the naming convention, yyMM. Within each subdirectory are deals that were issued during that month. These files typically employ the ".cdi" suffix. The IntexDealName.cdi files describe the original collateral assumptions, the bond characteristics, and the bond payment rules in sufficient detail to allow the Intex subroutines to calculate predictions of future cash flows.

The cmo_cdu directory contains files and subdirectories. The subdirectories are also named using the convention of yyMM. Within each subdirectory, there are IntexDealName.cdu files that represent the updated information for a deal. Most deals pay monthly and therefore are updated monthly with new ".cdu" files. The most important information on the ".cdu" files are the updated collateral, the new bond factors and new interest rate resets on floating rate bonds. One must have all the historical ".cdu" files in order to accurately report the historical coupons and bond factors (unless these were available at one time and written to the Calypso database). For example, in order to report the last six month cash flows for a deal that started six months ago, one would need the ".cdu" file and the five ".cdu" files for the most recent five historical months. To report the last six month cash flows for a deal that started more than six months ago, one would need the original ".cdi" file and the last six months ago, one would need the original ".cdi" file and the last six months six months ago, one would need the original ".cdi" file and the last six months ".cdu" files. Note that the original ".cdi" file might be from many years ago; however, it is still necessary as it contains indicative data that the Intex subroutines must have to be able to generate cash flows.



Besides the yyMM subdirectories in the cmo_cdu directory, there is also an mbspools directory that contains all the data for the various agency pass-throughs. In addition, there are other files that are important to the cash flow generation process or integral to identification and classification. For instance, there are several CUSIP files that are constantly being updated by Intex with cross references for Intex Deal Names and CUSIP identifiers.

1.2 Summary of the Intex Integration

The Calypso integration with Intex does not only involve the Intex database. The Intex subroutines are necessary to interpret the Intex data and to be able to dynamically compute predicted cash flows for analysis, valuation, and risk management purposes. The integrated process between Calypso software and Intex software to produce cash flows generally follows this outline:

- 1. Identify the bond via CUSIP, ISIN or INTEX_NAME.
- Supply a future interest rate environment to the Intex Subroutines via Market Data and the Pricing Environment. This is necessary for any resets on underlying adjustable collateral and for resets on floating rate bonds. Indices that are most frequently required include 1-month LIBOR, 3-month LIBOR, 1-year CMT, Prime and 11th District COFI.
- If desired, supply the other parameters that will directly affect the collateral and bond amortization. The most obvious parameter would be a Prepayment Quote or a Prepayment Curve. Many MBS, ABS and CMBS securities are backed by mortgage loans or home equity loans that have an uncertain amortization schedule. This is because the borrowers associated with the loans have an option to pay some or the entire outstanding principal earlier than required. Amortizing principal payments that are received earlier than the agreed minimum amortization schedule is referred to as "prepayments". Additionally, Calypso will allow one to enter Default Curves and Recovery Curves. Default and recovery have the same meanings in structured finance as in the rest of the capital markets. Default means that the borrower has stopped making payments and recovery refers to the amount that the lender is able to recoup through foreclosing upon the property and a subsequent sale.
- The Intex subroutines directly supply historical cash flows of principal and interest from which Calypso calculates historical amortization factors and coupons.
- The Intex subroutines utilize the Market Data and Curves (Prepayment, Default, and Recovery) to calculate the future cash flows of the underlying collateral of the entire deal in which the bond in question resides. The Intex subroutines then allocate the cash from the collateral via the Intex-stored bond payment rules (also called the "waterfall") to provide future principal and interest cash flows for the bonds in the deal. Again, Calypso calculates the predicted factors and coupons of the bonds from the principal and interest cash flows supplied by Intex.

The Calypso software then has the cash flows to be able to do any analytical calculations that are requested, such as weighted average life (WAL), duration and convexity, etc. When interest rates or prepayment rates, etc. are perturbed to supply certain analytical measures, the process described above is repeated as many times as necessary to obtain different cash flow scenarios from the Intex Server.

The Intex integration is supplied as an independent module. To use this facility, a customer must obtain the Intex Integration Module from Calypso and arrange for the delivery of Intex data directly with Intex Solutions, Inc.



General Installation

2.1 Module Installation

The Intex Integration module is installed as part of the Calypso Installer when you select the "Intex Integration" interface AND the "Structured Finance" optional module.

It contains the runtime libraries required to access the Intex deal and cash flow models via the Intex subroutines. The Intex subroutines C library, however, is not distributed as part of this package. Customers must separately obtain and install the subroutines library from Intex.

You also need to add the Intex libraries cmosub32.dll or cmosub32.so (Windows or Unix library) to the Calypso Installer. These libraries are obtained from Intex.

Please refer to the Calypso Installation Guide for details on using the Calypso Installer.

2.2 Database Synchronization

When you run Execute SQL as part of your installation, the Intex database files will be already loaded.

2.3 Demo Data Set

The Database Synchronization creates the following data elements in your database:

- All the Domain Names and Values that are included in the Demo Data and are described below. This includes pricers that may be used with the BondAssetBacked Product in conjunction with Intex. These are "PricerIntexBondAssetBacked" and "PricerIntexComplexABS".
- Pricing parameters that may be used with the "PricerIntexBondAssetBacked" "PricerIntexCreditDefaultSwapABS" or "PricerIntexComplexABS".
- The intex_values and intex_bond_map tables required to store the configurable Intex-to-Calypso mapping values.
- The basic mapping setup for calendar, legal entity, reset index, and seniority.
- The default legal entity named "INTEX", which will be used as the ABS bond issuer if the Intex issuer name is not mapped and does not exist in the Calypso database and if the INTEX_CREATE_ISSUER environment property is set to "False".
- A Security Code called "INTEX_NAME" in the domain values. This security code is a unique identifier using the Intex assigned deal name and tranche name.
- The scheduled task "INTEX_UPDATE". This scheduled task may be used to import periodic updates of Intex data into Calypso.
- The exception types, "INTEX_INFORMATION" and "INTEX_EXCEPTION" generated by the Intex Server.



Setup

3.1 Setting Environment Properties

Set the following environment properties as applicable by using the User Environment file:

Environment Property	Description
INTEX_CDI_PATH	This is the path to the directory which contains the Intex files with the extension, ".cdi". This directory must be named, "cmo_cdi". The Intex ".cdi" files are the "initial" files that are published by Intex when the deal is first modelled. The ".cdi" files contain the static data for the deals and the information to be able to model the cash flows of all the bonds in the deal based on how the deal was originally structured, i.e. with the original collateral and with the original bond coupons, etc.
INTEX_CDU_PATH	This is the path to the directory which contains the Intex files with the extension, ".cdu". This directory must be named, "cmo_cdu". The Intex ".cdu files" are the "update" files that are typically published monthly by Intex. The first ".cdu" file for a new deal is published following the first payment date for the deal and typically monthly thereafter, depending on the payment periodicity of a deal.
INTEX_CUSTOM_PATH	Directory containing custom ".cdi" files for custom import.
RMI registry port	The RMI Registry Port, "8777" for example.
INTEX_SERVER_RMI_PORT	The same value as the RMI Registry Port.
INTEX_SERVER_RMI_HOST	The host computer on which the Intex Server is running.
INTEX_LIBRARY_PATH	This is the path to the directory which contains the Intex runtime libraries.
INTEX_CREATE_ISSUER	 When a bond is imported from Intex, Calypso first tries to match the Issuer to a pre-existing Legal Entity matching on Short Name. If that fails and environment property INTEX_CREATE_ISSUER is set to True, Calypso creates the Issuer legal entity. If INTEX_CREATE_ISSUER is set to False, Calypso will use what is in environment property INTEX_DUMMY_ISSUER as the Issuer legal entity. If INTEX_DUMMY_ISSUER is not set, "INTEX" is used as the



Environment Property	Description		
INTEX_DUMMY_ISSUER	If set, this will be used as the Issuer Legal Entity, depending on the logic described above under INTEX_CREATE_ISSUER.		
INTEX_CACHE_MAX_SIZE	The number of deals to be held in cache (memory).		
INTEX_CDO_USE_PRECALC_AMORT_SCHEDULE	True = the underlying CDOs in a CDO Squared will use a pre- calculated amortization schedule to speed performance. False = the underlying CDOs in a CDO Squared will calculate all levels of the amortization schedules. This could take a significant amount of time.		
INTEX_ENGINE_MANAGER_NAME	No longer used – Use STANDALONE_INTEX_SERVER_URL instead. For reference - Used to route client invocations to the create intexserver instance in the case that Intex is hosted on a separate engine server. This should be set to the Engine Manager Configuration created for hosting the Intex Engine in the environment file. For example, if the new Engine Manager Configuration is named intexserver, the setting should be INTEX_ENGINE_MANAGER_NAME = intexserver.		
STANDALONE_INTEX_SERVER_URL	URL of the Intex Server. Alternatively, you can set the environment property STANDALONE_INTEX_RMI_BIND_ADDRESS on the server side to bind the remote object on a specific IP address.		

Sample configuration on a standalone PC:

Environment Property	Example Value	
INTEX_CDI_PATH	C:\intex\cmo_cdi	
INTEX_CDU_PATH	C:\intex\cmo_cdu	
RMI registry port	8777	
INTEX_SERVER_RMI_PORT	8777	
INTEX_SERVER_RMI_HOST		
INTEX_LIBRARY_PATH	C:\calypso\software\release\modules\intex\lib\win32; C:\calypso\software\release\modules\intex\target\lib	
INTEX_CREATE_ISSUER	True	



Environment Property	Example Value
INTEX_DUMMY_ISSUER	
INTEX_CACHE_MAX_SIZE	200
INTEX_CDO_USE_PRECALC_AMORT_SCHEDULE	False

3.2 Running the Intex Loader and Intex Server

The Intex Server is started using "intexServer.bat" on Windows platforms, or "intexServer.sh" on *nix platforms.

The Intex Server is used to compute forecasted cash flows for ABS bonds using the Pricer PricerIntexBondAssetBacked or PricerIntexComplexABS.

The Intex Loader can be started from the Calypso Navigator, provided you add it to the menu using the Main Entry Customizer – menu action intex.IntexLoaderWindow.

The Intex Loader may be used to import securities from the Intex Database either for the first time or for update purposes. During the import process in the Intex Loader, Intex data items are mapped to Calypso data items. The configurable value mapping from Intex values to Calypso values is described below.

Note that the Intex Loader is not the only way to load Intex securities from the Intex database into the Calypso database. It is also possible to use the INTEX_UPDATE scheduled task or the Bond Product window. The integration process is described below.

3.3 Domain Values

Certain Domain Names and Domain Values are necessary for the proper functioning of the Intex Module. All the Domain Names are part of the Demo Data that is imported during the database synchronization (ExecuteSQL). The user will want to customize many of the Domain Values as their values will be specific to the client's portfolio content and organization. The Domain Names and Values listed here are specific to the Intex module. If the Intex Module is used in conjunction with the Structured Finance Module, there will be additional Domain Names and Values that are documented in the Calypso Structured Finance User Guide.

Domain Names and Values are accessed via **Configuration > System > Domain Values**.

3.3.1 Deal Sector (ABSDeal.extendedType)

Deal Sector is defined by ABSDeal.extendedType. Deal Sector is designed to be a sub-categorization of Deal Type (see next section). ABSDeal.extendedType populates the Deal Sector drop-down on the Intex Mapping Window so that Intex data may be mapped into this Calypso field. Deal Sector is displayed on the ABS Tab of the BondAssetBacked Product. If one is using the Structured Finance Module, Deal Sector is also viewable on the Deal Summary Panel of the Structured Finance Deal.



It is expected that the user will configure the Domain Values as needed; however, the Demo Data supplies the following Domain Values:

- ABS
- Aircraft
- Auto Leases
- Auto Loans
- Credit Cards
- Equipment Leases
- Floor Plan
- Franchise
- High Yield Bonds
- High Yield Bonds and Loans
- High Yield Loans
- Home Equity
- Hybrid
- Investment Grade Bonds
- Large Commercial
- Manufactured Housing
- Marine
- Mixed Properties
- Motorcycle
- Multifamily
- Prime
- Private Label US Agency CMO
- Private Label Whole Loans
- RV
- Receivables
- Small Business
- Student Loans
- Subprime
- US Agency CMO
- US Agency Pass Through

3.3.2 Deal Type (ABSDeal.subtype)

Deal Type is defined by ABSDeal.subtype. ABSDeal.subtype populates the Deal Type drop-down on the Intex Mapping Window so that Intex data may be mapped into this Calypso field. Deal Type is displayed on the ABS Tab of the BondAssetBacked Product. If one is using the Structured Finance Module, Deal Type is also viewable on the Deal Summary Panel of the Structured Finance Deal.



It is expected that the user will configure the Domain Values as needed; however, the Demo Data supplies the following Domain Values:

- ABS
- CBO
- CDO
- CLO
- CMBS
- RMBS

3.3.3 Curves (absMktDataUsage)

The absMktDataUsage Domain Name is used to define the four different curves that may be employed in pricing ABS securities. Usage of these curves is defined in Section 6.1 – Setting Market Data. These curves are Default, Delinquency, Prepayment and Recovery as defined by the following Domain Values that are supplied by the Demo Data:

- DEFAULT
- DELINQUENCY
- PREPAY
- REC

3.3.4 Default Curve (absMktDataUsage.DEFAULT)

This Domain Name defines the Default Curve. The following Domain Value is supplied in the Demo Data:

CurveDefault

3.3.5 Delinquency Curve (absMktDataUsage.DELINQUENCY)

This Domain Name defines the Delinquency Curve. The following Domain Value is supplied in the Demo Data:

• CurveDelinquency

3.3.6 **Prepayment Curve (absMktDataUsage.PREPAY)**

This Domain Name defines the Prepayment Curve. The following Domain Value is supplied in the Demo Data:

• CurvePrepay

3.3.7 Recovery Curve (absMktDataUsage.REC)

This Domain Name defines the Recovery Curve. The following Domain Value is supplied in the Demo Data:

CurveRecovery

3.3.8 Collateral (BondAssetBacked.collateralType)

BondAssetBacked.collateralType populates the Collateral drop-down on the ABS Tab of the BondAssetBacked Product.



It is expected that the user will configure the Domain Values as needed; however, the Demo Data supplies the following Domain Values:

- Auto Loans
- Commercial Home Equity Loans
- Credit Card
- Mortgages
- Residential Home Equity Loans
- Student Loans

3.3.9 Pricers

The Domain Name, BondAssetBacked.Pricer is used to define the three Pricers that may be used to price ABS. The following Pricer Domain Values are supplied in the Demo Data:

- PricerBondAssetBacked (default pricer)
- PricerIntexBondAssetBacked (Intex pricer)
- PricerIntexComplexABS (complex Intex pricer)

The Domain Name, CreditDefaultSwapABS.Pricer is used to define the pricers that may be used to price CDS ABS trades.

- PricerCreditDefaultSwapABS (default pricer)
- PricerIntexCreditDefaultSwapABS (Intex pricer)

3.3.10 Bond Type (BondAssetBacked.subtype)

Bond Type is defined by BondAssetBacked.subtype. BondAssetBacked.subtype populates the Bond Type dropdown on the Intex Mapping Window so that Intex data may be mapped into this Calypso field. Bond Type is displayed in a drop-down on the Bond Tab of the BondAssetBacked Product.

It is expected that the user will configure the Domain Values as needed; however, the Demo Data supplies the following Domain Values:

- AUDMBS
- CMO
- IO (Interest Only)
- PO (Principal Only)
- Pass Through
- Principal + Interest
- Stripped

Note that IO (Interest Only) and PO (Principal Only) are mandatory to be included as Domain Values if the portfolio contains IOs or POs as the BondAssetBacked Product uses this information in logic for calculating and displaying cash flows.



3.3.11 Import Data Level (IntexMapping.datalevel)

The Domain Name, IntexMapping.datalevel populates the Import Data Level on the Intex Loader and the Intex Mapping Window. "Bond Only" would be used exclusively if the Intex Module is being used without the Structured Finance Module. If both modules are being employed, then all the methods would be available. The Domain Values supplied in the Demo Data are as follows:

- ABS Deal
- ABS Deal & Collateral
- Bond Only

3.3.12 Seniority (securityCode.DebtSeniority)

The Domain Values of securityCode.DebtSeniority may be used on the Intex Mapping Window for mapping the Seniority from Intex data. The user may want to do this for customized use of this field; however, at present it is not employed in the standard Calypso functionality.

It is expected that the user may configure the Domain Values as needed; however, the Demo Data supplies the following Domain Values:

- LIEN1
- LIEN2
- LIEN3
- SENIOR_SECURED
- SENIOR_UNSECURED
- SUBORDINATE

3.3.13 Setting Missing Domain Names and Values

If any of the above-mentioned Domain Names are missing or the user wishes to configure Domain Values, one may simply follow this example for the absMktUsage Domain Name and its Domain Values, "DEFAULT", "DELINQUENCY", "PREPAY" and "REC":

- » Navigate to Domain Values via: Configuration > System > Domain Values.
- » Add the Domain Name "absMktDataUsage". Click Save All.
- » Then click Load.
- In the Domain Name "absMktDataUsage", add the values "DEFAULT", "DELINQUENCY", "PREPAY" and "REC". Each of these indicates that the item is a Default Curve, a Prepayment Curve or a Recovery Curve respectively. Click Save All.

3.4 Setting Bond Templates and Product Codes

The steps to set up a Bond Product are detailed in the Fixed Income User Guide. Depending on the mix of ABS and MBS securities of interest, there may be some specific default settings that are desirable to be set up in a Bond Template or perhaps several different Bond Templates for different market segments. Bond Templates may be



used to fill in defaults for some values that Intex may not provide. Examples of data items that Intex does not typically supply are Issue Price, Redemption Price and the number of decimals of precision and rounding rules for various numerical values.

From the Calypso Navigator, navigate to **Configuration > Fixed Income > Bond Product Definition** to setup bond templates as needed.

Name	UST 🔻		Product Id	0
Security Code CUSIP		.oad Import from Intex	Templat	ies
Legal Entities Convertible Call Sche Bond Coupon	edule Brady Schedule C Market	redit Events ABS CLN Special (Revolver	Primary Market
Bond Class Bond	Bond Type UST		•	
Issue Date Dated Date Maturity Da	te Issuer USGV 0D V Country UNITED	IS Government		
Issue Price Currency Redem. Price	Redem. Curr. Total Is:	sued Face Value 0 1,000	0	
Code CUSIP		Codes		
Comment		Min. Purchase Amt.		
Set Custom Data Bo	nd Status 📃 💌	Issue Credit Ratings		

The **Templates** button in the upper right hand corner may be used to create a new Template or to load an existing Template. Specifically, the Templates button displays the following dialog:

🔀 Please select a template operation	×
Search text:	
Please select a template operation	
Convert Defaults	
Load Template	
Remove Template	
Save Template	
OK Cancel	



From this window, you may:

- Convert Defaults Uses the current data on the Bond Product Window to create a Template.
- Load Template Brings up a list of previously defined Templates from which to choose to load.
- Remove Template Will delete a previously defined Template.
- Save Template Saves a new or modified Template.

You may also save Product Codes as part of a Template. Product Code manipulation is explained in the Calypso Fixed Income Trading User Guide.

From the Calypso Navigator, navigate to **Configuration > Product > Code** to define product codes:

Product Code Window					
Name Type 🗸					
Unique		Sea	archable		Mandatory
Product ALL					
Name	Туре	Unique	Searchable	Mandatory	Product List
COMM_FIXING_HOLS	string				Commodity,CommoditySwap,CommoditySwaption
COMM_FIX_PRICE_DEC	string				Commodity,CommoditySwap,CommoditySwaption
COMM_INDEX_DEC	string				Commodity,CommoditySwap,CommoditySwaption
CUSIP	string	~	~		ALL
Common	string	~	~		ALL
DebtSeniority	string				ALL
DesignatedPriority	string				ALL
GCFCusip	string	~	~		Bond
ISIN	string	~	~		ALL
Local	string	~	~		ALL
RGA	string	~	~		ALL
INTEX_NAME	string	~	~		Bond
Load New	Delet	ie s	Save		Close

The Product Codes that are particularly relevant to ABS or MBS securities are CUSIP, INTEX_NAME and ISIN. If you open the "Codes" window from the Bond Product Window, you will have access to the specific codes for this bond:

📈 Code Window			
Product Code Name CUSIP Common DebtSeniority	Value •	-	
DesignatedPriority GCFCusip INTEX_NAME ISIN	▼	-	
Local RGA]	
Apply	Refresh	n ClearAll	Cancel



Once one or several Templates for ABS or MBS securities are defined, they may be associated with the Product Type (aka Bond Class) and Product Subtype (aka Bond Type) in the Intex Mapping (described below). With the Template defined and associated in this manner, there is no need to load the Template when loading securities from the Intex database. This all happens automatically during the Intex import.

3.4.1 **Private Labeled Securities**

Private labeled securities may require a key code (password) provided by the dealer to allow pricing them. The key code must be entered in the Bond Product Definition window using the product code "DealKeyCode".

🛃 Code Window	
Product Code Name	Value
DealKeyCode	6ba8utnsslnygns7x
INTEX_NAME	FHLKB18-AM
AGENCY_LEND_BENCH_RATE	



Setting Intex Mapping Values

The Intex Loader is used to map Intex values to Calypso values. To accomplish the mapping, the relevant Domain Values must already have been created.

The mapping process is accessed via Intex Loader Window > Utilities > Intex Mapping Setup.

Following this navigation will reveal the window pictured below. The two main mapping sections are Intex Values and Products. Many of the Intex mappings will be necessary for Intex without Structured Finance and there are a few mappings that are specific to Structured Finance. Rather than forcing the reader to flip back and forth between the Calypso Intex User Guide and the Calypso Structured Finance User Guide, this section, Setting Intex Mapping Values, is duplicated in its entirety in both guides. For clarity, the mapping values that are only available in the Structured Finance module are labeled as such.

The mapping values are defined in alphabetical order, as they are listed in the Intex Mapping Window.

🗾 Intex Mapping Window		
✓ Intex Mapping Window Intex Mappings Intex Values ValueName Calendar CollateralLoanAttributes CollateralStatistic Columns.ASSETBACK_TYPE Columns.COLLATERAL_TYPE Columns.DEAL_CATEGORY Columns.TRANCHE_TYPE VegalEntity ResetIndex Seniority ✓ TestSubType TestSubType ✓ Products 	Intex Values Intex Values Name DEAL_CATEGORY Calypso Values Deal Type	I Type Mapping
Products	ABS 👻	Deal Sector
	Import Data Level Bond Only	Default Bond Template intexdealdefault
	Add	Remove
Load		Close

4.1 Value Name

A top level listing of all the mapping categories for Intex. The list is identical to the mapping categories in the window above.

4.2 Calendar

The Intex Calendar values must be mapped to Calypso Calendar values. As this is very standard, the relationship is frequently a mapping of identical values as in the New York City example shown below.



🗾 Intex Mapping Window		
🔲 Intex Mappings	1	
🕈 🛄 Intex Values	Name	Calendar
• 🛄 ValueName	Ndilic.	Calential
• E AssetbackType	Intex Value:	NYC
- AND Anisteruani	Description:	New York City
- Ship - Skinde hinde	Calues Values	NYC
- 🐓 BLB Barcelona	Calypso value.	
– 🐓 BNB Berlin		
- 🤔 BRB Brussels	<< Add	
- 🔮 BSB Basle	>> Domono	
- Scobenhagen	>> Remove	
DUB Dublin		
STR. Coorge Town		
- Verige rown		
- 42 LNB London		
- 🐓 LON London		
– 🐓 LSB Lisbon		
– 🤔 LXB Luxembourg		
— 🐓 MDB Madrid		
- 🍄 MEB Melbourne		
- 37 MIB Milan		
MUB Munich		
- 42 MWB Monscow		
- VIC New York City		
- 🔮 OSB Oslo		
– 🐓 PAB Paris		
- 🤔 PRB Prague		
- SRMB Rome		
STD Staaldaala		
SVB - SUCKIDIM		
- V TGT TARGET		
- 🐓 TRB Toronto		
– 🐓 VIB Vienna		
- 🐓 VTB Valletta		
UNDER STREET		
CollateralLoanAttributes		
	1	
Load		Close

4.3 Collateral Loan Attributes

This is an Intex Value Mapping that is specific only to the Structured Finance Module.

These are the values that Intex assigns to the individual mortgage loan collateral. The codes along with their translations are as follows:

- DC0 -- Other/Unknown
- DC1 -- None
- DC10 -- Mortgage Verification Only
- DC11 -- Reduced
- DC12 -- Underwriting Doc Incomplete
- DC13 -- Program Violation
- DC14 -- EZ/Simplified



- DC15 -- Alternative
- DC16 -- Streamline
- DC2 -- Full
- DC3 -- Income, Asset & Mortgage Verification
- DC4 -- Low/Limited
- DC5 -- Income & Mortgage Verification
- DC6 -- Income & Asset Verification
- DC7 -- Asset & Mortgage Verification
- DC8 -- Income Verification Only
- DC9 -- Asset Verification Only
- IC0 -- Other/Unknown
- IC1 -- No Mortgage Insurance
- IC10 -- Financial Guaranty
- IC11 -- Foremost
- IC12 -- GE
- IC13 -- GMAC
- IC14 -- Home Guaranty
- IC15 -- Insured Credit Serv
- IC16 -- Integon
- IC17 -- Investor's Mtg Ins
- IC18 -- Kodak
- IC19 -- Liberty
- IC2 -- Alaska Housing
- IC20 -- Maryland Housing
- IC21 -- MGIC
- IC22 -- Mortgage Guaranty Ins
- IC23 -- NYC Rehabilitation
- IC24 -- PMI Mortgage Ins
- IC25 -- Policy Holders Benefits
- IC26 -- Republic Mortgage Ins
- IC27 -- Ticor
- IC28 -- Triad Guaranty Ins
- IC29 -- United Guaranty
- IC3 -- Amerin
- IC30 -- US Mortgage Ins
- IC31 -- VA
- IC32 -- Verex Assurance



- IC33 -- Vermont Home Mortgage
- IC34 -- Wisconsin Mortgage Assurance
- IC4 -- California Housing
- IC5 -- Cavalier
- IC6 -- Commonwealth
- IC7 -- Dupont
- IC8 -- FGIC
- IC9 -- FHA
- LP0 -- Other/Unknown
- LP1 -- Purchase
- LP2 -- Refi-Cash Out
- LP3 -- Refi-No Cash Out
- LP4 -- Second Mortgage
- LP5 -- Refi-Unknown Cash
- LP6 -- Construction
- LP7 -- Home Improvement
- LP8 -- Purchase or Construction
- LP9 -- Remortgage
- LT0 -- Other/Unknown
- LT1 -- Conventional
- LT10 -- Non-Conforming
- LT11 -- Subprime
- LT12 -- Contract for Deed
- LT13 -- Alt-A
- LT14 -- FNMA
- LT15 -- HELOC
- LT16 -- Conforming
- LT17 -- Jumbo
- LT18 -- Commercial
- LT2 -- FHA
- LT3 -- VA
- LT4 -- Conventional with PMI
- LT5 -- Government (Unknown)
- LT6 -- Affordable Housing Initiative
- LT7 -- Consumer Motorized
- LT8 -- Consumer Non-motorized
- LT9 -- Multifamily



- OC0 -- Other/Unknown
- OC1 -- Primary (Owner Occupied)
- OC2 -- Secondary (Owner Occupied)
- OC3 -- Investor (Non-owner Occupied)
- OC4 -- Buy to Let
- OC5 -- Business
- PT0 -- Other/Unknown
- PT1 -- Single Family Residence
- PT10 -- Bungalow
- PT11 -- Detached
- PT12 -- Semi-Detached
- PT13 -- Terraced
- PT2 -- Condominium
- PT3 -- Co-op
- PT4 -- 2-4 Units
- PT5 -- Townhouse
- PT6 -- PUD
- PT7 -- 5+ Units
- PT8 -- Commercial
- PT9 -- Manufactured Housing

4.4 Collateral Statistic

This is an Intex Value Mapping that is specific only to the Structured Finance Module.

These are the values that Intex assigns to either summary collateral statistics or to individual collateral instruments. The codes along with their translations are as follows:

- AbsSummaryInfo.1MO_ACCUM_NET_LOSS -- collat realizedloss%.
- AbsSummaryInfo.1MO_ACCUM_NET_LOSS_RATE -- Sum of realized loss(\$) / original collateral bal(\$) in percentage.
- AbsSummaryInfo.1MO_BANKRUPT_RATE -- Loans in bankruptcy, %.
- AbsSummaryInfo.1MO_COLLAT_BAL -- Current collateral balance, \$.
- AbsSummaryInfo.1MO_CPR -- Annual prepayment rate, % CPR.
- AbsSummaryInfo.1MO_DELINQ_30_PLUS -- Number of loans 30 plus days delinquent.
- AbsSummaryInfo.1MO_DELINQ_60_PLUS -- Number of loans 60 plus days delinquent.
- AbsSummaryInfo.1MO_DELINQ_90_PLUS -- Number of loans 90 plus days delinquent.
- AbsSummaryInfo.1MO_FORECLOSURE_RATE -- %Loan balance in foreclosure.
- AbsSummaryInfo.1MO_REO_RATE -- Loans in real estate offering, %.



- AbsSummaryInfo.1MO_WAC -- Gross collateral coupon, %.
- AbsSummaryInfo.1MO_WAM -- Weighted average remaining term to stated maturity, months.
- AbsSummaryInfo.3MO_CPR -- 3-month CPR, %.
- AbsSummaryInfo.NUMBER_OF_LOANS -- Number of Outstanding Loans.
- Current WAS
- DSCR
- LoanAttr.Asset Doc -- Loan documentation (full, limited, none, etc.).
- LoanAttr.Asset Name -- Asset Name.
- LoanAttr.Asset Purpose -- Loan purpose (purchase, refinance, cash out.).
- LoanAttr.Insurer -- Insurer.
- LoanAttr.Lein Position -- Lein Position.
- LoanAttr.Loan Type -- Loan Type.
- LoanAttr.Modification Code -- Loan Modification Code.
- LoanAttr.Occupancy -- Occupancy Status.
- LoanAttr.Property Code -- Loan Property type (single-family, PUD, condo, etc.).
- LoanAttr.Servicer -- Servicer.
- LoanData.APPR_VALUE -- Appraisal Value.
- LoanData.APPR_VALUE_ASOF -- Appraisal Value As Of.
- LoanData.ASSET_FREQUENCY -- Pay Frequency.
- LoanData.ASSET_SUBTYPE -- Asset Subtype.
- LoanData.ASSET_TYPE -- Asset Type.
- LoanData.BORROW -- Borrower.
- LoanData.CITY -- City.
- LoanData.COUNTRY -- Country.
- LoanData.CUSIP -- CUSIP.
- LoanData.DEBT_SERVICE -- Debt Service.
- LoanData.DEBT_SERVICE_ASOF -- Debt Service As Of.
- LoanData.DEFAULT_FLAG -- Default Flag.
- LoanData.DSCR -- DSCR.
- LoanData.DSCR_ASOF -- DSCR As Of.
- LoanData.EMERGING_MARKET -- Emerging Market.
- LoanData.FICO -- Fico Score.
- LoanData.FIX_FLT -- Fix or Float.
- LoanData.FUNDED_STATUS -- Funded Status.
- LoanData.HIRESBDTYP -- Hi-Res Bond Type.
- LoanData.INDUSTRY_FITCH -- Fitch Industry Code.
- LoanData.INDUSTRY_MOODY -- Moody's Industry Code.



- LoanData.INDUSTRY_S&P -- S&P Industry Code.
- LoanData.INTEX_DEALTYPE -- Intex Deal Type.
- LoanData.ISIN -- ISIN.
- LoanData.ISSUER_CODE -- Issuer.
- LoanData.LOANX -- LoanX ld.
- LoanData.MATUR_DATE -- Asset Maturity Date.
- LoanData.NOI -- Net-Operating-Income.
- LoanData.NOI_ASOF -- As Of Date for Net-Operating-Income.
- LoanData.ORIGINATOR -- Loan Originator.
- LoanData.PAID_THRU -- Paid-through Date.
- LoanData.PIK -- PIK.
- LoanData.REGION_MOODY -- RATING: Moody Region.
- LoanData.SPONSOR -- Sponsor.
- LoanData.STREET -- Street Address.
- LoanData.STRUCTURED_FINANCE -- Structured Finance Security.
- LoanData.SYNTHETIC -- Synthetic.
- LoanData.TENANT1 -- The three largest tenants.
- LoanData.TENANT2 -- The three largest tenants.
- LoanData.TENANT3 -- The three largest tenants.
- LoanData.TIER1FLAG -- Tier 1.
- LoanData.TIER2FLAG -- Tier 2.
- LoanData.UW_APPR_VALUE -- Underwritten Appraisal Value.
- LoanData.UW_APPR_VALUE_ASOF -- Underwritten Appraisal Value As Of.
- LoanData.UW_NOI -- Underwritten NOI.
- LoanData.UW_NOI_ASOF -- Underwritten NOI As Of.
- LoanStat.Delinquency Status -- Delinquency Status.
- PoolInfo.12MO_CPR -- historical 1 year prepay rate in CPR units.
- PoolInfo.12MO_PSA -- historical 1 year prepay rate in PSA units.
- PoolInfo.1MO_PSA -- historical 1 month prepay rate in PSA units.
- PoolInfo.3MO_PSA -- historical 3 month prepay rate in PSA units.
- PoolInfo.6MO_CPR -- historical 6 month prepay rate in CPR units.
- PoolInfo.6MO_PSA -- historical 6 month prepay rate in PSA units.
- PoolInfo.ARM: Gross Margin/Spread -- ARM: Gross Margin/Spread.
- PoolInfo.ARM: Index -- ARM: Index.
- PoolInfo.ARM: Life Cap -- ARM: Life Cap.
- PoolInfo.ARM: Life Floor -- ARM: Life Floor.
- PoolInfo.ARM: Payment Cap -- ARM: Payment Cap.



- PoolInfo.ARM: Payment Floor -- ARM: Payment Floor.
- PoolInfo.ARM: Rate Formula -- ARM: Rate Formula.
- PoolInfo.ARM: Rate Reset Period -- ARM: Rate Reset Period.
- PoolInfo.Amort Type -- Amorization rule.
- PoolInfo.Asset Age -- The number of months that have elapsed since the pool/loan was issued.
- PoolInfo.Balloon -- Number of balloon months.
- PoolInfo.Cashflow Stratification -- Collateral cash flow type.
- PoolInfo.Coupon -- Coupon.
- PoolInfo.Current Amort Term -- The Pools' weighted-average remaining term, in months.
- PoolInfo.Current Balance -- Current Balance.
- PoolInfo.Current Factor -- Current Factor.
- PoolInfo.Current LTV -- Pools' current LTV, in %.
- PoolInfo.Day Count -- Day Count.
- PoolInfo.Gross Coupon -- Gross Coupon.
- PoolInfo.Group Number -- Group Number.
- PoolInfo.Is Balloon -- Is Balloon.
- PoolInfo.Issue Date -- Asset Issue Date.
- PoolInfo.Item Number -- Item Number.
- PoolInfo.LIFE_CPR -- historical lifetime prepay rate in CPR units.
- PoolInfo.LIFE_PSA -- historical lifetime prepay rate in PSA units.
- PoolInfo.MSA -- MSA.
- PoolInfo.Maturity Date -- Asset Maturity Date.
- PoolInfo.Net Coupon -- Annual pass-through interest rate, in percent.
- PoolInfo.Orig LTV -- Orig LTV.
- PoolInfo.Orig Term -- Orig Term.
- PoolInfo.Original Balance -- Original Balance.
- PoolInfo.Original IO -- Original IO.
- PoolInfo.PSA 1M -- historical 1 month prepay rate in PSA units.
- PoolInfo.PSA 3M -- historical 3 month prepay rate in PSA units.
- PoolInfo.PSA 6M -- historical 6 month prepay rate in PSA units.
- PoolInfo.Property Type Stratification -- Property type.
- PoolInfo.Region -- MSA Region.
- PoolInfo.Rem Term -- Rem Term.
- PoolInfo.Remaining IO -- Remaining IO.
- PoolInfo.State -- State.
- PoolInfo.State Stratification -- This field holds the pools' location in state/province.
- PoolInfo.Unique Name -- Unique Name.



- PoolInfo.Zip Code -- Zip Code.
- Source

4.5 Columns

Lists the columns that are viewable in the Intex Loader and able to be mapped. These are:

- ASSETBACK_TYPE
- COLLATERAL_TYPE
- DEAL_CATEGORY
- TRANCHE_TYPE

4.6 Columns.ASSETBACK_TYPE

Within the Intex subroutines, the Intex database is classified into three major classes:

- CMOs They are either Agency Issued with Agency Collateral or Private Label Issued with Agency Collateral deals backed by residential mortgages. The agencies are Fannie Mae, Freddie Mac or Ginnie Mae.
- Whole Loans This term has become a misnomer. The structured finance market has many examples of terms being invented and used for an original purpose that may evolve or blur over time. Some market participants may use the original meanings of these terms and other market participants may use different interpretations. It can be argued that Intex uses one of these variants for how it classifies "Whole Loans" at the database level. In Intex jargon, any deal that is not backed by agency collateral is considered to be a "Whole Loan" deal.
- Pass-throughs (or "MBSPOOLS") These are securities that are issued by Fannie Mae, Freddie Mac or Ginnie Mae where the cash flows are not "structured" with rules. The cash flows of the underlying mortgage simply "pass-through" the structure to the bond holders.

Intex provides data describing the underlying collateral types for all Whole Loan deals. We have provided a means to map the Intex descriptor values for these collateral types to configurable Calypso values. As of this writing, the available Intex values that are contained in the Intex data item, "icmo_assetback_type" are documented by Intex to be the following:

Intex Values	Description
ICMOASSETBACK_LOAN	Normal whole loans
ICMOASSETBACK_CREDITCARD	Credit card receivables
ICMOASSETBACK_AUTOLOAN	Car loans
ICMOASSETBACK_HOMEEQUITY	Home equity loans
ICMOASSETBACK_MANUHOUSE	Manufactured housing loans
ICMOASSETBACK_FLOORPLAN	Floorplans



Intex Values	Description
ICMOASSETBACK_EQUIPMENT	Equipment loans
ICMOASSETBACK_STUDENTLOANS	Education loans
ICMOASSETBACK_RECEIVABLES	Receivables
ICMOASSETBACK_COMMERCIAL	Commercial mortgages (CMBS)
ICMOASSETBACK_AGRICULTURE	Farmer Mac loans
ICMOASSETBACK_FRANCHISE	Franchise loans
ICMOASSETBACK_RV	Recreation vehicle loans
ICMOASSETBACK_MARINE	Marine loans
ICMOASSETBACK_MOTORCYCLE	Motorcycle loans
ICMOASSETBACK_AUTOLEASE	Auto leases
ICMOASSETBACK_AIRPLANE	Airplane loans
ICMOASSETBACK_CLO	Collateralized loan obligations
ICMOASSETBACK_HEALTHRECEIVABLES	Healthcare receivables
ICMOASSETBACK_CLN	Credit linked notes
ICMOASSETBACK_CDO	Collateralized debt obligations
ICMOASSETBACK_SMALLBUSINESS	Small business loans
ICMOASSETBACK_CONSUMER	Consumer loans
ICMOASSETBACK_TAXLIEN	Tax liens
ICMOASSETBACK_PROJECT	Project loans
ICMOASSETBACK_TIMESHARE	Timeshare loans
ICMOASSETBACK_STCD	Single Tranche Credit Derivative



4.7 Columns.COLLATERAL_TYPE

These are the collateral categories that Intex uses to describe the overall deal collateral. These collateral types are stored in the Intex field, "ICMOADDLINFO_COLLAT_TYPE".

Intex Values	Applicable Group	Description
ABS	CDO	
ABS/REIT	CDO	
ALT_A	Whole Loan, HEQ	Alt-A and Alt-A-Minus loans. Alt-A loans are loans made to borrowers with good credit, but with non- conforming underwriting ratios, limited documentation, or other characteristics which don't meet the standards for prime loans. Alt-A pools may have lower FICOs (700-730), higher LTVs (> 75), and higher percentages of loans with limited or no documentation (30-50%) than typical prime jumbo pool. Alt-A-minus loans fall between Alt-A and subprime. Alt-A-minus pools may have lower FICOs (660-700), higher LTVs (> 80), and higher percentages of loans with limited or no documentation (>50%) than typical Alt-A pools.
ARREARAGE	Whole Loan, HEQ	Previously delinquent loans restructured with an arrearage component. Newer arrearage deals are put on the HE database but a handful of older deals originally put on the WL database in the late 1990s are still classified as WL.
Agency Multifamily	CMBS	
CDO Securities	CDO	
CDO Securities/ABS	CDO	
CDO ²	CDO	
CMBS	CDO	
CMBS/Loans	CDO	
CMBS/Loans/REIT	CDO	
CMBS/REIT	CDO	
CRE	CDO	
Conduit	CMBS	



Intex Values	Applicable Group	Description
Development	CMBS	
Emerging Market	CDO	
Enterprise	Franchise	
Equipment	Franchise	
Fee Simple	Franchise	
Fee Simple - 2nd	Franchise	
Fusion	CMBS	
Ground Lease	Franchise	
HELOC	Whole Loan, HEQ	Home Equity Lines of Credit. These are normally kept on the HE database but some deals with mixed HE/WL collateral types exist.
HIGH LTV	HEQ	First or second liens with combined LTVs greater than 100% of property value (typically 115%-125%).
High Yield	CDO	
High Yield/CDO Securities	CDO	
High Yield/Emerging Market	CDO	
High Yield/Investment Grade	CDO	
High-Grade Structured Finance	CDO	
High-Yield Bonds	CDO	
High-Yield Loans	CDO	
Investment Grade	CDO	
Investment-Grade Bonds	CDO	
Kickout	CMBS	
LOT LOAN	Whole Loan	Loans made on unimproved land
Large Loan	CMBS	
Lease-Backed	CMBS	



Intex Values	Applicable Group	Description
Leasehold	Franchise	
Loans to Microfinance Institutions	CDO	
Long-Term Floating Rate	CMBS	
MIXED USE	HEQ	Loans for mixed use buildings where the commercial/small business portion is small relative to the residential portion.
Market Value	CDO	
Mezzanine	CDO	
Mezzanine Structured Finance	CDO	
Middle Market	CDO	
Military Housing	CMBS	
Mixed	CDO, CMBS	
Mixed - Conduit And Re- Securitization Of One Conduit Deal	CMBS	
Mixed - Fusion And Re- Securitization Of One Single- Borrower Deal	CMBS	
Mixed - Seasoned Loan And Re- Securitization Of Three	CMBS	
Mixed - Short-Term Floating Rate And Re-Securitization Of Two	CMBS	
NA	Whole Loan, Franchise, HEQ	Other/Unable to determine.
NIM	Whole Loan, HEQ	Net Interest Margin, typically a resecuritization of residuals from other deals
NON-CONFORMING		
NON-PERFORMING	HEQ	Sub-Performing and Non-Performing mortgages.



Intex Values	Applicable Group	Description
PRIME	Whole Loan	Loans made to borrowers with good credit that generally meet the lender's strictest underwriting criteria. Intex may also classify some limited documentation pools made to very high-quality borrowers (typically with weighted-average pool FICOs of 740+) as Prime instead of ALT_A.
Project Finance Loans	CDO	
REIT	CDO	
REPERFORMING	Whole Loan	Loans insured by the FHA/VA that were previously delinquent
REREMIC	Whole Loan	Resecuritization of other securities of multiple collateral types. Note: resecuritizations will normally be tagged with the collateral type of the underlying securities, the "reremic" collat type will only be assigned to deals backed by multiple collateral types.
RMBS	CDO	
Re-Securitization - Agency Multifamily	CMBS	
Re-Securitization - B-Piece	CMBS	
Re-Securitization - Conduit	CMBS	
Re-Securitization - Large Loan	CMBS	
Re-Securitization - Mixed	CMBS	
Re-Securitization - Seasoned Loan	CMBS	
Re-Securitization - Swap	CMBS	
Royalty	Franchise	
SBA ASSISTANCE	HEQ	SBA Assistance loans.
SCRATCH & DENT	Whole Loan, HEQ	May include many different loan types in one deal, including delinquent loans, re-performing loans, repurchases, loans with document or other deficiencies, and seasoned loans. Loans may either be acquired from various unaffiliated sources of the Seller, or may be loans originated by an affiliate of the Seller which do not conform to that Seller's standard



Intex Values	Applicable Group	Description
		guidelines for securitization. These are normally kept on the HE database but some deals with mixed HE/WL collateral types exist.
SECOND LIEN	Whole Loan, HEQ	Second lien mortgages. These are normally kept on the HE database but some deals with mixed HE/WL collateral types exist.
SLA/PPA	CDO	
SMALL-BALANCE COMMERCIAL MORTGAGE	HEQ, CMBS	Small-balance commercial mortgages
SUBPRIME	Whole Loan, HEQ	Loans to borrowers with poor credit, typically have weighted-average pool FICOs of 620 or less. These are normally kept on the HE database but some deals with mixed HE/WL collateral types exist.
SYNTHETIC: INDEX	HEQ, CMBS	Synthetic indices such as the ABX index.
Seasoned Loan	CMBS	
Short-Term Floating Rate	CMBS	
Short-Term Floating Rate Deals		
Single Borrower - Lease-Backed	CMBS	
Single Borrower - Multiple Properties	CMBS	
Single Borrower - Single Property	CMBS	
Single-Borrower Deals		
Structured Finance	CDO	
Structured Finance/REIT	CDO	
Synthetic: ABS	CDO	
Synthetic: ABS/RMBS	CDO	
Synthetic: CDO Securities	CDO	
Synthetic: CMBS	CDO	



Intex Values	Applicable Group	Description
Synthetic: CMBS Commercial Pool - Mixed	CMBS	
Synthetic: CMBS/REIT	CDO	
Synthetic: Conduit	CMBS	
Synthetic: Derivative Contracts	CDO	
Synthetic: Emerging Market	CDO	
Synthetic: High Yield	CDO	
Synthetic: Investment Grade	CDO	
Synthetic: Mezzanine	CDO	
Synthetic: Mixed	CDO	
Synthetic: REIT	CDO	
Synthetic: RMBS	CDO	
Synthetic: RMBS/CDO	CDO	
Synthetic: Revenue-Backed	CMBS	
Synthetic: Single Borrower - Multiple Properties	CMBS	
Synthetic: Small-Balance Commercial Mortgage	CMBS	
Synthetic: Structured Finance	CDO	
Synthetic: Trust-Preferred	CDO	
TIMESHARE	HEQ	Loans made on timeshare properties.
Tax-ExempTrust-Preferred	CDO	
Tax-Exempt	CDO	
Unsecured REIT Debt	CMBS	
VENDEE	Whole Loan	A "vendee loan" is a sale by the United States Department of Veterans Affairs on the credit terms of a residential property acquired following the



Intex Values	Applicable Group	Description
		foreclosure of a mortgage that was guaranteed by the United States Department of Veterans Affairs.

4.8 Columns.DEAL_CATEGORY

DEAL_CATEGORY (icmo_deal_category), as defined by Intex, may be one of the following seven choices:

- 0- AGENCY_ADMIN
- 1- PRIVATE
- 2- WHOLE_LOAN
- 3- POOL_MBS
- 4- SWAP
- 5- BOND
- 6- DEBENTURE

These are defined in Columns.DEAL_CATEGORY as seen below:

🔀 Intex Mapping Window		
 Intex Mappings Intex Values ValueName AssetbackType Calendar Columns Columns.ASSETBACK_TYPE Columns.DEAL_CATEGORY Columns.DEAL_CATEGORY 1 PRIVATE 2 WHOLE_LOAN 3 POOL_MBS 4 SWAP 5 BOND 6 DEBENTURE Columns.TRANCHE_TYPE LegalEntity ResetIndex Seniority Products AGENCY_ADMIN POOL_MBS WHOLE_LOAN 	Name: Intex Value: Description: Calypso Value: << Add >> Remove	Columns.DEAL_CATEGORY
Load		Close

In actuality, the only selections from this list that have relevance with ABS and MBS are AGENCY_ADMIN, PRIVATE, WHOLE_LOAN and POOL_MBS. Calypso does not support SWAP, BOND nor DEBENTURE.



4.9 Columns.TRANCHE_TYPE

TRANCHE_TYPE (icmo_tranche_types) is defined by Intex as an array which concatenates the different applicable types for Principal Types, Interest Types, Residual Types, Whole Loan Class Types, and Agency Callable Types. As of this writing, the available Intex Tranche Types that are employed to describe the tranche characteristics are the following:

Intex Principal Types

Intex Types	Description
AD	Accretion Directed
AFC	Available Funds Class
AMZ	Amortizing
AS	Accelerating Senior
BUL	Bullet Maturity
CAC	Controlled Amortization
СМР	Companion
СРТ	Component
EDC	Extended Delay Class
LIQ	Liquid Asset
MEGA	Agency Mega, Giant or Platinum
NAS	Non-Accelerating Senior
NIM	Net Interest Margin
NSJ	Non-Sticky Jump
NTL	Notional
PAC or PAC1 PAC4	Planned Amortization
РТ	Pass-Through
RTL	Retail
SCH or SCH1 SCH4	Scheduled Payments
SEG	Segment


Intex Types	Description
SEQ	Sequential Pay
SJ	Sticky Jump
SP	Single Payment
SPP	Shifting Payment Percentage
STP	Pro
SUP	Support
TAC or TAC1 TAC4	Targeted Amortization
XAC	Index Allocation

Intex Interest Types

Intex Types	Description			
AFC	Available Funds Class			
ARB	Ascending Rate Bond			
САВ	Capital Accretion Bond			
САР	Fixed rate, but capped to collateral net rate			
DLY	Float Delay			
DRB	Declining Rate Bond			
EXE	Excess			
FIX	Fixed			
FLT	Floating			
IDC	Index Differential			
INV	Inverse Floating Rate			
10	Interest Only			
PEN	Prepayment Penalty tranche			



Intex Types	Description				
PO	Principal Only				
PRT	Participating Tranche – rec	Participating Tranche – receives excess interest			
PZ	Partial Accrual				
SUB	Equity tranche. Receives e	xcess interest			
W	Coupon related to collatera	al interest rate			
WAC	Coupon related to collatera	al interest rate			
Z	Accrual				

Intex Residual Types

Intex Types	Description
NPR	No-Pay Residual
R	Residual
RES	Residual
RL	Residual
RS	Residual

Intex Whole Class Types

Intex Types	Description	
JUN	Junior	
MEZ	Mezzanine	
SPR	Super Senior	
SEN	Senior	
WAC_IO	Weighted-average Coupon Interest Only	
XRS_IO	Excess-Ratio Strip Interest Only	



Intex Types	Description
XRS_PO	Excess-Ratio Strip Principal Only

Intex Agency Callable Types

Intex Types	Description
CALLABLE	With respect to a callable deal (FHL and GNM convention), a class of callable certificates or callable pass-through certificates representing the beneficial ownership of specified contributing assets, subject to optional redemption by a related call class.
CALL	With respect to a callable deal (FHL and GNM convention), a class of certificates representing the right to direct the agency to redeem a related callable class and to acquire the contributing assets underlying such callable class.
REDEEMABLE	With respect to a redeemable deal (FNM convention), a class of redeemable certificates representing the beneficial ownership of specified contributing assets, subject to optional redemption by a related redemption class.
REDEMPTION	With respect to a redeemable deal (FNM convention), a class of certificates representing the right to direct the agency to redeem a related redeemable class and to acquire the contributing assets underlying such redeemable class.
RDM	With respect to a redeemable deal (FNM convention), a class of redeemable pass- through certificates representing the right to direct the agency to redeem a related redeemable class and to acquire the contributing assets underlying such redeemable class.

Intex Other Types

Intex Types	Description		
FEE	Trustee fee, financial guarantee, or other expense		
FG	Financial Guarantee		
FND	Reserve Fund		
NO	Non-Offered		
oc	Overcollateralization		
РР	Private Placement		



Intex Types	Description
RND	Rounding Account
RSV	Reserve Fund
SC	Structured Collateral

The Tranche Types are defined in Columns.TRANCHE_TYPE, as partially shown below:

🗾 Intex Mapping Window				
Intex Mappings		-	4	
🔶 📰 Intex Values			P	
🔶 💷 ValueName			Name:	Columns.TRANCHE_TYPE
🗠 🛄 AssetbackType			heters Malana	
🔶 🛄 Calendar			intex value:	
— 🐓 CollateralType			Description	
- III Columns			Description.	
Columns.ASSETBACK_TYPE			Calvoso Value:	
Columns.DEAL_CATEGORY				ļ
← Columns.TRANCHE_TYPE				
— 🐓 AD Accretion Directed			<< Add	
— 🐓 AFC Available Funds Class				
— 🐓 AMZ Amortizing			>> Remove	
– 🐓 ARB Ascending Rate Bond				
— 🤔 AS Accelerating Senior				
– 🤔 AUC Auction Rate Bond				
– 🐓 BUL Bullet Maturity				
— 🐓 CAB Capital Accretion Bond				
– 🐓 CAC Controlled Amortization				
– 🐓 CALL Call class				
– 🐓 CALLABLE Callable class				
— Sector CAP Fixed Rate, but capped to collateral netrate				
– 🐓 CDS Credit Default Swap				
- 🐓 CMP Companion				
- 🔮 CPT Component				
- 🐓 DLY Float Delay				
- S DRB Declining Rate Bond				
- Section of the sect				
STATE Strengthered				
EAE EXCESS EEE Trustee Fee Financial Cuarantee or other Funance	Г	1		
FEC Hustee ree, rinancial ouarantee, or outer expanse Sec. Einancial Guaranteo		1		
→ FU Filiantial Qual antee	Г	1		
\rightarrow Lin Fineu-Late		4		
	-	-		
Load				Close
				0.000



4.10 Legal Entity

The Intex Issuers (icmo_deal_issuer) must be mapped to Calypso Legal Entities that have the role of Issuer and that have a status of being "Enabled". One accomplishes this by first creating the Legal Entity in Calypso through the following navigation path:

Configuration > Legal Data > Entities

🗾 Legal Entity	[91100/release/calypso_user]	
Utilities Help		
Short Name	Status Disabled 💌	
Full Name	Role(s)	
Parent		
Country	NONE	
Inactive As From		
Entered Date	Disabled Pole(s)	
External Ref		
Holidays	Non Financial	
Comment		
Attributes	Legal Agreement Contact Rating SDI's Netting Methods	
Custom	Registration Relation Tolerance Account	
Ref Ob	LE Id Authorization Show Auth.	
Load	New Delete Save Save As Update Short Name	Close

One can create new Legal Entities on this window, assign the role of Issuer and change the status to "Enabled". For example, here is Fannie Mae as an Issuer:

🗾 Legal Entity	- Version - O					
Utilities Help						
Short Name	FANNIE MAE		Status	Enabled	-	
Full Name	Federal National Mortgage	Association	Role(s)	lssuer		
Parent						
Country	UNITED STATES	•				
Inactive As From	User	calypso_user				
Entered Date	10/16/2007 4:52:3	6 PM	iochlad Dolo(o)		Add	
External Ref		Einanoia	isabieu Roie(s)			
Holidays		Non Final	ncial			
Comment				1		
Attributes	Legal Agreement	Contact	Rating	SDI's	Netting Methods	
Custom	Registration	Relation	Tolerance		Account	
Ref Ob	LE ld 1204	Aut	horization		Show Auth.	
Load	New Delete S	Save Save	As Upd	ate Short N	ame	Close





Alternatively, if you are trying to look up previously created entities, one may use the Load button on this window and obtain a dialog window that allows the entry of the beginning of the Short Name, resulting in a list to choose from:

🔀 Legal Entity Chooser 🏼 [9	91100/release/	calypso_user]			×
					_
Include Disabled 🖌	Legal Entity	LE Full Name	Country	Roles	
	FRANKFURT	Frankfurt Branch	GERMANY	Agent,CounterParty,Proc	Ì
Multi Selection	FWB	FWB	UNITED STATES	MarketPlace	
Short Name Like	FANNIE MAE	Federal National Mortgage Association	UNITED STATES	Issuer	
SHULLINGTHE LIKE	FREDDIE MAC	Federal Home Loan Mortgage Corporation	UNITED STATES	Issuer	
f	FINNISHGVT	Finnish Government	FINLAND	Issuer	
· · · · · · · · · · · · · · · · · · ·	FRGVT	French Government	FRANCE	Issuer	
ld					
Full Name Like					
External Ref Like					
Role					
ALL 💌					
Add Dolo					
Add Role					
Show Child LE		10			
		Apply Cancel			

After the Legal Entities are established, one sets up the mapping in the Intex Mapping Window.

🗾 Intex Mapping Window		
Intextulpping minute Intex Mappings Intex Mappings Intex Values Intex ValueName AssetbackType CollateralType Columns.ASSETBACK_TYPE Columns.ASSETBACK_TYPE Columns.ASSETBACK_TYPE Columns.ASSETBACK_TYPE Columns.TRANCHE_TYPE Columns.TRANCHE_TYPE EgalEntity Image: State of America Commercial Mortgage BofA CMBS FREDDIE MAC FHLMC FREDDIE MAC FHLMC Frennie Mae FNMA Freddie Mac FHLMC Freddie Mac FHLMC Freddie Mac GNMA Ginnie Mae GNMA Wells Fargo Mortgage Backed Securities Trust Wells Fargo MBS ResetIndex AGENCY_ADMIN AGENCY_ADMIN POOL_MBS WHOLE_LOAN	Name: Intex Value: Description: Calypso Value: << Add >> Remove	LegalEntity Fannie Mae FNMA FANNIE MAE
Load		Close

Note that the Intex mapping is presently case sensitive and that Intex does store the agencies in both mixed case and upper case, so there are two mappings in this example that associate to the Calypso Legal Entity, FANNIE MAE.



It is not always necessary to set up a Legal Entity as previously described. This is because there is a hierarchy in automatically associating an Issuer with a Legal Entity. The hierarchy is as follows:

- When a bond is imported from Intex, Calypso first tries to match the Issuer to a pre-existing Legal Entity matching on Short Name.
- If that fails and the environment property **INTEX_CREATE_ISSUER** is set to True, Calypso creates the Issuer Legal Entity.
- If INTEX_CREATE_ISSUER is set to False, Calypso will use what is in the environment property, INTEX_DUMMY_ISSUER as the Issuer Legal Entity.
- If INTEX_DUMMY_ISSUER is not set, the final default is "INTEX" is used as the Issuer Legal Entity.

4.11 ResetIndex

The Intex Reset Indices values have to be mapped to Calypso Indices values.

🗾 Intex Mapping Window			
Intex Mappings		4	
- 42 DayCounts - Yields - FOM		P.	
- Inter Values		Name:	ResetIndex
• Il ValueName			
AssothackTyme		Intex Value:	CMT_1YR
- Calendar			
		Description:	bond-equiv 1yr CMT
collateral type		Calimaa Maluar	MM OMT 4V
Columns ASSETBACK TYPE		Calypsu value:	
Columns DEAL CATEGORY			
Columns TRANCHE TYPE		bbA >>	
		>> Remove	
CD 6MO 6mo CD Mookk fur			
CD_0WO Onto, CD, weekly Avg.			
CWT_TOTK DONU-EQUIV TOYL CWT			
CMT_TTT: - DOIL-EQUIV_TYLCMT CMT_2YP_bond_equiv_2xr_CMT			
CWT_ZTK DUNU-EQUIV Zyi CWT CWT_30VP bond organiz 30vr CMT			
CMT_SUTR DUNU-EQUIV SUSI CMT			
CMT_3WO DONU-EQUIV STILL CMT			
CMT_STR bond equit Str CMT			
- S CMT_STR Dona-equiv Syr CMT			
- S CMI_BMU bond-equivismo CMI			
- S CMT_/YR bond-equiv /yr CMT	_		
- S CUF generic Cost UT Funds			
- S COH_11 11th district Cost-of-Funds index			
- S CUNTRACT generic contract rate			
DUMMY Ioans with complex coupon formulas			
SUBIDOR 2NO - 2 WORTH FUDIDOR - 4			
EURIBOR_2MO 2-month EURIBOR rate			
EURIBOR_3MO 3-MUNITI EURIBOR Fale			
EURIBUK_BIU 6-MONTH EURIBUR Falle			
TR_INDADEP_MOLT Multiple indexes			
TR_INDADEP_NONE NO INDEXES			
LIBOR_10TR_SWAP 10y1 LIBOR swap rate			
LIBOR_1WO 1-MUNIN LIBOR rate			
LIBOR_THR 1-year LIBOR rate			
LIBOR_2MU 2-month LIBOR rate			
LIBOR_ZTR_SWAP Zyi Libor Swap rate			
LIDOK_JMO 3-MONIN LIBOK rate			
LIBOR_DRU D-MUNITI LIBOR Tale			
LIDOR_ODP_INIO 1-ITIOINIT ODP LIDOR Tate			
Silbor_GBP_SMO S-month GBP LIBOR Fale			
MONET_INKT Money Market (commercial paper rate)			
STEDUD STEDUD I STEDUD Isomo			
TIPOP 1MO 1 month TIPOP rate			
TIDOR_INO I-IIIOIUI IIDOR I ale			
- Droducte	-		
Load			Close



4.12 Seniority

It may be desirable to designate the seniority of a bond separately from the Product Sub Type (Bond Type in the Bond Window). This may be accomplished by mapping the Intex Tranche Type to a Product Code called, DebtSeniority. Product Codes may be found in the center of the Bond Tab of the Bond Window.

🔀 Bond Window	
Name WFM04001-B1 UST Product Id 2501	
Security Code CUSIP 949814bv8 Load Import from Intex Templates	
Legal Entities Convertible Call Schedule Brady Schedule Credit Events ABS CLN Revolver Bond Coupon Market Special CashFlows Primary Market	
Bond Class BondAssetBacked 💌 Bond Type WL JUN_FIX 💌	
Issue Date Dated Date Maturity Date 01/01/2004 01/01/2004 01/01/2034 0D Issuer WELLS FARGO MBS TRUST Wells Fargo Mortgage Backed Securities Country UNITED STATES Image: Country UNITED STATES Image: Country UNITED STATES	
Issue PriceCurrencyRedem. PriceRedem. Curr.Total IssuedFace Value100USD100USD12,553,0001,000	
Code CUSIP 949814BV8 Codes	
Comment Updated from INTEX data on 12/18/07 5:33:48.781 PM EST Min. Purchase Amt.	
Set Custom Data Bond Status 💌 Issue Credit Ratings	
Load New Delete Save Save As New Update Name Help Print Clock	se

If one clicks on **Codes** ..., the window below is displayed. This contains fields that are defined by the Product Code Window. In this instance, the most used Product Codes would probably be the CUSIP, DebtSeniority, INTEX_Name and the ISIN.



Code Window Bo	ndWFM04001-I	81/0D/Perpetual/5.5%	<
Product Code Name CUSIP	Value 949814BV8		
INTEX_NAME	WFM04001,B1		
DesignatedPriority GCFCusip	▼		
ISIN Local			
RGA			
Apply	Refresh	learAll Cancel	

Please refer to the Calypso Fixed Income Trading User Guide for how Product Codes are defined (see the section "Specifying Product Code Definitions").

The following Product Code Window displays which Product Codes are defined to be available for different Products. The Product Code may be accessed via **Configuration > Product > Code**.

📈 Product Code 🛛 Window	v				
Name DebtSeniority		•	Туре	string	•
Unique		Sea	rchable		Mandatory
Product ALL					
Name	Туре	Unique	Searchable	Mandatory	Produ
COMM_FIXING_HOLS	string				Commodity,CommoditySw
COMM_FIX_PRICE_DEC	string				Commodity,CommoditySw
COMM_INDEX_DEC	string				Commodity,CommoditySw
CUSIP	string	~	~		ALL
Common	string	~	~		ALL
DebtSeniority	string				ALL
DesignatedPriority	string				ALL
GCFCusip	string	~	~		Bond
ISIN	string	~	~		ALL
Local	string	~	~		ALL
RGA	string	~	~		ALL
INTEX_NAME	string	~	~		Bond
•					▶
Load New	Delet	te S	Save		Close



The first step in structuring the mapping of Seniority is to define the DebtSeniority and securityCode.DebtSeniority Domain Values. These are illustrated in the window that follows. One navigates to these Domain Values via **Configuration > System > Domain Values**.

🗾 Domain Values Window	
Search: SECURITYcODE Find Value SecurityCode Common DebtSeniority DesignatedPriority GCFCusip INTEX_NAME INTEX_NAME SIN Local Name RGA SecurityCode.DebtSeniority ILEN1 LIEN1 LIEN3 MEZZANINE SUBORDINATE SUPER SENIOR SecurityCode.DesignatedPriority	Name: securityCode Value: DebtSeniority Comment:

The Intex values for the Tranche Type are mapped to the Calypso values for securityCode.DebtSeniority.

In the following example, we have set up the Seniority values JUN, MEZ, SEN, SPR and SUB to map to the appropriate Calypso values which will appear in the Product Codes.

🗾 Intex Mapping Window		
Intex Mappings	Name: Intex Value: Description: Calypso Value: << Add >> Remove	Seniority JUN Junior JUNIOR
Load		Close



4.13 TestName

This is an Intex Value Mapping that is specific only to the Structured Finance Module.

Test Name may be used to map an Intex Test Name to a Calypso Test Name in a one-to-one or a many-to-one fashion.

4.14 TestSubType

This is an Intex Value Mapping that is specific only to the Structured Finance Module.

These are the subtype values that Intex assigns to the various deal tests. The codes along with their translations are as follows:

- 0 -- Unspecified CASHFLOW Test type.
- 1 -- Interest coverage test.
- 2 -- Over Collateralization test.
- 3 -- Additional Coverage test.
- 4 -- Delinquency test.
- 5 -- Current Loss test.
- 6 -- Cumulative Loss test.
- 7 -- FG Draw test.
- 8 -- Excess Interest test.
- 9 -- Event of Default.

4.15 TestType

This is an Intex Value Mapping that is specific only to the Structured Finance Module.

These are the type values that Intex assigns to the various deal tests. The codes along with their translations are as follows:

- 0 -- Unspecified Test type.
- 1 -- Test impacts the waterfall of cash in the structure.
- 2 -- Test determines if current collateral portfolio meets predefined compliance measures.
- 3 -- Test determines whether a new collateral item can be purchased into an existing portfolio.
- 4 -- Test is expected to occur at some point (FAIL status is expected and does not indicate a negative condition).



4.16 Defining Products

Mapping for Structured Finance and for Bond Asset Backed Products is a two-step process:

First one maps the appropriate Intex values to Calypso values to define the Deal information. This is not a one-toone mapping of fields; but rather it is a group of three fields mapped to four attributes in Calypso.

Specifically, the mapping is for the fields:

- DEAL_CATEGORY
- ASSET_BACK_TYPE
- COLLATERAL_TYPE

To:

- Deal Type
- Deal Sector
- Import Data Level
- Default Bond Template

The Import Data Level that is chosen sets the default when this deal is fetched via the Intex Loader. One may use the Import Data Level drop-down to subsequently change this setting before the "Update" or leave it as the setting has been mapped.

The Default Bond Template is the Bond Template that will be used to import and save the bonds associated with the deal unless one changes this in the next step. These are the bonds or tranches that are the liabilities of the deal.

The instructions that follow will illustrate this mapping process to produce a product that has the following characteristics:

- Deal Type = CDO
- Deal Sector = High Yield Bonds
- Import Data Level = ABS Deal & Collateral
- Bond Template Name = intexdealdefault
- Bond Type = CDO Senior Fixed

In the next window picture, the following values:

- DEAL_CATEGORY = WHOLE_LOAN
- ASSETBACK_TYPE = CDO
- COLLATERAL_TYPE = High Yield

Have already been mapped to:

Deal Type =

CDO

"CDO" is selected from a drop-down list defined by the Domain Value, ABSDeal.subtype.



Deal Sector =	High Yield Bonds	"High Yield Bonds" is selected from a drop-down list defined by the Domain Value, ABSDeal.extendedType.
Import Data Level =	ABS Deal & Collateral	"ABS Deal & Collateral" is selected from a drop-down list defined by the Domain Value, IntexMapping.datalevel to be:
		ABS Deal
		ABS Deal & Collateral
		Bond Only
Default Bond Template =	intexdealdefault	"intexdealdefault" is selected from a drop-down list of the possible Bond Templates that have been defined.

🗾 Intex Mapping Window		
Intex Mappings	Intex Deal Type Mapping	
 Intex Values Products WHOLE_LOAN WHOLE_LOAN/CDO/High Yield MEZ_FLT SEN_FLT WHOLE_LOAN/Commercial/Fusion WHOLE_LOAN/Commercial/Single Borrower - Multiple Properties WHOLE_LOAN/Credit Card/ABS WHOLE_LOAN/Acredit Card/ABS WHOLE_LOAN/Anome Equity/SUBPRIME WHOLE_LOAN/Loan/ALT_A WHOLE_LOAN/Loan/NON-CONFORMING WHOLE_LOAN/Student Loans 	Intex Values Value Name Value DEAL_CATEGORY WHOLE_LOAN 2 ASSETBACK_TYPE CDO 20 COLLATERAL_TYPE High Yield Calypso Values Deal Sector Deal Type Deal Sector CDO Import Data Level Default Boo ABS Deal & Collateral intexdealor Update Add	Select or Bonds V Hefault V
Load		Close

For the second step, the tranche must be defined to be "Senior Fixed". This is done by right clicking on the WHOLE_LOAN/CDO/High Yield Product entry and the button to choose to set a "New Tranche Type" is displayed:



🗾 Intex Mapping Window			
Intex Mappings ↓	Intex D	eal Type Mapping	
	Name DEAL_CATEGORY WASSETBACK_TYPE COLLATERAL_TYPE	Value /HOLE_LOAN 2 DO 20 ligh Yield	Select
	Calypso Values Deal Type CDO Import Data Level ABS Deal & Collateral Update Add	Deal Sector High Yield Bond Default Bond Te intexdealdefaul	is mplate t Remove
Load			Close

Using this button supplies a new tranche entry that is to be defined:

📈 Intex Mapping Window			
Intex Mappings	Intex Values	Bond Type Mapping	
	Name DEAL_CATEGORY ASSETBACK_TYPE COLLATERAL_TYPE TRANCHE_TYPE Cabypso Values Deal Type CDO Bond Type CDO Mez Floater	Value Select WHOLE_LOAN 2 CDO 20 High Yield Deal Sector High Yield Bonds Bond Template Name Remove	
Load	1	Close	e

Use the ellipsis (...) next to TRANCHE_TYPE to select both the Tranche Types, SEN and FIX:



Choose TRANCHE_TYPE Values

Accelerating Senior AS	•	Senior SEN
Accretion Directed AD		Fixed-rate FIX
Accrual Z		>>
Agency Mega, Giant or Platinum MEGA		
Amortizing AMZ		
Ascending Rate Bond ARB		
Auction Rate Bond AUC		llp
Available Funds Class AFC		
Bullet Maturity BUL		Down
Call RDM		
Call class CALL		
Call class REDEMPTION		
Callable class CALLABLE		
Callable class REDEEMABLE		
	-	
		OK Cancel

Change the Bond Type to CDO Senior Fixed, make sure the Bond Template Name is set to the desired value and "Add" it to the Product mapping list:

🗾 Intex Mapping Window		
Intex Mappings	Intex Values	fvpe Mappinα
	Name DEAL_CATEGORY WHOL ASSETBACK_TYPE CDO COLLATERAL_TYPE High Y TRANCHE_TYPE SEN_F	Value Select E_LOAN 2 20 ield
	Calypso Values Deal Type CDO Bond Type	Deal Sector High Yield Bonds Bond Template Name
Load	CDO Senior Fixed Update Add	intexdealdefault Remove Close

This completes the definition of the mapping for a CDO – High Yield Bonds – Senior Fixed with the bond template, intexdealdefault.



Importing Data from Intex

You can import Intex bond data using the Intex Loader, using the INTEX_UPDATE scheduled task, or using the Bond Product window.

The domain "Intex.IsLoadCollateralInfo" allows controlling which data is imported from Intex. When Value = false, or not set (default), the following information is not loaded: Collateral Info, Clear Structured Deal Stats and Collateral Group Stats. You need to set Value = true to import these data.

5.1 Using the Intex Loader

Bring up the Intex Loader using menu action intex.IntexLoaderWindow.

Intex Lo	ader					_		\times
ilities								
Single Requ	uest Bulk lo	ad Custom Ma	nagement Re	name De	al			
Regular \vee	CUSIP/ISIN $ \sim $					~	Query	~
Selection	Deal Name	Tranche Name	Tranche Type	Cusip	Deal Category	Assetb		
							Updat	te
							Select	All
							Unselec	t All
							Test Cor	nne
<						>	Save hi	stori

You can click **Test Connection** to test the connection to the Intex Server. The log provides information about the connection.

5.1.1 Whole Deal or Single Security Mode

The Intex Loader is a separate process that may be used to import securities from the Intex database. The mapping from Intex values to Calypso values has already been illustrated in previous examples. This mapping facility is under the Utilities menu.





To import a single security:

- » Select the drop-down choice of CUSIP/ISIN (this is the default).
- » Enter either the CUSIP or ISIN of the security and click on the "Query" button.

If the security is successfully fetched from the Intex database, the "Status" at the bottom of the window will read, "Query request completed successfully" and the single security line item will appear in the body of the window as illustrated below.

CUSIP/ISI	N 🔫	31394WK98 (FHL2777,DB)			•
Selection	Deal Name FHL2777	Tranche Name DB	Tranche Type PAC_FIX	Cusip 31394WK98	Deal Category AGENCY_ADMIN	Assetback
4						

To update the Calypso database with the information from the Intex database click **Update**. The "Status" will change to "Processing update request ..." and then to "Update request completed successfully" if the update is successful.

To import several bonds or all the bonds from an entire structured finance deal:

- » Select the drop-down choice of "Deal Name".
- » Enter the Intex Deal Name and either hit Enter or click on the "Query" button.

Note that once the bond list is displayed, you can "Select All" (the default), "Unselect All" or individually choose which bonds to update via the Selection checkbox.

The window below shows the partial result from querying the Freddie Mac CMO with the Intex Deal Name, FHL2777.

Selection	Deal Name	Tranche Name	Tranche Type	Cusip	Deal Category	A	s
~	FHL2777	AA	SUP_RTL_FIX	31394WJZ2	AGENCY_ADMIN		٦
1	FHL2777	BB	SUP_RTL_FIX	31394WK56	AGENCY_ADMIN		
v	FHL2777	DA	PAC_FIX	31394WK80	AGENCY_ADMIN		
~	FHL2777	DB	PAC_FIX	31394WK98	AGENCY_ADMIN		
1	FHL2777	DC	PAC_FIX	31394WKA5	AGENCY_ADMIN		
v	FHL2777	DE	PAC_FIX	31394WKB3	AGENCY_ADMIN		
~	FHL2777	DG	PAC_FIX	31394WKC1	AGENCY_ADMIN		
~	FHL2777	DH	PAC_FIX	31394WKD9	AGENCY_ADMIN		Ī
v	FHL2777	FB	SUP_FLT	31394WKG2	AGENCY_ADMIN		
V	FHI 2777	FD	PAC FLT	31394WK.I6	AGENCY ADMIN		_
•							۲



Note that within the Intex Loader, you may double-click on any of the bonds and the Bond Window will display the information for that specific bond.

In the examples discussed, the Import Data Level has been set to "Bond Only". The other drop-down choices of "ABS Deal" and "ABS Deal & Collateral" are reserved for importing the entire Structured Finance Deal. To understand and use this capability, please refer to the Structured Finance User Guide.

5.1.2 Bulk Loader

Within the Intex Loader you can also import several securities from a file using the "Bulk load" tab.

	Intex Loader							_		\times
Ut	ilities									
\$	Single Request Bul	k load Custom Manag	gement Rename Deal							
I	IntexFile					Query	Import	~	Run	
	Identifier	Deal Name	Tranche Name	Bond Name	Cusip	1	ISIN	Status	Error	

If you already know the path to a file that contains securities to be uploaded, then enter the path in the "Intex File" field and click **Import**.

If you want assistance in generating the path to the file where you have stored the security identifiers, you may click **Query** and the following dialog window will appear:

💋 Open		×
Look in: 📑 d	calypso	
software		
Test_Bulk	Loader_1.out	
File <u>N</u> ame:	Test_Bulk_Loader_1.out	
Files of <u>T</u> ype:	Intex Files (.out)	-
		Open Cancel

On this window, you may use the "Look in:" drop-down to help you browse and select the correct directory path to the import file that you have constructed. The import file must have the file extension, ".out". An example of such a file follows.

```
! Testing Bulk Loader Functionality
! DealName,TranchName or CUSIP
31393UY98
FNM04001,GT
```



FNM04001,GU

FNM04001, HA

Note that an exclamation point (!) or a pound sign (#) at the beginning of a line designates that line as a comment. To import securities, you need to list the Intex Deal Name, followed by the Intex Tranche Name delimited by a comma or just the CUSIP. The sample file shows alternating between using the CUSIP or the Deal Name and Tranche Name.

5.1.3 Custom Management

The Custom Management functionality is used to manage custom ".cdi" files that are supplied by dealers. Clients may purchase newly issued securities that Intex has not yet modeled. Many dealers have specialized Intex software which enables them to model a deal and produce an Intex-compatible file, referred to here as the custom.cdi file. For the custom.cdi file to be used in the Calypso software, the file must be uploaded to a common folder that Calypso can access. The specific bonds to be traded are then updated in the standard fashion with the Intex Loader utilizing custom.cdi.

When Intex has officially modeled the deal, there is a process within the Custom Management tab of the Intex Loader to "Reprocess" the custom.cdi to use the official Intex .cdi file name. That process enables the saved bonds to inherit the CUSIPs, ISINs, and INTEX_NAME from the Intex database. After reprocessing, the custom.cdi should be put in DELETED status. This is necessary because Calypso first looks in the directory for custom.cdi files before querying the Intex database for the official Intex .cdi file. If the filenames are the same, stale information may come from a cstom.cdi file that has not been deleted. To guard against reprocessed custom.cdi files not being deleted, check the "Delete on Reprocess" checkbox to have an automatic delete occur when a custom.cdi is reprocessed.

When this box is checked, a Reprocess Action will automatically trigger a simultaneous Delete Action. The Reprocess Action is accomplished by checking the box to the left of the custom.cdi, entering the Official Intex cdi file name in the "New Deal Name" column and clicking on the double arrow in the window heading. The checkbox "Delete on Reprocess" will default to be checked on. The custom.cdi will be reprocessed and take on the "DELETED" status in one step.

📕 Intex Loader			
Utilities			
Single Request Bulk	load Custom Management Renar	me Deal	ess
	File Name	Uploaded By	Uploaded At
	equals_jdot22.cdi	calypso_user	10/18/22 7:35:49.647 PM EDT
	bela211.cdi	calypso_user	10/18/22 7:44:53. 180 PM EDT

- » Select the status to filter on from the "Show" dropdown:
 - To Be Reprocessed
 - Reprocessed



- Deleted
- All
- » Click 🔄 to import Intex files from the directory specified in the environment property INTEX_CUSTOM_PATH.
- » Check "Delete on Reprocess" to guard against reprocessed custom.cdi files not being deleted by having an automatic delete occur when a custom.cdi is reprocessed.

5.1.4 Rename Deal

In	tev	10	30	or	
	LCA	20	au		

Utilities		
Single Request Bulk load	Custom Management	Rename Deal
Old Deal	HL21R16	New Deal FHMR2R16 Apply

Intex may sometimes rename a deal, and if you have an existing trade using the old name, you will get an error from Intex saying "Deal Name has been renamed".

The "Rename Deal" tab allows updating a deal name and the tranches and copies the old quote values to the new quote name.

5.2 Using the INTEX_UPDATE Scheduled Task

You can also bulk load Intex securities in a scheduled task that may be timed to run after the Intex Auto Download has been completed. Follow the steps below to set up and automate the execution of the scheduled task.

- » Create the input file in the same format as the one for the Bulk Loader.
- » From the Calypso Navigator, navigate to **Configuration > Scheduled Tasks > Scheduled Tasks**.

The Scheduled Task Window depicted below has been set up with a saved task. Detailed instructions on how to use this window may be found in the Calypso Scheduled Tasks User Guide. A simple summary to enter a basic task for Intex data would be as follows.



Task Description	
Task Type	e: INTEX_UPDATE
External Reference	:
Comments	5:
Description	:
Execution Parameters	
Attempts: 1	Retry After: 0
JVM Settings: -Xn	ns512m -Xmx1024m
Log Settings:	
Task Notification Option	ns
Send Emails	Publish Business Events
Common Attribu	ites
Task Attributes	
Static Data Filter	
Input Dir	
Input File Names	
Template Name	
Historical Update	

Select the "INTEX_UPDATE" task type.

Appropriately set the Time Zone, Execution Time, From Days, To Days, Valuation Time, etc.

The Static Data Filter may be used to select the bonds to be updated. If a Static Data Filter is used, it will take precedence and any Input File entered will not be used. You can create a Static Data Filter via **Configuration > Filters > Static Data Filter**.

Enter the value for the Input Directory where the Input File may be found. Example "C:\calypso".

Enter the value for the Input File Name or Names. Example "CUSIP_BULK-RELEASE.txt". Note that the file extension is the choice of the user and should be entered. You may enter more than one Input File Name delimited with commas.

Save the task.

Note: The Calypso Scheduler must be running at the time that the Task is scheduled to execute, or it will not run.



5.3 Using the Bond Product Window

5.3.1 Fetching an Intex Security from the Calypso Database

When an Intex Security has already been saved to the Calypso database either via the Intex Loader or from the Bond Window itself, you may fetch the bond in the Bond Window. This is accomplished by the following steps.

From the Calypso Navigator, navigate to Configuration > Fixed Income > Bond Product Definition.

Choose the identifier that you want to use to fetch the bond via the Security Code drop-down menu. This will typically be either CUSIP, INTEX_NAME or ISIN. After entering the value for the Security Code, either just hit "Enter" or click **Load** to fetch the bond from the Calypso database.

In the window which follows, the CUSIP, 31394WKJ6, has been used to fetch a Freddie Mac CMO PAC Floater. Since customized mapping has been configured, the Bond Tab displays the Bond Class to be BondAssetBacked, the Bond Type to be CMO PAC_FLT and the Issuer to be Freddie Mac. The Total Issued and other indicative data are also displayed. Note that the Comment provides the last date and time that this bond was updated from the Intex database.

USIP 💌 31			
	1394WKJ6	Load Impo	rt from intex
Convertible Call Sch	edule Brady Schedule	Credit Events	ABS CLN Revo
Coupon	Market	Special	CashFlo
ondAssetBacked	Bond Type CM0	PAC_FLT	-
Dated Date Maturity Da	te Issuer F	REDDIE MAC	
04/15/2004 04/15/2033	0D 🔻 Federal	Home Loan Mortgage	Corporation
	Country	INITED STATES	-
urrency Redem. Price	Redem. Curr. To	tal Issued F	ace Value
D 🔽 10	0 USD 💌	37,216,800	1,000
JSIP 🔻 31394	WKJ6	Codes	
odated from INTEX data or 3T	n 12/13/07 11:48:20.886 A	Min. Purcha	ase Amt.
	Convertible Call Sch Coupon andAssetBacked Dated Date Maturity Da 4/15/2004 04/15/2033 urrency Redem. Price D 10 SIP 31394 odated from INTEX data or 3T	Convertible Call Schedule Brady Schedule Coupon Market andAssetBacked Bond Type CMO Dated Date Maturity Date Issuer Federal I d4/15/2004 04/15/2033 OD Federal I Country L urrency Redem. Price Redem. Curr. To D 31394WKJ6 SIP 31394WKJ6 SIP 31394WKJ6 SIF SIF	Convertible Call Schedule Brady Schedule Credit Events Coupon Market Special andAssetBacked Bond Type CMO PAC_FLT Dated Date Maturity Date Issuer FREDDIE MAC 4/15/2004 04/15/2033 OD Federal Home Loan Mortgage Country UNITED STATES urrency Redem. Price Redem. Curr. Total Issued F D 31394WKJ6 Codes Odated from INTEX data on 12/13/07 11:48:20.886 AM Min. Purcha

Alternatively, you can use the INTEX_NAME or the ISIN to fetch the bond. The format for the INTEX_NAME is Intex Name-Tranche Name. For this example, the INTEX_NAME is "FHL2777-FD". For this purpose, the INTEX_NAME may be entered in upper case or lower case.

You can click Help for complete details on the Bond Window. However, it might be useful here to point out some of the tabs in this window that are populated by Intex data when an Intex security is fetched, thus alleviating the user from the task of hand entering most of the security static data.



The next window shows the Coupon Tab pre-filled with Intex data. It is obvious that the security in the example is a monthly floater, resetting off the 1-month USD LIBOR index with a spread of 30 basis points. All of the details in the following example were supplied by the Intex database.

Legal Entities	Convertible	Call Sc	hedule	11	Brady Sche	dule	Cr	edit E	vents	AB	S	CLN	Revolve
Bond	Cour	pon	r	ħ	Aarket	ľ	~	Spec	ial	ľ	2	C	ashFlows
Floating Rate			Dayc	ou	30/360	1	Ŧ	Ссу	USD		-		
Spread	30	Index	USD	-	LIBOR	-	1M	-	T3750)	¥		
Reset Days	2	Rate	Index	Fa	1] 🗆	Rese	Bus	Lag	Re	set	In Arre	a
Reset Holidays	LON				Re	set C	ec.	0	NONE		•	1	
Holiday	NYC		-		Roll Day		15	Рауг	nent La	ag	0	BUS	6
Payment Rule	UNADJUST	ED 🔻			Date Roll	10_0	HANG	E		-			
Frequency	/ MTH	-			0	Pre	-Paid						
			,	lcc I	Daycount	0/36	60		•	Use	In Si	tubs	
Stub Star	t												
Stub En	d												

The other major panel where you can view data that has been populated from the Intex database is the ABS tab. This tab is only enabled for bonds of class "BondAssetBacked".

	Convertience						_				
Bond	Coup	on	Market	r	Special	T		CashFlows		Primary	Market
ABS Identifica	tion Series: FHL Collateral: Fixe	2777 d 30yr & 15yr Re	s Loans 🔍 💌	•	Class:	FD			Groups:	1	
Principal Payr Scheo Principal Fra	nents Jule Type: Vari action (%): 100	able	•	Factor De Paym	lay Days:	0	ANCE .			Business Day Business Day	
carly revemp	don Date.			l	Date Roll:	NOCH	ANGE	-			
Quotes	uun bate.				Date Roll:	NO CH	ANGE				
Quotes Prepaym	ient Type:	•		Speed Ass	umption:	NO CH	ANGE	Edit.			
Quotes Prepaym	ient Type:			Speed Ass Weighted	umption:	NO CH	ANGE	Edit.			
Quotes Prepaym Factor Sched	uent Type:	v		Speed Ass Weighted	umption: Avg. Life:	NO CH		Edit.			
Quotes Prepaym Factor Sched	e Known Date	Factor	Coupon	Speed Ass Weighted	umption: Avg. Life:	End	Net Inte	Edit. Edit. erest Shortfall	Interest	Reimbursement	Add
Quotes Prepaym Factor Sched	ule 6 Known Date 05/15/2007	• • Factor 0.6985695273	.C2UB00.00	Speed Ass Weighted /	umption: Avg. Life:	End 0490	Net Inte	Edit. Edit. erest Shortfall 0.00	Interest	Reimbursement	Add
Prepaym Prepaym Factor Sched Effective Dat 05/15/2007 06/15/2007	ule 6 Known Date 05/15/2007 06/15/2007	 Factor 0.6995695273 0.6875290490 	<u>,Coupon</u> 5.62000000 5.62000000	Speed Ass Weighted / End Date 06/15/2007 07/15/2007	umption: Avg. Life: 0.687529 0.674392	524 0490 7341	Net Intr 0.00 0.00	Edit. Edit. erest Shortfall 0.00 0.00	Interest	Reimbursement	Add
Quotes Prepaym Factor Sched Effective Dat 05/15/2007 06/15/2007 07/15/2007	e Known Date 6 Known Date 05/15/2007 06/15/2007 07/15/2007	Factor 0.6995695273 0.6875290490 0.6743927341	<u>562000000</u> 562000000 562000000	Speed Ass Weighted / End Date 06/15/2007 77/15/2007 08/15/2007	Umption: Avg. Life: 0.687529 0.674392 0.660353	End 1 0490 7341	Net Inte 0.00 0.00	Edit. Edit. erest Shortfall 0.00 0.00	Interest	Reimbursement 0.00 0.00 0.00	Add Edit
Cuotes Prepaym Factor Sched Effective Dat 05/15/2007 06/15/2007 07/15/2007 08/15/2007	ule 6 Known Date 05/15/2007 06/15/2007 07/15/2007 08/15/2007	 Factor 0.6995695273 0.67529049 0.6743927341 0.6603532483 		Speed Ass Weighted / End Date 16/15/2007 17/15/2007 19/15/2007	Avg. Life:	End 1 0490 7341 2483 4217	Net Inte 0.00 0.00 0.00 0.00	Edit. Edit. erest Shortfall 0.00 0.00 0.00 0.00	Interest	Reimbursement 0.00 0.00 0.00 0.00	Add Edit Remov
Quotes Prepaym Factor Sched Effective Dat 05/15/2007 06/15/2007 07/15/2007 08/15/2007 08/15/2007	ule 6 Known Date 05/15/2007 06/15/2007 07/15/2007 08/15/2007 09/15/2007	 Factor 6995695273 0.6875290490 0.667532483 0.6603532483 0.6489884217 	<u>Sequence</u> 5.62000000 5.62000000 5.62000000 5.91125000 5.91125000 6.05250014	Speed Ass Weighted / End Date 5/10/2007 7/115/2007 08/15/2007 08/15/2007 0/15/2007	Umption: Avg. Life: 0.687529 0.674392 0.660353 0.649988 0.638567	End 0490 7341 2483 4217 0633	Net Intr 0.00 0.00 0.00 0.00 0.00	Edit. Edit. erest Shortfall 0.00 0.00 0.00 0.00 0.00	. Interest	Reimbursement 0.00 0.00 0.00 0.00 0.00	Add Edit Remov

The ABS Tab has essentially four sub-panels, i.e. ABS Identification, Principal Payments, Quotes, and the Factor Schedule.



ABS Identification

This section provides the Series, Class and Collateral Groups for all structured finance securities sourced from Intex.

The Series provided is how the information is stored in Intex. Most of the time this will not be just the official series as denoted on the prospectus, but it will be Intex version which usually contains a prefix to identify the issuer. For the example of CUSIP, 31394WKJ6, Intex publishes the series to be FHL2777, indicating Freddie Mac as the issuer of the 2777 series. Since the issuer information is captured elsewhere, the user may choose to edit this field to just contain the official series of "2777" and save that information. This field is mandatory.

The Class displayed is the official class (or tranche) of the security as denoted in the prospectus or private placement memorandum. For an essentially one-class security, such as a pass-through, this field is populated with a "1" as supplied by Intex. This field is mandatory.

The Groups field displays the name(s) of the collateral group(s) that contribute cash flows to the bond identified. The collateral group or groups are the Intex names, which are usually identical or like the names that one would see in the prospectus. For a pass-through, the Groups field is pre-filled with a "0" because there are no collateral group distinctions with pass-throughs.

The Collateral field is populated by loading in an Intex Security if the Category is WHOLE_LOAN and the user has mapped the Columns.ASSETBACK_TYPE to a Calypso Value that is also listed as a Domain Value in the BondAssetBacked.collateralType domain. Intex does not use the Asset Backed Type field to describe the collateral for any deal that does not have the Category, WHOLE_LOAN (Deal Category = AGENCY_ADMIN, PRIVATE or POOL_MBS). This means that for AGENCY_ADMIN, PRIVATE and POOL_MBS, the user may have to supply the Collateral field value, if desired, by editing and saving it on this window.

If the Collateral field did not successfully map by using Columns.ASSETBACK_TYPE, then Calypso attempts to use a mapping in Columns.COLLATERAL_TYPE. If the security being imported has an Intex value in Columns.COLLATERAL_TYPE and it maps to a Calypso value that is also listed as a Domain Value in the BondAssetBacked.collateralType domain, then that Calypso value is used to populate the Collateral field.

Principal Payments

This section describes attributes of the principal payments of the bond.

The Schedule Types may be Fixed Schedule, Variable or Variable Schedule. For ABS and MBS securities, this is most often set to Variable.

Factor Delay Days is for the convenience of the user to enter the number of days between the Payment Date and the publication of the Factor. This field is not provided by Intex.

The Principal Fraction is set to 100% for all bonds that pay principal and especially for Principal Only securities (POs). Conversely, it is set to 0% for bonds that are Interest Only (IOs). The attribute of being a PO or an IO is designated by the Bond Type (Product Subtype) with the settings of PO (Principal Only) or IO (Interest Only). It is very important for POs and IOs to be set up with the appropriate Bond Types to calculate and display the correct cash flows for the bonds.

Early Redemption Date is displayed here for the user to enter if the bond is retired before the Stated Maturity Date.



Quotes

There are two different types of Quotes that may be entered on the ABS Panel of the Bond Window. These are Prepayment Quotes and Weighted Average Life Quotes.

The Prepayment Quote is used as a simple constant value (scalar) at which to calculate future cash flows. This may be used if there is no need for varying prepayment assumptions in the future as is facilitated by the Prepayment Curve (vector). The Prepayment Quote consists of selecting the Prepayment Type (CPR or PSA) and the Speed Assumption (magnitude in percentage).

The Weighted Average Life (WAL) Quote may be used to designate an assigned WAL rather than using a dynamic calculation.

Both the Prepayment Quote and the Weighted Average Life Quotes are entered for a specific date by using the associated **Edit** buttons.

Factor Schedule

The Factor Schedule is imported from Intex when the bond is loaded from the Intex database. The amount of history imported is dictated by the amount of history that you have available in your local Intex database. Namely, the history will go back in time as far back as the earliest ".cdu" file for that security in your Intex database. Similarly, the Factor Schedule will only be as current as your local Intex database.

NOTE: After pool factors are updated on a bond, you need to run Process Trades to update the trades accordingly.

A brief description of the columns in the Factor Schedule follows:

Column Heading	Description
Effective Date	The date which is the start date of the accrual period when the factor is employed in determining the current balance or notional amount of the security.
Known Date	Used for Credit Derivatives on ABS – the date that the factor is published.
Factor	The factor, expressed as a decimal (1.00000000 = 100%), which defines the current balance or notional amount of the security when multiplied by the Original Face.
Coupon	The interest rate for the security for the accrual period that starts on the Effective Date.
End Date	The start date for the subsequent accrual period.
Factor at End	The factor at the start date of the subsequent accrual period (the Factor at End for the first period is the same as the Factor for the second period).
Net	Used for Credit Derivatives on ABS – Sum of Interest Shortfall, Interest Reimbursement, Principal Shortfall, Principal Reimbursement, Writedown, and Writedown Reimbursement.



Column Heading	Description
Interest Shortfall	Used for Credit Derivatives on ABS – the amount the interest payment is less than that specified by the coupon and accrual days.
	For MBS, both Interest Shortfalls and Interest Reimbursements are displayed in the Interest Shortfall column. Shortfalls are positive numbers and Reimbursements are negative numbers in keeping with the convention that Intex employs.
Interest Reimbursement	Used for Credit Derivatives on ABS – the amount that previous Interest Shortfall is reimbursed.
Principal Shortfall	Used for Credit Derivatives on ABS – the amount that the principal payment is less than scheduled and unscheduled amortization.
Principal Reimbursement	Used for Credit Derivatives on ABS – the amount that the previous Principal Shortfall is reimbursed.
Writedown	Used for Credit Derivatives on ABS – the amount of bond principal that is written off as a loss.
	For MBS, both Principal Shortfalls and Principal Reimbursements are displayed in the Writedown column. Shortfalls are positive numbers and Reimbursements are negative numbers in keeping with the convention that Intex employs.
Writedown Reimbursement	Used for Credit Derivatives on ABS – the amount of previous writedown that is reimbursed.
WAC	Weighted Average Coupon.
WAM	Weighted Average Maturity.

Additional Settings

The domain "PoolPrefixesForFactorBasedOnPayDate" contains prefixes for factors based on payment date instead coupon start date.

If domain "BondAssetBacked.DC30_360_SpecialDiscountingFor31" contains Value = true, for 30/360 bonds settling on the 31st of the month, the yield is calculated based on discounting to the 1st of the next month.

The domain "FixedRateTrancheTypeUsingComputedCoupon" should contain the list of tranche types for fixed rate tranches for which you need to use computed coupon instead of coupon. By default, it contains the values SEN_WAC, SEN_FLT, SEN_CPT, and SEC_WAC_CAP.

5.3.2 Fetching an Intex Security from the Intex Database

The Bond Window may also be used to fetch securities directly from the Intex database. This is very handy when the bond in question has not yet been imported via the Intex Loader or if the bond has been previously imported but is stale and is in need of an update.

To fetch directly from the Intex database, change the Security Code to the identifier that you wish to use, enter the value of the identifier (e.g., CUSIP, INTEX_NAME or ISIN) and click **Import from Intex**. Note that the **Import from Intex**



button does not display if the Intex Module is not available in your runtime environment. The fetch will employ the same logic as defined in the Intex Loader and as customized in the Intex Mapping.

The results displayed on the Bond Window are transient data and must be "Saved" for the information to be written to the Calypso database. If the bond already exists in the Calypso database, the bond is first fetched from the Calypso database and then updated with current Intex data. In this manner, any enriched data from the Calypso database is preserved. You may take the information as is or edit certain fields and "Save" the newly updated bond to the Calypso database.



Capturing and Pricing ABS Trades

Prior to capturing and pricing ABS Trades, you need to set up several market data items.

6.1 Setting Market Data

6.1.1 **Prepayment Curves**

Prepayment Curves are Market Data Items with a term structure that may be associated with a security or a group of securities using the Pricer Configuration. Most ABS and MBS securities are self-amortizing bonds that pay monthly, quarterly, or semi-annual scheduled principal. In addition to scheduled principal, many bonds pay unscheduled principal due to the underlying collateral paying off earlier than scheduled. These unscheduled principal payments are known as prepayments. There are various units employed to measure prepayments. Calypso has integrated all the various units that are supported by Intex. The following table lists the acronyms that Intex employs for prepayment measures along with a brief description.

Prepayment Units	Description
PSA	Percent of the PSA Model, first defined by the Public Securities Association.
CPR	Constant Prepayment Rate based on an annual percentage.
SMM	Single Monthly Mortality based on a monthly percentage.
СРҮ	Same as CPR; however, prepayments will be locked out for any period that yield maintenance is in effect. Used primarily for CMBS deals.
СРР	Same as CPR; however, prepayments are locked out for any period that prepayment penalties are in effect. Used primarily for CMBS deals.
СРВ	Like CPR, except that ARM pools prepay in full at their next reset date.
ABS	Percent of Asset Backed Securities prepayment rate. Used primarily with auto deals.
HEP	Percent of Home Equity Prepayment Model.
PPC	Percent of Prospectus Prepayment Curve (if modeled, otherwise reverts to PSA).
SCRIPT	Percent of User-defined Prepayment Script model. If this is selected as the prepayment type, it should be noted that if the script within the deal model has a default CDR curve, you cannot override the default/loss scenario.
МНР	Percent of Manufactured Housing model.



Prepayment Curve (1018) WFM04001-B1 12/6/07 8:20:52 AM CPR User(calypso_user) Name WFM04001-B1 CLOSE Date 12/06/2007 8:20:52 AM Current Definition Graph Prepayment Speeds Tenor Prepayment Rate(%) Prepay Type 10 1 M CPR Ŧ 6M 15 1Y 20

To define a prepayment curve, choose Market Data > Credit Curves > Prepayment Curve.

The Prepayment Type is used to select the prepayment units to use. You may select monthly or yearly Tenors, e.g., 1M, 6M, 1Y, etc. and associate the Prepayment Speed with the Tenor Points. The Prepayment Speeds are expressed as a percentage. The interpolation method between curve points is a constant, in other words, the Prepayment Speed for the first Tenor will be employed for all payment periods between two consecutive curve Tenors. As well, the last Prepayment Speed entered will be used for the remaining life of the bond. The window above shows an example of a Prepayment Curve Window. Note that there is also a tab to show a graph of the prepayment curve.

See below for associating prepayment curves with the pricing environment.

6.1.2 Delinquency Curves

Delinquency Curves may be defined in much the same manner as Prepayment Curves. Delinquency Curves are also Market Data Items with a term structure that may be associated with a security or a group of securities using the Pricer Configuration. To define a delinquency curve, choose Market Data > Credit Curves > Default Curve.

Since the default modeling in Calypso is that the servicer advances interest and principal, delinquencies only affect the cash flows of a bond if a trigger event is present and is tripped by the delinquency assumption. For example, in many home equity deals, the subordinate bonds and the senior bonds receive principal simultaneously if the underlying collateral is performing well. However, if the delinquency exceeds a certain pre-set percentage (the trigger) of the outstanding balance, then prepayment principal is used to pay down the senior bonds and not the subordinate bonds. This trigger event serves to protect the senior bonds and potentially lengthens the weighted average lives of the subordinate bonds.



The following is an example of a definition of a delinquency curve:

🗾 Deling	uency Curv	e User(calypso_user)					
Name		CLOSE	•	 Date 	03/31/2009	1:42:45 PM	Current
Definit	ion Graph						
		Delinquency Speeds				Comment	
	Tenor	Delinguency Rate(%)					
	6M	0.5	-				
	1Y	2					
	2Y	1					

You may select monthly or yearly Tenors, e.g., 1M, 6M, 1Y, etc. and associate the Delinquency Rate with the Tenor Points. The Delinquency Rate is expressed as a percentage. The interpolation method between curve points is a constant, in other words, the Delinquency Rate for the first Tenor will be employed for all payment periods between two consecutive curve Tenors. As well, the last Delinquency Rate entered will be used for the remaining life of the bond. The window above shows an example of a Delinquency Curve Window. Note that there is also a tab to show a graph of the delinquency curve.

See below for associating delinquency curves with the pricing environment.

6.1.3 Default Curves

Default Curves are also Market Data Items with a term structure that may be associated with a security or a group of securities using the Pricer Configuration. Default Curves affect the projected cash flows of a security by defining assumptions regarding expected losses on the underlying collateral which supports the bond. The following table lists the acronyms that Intex employs for default measures along with a brief description.

Default Units	Description
MDR	Losses are a percentage of performing balance.
CDR	Losses are an annualized percentage of performing balance.
SDA	Losses are a percentage of the Standard Default Rate model.
SDR	Losses are given as a non-compounded annual rate. The application of the loss depends on the frequency of the asset: if applied to a monthly loan, an SDR of 3% would lose 0.25% of the current balance on a monthly payment date, but the same SDR forecast on a semiannual loan would lose 1.5% of the current balance on semiannual payment date. E.g., 3.0.
ORIGMDR	Losses are a percentage of the original loan balance.
ORIGCDR	Losses are an annualized percentage of the original loan balance.



Default Units	Description
ORIGSDR	Losses are given as a non-compounded annual rate, based on the original balance of the loan. Actual loss amounts on a payment date recognize the payment frequency of the loan, as with SDR.
SCHMDR	Losses are a percentage of the amortized balance.
SCHCDR	Losses are an annualized percentage of the amortized balance.
AGGMDR	Losses of a specified percentage of the outstanding collateral balance as of the start of cash flow generation are distributed pro-rata among the loans. Intex can supply further details for the description of this mode.
РНМ	Percent of collateral distributed over a span.

To define a default curve, choose Market Data > Credit Curves > Default Curve.

🔀 Default Curve (1009) WFMC	04001 12/6/0	7 8:20:52 AM CDR Use	er(calypso	_user)	
Name VVFM04001	CLOSE	Date 12/06/20	107	8:20:52 AM	Current
Definition Graph					
	Defa	ault Speeds			
Default Type	Tenor	Default Rate(%)			
CDR	1M	1			
CDR •	5M	2	- 13		
	2Y	6	-		

The Default Type is used to select the default units to use. You may select monthly or yearly Tenors, e.g., 1M, 6M, 1Y, etc. and associate the Default Rate with the Tenor Points. The Default Rates are expressed as a percentage. The interpolation method between curve points is a constant, in other words, the Default Rate for the first Tenor will be employed for all payment periods between two consecutive curve Tenors. Also, the last Default Rate entered will be used for the remaining life of the bond. The window above shows an example of a Default Curve Window. Note that there is also a tab to show a graph of the Default Curve.

See below for associating default curves with the pricing environment.

6.1.4 Recovery Curves

The Intex integration employs the existing functionality of Recovery Curves in Calypso to assign loss recovery assumptions to the underlying collateral and thus to the cash flows of the bonds. For a more detailed explanation of the functionality of Recovery Curves, please see the Calypso Market Data User Guide.

To define a recovery curve, choose **Market Data > Credit Curves > Recovery Curve**. The Definition tab of the Recovery Curve Window is the initial display.



lame		CLOSE	•	Date 12/1	8/2007	8;17;13 AM	Curren
Definition Off	sets Points	Graph					
Currency	USD 🔻 Is	suer INTEX	;		Seniority	MEZZANINE	-
Ticker			New				
Holidays	NYC						
Interpolator	InterpolatorLin	ear	•				
Deining Fran	default		-				

On the Offsets tab, you select the Tenor Offsets by highlighting and using the double arrow (">>") to form a Selection:

Definition Offse	ets Points Gr	aph		
1	All		Selection	Specific Dates
4D	^		1M	
5D			6M	
6D			1Y	âdd Remove
1W		~		Add
2W	_			
15D				
3W				
4W				

Then select the Points tab and click **Generate** to generate the points.

Definition Offsets	Points Graph		
	Date	Offset	Recovery Rate
	01/07/2008	32	90.00000
	06/06/2008	183	80.00000
	12/08/2008	368	60.00000
Insert			
Remove			
Interpolate			

You can then enter the recovery rates.

Like the Prepayment Curve and the Default Curve, the Graph tab may be used to display a graphical representation of the Recovery Rates:





See below for associating recovery curves with the pricing environment.

6.2 Associating Market Data with a Pricing Environment

Market data are associated with a pricing environment through the Pricer Configuration.

From the Calypso Navigator, navigate to **Market Data > Pricing Environment > Pricer Configuration** and load a pricer configuration.

6.2.1 Pricers

BondAssetBacked

Select the Pricers tab to define the pricers to be used. For the Intex integration to function, it is necessary that the pricer PricerIntexBondAssetBacked (or the pricer, PricerIntexComplexABS) be added to this list with for the Product Type BondAssetBacked, and the Extended Type and Subtype both set to ANY. In summary, this pricer is used to support cash flow forecasting using the Intex subroutines and the Prepayment Curve (or Quote), Delinquency Curve, Default Curve and Recovery Curve.



Commodity Cu	stom Tra	de Level O	verride	Calibratio	on			
Model Parar	neters	FX	Rep	oo Credit Al		ABS	7	Correlation
Pricers Discount Curves Forecast Curves Surfaces Product Spec						oduct Specific		
Product BondAssetBacked SubType ANY Add								
Extended Type A	NY	-	PricerP	ricerIntexB	ondAssetBa	IC 🔻		Remove
Product Extended			уре	SubType	Pricer			
Loan ANY				ANY	PricerLoan			
ADR	ANY			ANY	PricerEquity			
BondAssetBacked	ANY			ANY	PricerIntexB	ondAsse	etBack	ed

() NOTE: The Intex Server must be running in order to compute forecasted cash flows for ABS bonds.

PricerIntexComplexABS has virtually the same functionality as PricerIntexBondAssetBacked with the exception that it does not default to doing all the calculations for the Trade Window unless specifically requested. PricerIntexComplexABS was created to increase performance of the Trade Window by eliminating unwanted calculations.

CreditDefaultSwapABS

For the product CreditDefaultSwapABS, you must associate PricerIntexCreditDefaultSwapABS to use the Intex pricer.

6.2.2 ABS Market Data

Select the ABS tab to select named Prepayment Curves, Delinquency Curves, Default Curves and Recovery Curves. This panel only appears if the domain absMktDataUsage is defined. See Domain Values for details.

				- V d			0
Model	Parameters	FX	Rep	0 0	redit	ABS	Correlation
Pricers	Discount Co	urves Forecast Curves Sur			faces Product Speci		
ssuer: INTE	x 🖣	Series:	WFM04001	-	Class:	B1 💌	Group: ANY
Jsage: REC	▼ M	arket Data:	WFM04001	-B1	Selec	t	Add Remove
Us	sage		Ke	зу		D.	farket Data Item
REC		INTEX.WFM	104001.B1.A	ANY		VVFM040	01-B1
DEFAULT		INTEX.WFM	104001.ANY	(ANY		WFM040	01
		INITEV WEM	104004 ANIN	(0 N D /		WEM040	01
PREPAY		INTEA.WF W	104001.AIN1	CANT .		111 110 40	01
PREPAY DEFAULT		INTEX.WFM	106009.ANY	ANY		WFM060	09
PREPAY DEFAULT DEFAULT		INTEX.WFM INTEX.BSH	106009.ANY	(ANY ANY		WFM060 BSH07A	09 C1-M1
PREPAY DEFAULT DEFAULT PREPAY		INTEX.WFM INTEX.BSH FREDDIE M	106009.ANY 107AC1.M1.J 1AC.FHL27	(ANY ANY 77.ANY.ANY	1	WFM060 BSH07A FHL277	09 C1-M1 7
PREPAY DEFAULT DEFAULT PREPAY REC		INTEX.WFM INTEX.BSH FREDDIE M INTEX.BSH	06009.ANY 07AC1.M17 MAC.FHL27 07AC1.M17	(ANY ANY 77.ANY.ANY ANY	f	WFM060 BSH07A FHL2777 BSH07A	09 C1-M1 7 C1-M1
PREPAY DEFAULT DEFAULT PREPAY REC REC		INTEX.WFM INTEX.BSH FREDDIE M INTEX.BSH INTEX.WFM	106009.ANY 107AC1.M1 1AC.FHL27 107AC1.M1 106009.ANY	(ANY ANY 77.ANY.ANY ANY 'ANY	1	WFM060 BSH07A FHL2777 BSH07A WFM060	09 C1-M1 7 C1-M1 09
PREPAY DEFAULT DEFAULT PREPAY REC REC PREPAY		INTEX.WFM INTEX.BSH FREDDIE M INTEX.BSH INTEX.WFM INTEX.FNM	106009.ANY 107AC1.M1 107AC1.M1 107AC1.M1 106009.ANY 106009.ANY 104001.ANY	(ANY ANY 77 ANY ANY ANY (ANY ANY	f	WFM060 BSH07A FHL2777 BSH07A WFM060 CPRTES	09 C1-M1 7 C1-M1 09 TT
PREPAY DEFAULT DEFAULT PREPAY REC REC PREPAY PREPAY		INTEX.WFM INTEX.BSH FREDDIE M INTEX.BSH INTEX.WFM INTEX.FNM INTEX.WFM	106009.ANY 107AC1.M1.J 107AC1.M1.J 107AC1.M1.J 106009.ANY 104001.ANY 104001.B1.J	(ANY ANY 77 ANY ANY ANY (ANY ANY ANY	/	WFM060 BSH07A FHL2777 BSH07A WFM060 CPRTES WFM040	09 C1-M1 7 C1-M1 09 TT 01-B1
PREPAY DEFAULT DEFAULT PREPAY REC REC PREPAY PREPAY PREPAY		INTEX.WFM INTEX.BSH FREDDIE M INTEX.BSH INTEX.WFM INTEX.FNM INTEX.WFM INTEX.FNL	106009.ANY 106009.ANY 107AC1.M12 107AC1.M12 106009.ANY 106009.ANY 104001.B12 2777.ANY A	(ANY ANY 77 ANY ANY ANY (ANY (ANY NY	f	WFM060 BSH07A FHL2777 BSH07A WFM060 CPRTES WFM040 FHL2777	09 C1-M1 7 C1-M1 09 IT 01-B1 7



Curves can be associated by issuer, series, class, and group.

» Select an issuer and a series, then select a class or ANY and a group or ANY.

You can only select an issuer and a series if an ABS bond exists in the system for which the issuer and series are populated.

- » Select a usage as defined in the domain absMktDataUsage.
- » Then click **Select** to select an actual curve.

Prepayment curves are created using Market Data > Credit Curves > Prepayment Curve.

Delinquency curves are created using Market Data > Credit Curves > Delinquency Curve.

Default Curves are created using **Market Data > Credit Curves > Recovery Curve**.

Recovery curves are created using **Market Data > Credit Curves > Recovery Curve**.

» Click Add to add the selected curve for the selected usage. Then click Save to save the Pricer Configuration.

Note that one may associate and save any of these curves at a high level, such as for the specific Issuer and Series and then also save a different curve for at a lower level for the Issuer, Series, and Class. The curve or curves defined at the lower Class level would override the curves associated at the Series level. The more granular association overrides the higher level association.

6.3 Capturing an ABS Trade

Bring up a trading environment and choose **Trade > Fixed Income > Bond**.

Speed Entry							1
Buy 🔻 CUSI	Р 🔻 🦻	49814BV8 (BondWFM	104001-B1/0D/01/0	01/2034/5.5%)	Vominal	1,00	0.00 Save
Clean Price	0.00000000	Settle Date 12/07/20	07 Cpty NO	NE	TR	ADINGC	▼ New
Proceeds		Price Details		⊢Benchmark	Details	Bond Details	1
Principal	0.00	Clean Price	0.00000000	Clean Price		Market Quote	
Accrual		Yield	0.00000000	Yield		Next Coupon	01/25/2008
Total	0.87	Dirty Price	0.00000000	Spread		Accrual Days	6
Ccy US	SD 🔻	Gross Price		Name		Current Nominal	945.63
FX		Margin		CUSIP		Current Coupon	5.5
Settlement	0.87	Prepay Sp				Pool Factor	0.9456346937

- » Select the bond you want to trade using the security code of your choice (CUSIP, INTEX_NAME, ISIN, etc.). Enter the nominal, settlement date, book, etc. as needed.
- » Choose Help > Trade Fields for complete details.



» Click **Price** to price the trade – The pricing details are described below.

6.3.1 Market Data

The market data are loaded from the Pricer Configuration of the selected pricing environment into the trade window.

Market Data P	Pricer Params	Results]			
1234/USD(R)CL0	OSE 8/3/07 2:02:0	01.000 PM E	EDT			
DEFAULT WFM04	001/ANY(R)CLO	SE 9/28/07	5:05:10.000 P	PM EDT		
PREPAY WFM04001-B1/ANY(R)CLOSE 8/31/07 5:03:34.000 PM EDT						
REC_WFM04001-B1/USD(R)CLOSE 8/31/07 9:12:13.000 AM EDT						
Val Date 12/06/	2007 8:55:	23 AM	Pricing Env	default		Price

6.3.2 **Pricing Parameters**

There are several Pricing Parameters that are specific to Intex and may be used with the Intex pricers. The following table describes their use.

Pricing Parameter	Description
ABS_EXERCISE_DATE	Exercise if the date entered is in the past and the option conditions as defined in the prospectus and modeled by Intex have been met.
ABS_OPTION_EXERCISE	NEVER - The option would not be exercised even if the conditions of exercise as defined in the prospectus and modeled by Intex are true. ASAP - The option would be exercised as soon as the conditions of
	exercise as defined in the prospectus and modeled by Intex are true. This might be when the collateral is at a small enough percentage compared to the original collateral amount or when all the bonds in the deal are at a small enough percentage compared to the original total bonds outstanding. Alternatively, the condition may be associated with a date.
	DATE - If this is set, the parameter ABS_EXERCISE_DATE will be used as part of the logic to decide to exercise or not.
ACCRETION_CALC_METHOD	Calculator for constant prepayment accretion for PREM_DISC_YIELD computation: ContractualToMaturityWithConstantPrepayment.
	When saving a floating rate trade, the floating rate is stored in the trade keyword INDEX_RATE, and in the trade open quantity. This rate is used for accretion calculation.
	The scheduled task INTEX_YIELD_UPDATE needs to be run to update the trade keywords Yield and INDEX_RATE as of trade settle date.
COLLATERAL_AGGREGATION	TYPICAL - Intex groups the underlying collateral in a more granular fashion than the WAVG method. This collateral grouping can produce more accurate results at potentially the cost of more calculation time.


Pricing Parameter	Description
	WAVG - Intex groups the underlying collateral and uses the weighted averages of the groups to compute cash flows. This is the method most employed to best balance the cost of the calculations with the benefit of the accuracy.
	CLUSTERS - Intex groups the underlying collateral into homogeneous coupon and maturity clusters before performing cash flow calculations.
	PRICING - Intex uses the collateral assumptions from the time the deal was priced to compute cash flows. These are usually grosser assumptions that produce fast results.
PREPAYMENT	Quote - The cash flows are derived from the level prepayment speed supplied in the Bond Window. If there is an association with a Prepayment Curve, it is not used, and the Prepayment Curve is hidden from the Market Data
	Curve - If there is a Prepayment Curve associated with the pricing environment, then it is viewable in the Market Data and it is employed in calculating cash flows.
	None - Neither the Quote nor the Prepayment Curve is used for prepayments. The Prepayment Curve is not viewable in the Market Data.
RECOVERY	The assumed number of months lag time from the date of default to the date of liquidation and recovery.
SOLVER_MAXIMUM_DEFAULT	An upper bound when solving for an implied default rate, beyond which the calculation should halt.
SOLVER_MAXIMUM_ITERATIONS	Sets the number of iterations for the solver to try before giving up on establishing an answer.
SOLVER_MAXIMUM_PREPAYMENT	An upper bound when solving for an implied prepayment rate, beyond which the calculation should halt.
SOLVER_MINIMUM_DEFAULT	A lower bound when solving for an implied default rate, beyond which the calculation should halt.
SOLVER_MINIMUM_PREPAYMENT	A lower bound when solving for an implied prepayment rate, beyond which the calculation should halt.
SOLVER_PRECISION	Sets the precision of the solver
SOLVER_TARGET_TYPE	PRICE - Sets Price as the Target for the solver. YIELD - Sets Yield as the Target for the solver. WAL - Sets WAL as the Target for the solver.



Pricing Parameter	Description
	TOTAL_WRITEDOWN - Sets Total Writedown as the Target for the solver.
	TOTAL_LOSS - Sets Total Loss as the Target for the solver.
SOLVER_TARGET_VALUE	Enter the value of Price, Yield, WAL, Total Writedown or Total Loss here, depending on the selection for the Target Type.
USE_INTEX_ANALYTICS	With this parameter checked on, many of the pricing results (Pricer Measures) are sourced from calculations by the Intex Subroutines. These Pricer Measures are listed in the next section, Pricing Results. In addition to enabling the Pricer Measures to be computed with Intex Subroutines, this parameter will also enable the solvers to be computed.

6.3.3 **Pricing Results**

Using Intex Analytics

If the USE_INTEX_ANALYTICS pricing parameter is checked on, then the following Pricer Measures are sourced from calculations performed by the Intex Subroutines:

- PRICE
- DIRTY_PRICE
- ACCRUAL
- YIELD
- YIELD_BEY
- DISC_MARGIN
- WAL
- MODIFIED_DURATION
- CONVEXITY
- Z_SPREAD
- PRINCIPAL_WRITEDOWN
- NPV
- PV01
- DELTA

In addition, the following solver results will use the Intex Subroutines:

- IMPLIED_CDR
- IMPLIED_CPR
- IMPLIED_PSA
- IMPLIED_SDR
- BREAK_EVEN_DEFAULT_RATE (equivalent to the IMPLIED_CDR)



Weighted Average Life

Market Data	Pricer Params Result	s					
	SETTLEMENT_AMOUNT	ACCRUAL	DIRTY_PRICE	NPV	NPV_NET	PV01	WAL
Pay/Rec	-9,370,452.10	0.09167	7.62450000	-8,606,203.38	-8,606,203.38	-46.29	0.514

The WAL (Weighted Average Life) Pricer Measure is available for all the Bond Pricers. It can be added to the results using **Bond > Configure Results**.

The formula for Weighted Average Life of a bond is defined as the average time to receive the principal cash flows of the bond weighted by the individual principal payments. The formula for the WAL is as follows:

$$WAL = (\frac{1}{D}) \frac{(CFDate_{t} - SDate)(PRINCIPAL_{t})}{\sum_{t}^{N} PRINCIPAL_{t}}$$

Where:

- t = Period subscript, t = 1, ... N
- *PRINCIPAL*_t = Principal arriving at time t
- N = Number of periods until last principal flow
- *CFDate_i SDate*₌ the number of days between the principal cash flow at time t and the Settlement Date (day count employed is the same as the bond)
- D = the number of days in a year as specified by the day count used by the bond

6.4 Using Scenario

Curves can be added to scenario market data items in order analyze the impact on bond prices if they are shifted. For a full definition of how to use Scenario Analysis, please see the Scenario Analysis User Guide. A summary with a Prepayment Curve shift follows to illustrate the changes introduced by the Intex integration.

- » Have a pre-defined Prepayment Curve that you want to shift in Scenario Analysis.
- » Bring up the Scenario Editor using **Configuration > Reporting & Risk > Scenario Editor**.
- » Add a Market Data Group under the Market Data Sets Tab.

Usage = ABS

Curve Type = Prepay (Delinquency, Default and Recovery are also available)

Type = any of the Prepayment Units

Name = a pre-defined Prepayment Curve



Market Data Sets Foules Fork Measures Market Data Groups • Calypso • Abs_curve_prepay1 • all_fx	Name: abs_curve_prepay1 Type: MarketData Comments:			
	Selection Selection Association Selection Selection Association Association	Nem Usage:	ABS	•
+ all_vol + Basis_curve + Correlation_Issuer + Credit_curves + Credit_Recovery_curves		Curve type: Type: Name:	Prepay CPR CPR_20_40	•
+ FX_Data - • Quotes_Cash • Quotes_Equity - • Quotes_FX + Vol_Bond				

» Create shifting rules – the following window shows the rule to shift the Prepayment Curve up by a relative 10%.

Market Data Sets Rules Risk Measures		
Rute Groups additive_shift_simul additive_shift_simul Bear_Flattener Bear_Steepener Bull_steepener Bull_steepener Bull_steepener Corr_up_10 CPR_dn_10 CPR_up_10 credit_curve_rule Fordity un 10	Name: CPR_up_10 Type: Curve Comments: Selection P Pate D 0D 30Y 10.0 %(rel) Zero	Type: Zero Perturb: FROM-TO From To Amount Type ♥ 0D ♥ 30Y 10.00 ♥ %(rel)

» Create the risk measures you want to compute – the following window shows NPV and WAL.

Market Data Sets Rules Risk I	Measures				
Groups + abs_curve_prepay1_cpr - Cabasso	Paramet	ter set name: abs_curve_prepa	ay1_cpr		Verbose mode
+ A_Gamma + archeus + Basis_shift	P P Ris	tion sk Measures) abs_curve_prepay1_cpr [ab:	Risk Measure Name:	abs_curve_prepay1_cpr	
Basket_Shock Bear Elat	e 🥥 Pri	icer Measures	Mikt Data Set:	abs_curve_prepay1	
+ Bear_steep	- a	WAL	Product type:	ANY	
Bull_Flattening Bull_steepening cds_multiplicative_shift Composite corp_spread_widening Correlation_stock credit_cons credit_cons Credit_View Delta		eProcess eShift (cing Parameters) CPR_up_10,default -Of Forward Date enfigure columns) Include inputs 2 Columns -+ Trade Id	CPR_up_10_	_WAL-BASEWAL	

» Create a Trade Filter via **Configuration > Filters > Trade Filter**.





🔀 TradeFilter I	Definition	Window [900	003/rel	900/c	alypso_	_use	r]			
Name	FHL2777-0)B-1001				1	lime Zone	NONE		-
Comment							Holidays			
			_				Check I	Holidays		
Use SQL	G	enerate SQL		Parent	NONE					-
🔲 Use Cac	he (Expi	ry Hours) 🛛	0		(Minute	es)		🗌 Set as	s default	parent
Trade Criteri	a Under	lying Security	Post	Proces	ssing	Pos	sition Spec	:		
ſ	Ranges						Product Cr	riteria		
5	Trade Id Settle Date	Min	NONE	•				Max	-	
Ма	turity Date		NONE	-				NONE	-	
	Quantity									
Т	rade Price									
Date	Time Type	EnteredDate			•	Edit				
Filte	er 🗹 IN									
Tra	ade Id List	1001								

The following window just selects Trade Id 1001 and names the filter, FHL2777-DB-1001.

» Run the Scenario analysis – There are multiple ways to run a risk analysis – Refer to the Calypso Risk Analyses User Guide for details.

Here is the Risk Analysis window: select the risk analysis type "Scenario", the trade filter you have created, and the analysis configuration created above using the Scenario Editor.

You can click **Risk** in the Calypso Navigator to bring up the Risk Analysis Config window.



📕 Risk Analysis											
Analysis Set Name	Scenario-CPR-up-	10			Sce	enario-(CPR-up-	10	•	-	
Risk Runner Config				-							
Dispatcher Config				-					lew Set		
Analysis Type	Scenario FHL2777-DB-1001							Earn Eat			
Trade Filter					AsofDate	e	-	Save Set	_		
Analysis Params Set	abs_curve_prepay	/1_cpr	-					Re	move Set		
Pricing Env	Pricing Env default 🗨 🗌 Generate MkData										
Save [DI	B] Save As Bl	ob						Upda	te Domains		
✓ Display	Print	Use Dispate	cher				[Display	/ Market Dat	а	
_save to	Format							Check	Market Dat	а	
		View	e De	fault	_	-					
Description		Cal	c. Pr	iority	50						
		Jot	Tim	eout	0						
Add Elem	ent Remov	re Element									
Analysis Pricing Env Scenario default	Trade Filter	Para abs curve	mete prep	ers av1	cpr	Save I	Display	Print	Distributed	Savel	

Run the analysis and configure the results as desired.

Util	ities \	/iew								
=	Name	[F] ScenarioAnalysis	Val Date	12/14/07 6:4	15:27 PM	Params	abs_curve_	prepay1_cpr		
	PEnv	default	Base Ccy	USD		Trade Filter	FHL2777-D	B-1001		
Ξ	Agg.					Expand/Col	lapse 🗘	🗹 tree 🔛 Inv	vert	
	abs_c	:urve_prepay1_cpr	WA	L	CPR	_up_10[abs_	curve_prepa	y1]_NPV	BaseNPV	BaseWAL
		(0.04)	0	0.62				(495,279.32)	(498,728.61)	0.66

6.5 Using Scenario Sensitivity

Curves have also been added as a Parameter Set so that prepayments may be shifted in a Scenario Sensitivity. An example of running a Scenario Sensitivity on prepayments is as follows.

You can bring up a trading environment that shows your trade and configure the risk analysis from there.

Softer Trade Edit Market Dat	ta Pricing	Env Pricing Grid He	sip						
WorkSpace calypso_user_ws	1								
		KevinSwap							
-	0.000			1.1.1.2.2.2	-			- 22	11222
Pricing_default	Val Date	2/19/2007 3:18:47 Pf	Feed Reuters	 Posit 	ions R.Time	Mix Data	R-Time Tra	sde	Calc
Analysis ScenarioSensi V	Params	2/19/2007 3:18:47 Pf Prepay	Feed Feeders	Run Dispati	tons R-Time	Runne	NONE	sde •	Calc Priority 50



» Select ScenarioSensitivity from the Analysis field and click ... next to the Params field to configure the analysis.

The following window shows the Viewer after having selected the Shift to be Prepayment (a newly introduced selection) and set the Amounts to be -30 to +30 in 10% intervals:

📕 ScenarioS	Sensitivity Param Viewer 📃 🗖 🔀
Name:	Prepay
Comments:	
1D (x) 2	2D (y)
Shit	ft: Prepayment 🔻 Type: %(rel) 💌
Amounts	▼ -30,-20,-10,10,20,30
Dimension:	1D Dispatcher: Number of Trades per Job: 0
Measures:	NPV
Market Data	Set: 🗾 👻
Load	New Delete Save Save As Close

» Then click **Run** to run the analysis.

🗾 Scenari	oSensitivityAr	nalysis	PE: default	Params: Prepay Da	nte: 12/19/0	7 3:18:47.000
Utilities						
- Name	ScenarioSensi	tivityAna	Val Date	12/19/07 3:18:47 PM	Params	Prepay
PEnv	default		Base Ccy	USD	Trade Filter	
Matrix						
Shift (%(rel)) NPV					
-30.0	0 (32,447.56)					
-20.0	00 (31,408.40)					
-10.0	00 (19,611.51)					
10.0	0 21,627.06]				
20.0	43,292.47					
30.0	0 64,110.51]				

It shows the change in NPV for each shift.



Intex Data Mapping Reference

7.1 Bond Products

Each ABS tranche modeled by INTEX can be imported into Calypso as a BondAssetBacked product. The data fields in the INTEX deal structure are internally mapped to the Calypso product fields according to the following table:

ICMO Structure

INTEX	Calypso (BondAssetBacked Product)	Comment
icmo_deal_category icmo_assetback_type ICMOADDLINFO_COLLAT_TYPE icmo_tranche_types	ABSDeal.DealType ABSDeal.DealSector Bond.BondType (always BondAssetBacked) BondAssetBacked.SubType	Based on custom product mapping values.
icmo_deal_is_pure_io	BondAssetBacked.PrincipalPerc entage	Set to 0% for interest-only tranches.
icmo_dealname	BondAssetBacked.ABSSeries	Deal name.
icmo_tranche_names	BondAssetBacked.ABSClass	Tranche name.
icmo_dealname icmo_tranche_names	Bond.Name SecCode.INTEX_NAME	Calypso name is the concatenation of Intex deal and tranche names.
icmo_tranche_cusips	SecCode.CUSIP	
ICMOADDLINFO_TR_ISIN	SecCode.ISIN	
ICMOADDLINFO_TR_CURRENCY	Bond.Currency Bond.CouponCurrency	
ICMOADDLINFO_DEAL_COUNTRY_CO DE	Bond.Country	Country ISO code.
icmo_deal_issuer	Bond.IssuerId	Must be valid issuer legal entity in Calypso or based on custom mapping values.
icmo_vcollat_grps	BondAssetBacked.CollateralGro ups	Collateral group names supporting the tranche.



INTEX	Calypso (BondAssetBacked Product)	Comment
icmo_assetback_type	BondAssetBacked.CollateralTyp e	Based on custom mapping values.
icmo_tranche_dateds	Bond.DatedDate Bond.IssueDate	Tranche dated date.
icmo_tranche_statedmatdates	Bond.MaturityDate	Stated maturity date of the tranche.
icmo_deal_paid_down_date	BondAssetBacked.EarlyRedempt ionDate	If paid down date is earlier than stated maturity.
icmo_pay_dd icmo_tranche_delays	Bond.RollingDay	Calypso's payment cycle day is the nominal pay day unadjusted by any payment delay.
icmo_tranche_coupons	Bond.Coupon	Fixed coupon rate.
icmo_first_eventdate icmo_tranche_firstdates	Bond.FirstCouponDate	Front stub.
icmo_collat_freq icmo_tranche_freqs	Bond.CouponFrequency	Payment frequency.
icmo_collat_curmonth		
icmo_tranche_origbals	Bond.Totallssued	
lcmo_tranche_delays	Bond.CouponOffset BondAssetBacked.PayDownOffs et	Payment delay for principal and interest.



BLOCK_INFO Structure

INTEX	Calypso (BondAssetBacked Product)	Comment
bi_flt_indextype	Bond.RateIndex	Rate index for CMO floaters.
bi_flt_const	Bond.RateIndexSpread	
bi_flt_cap	Bond.CapStrike	Intex can supply a value of 0, 99, 999, or 9999 and these all mean there is no Cap.
		If the Cap field value is 0, negative, or 99 or greater, this is interpreted as the bond not having a Cap.
bi_flt_cap_expr	Bond.CapStrike Bond.FloorStrike Bond.OptionType	If Intex supplies a Periodic Cap and no Life Cap (bi_flt_cap_expr is non- NULL), Calypso populates the Cap as 0 and this is interpreted as not a Cap. For example, Freddie Mac Structured Pass Through Floaters (Freddie Mac "K" bonds). If bi_flt_cap_expr is NULL, then Calypso populates the Cap field with the value Intex supplies. The Type will either be Floor or Collar as there will never be an ABS or MBS without at least a Floor. There will never be a Type that is a Cap because there will always be a Floor and the Cap + Floor results in a Collar.
bi_flt_floor	Bond.FloorStrike	The Floor field will always come in as either a "0" or a non-zero value as supplied by Intex.
bi_daycount_method	Bond.DayCount Bond.AccrualDayCount	See Daycount Conventions.
bi_bd_center_name	Bond.Holidays	Based on custom mapping values.
bi_businessday_method	Bond.DateRoll	See Date Roll Conventions.



ARM_INFO Structure

INTEX	Calypso (BondAssetBacked Product)	Comment
armi_index	Bond.RateIndex	
armi_netmargin	Bond.RateIndexSpread	
armi_caplife	Bond.CapStrike	
armi_flrlife	Bond.FloorStrike	

7.2 Daycount Conventions

INTEX Daycount	Calypso Daycount	Comment
ICMO_DAYCOUNT_30360	DayCount.D_30_360	
ICMO_DAYCOUNT_30365	DayCount.D_30_365	
ICMO_DAYCOUNT_ACTUAL360	DayCount.D_ACT_360	
ICMO_DAYCOUNT_ACTUAL365	DayCount.D_ACT_365	
ICMO_DAYCOUNT_ACTUALACTUAL	DayCount.D_ACT_ACT	

7.3 Date Roll Conventions

INTEX Business Day Method	Calypso Date Roll	Comment
ICMO_BUSINESSDAY_NONE	DateRoll.R_NONE	No business day adjustment convention.
ICMO_BUSINESSDAY_FOLLOWING	DateRoll.R_FOLLOWING	Pay on the day after the weekend/holiday.
ICMO_BUSINESSDAY_PRECEDING	DateRoll.R_PRECEDING	Pay on the day before the weekend/holiday.
ICMO_BUSINESSDAY_MFOLLOWING	DateRoll.R_MOD_FOLLOWING	Pay on the "modified following" day.
ICMO_BUSINESSDAY_EOMFOLLOWING	DateRoll.S_END_MONTH	Pay on the "modified following" end-of-month day.



INTEX Business Day Method	Calypso Date Roll	Comment
ICMO_BUSINESSDAY_EOMPRECEDING	DateRoll.S_END_MONTH	Pay on the "modified" end-of- month day of the previous month.



Troubleshooting

- The Intex integration is of course highly dependent on Intex data. Occasionally, Intex revises some discrepancies in their data files after the data has already been published. The user should be cognizant of this possibility when reviewing Factor Schedules that may have changed after an update, etc. or when doing user acceptance testing with results obtained at different times.
- Interest Only (IO) and Principal Only (PO) securities must be mapped to their respective Bond Types (Product Subtypes) appropriately as IO (Interest Only) or PO (Principal Only) or inconsistencies in cash flow generation may result.
- If there appears to be a problem with the Bond Type (Product Subtype), be sure to consult the Tranche Name, Tranche Type, Deal Category and Asset Back type that import from Intex and are all listed on the Intex Loader window.