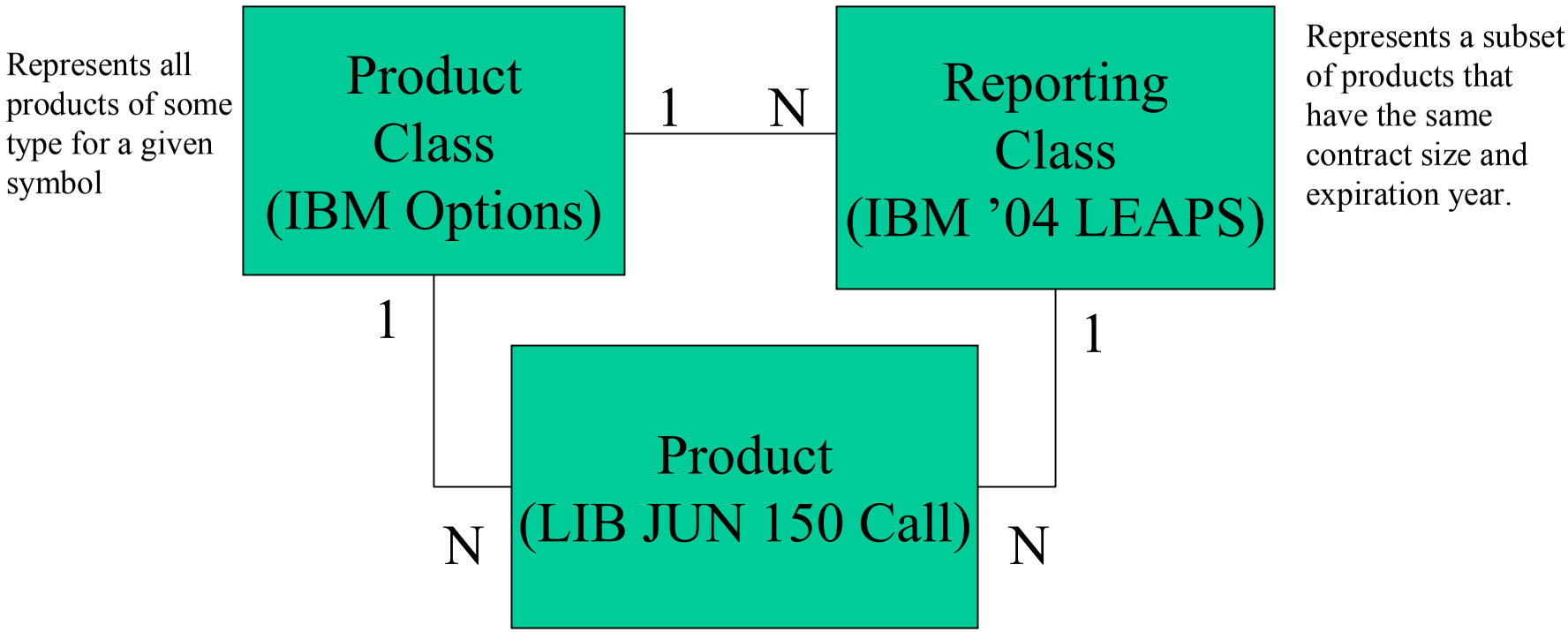
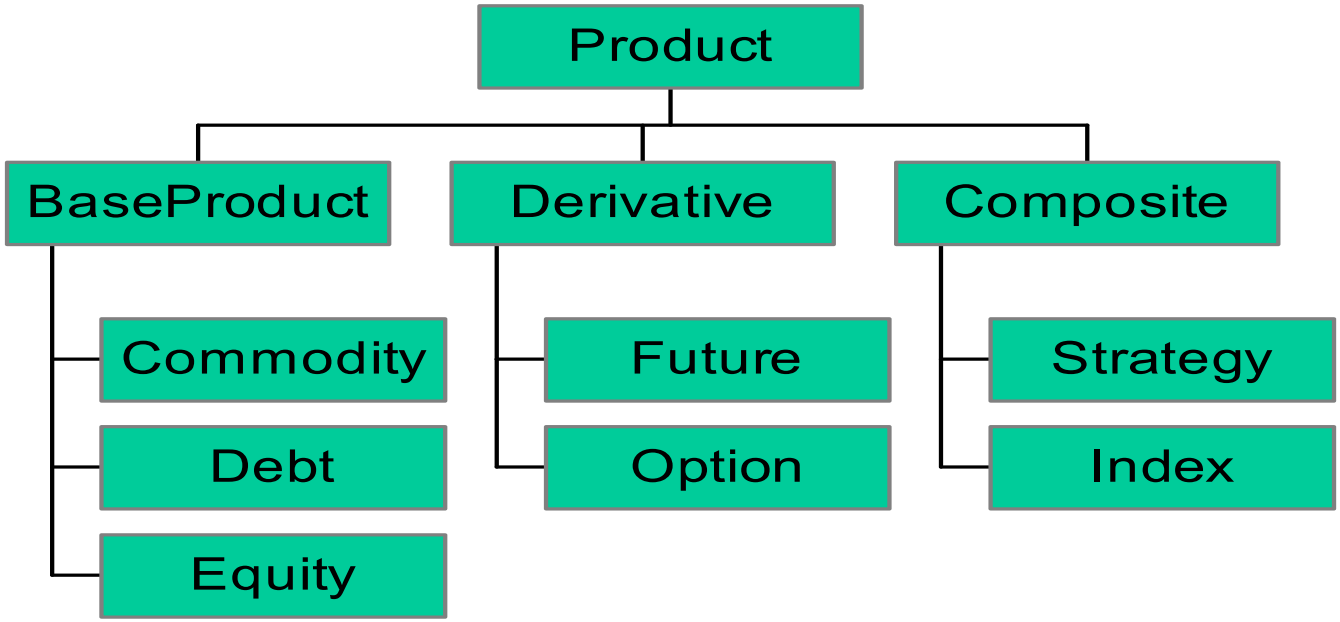
Product Relationships



Even though these relationships are more for options and futures, the relationships are used for all product types

Product Type Hierarchy



- Hierarchy is mainly used for editing product definition
- Only Strategy products have different trading rules

Java Code Overview

- Interfaces are in com.cboe.interfaces.domain.product package in the domain/Java/interface directory.
- Implementations are in com.cboe.domain.product package in the domain/Java/persist directory.
- Code was first implemented for automatic updates received from our floor trading system. Because of this, the validation checking is still not as strict as it should be for manual entry.
- JGrinder is used for persistence.
- Product has one persistent class (ProductImpl) and different editor classes by product type.
- For most methods, ProductImpl just gets editor based on product type and delegates call to the editor.
- ProductClassImpl and ReportingClassImpl use Jgrinder collection relationships.
- We use a “pooled broker” for the product related homes to prevent duplicate instances from being created in memory.

Adding a product type

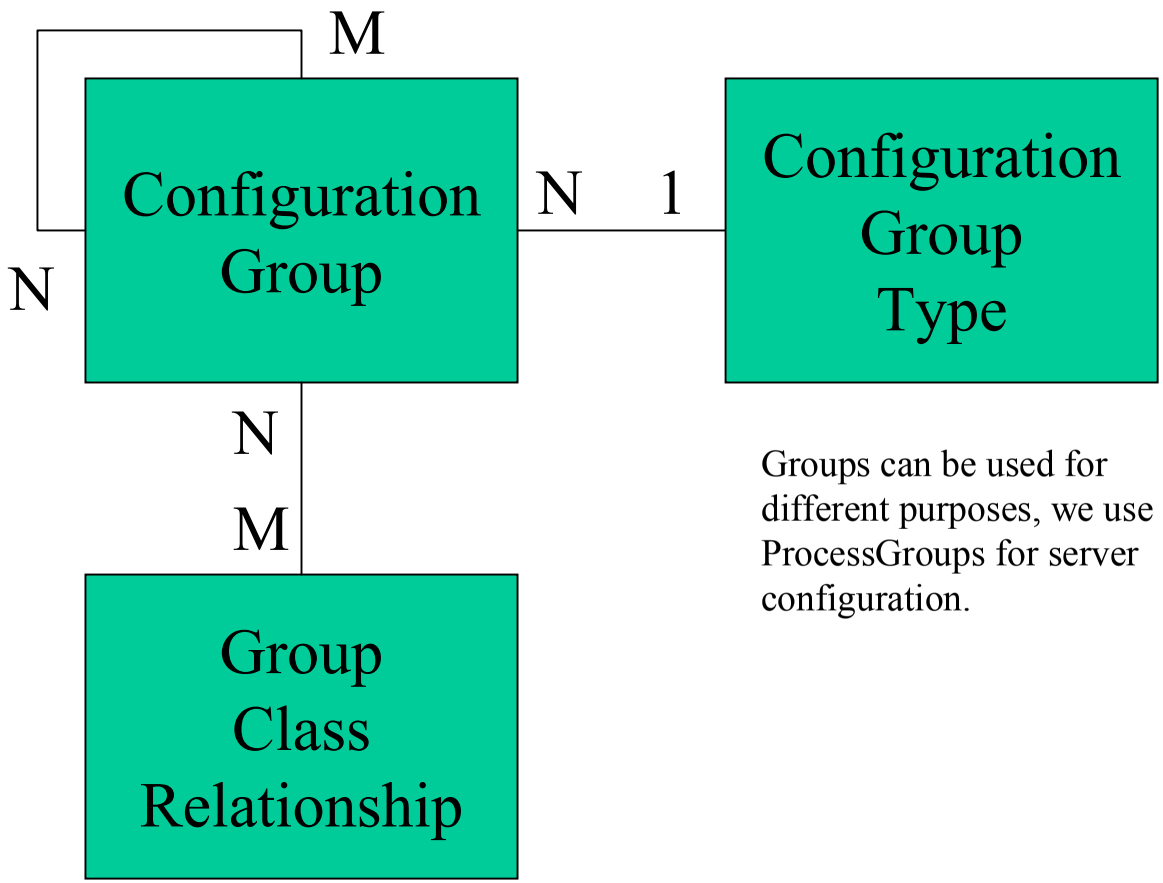
- Given the current implementation, adding a new product type in one sense only involves creating a new Product editor to handle the updating and reading.
- New values may need to be added to the ProductClass, ReportingClass or Product if the current definitions are not sufficient.
- The longer answer is that products by themselves are only part of the effort needed to actually trade something. The source of product information and the configuration of products into server groups and trading sessions must also be considered (configuration is covered next).
- If products are obtained from an existing external source, an adapter will be needed to retrieve information from the external source, translate the source data into product IDL structs and call the appropriate method on the ProductMaintenanceService.
- Options on futures are covered in the model, though there are no procedures built-in to handle creation of new products on expiration.
- The last consideration would be if the new products need new trade rules. Those type of changes are beyond our current scope.

Product Configuration

- For products to trade, they must be assigned to a server and a trading session.
- Configuration is done by ProductClass.
- Assignments to servers are done through the ProductConfigurationService
- Assignments to trading sessions is done through the TradingSessionService
- The combination of server routing group configuration and trading session is used to route requests to a particular server instance.
- For example, IBM options could be assigned to TradeServer1 for the AM session and to TradeServer2 for the regular session.
- We currently use a program that uses a “session code” received during our product download to assign classes to servers automatically.
- The script assignClassesToRoutingGroups is to update routing group assignments.
- The RoutingGroupAssignment.properties file controls how the “session code” is used to assign classes to servers.
- The assignClassesToSession is used to update class assignments to trading sessions.
- Trading session assignment properties are in TradingSessionElementTemplate.xml

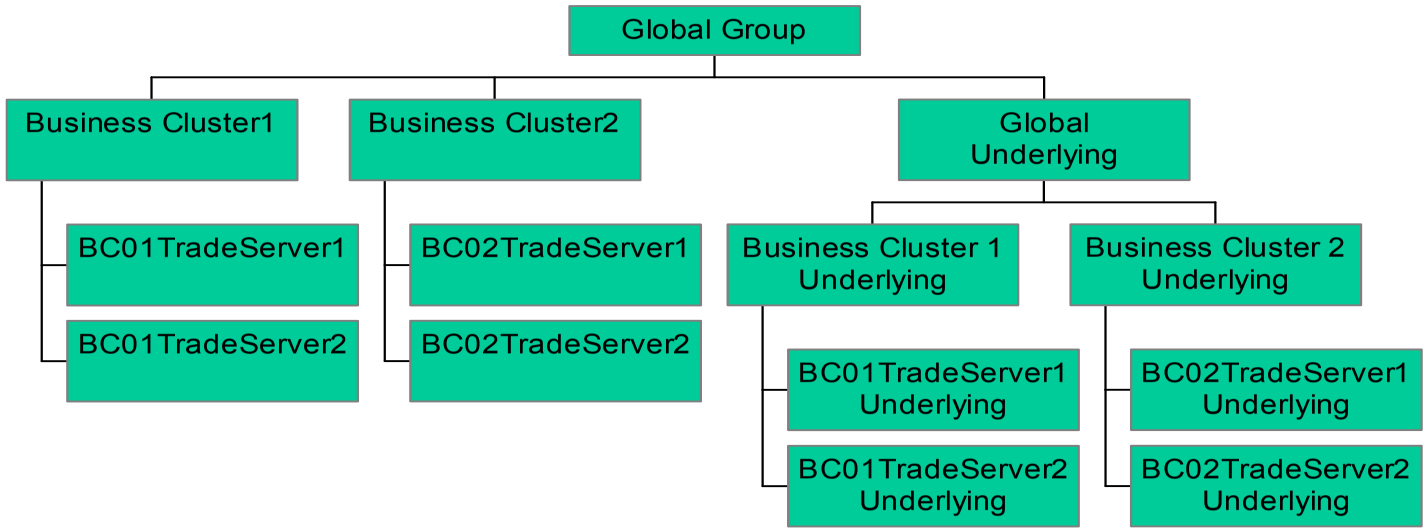
Configuration Groups

Groups can be arranged in a hierarchy.



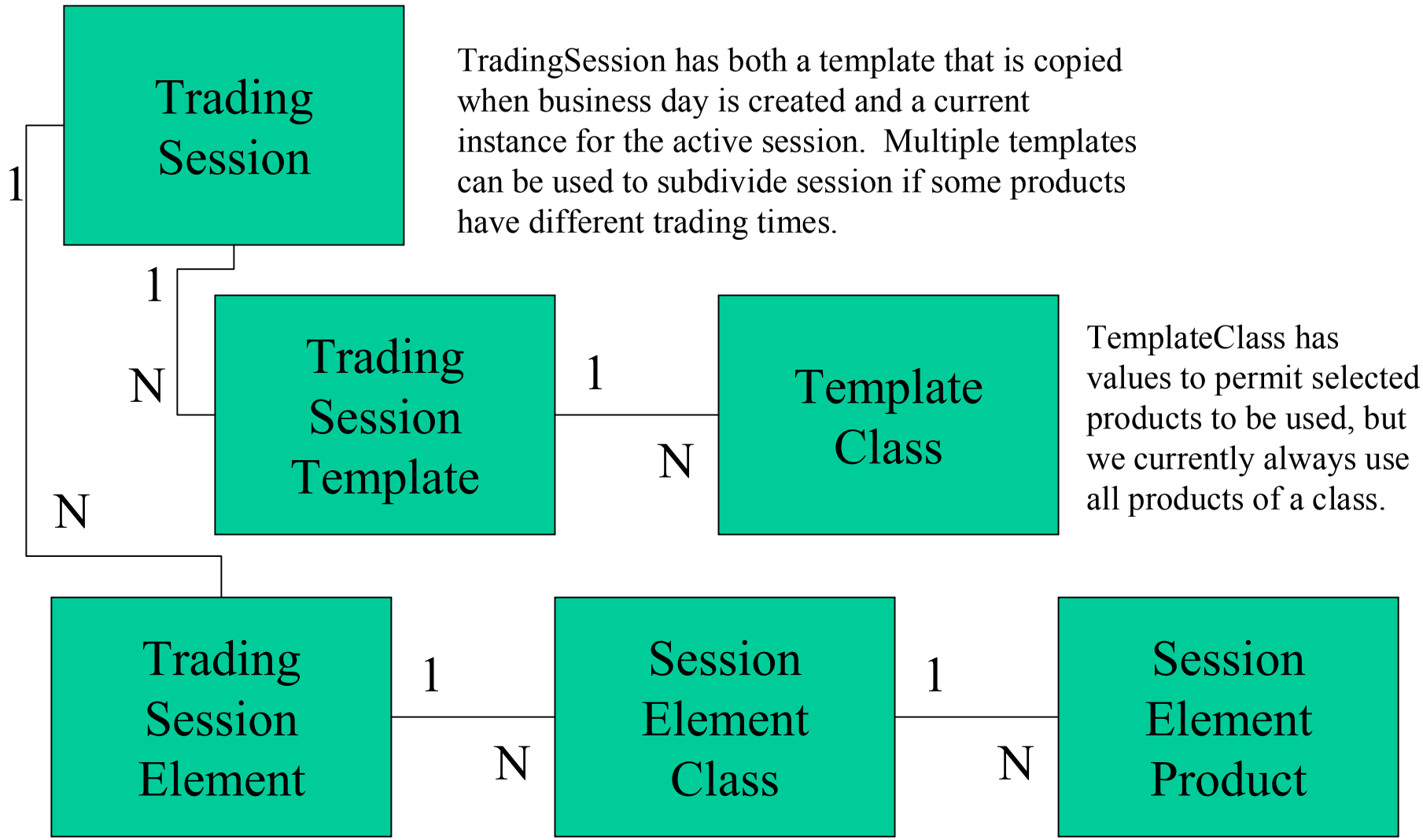
Groups can be used for different purposes, we use ProcessGroups for server configuration.

Routing Groups



- Routing groups are used for server configuration and event channel filtering.
- Servers query for assigned classes at start up
- Most events have an array of groups as one of the arguments, this allows easy filtering on server side for all assigned classes.

Trading Sessions



TradingSession has both a template that is copied when business day is created and a current instance for the active session. Multiple templates can be used to subdivide session if some products have different trading times.

TemplateClass has values to permit selected products to be used, but we currently always use all products of a class.