

# Immutable Objects

Immutable objects are those objects, which cannot be changed. That means (most of the) properties or contents of these objects cannot be edited. I had discussed few points about immutability on my notes about Virtual Documents. Lets see some other aspects of Immutability here.

Now lets see how can we make an object immutable and what are the exception to it

## 1) Versioning an Object (Sys object or any sub type of Sys object)

When an Object is versioned (made a new version by check in) the old version of the versioned object becomes immutable

## 2) Branching an Object

When you branch an Object the parent of the new Branched object becomes Immutable.

*In both the cases mentioned above Immutability of an object is controlled by an attribute with Boolean value called **r\_immutable\_flag**, which is part of **dm\_sysobject***

*Content server sets the r\_immutable\_flag to true on the old version of the object in both these cases.*

## 3) Retention Policy

If the Object is governed by a retention policy that makes its immutable then also the r\_immutable\_flag to true making the Object immutable.

## 4) Freezing a Document by calling freeze()

Freeze method is used to explicitly set a object as immutable. When you call freeze method it sets **r\_immutable\_flag** to true and also sets **r\_frozen\_flag** to true.

Setting **r\_frozen\_flag** to true indicates that freeze method is called on that object. In other words **r\_frozen\_flag** is set to true only if freeze method is called on that object, not by versioning branching etc.

### Unfreezing a Document

**Unfreeze** method sets the value of **r\_frozen\_flag** to false and also **r\_immutable\_flag** to false and hence makes that object mutable again

### Freezing and Unfreezing a Virtual Document

If you chose to freeze an associated snapshot in a Virtual Document, the **r\_has\_frzn\_assembly** attribute is also set to TRUE on that Virtual Document object.

When you freeze a snapshot **r\_immutable\_flag** attributes for each component in the snapshot is set to true and also value of **r\_frzn\_assembly\_cnt** is incremented. The **r\_frzn\_assembly** count attribute contains a count of the number of frozen snapshots that contain this component.

If value of **r\_frzn\_assembly\_cnt** is greater than zero, you cannot delete or modify the object.

Calling a Freeze method to freeze a snapshot automatically freezes the document with which the snapshot is associated. To freeze only the snapshot and not the document, first execute a Freeze method and include the argument to freeze the snapshot then execute an Unfreeze method to unfreeze only the document.

## Exceptions

Even though if an Objects is set to immutable there are some attributes of that object that can be changed, lets see what all are those attributes are

These are the attributes that content server can change on a immutable Objects

- a\_archive
- i\_isdeleted
- i\_reference\_cnt
- i\_vstamp
- r\_access\_date
- r\_alias\_set\_id
- r\_current\_state
- r\_resume\_stat
- r\_frozen\_flag
- r\_frzn\_assembly\_cnt
- r\_immutable\_flag
- r\_policy\_id

There are few attributes that an application or a DQL can change on a Frozen Object

- i\_folder\_id
- a\_special\_app
- a\_compound\_architecture
- a\_full\_text
- a\_storage\_type
- Version label (r\_version\_label) Symbolic labels only
- acl\_domain
- acl\_name
- owner\_name
- group\_name,
- owner\_permit
- group\_permit
- world\_permit

Changing i\_folder\_id means you can link or unlink a Frozen document with any folders or cabinets)