



INTERSYSTEMS LEARNING SERVICES

InterSystems Change Control



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ICC 615: CCR Tier 2 – Debugging Basics



Objectives

- Undo changes.
- Cancel Tier 2 CCR.
- Anatomy of GUIDs and ElementXML.
- Introduction to debugging Tier 2 CCRs.
- Understand meaning and resolution for:
 - Missing GUID.
 - GUID Conflict.



Part 1: Undo Change Not Bundled and Uploaded



Undo a Change Not Bundled and Uploaded

- Useful for unintentional changes in BASE.
- Irreversible action.
- Undo will:
 - Revert all changes to affected item.
 - Added items are deleted.
 - Remove item from uncommitted queue.
 - Remove check-out status on item.



Undo a Change Not Bundled and Uploaded (cont.)

- Careful – may cause broken pointers. For example:
 - Add 2 items where item A references item B.
 - Perform undo on item B.
 - Item A still references item B and the undo on B might not throw an error.
 - Solution: make dummy change to item A to force re-export.



How To: Undo a Change Not Bundled and Uploaded

1. If not in active change session, start change session.
2. Go to Tools > Change Control > Bundle & Upload ItemSet.
3. Click Undo for appropriate Item.
4. Click OK to confirm Undo.

Select	Updated Time	CCR	Changed By	Action	Given Name	Internal Name	View	Diff	Undo
<input type="checkbox"/>	2019-07-22 12:38:32	ISCU0001	TrakLogon01	edit	/User/CTCareProv/DrAinsleyRivers F1A3D4B4-9743-11E6-85CE-560C79E68DF5	\$lb("2224","User.CTCareProv")	View	Diff	Undo
<input type="checkbox"/>	2019-07-22 12:28:33	ISCU0001	TrakLogon01	add	/User/CTCareProv/test 002C9A2C-1C8A-42CD-8B0B-95DA35EA06EF	\$lb("2291","User.CTCareProv")	View	Diff	Undo



Part 2: Cancel Transition for Tier 2



Review: Note on Cancelling CCRs Properly

- Only cancel CCRs that you no longer wish to have in any environment.
 - For example, started creating a care provider and received noticed that they don't need to be added.
- Make sure that cancelled CCRs are properly backed out.
 - Backed out of the Perforce branch.
 - Backed out of the environments.



Notes on Backing Out Tier 2 Change

- Verify no add actions under [show Submitted changes] in CCR.
 - New items should be end dated rather than backed out from Perforce.
 - A Perforce backout will cause item deletion!
- If all items in BASE have add action:
 - Backout plan is to end date those added items.
 - Do not use the Perforce backout tools.



Notes on Backing Out Tier 2 Change (cont.)

- If all actions are edit, use Perforce backout tools as described in ICC450.
- If there is a mix of add and edit actions for BASE:
 - Contact InterSystems Support for help.
 - Added items need to be end dated.
 - Edited items need to be backed using P4V (an InterSystems task).



Part 3: GUIDs and ElementXML



Review: GUIDs and ElementXML

- Assigned to TrakCare elements.
 - New objects are assigned a GUID on creation.
 - No relation to content of TrakCare configuration.
 - Example: 09290496-0BAD-11E2-9090-F403C32D8A93
- ElementXML files use GUIDs to reference configuration.
- Deleting and recreating configuration item creates new object with new GUID.
 - Do not do this.



Find GUID

- GUIDs are random; they do not contain any information about configuration.
- Tools > Change Control > Find GUID.
- Relates the GUID back to the configuration item.
- Provides change history for configuration item.

Find GUID

GUID

[Find](#)

Change Information

GUID	OID	Code	Description	Owner
07638230-7B58-4F74-BB2D-82AA5991416D	\$lb("485","User.CTLoc")	ICCLOC14	ICC Training Location 14	Location owned by XXXXXXXXXXXXXXXXXXXX >



Find GUID (cont.)

- This screen will provide all information about the referenced object.
 1. Class and ID (OID).
 2. Code value (where available).
 3. Description.
 4. Owner.
 5. Change history (note no Committed Time on this one).

Change Control

Find GUID

GUID

OID \$lb("51647","websys.Component")
Code questionnaire.QELEXML.Edit
Description Element XML Demo
Owner SITE

Change Information

Committed Time	Updated Time	CCR	Changed By	Action	Name	Internal Name
	2017-10-25 19:49:39	TRAK1404	demo	add	/websys/Component/ElementXMLDemo	9C5F71E9-9B59-415C-A0BF-A42B95A387D4 \$lb("51647","websys.Component")

CCRGUID.FindList: 0.003119 (secs), 11396 (lines), 711 (globals)



Part 4: Missing GUID

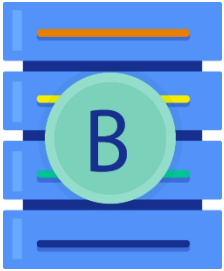


Missing GUID

- This error occurs on download of TrakCare configuration.
- TCC will not load incomplete configuration by default.
 - A missing GUID error means that the GUID lookup did not return a match.
 - TCC cannot link to a non-existent object.
- This will cause the load to fail and the whole transaction to roll back.



Missing GUID Example



Location
GUID: ABC
Hospital:
XYZ

Hospital
GUID: XYZ



Example Missing GUID Error

```
ERROR #5001: GUID reference(s) missing from stream /trk/enyhTEST/tc2016/perforce_tc2017/custom_ccrs/enx/ENYH/T2017/TEST/misc/User/ARCitmMast
/2D628C42-4711-11E8-B437-7F0F75D06854.xml: 84F406D0-4710-11E8-BD45-7F0F75D06854
ERROR #5001: GUID reference(s) missing from stream /trk/enyhTEST/tc2016/perforce_tc2017/custom_ccrs/enx/ENYH/T2017/TEST/misc/User/ARCitmMast
/D88B2B50-47C1-11E8-8362-7F0F75D06854.xml: 84F406D0-4710-11E8-BD45-7F0F75D06854
ERROR #5001: GUID reference(s) missing from stream /trk/enyhTEST/tc2016/perforce_tc2017/custom_ccrs/enx/ENYH/T2017/TEST/misc/User/PHCDrgMast/A96B506C-
138D-11E6-9B4B-7F0F75D06854.xml: 84F406D0-4710-11E8-BD45-7F0F75D06854, E1BA32FE-4710-11E8-92A4-7F0F75D06854, 8F61254E-4710-11E8-9FEE-7F0F75D06854,
DF98B344-4711-11E8-8D9F-7F0F75D06854, 99D522AA-4710-11E8-A689-7F0F75D06854, 89866416-4712-11E8-8D65-7F0F75D06854, A2E3F4A2-4710-11E8-B914-7F0F75D06854,
16C30424-4713-11E8-8D9B-7F0F75D06854
Load detected 3 errors in 11.455s.
Transaction rolled back
```

Configuration Files with missing GUID references

GUIDS that are missing from the target environment

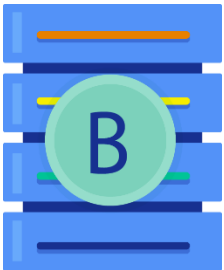


Resolve Missing GUID

- Steps below assume BASE-TEST-LIVE workflow and error occurred deploying to TEST.
 1. Use Find GUID in BASE to find object associated with missing GUID.
 - If object missing in TEST added by this CCR, most likely a different error is causing ItemSet load to fail. See Secondary Error discussion later.
 - If object missing in TEST added by different CCR still in BASE phase, continue to step 2.
 2. Specify CCR adding missing object as prerequisite CCR on CCR showing error.
 3. Progress CCR adding missing object to TEST.
 4. Deploy ItemSet that originally errored out.
 5. Progress both CCRs through normal workflow to Closed.



Missing GUID Example: Resolution



Location
GUID: ABC
Hospital:
XYZ

Hospital
GUID: XYZ



Circular Reference

- CCR1 adds configuration that depends on configuration added by CCR2.
- CCR2 adds configuration that depends on configuration added by CCR1.
- Solution: merge the 2 CCRs.
- Avoid situation by:
 - Keeping change small and discrete.
 - Progressing changes quickly.



Secondary Errors

- Missing GUIDs are the easiest warning to resolve.
- If multiple errors, most likely want to resolve missing GUID last.
- Example:
 - 2 items loaded in 1 ItemSet:
 - Configuration A fails to load with data validation issue.
 - Configuration B fails with missing GUID error because it refers to A.
 - If A is resolved, then the missing GUID warning will resolve.
- Check if missing GUID is in current CCR.



Quiz: Missing GUIDs

Question:

Preview integrations will catch missing GUID errors.

True or False?

Answer:

False. Perforce treats files as plain text. Perforce cannot interpret GUIDs.



Part 6: GUID Conflict

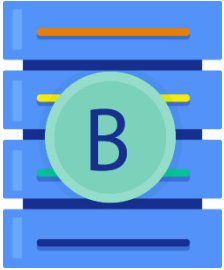


GUID Conflict

- Deployment uses GUID to determine whether to create vs edit configuration.
 - GUID found = update configuration item.
 - GUID not present = create new configuration item.
- In most tables, configuration must be unique based on code and description.
- GUID assigned on creation, and NOT linked to the object content.



GUID Conflict Example



Location
GUID: XYZ



Location
GUID: ABC



Wrong GUID on Object

- There will be a conflict on Code and Description (or other unique keys) if cannot find GUID.

```
Load started at 2018-06-14 09:52:50
WARNING: Unique Index conflict. User.CTLoc ICCLOC01 ICC Training Location 01 0AC352C7-A85B-4F56-9A71-6E20841523D8
Conflict with: User.CTLoc 470 ICCLOC01 ICC Training Location 01 15666461-80D8-4C71-A506-490E593C9D4E
WARNING: Unique Index conflict. User.CTLoc ICCLOC01 ICC Training Location 01 0AC352C7-A85B-4F56-9A71-6E20841523D8
Conflict with: User.CTLoc 470 ICCLOC01 ICC Training Location 01 15666461-80D8-4C71-A506-490E593C9D4E
ERROR #5001: Unable to load stream C:\TrakCare\Perforce\custom_ccrs\us\ISCU\TRAK\TEST\misc\User\CTLoc\0AC352C7-
A85B-4F56-9A71-6E20841523D8.xml
> ERROR #5001: Unable to save item $lb("", "User.CTLoc"), 0AC352C7-A85B-4F56-9A71-6E20841523D8
> ERROR #5521: SQLError: SQLCODE=-119 %msg=Table 'SQLUser.CT_Loc', Constraint 'IndexUniqueCodeHospIdx', Field(s)
CTLOC_Code="ICCLOC01",CTLOC_Hospital_DR=12; failed unique check
> ERROR #5001: Unique Index conflict. User.CTLoc ICCLOC01 ICC Training Location 01 0AC352C7-A85B-4F56-9A71-6E20841523D8
> ERROR #5001: Conflict with: User.CTLoc 470 ICCLOC01 ICC Training Location 01 15666461-80D8-4C71-A506-490E593C9D4E
Load detected 1 errors in .296s.
```



How do we get these conflicts?

- GUID assigned on creation.
- Deleting layout and recreating “same” layout does not result in same object.
 - Create new object with new GUID, having same key as deleted one.
- Conflict caused when delete not included in CCR.
- **Fix instead of delete and recreate.**



Resolution: Wrong GUID on Object (cont.)

- Update target environment to match GUIDs from BASE.
- Use ^SSADMIN > Option 5 > Change Control > Option 7 > Replace GUID.
- Alternate option:

```
Set GUID = "correct GUID"
```

```
Set OID = $lb("id", "class")
```

```
Set wrongGUID = ^OBJ.GUID(1,OID)
```

```
Kill ^OBJ.GUID(0, wrongGUID)
```

```
Set ^OBJ.GUID(0, GUID) = OID
```

```
Set ^OBJ.GUID(1,OID) = GUID
```



Quiz: GUID conflicts

Question:

Deleting and recreating an object is a likely cause of GUID conflict when moving between environments. True or False?

Answer:

True. This will create a new object (with a new GUID), having the same key as an existing one.



Summary

- What are the key points for this module?

