WWRUG13

Sharing Tools, Technology and Training

Definition Synchronization

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Agenda

- ▶ What is a definition file?
- ▶ Why synchronize your definitions?
- ▶ Different ways/tools to synchronize definitions
- ▶ Why create a new set of tools to do this?
- ▶ Export definitions RRR|ExportDef
- ▶ Compare definitions and create delta-definition files RRR|DefDiff
- ▶ Import delta-definition files RRR|ImportDef
- ▶ Delete surplus objects from your target server RRR|DeleteObject
- ▶ Restore your production system to a previous state
- ▶ Other tools for your upgrades

What can a Definition File Contain

- ▶ Your application, forms and business rules
  - Forms
  - Filters
  - Escalations
  - …
- ▶ Everything
  - Base objects
  - Custom objects
  - Overlays
- ▶ No data (typically)
  - Except for some configuration data when exporting deployable applications

Why Synchronize Definitions

- ► Make a the production and development system identical before you start developing

- ► Make sure no one else changed anything in production while you were developing

- ► Get your changes from DEV to TEST and then to PROD

- ► Revert to a previous state (if you have a backup DEF-file)

- ► Compare a system with an old version (if you have a DEF-file)

- ► …

Getting your Development Changes to Production

▶ **There are several tools that claim to do this**

   - Migrator, Panacea, ARSmarts, …

▶ **ARAdmin/DevStudio (export DEF + import DEF)**

   - The above tools have, at some point at least (migrator), cost money

   - This was the only way before the above tools existed

   - I became very good at the process, but …

      ▪ Export to DEF problems (especially of complete ITSM systems):

        – It takes a lot of time, it times out, or bogs down your server or pc

      ▪ Import DEF problems:

        – The error report is extremely hard to use if you get more than one or two errors

Why did I create a new set of tools to do this?

- ▶ I wanted to use the old and very dependable DEF export/import technique

- ▶ I wanted to be able to do it on large systems (ITSM…)

- ▶ I wanted to migrate changed objects only, skipping any object that did not really need an update

- ▶ Make it easy to find deleted objects so they can be deleted in the target as well

- ▶ Create a full DEF backup of my target before migration

- ▶ Create a delta DEF backup of changed/deleted objects before migration

- ▶ Be able to use full DEF exports to verify that everything was migrated

- ▶ Get better error handling and error messages

RRR|ExportDef – Export Complete DEF-files from DEV and PROD

- ► Can handle any number of objects as small chunks are exported instead of everything at once (DevStudio)

- ► If your system is not too big, DevStudio can be used instead

```
C:\def>rrrExportDef.exe dev 0 Demo PROMPT DEV.def
Please enter password:*****
Exported   190 regular forms
Exported    40 dialog forms
Exported    65 view forms
Exported    22 vendor forms
Exported    20 join forms
Exported   957 filters
Exported  3217 active links
Exported   155 char menus
Exported    38 escalations
Exported    53 images
Exported   290 guide containers
Exported    26 fltrguide containers
Exported    10 app containers
Exported     0 packlist containers
Exported     4 webservice containers
C:\def>rrrExportDef.exe prod 0 Demo PROMPT PROD.def
…
```

RRR|DefDiff – Create Delta/Backup DEF-files

- ► This tool can even compare DEF-files from different versions of the AR System
- ► The output consists of a number of small DEF-files and a diff list

```
C:\def>dir *.def
21M        PROD.def
21M        DEV.def

C:\def>rrrDefDiff DEV.def PROD.def
diff-object     form       wwrug13-test
source-only     actl       wwrug13-test-button1
source-only     actl       wwrug13-test-button4
source-only     actl       wwrug13-test-button5
target-only     actl       wwrug13-test-button1-WRONGNAME
target-only     actl       wwrug13-test-button2
TOTAL diff-object 1
TOTAL source-only 3
TOTAL target-only 2

C:\def>dir *.def
21M        PROD.def
1.2K       PROD-backup-delete.def
2.3K       PROD-backup-diffobj.def
21M        DEV.def
1.8K       DEV-import-newobj.def
2.7K       DEV-import-diffobj.def
```

RRR|ImportDef - Import Delta DEF-files

▶ You can just as well use DevStudio to import, but the error messages might be harder to connect to the right object in the DEF-file

```
C:\def>rrrImportDef prod 0 Demo PROMPT DEV-import-diffobj.def
Total of 1 objects in def-file, 1 imported, 0 failed

C:\def>rrrImportDef prod 0 Demo PROMPT DEV-import-newobj.def
Total of 3 objects in def-file, 3 imported, 0 failed
```

RRR|DeleteObjects – Delete Objects Not Needed

► It has always been difficult to find and delete objects that has been removed from an application (or renamed)

```
C:\def>rrrDeleteObject –d PROD-backup-delete.def prod 0 Demo PROMPT
Total to delete=2, deleted=2, failed=0
```

Revert Definitions to Previous State

▶ It has always been difficult to find and delete objects that has been removed or renamed

```
C:\def>rrrDeleteObject -d DEV-import-newobj.def prod 0 Demo PROMPT
Total to delete=3, deleted=3, failed=0

C:\def>rrrImportDef prod 0 Demo PROMPT PROD-backup-delete.def
Total of 2 objects in def-file, 2 imported, 0 failed

C:\def>rrrImportDef prod 0 Demo PROMPT PROD-backup-diffobj.def
Total of 1 objects in def-file, 1 imported, 0 failed
```

Can you Depend on these Tools to Work as Designed?

- ► The Import/Export functionality use the very basic API-calls ARExport() and ARImport() that will have your server produce/interpret the DEF-file data.

- ► In other words – the DEF-files are generated and read by your AR Server, not the RRR programs. If you trust your AR Server, you will be fine.

- ► Potential future problems that I can see (only RRR|ExportDef)
  - BMC introduced new object types in addition to FORM, ACTL, FLTR etc that RRR|ExportDef does not know about – these objects will be missed

Please perform database backups before you upgrade your servers anyway!!!

Other Tools for your Upgrades – RRR|DefFieldDiff

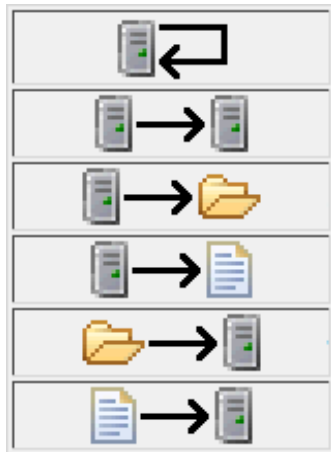► Helps you find and plan for data differences between application versions (DEF-files)

`C:\def>rrrDefFieldDiff DEV.def PROD.def FieldDiff.xls`

	Form	FieldID	Datatype	Name	Length	Comment	SourceEn	TargetEn
2	HD	600036025	CHAR	IS Ansv Inköpare	16			
3	HD	600036026	CHAR	IS Ansv Inköpare Namn	64			
4	HD	600036027	TIME	IS Sista rörelse				
5	HD Historik	536870944	ENUM => CHAR	Radera Ärendet => Direktf1	=> 32		Ja/Nej	Yes/No
6	HD Historik	536870944	ENUM => CHAR	Radera Ärendet => Direktf1	=> 32		Ja/Nej	Yes/No
7	HD Historik	536870944	ENUM => CHAR	Radera Ärendet => Direktf1	=> 32		Ja/Nej	Yes/No
8	HD Historik	536870944	ENUM => CHAR	Radera Ärendet => Direktf1	=> 32		Ja/Nej	Yes/No
9	HD Historik	536870945	CHAR	Orsak till radering => Avskr1	128 => 32			
10	HD Historik	536870945	CHAR	Orsak till radering => Avskr1	128 => 32			
11	HD Historik	536870947	TIME => CHAR	Raderad => Produkt1	=> 32			
12	HD Historik	536870947	TIME => CHAR	Raderad => Produkt1	=> 32			
13	HD Historik	536870947	TIME => CHAR	Raderad => Produkt1	=> 32			
14	HD Historik	536870948	=> CHAR	=> Produkt4	=> 32	New field in target def!		
15	HD Historik	536870977	=> ENUM	=> Radera Ärendet		New field in target def!		Ja/Nej
16	HD Historik	536870949	=> CHAR	=> Produkt2	=> 32	New field in target def!		
17	HD Historik	536870950	CHAR	Container2 => Produkt3	16 => 32	Field data length differ!		
18	HD Historik	536870950	CHAR	Container2 => Produkt3	16 => 32	Field names differ!		
19	HD Historik	536870951	=> CHAR	=> Produkt5	=> 32	New field in target def!		

Comment dropdown options:
- Sort Ascending
- Sort Descending
- (All)
- (Top 10...)
- (Custom...)
- Field data length differ!
- Field data types differ!
- Field does not exist in target def!
- Field names differ!
- **Field selection values differ!**
- Form does not exist in target def!
- Form has been renamed!
- New field in target def!
- New form in target def!

Other Tools for your Upgrades – RRR|Chive

- ▶ Backup data to ARX-files

- ▶ Create scripts to synchronize foundation data between servers and/or ARX-files

- ▶ Do very fast and accurate Delta Data Migrations between your production environment and a staging server

- ▶ Use the online configurator to create your configuration files

```
C:\def>rrrChive myconfig.cfg
```

Question/Discussions

- How do you synchronize your environments?

- Will you try this at home?

Wrap-up

- Misi Mladoniczky (miz@rrr.se)

- RRR Scandinavia AB

- You can download and access all the tools and utilities discussed from our web site http://rrr.se

- Come and visit us in the WWRUG technology showcase!