BrM 5.2.2 Database Conversion

BrMUG 2015

Park City, Utah

Significant Changes

- GUIDs
  - Globally Unique Identifier
  - Key fields replaced in DB with GUID field

- English Units Database
  - All units in DB are English based
  - Still able to display Metric if needed

GUIDS

- Globally Unique Identifier

- Randomly Generated Number

- All old fields still exist!

GUIDS Example

Column Name	Data Type	Allow Nulls
BRKEY	varchar(15)	☐
INSPKEY	varchar(4)	☐
ELEM_KEY	numeric(4, 0)	☐
ELEM_PARENT_KEY	numeric(4, 0)	☐
ENVKEY	numeric(1, 0)	☐
STRUNITKEY	numeric(4, 0)	☐
ELEM_GRANDPARENT_KEY	numeric(4, 0)	☐
ELEM_QUANTITY	float	☐
ELEM_SCALE_FACTOR	float	☑
ELEM_PCTSTATE1	float	☐
ELEM_PCTSTATE2	float	☐
ELEM_PCTSTATE3	float	☐
ELEM_PCTSTATE4	float	☐
ELEM_QTYSTATE1	float	☐
ELEM_QTYSTATE2	float	☐
ELEM_QTYSTATE3	float	☐
ELEM_QTYSTATE4	float	☐
ELEM_DESC	varchar(255)	☑
ELEM_CREATEDATETIME	datetime	☑
ELEM_CREATEUSERKEY	varchar(4)	☑
ELEM_MODTIME	datetime	☑
ELEM_MODUSERKEY	varchar(4)	☑
ELEM_DOCREFKEY	varchar(255)	☑
ELEM_NOTES	varchar(2000)	☑

Column Name	Data Type	Allow Nulls
PON_ELEM_INSP_GD	varchar(32)	☐
BRKEY	varchar(15)	☑
INSPKEY	varchar(4)	☑
ELEM_KEY	numeric(4, 0)	☑
ELEM_PARENT_KEY	numeric(4, 0)	☑
ENVKEY	numeric(1, 0)	☑
STRUNITKEY	numeric(4, 0)	☑
ELEM_GRANDPARENT_KEY	numeric(4, 0)	☑
ELEM_QUANTITY	float	☐
ELEM_SCALE_FACTOR	float	☑
ELEM_PCTSTATE1	float	☐
ELEM_PCTSTATE2	float	☐
ELEM_PCTSTATE3	float	☐
ELEM_PCTSTATE4	float	☐
ELEM_QTYSTATE1	float	☐
ELEM_QTYSTATE2	float	☐
ELEM_QTYSTATE3	float	☐
ELEM_QTYSTATE4	float	☐
ELEM_DESC	varchar(255)	☑
ELEM_CREATEDATETIME	datetime	☑
ELEM_CREATEUSERKEY	varchar(4)	☑
ELEM_MODTIME	datetime	☑
ELEM_MODUSERKEY	varchar(4)	☑
ELEM_DOCREFKEY	varchar(255)	☑
ELEM_NOTES	varchar(3999)	☑
PON_ELEM_INSP_LB	varchar(50)	☑
PON_ELEM_DEFS_GD	varchar(32)	☐
PON_ENVT_DEFS_GD	varchar(32)	☐
INSPEVNT_GD	varchar(32)	☐
STRUCTURE_UNIT_GD	varchar(32)	☐
PARENT_PON_ELEM_INSP_GD	varchar(32)	☑
BRIDGE_GD	varchar(32)	☐

Views To The Rescue

- Added views that mimic 5.2.1 tables

- Views for following tables
  - BRIDGE
  - INSPEVNT
  - PON_ELEM_INSP
  - ROADWAY
  - STRUCTUNIT

English Based Units

- All unit fields converted to English

- Conversion done through the PAIRCODE
  - Links to METRIC_ENGLISH field

- No going back
  - Check your PAIRCODES!

Script Based Options

- Ability to change what script does

- Each option has different options

- No going back
  - Verify your options!

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www.AASHTOWareBridge.com

Script Based Options

```sql
-- Turn on or off parts of the upgrade. Please refer to documents for more details.
INSERT INTO PON_GLOB_VAR (VARI, VAR_VALUE) VALUES ('ARCHIVE_PON_ELEM_INSP', 'DEFAULT'); -- DEFAULT | ALWAYS | NEVER
INSERT INTO PON_GLOB_VAR (VARI, VAR_VALUE) VALUES ('INSERT_STANDARD_BENEFITS_ACTIONS', 'DEFAULT'); -- DEFAULT | SKIP
INSERT INTO PON_GLOB_VAR (VARI, VAR_VALUE) VALUES ('CONVERT_METRIC_TO_ENGLISH', 'ON_(ONLY_COLUMNS_IN_PON_DICT)'); --
INSERT INTO PON_GLOB_VAR (VARI, VAR_VALUE) VALUES ('FORWARD_ELEMS_FOR_BLANK_INSP', 'ON'); -- ON | OFF

-- Turn on or off parts of the scripts. These will cause scripts to fail and are to be used for debugging.
INSERT INTO PON_GLOB_VAR (VARI, VAR_VALUE) VALUES ('PCB', 1); -- Pre-Clean up
INSERT INTO PON_GLOB_VAR (VARI, VAR_VALUE) VALUES ('TSC', 1); -- Schema update/creation.
INSERT INTO PON_GLOB_VAR (VARI, VAR_VALUE) VALUES ('PUP', 1); -- Grant 'PONTISUSER' permissions to new tables.
INSERT INTO PON_GLOB_VAR (VARI, VAR_VALUE) VALUES ('DDV', 1); -- Default Data verification.
INSERT INTO PON_GLOB_VAR (VARI, VAR_VALUE) VALUES ('FDV', 1); -- Force Set Default Data.
INSERT INTO PON_GLOB_VAR (VARI, VAR_VALUE) VALUES ('SUI', 1); -- Index update/creation.
INSERT INTO PON_GLOB_VAR (VARI, VAR_VALUE) VALUES ('SPK', 1); -- Primary Key creation.
INSERT INTO PON_GLOB_VAR (VARI, VAR_VALUE) VALUES ('SFK', 1); -- Foreign Key creation.
INSERT INTO PON_GLOB_VAR (VARI, VAR_VALUE) VALUES ('SVW', 1); -- Views creation.
INSERT INTO PON_GLOB_VAR (VARI, VAR_VALUE) VALUES ('STG', 1); -- Triggers creation.
INSERT INTO PON_GLOB_VAR (VARI, VAR_VALUE) VALUES ('PDR', 1); -- Procedures creation.
INSERT INTO PON_GLOB_VAR (VARI, VAR_VALUE) VALUES ('FNC', 1); -- Functions creation.
INSERT INTO PON_GLOB_VAR (VARI, VAR_VALUE) VALUES ('PCA', 1); -- Post-Clean up.
```

BrM

Script Checks

- Pre-migration checks to validate data

- Will give suggestions for corrections

- Scripts have not completed if checks hit!

Script Checks

```
Msg 50000, Level 16, State 1, Line 42
!!! SCRIPTS STOPPED DUE TO CUSTOM OBJECTS EXISTING THAT WOULD PREVENT SUCCESSFUL UPGRADE. !!!
Errors will occur during the update process for BRM522RC2. Due to the switch to GUID, objects t
ALTER TABLE BMSROCK_HEADER DROP CONSTRAINT FK_BMSROCK_HEADER_BRIDGE; -- Execute this statement
ALTER TABLE BMSORGSTR_HEADER DROP CONSTRAINT FK_BMSORGSTR_HEADER_BRIDGE; -- Execute this staten
ALTER TABLE BMS_RATG_EVNT_PUBD DROP CONSTRAINT FK_BMS_RATG_EVNT_PUBD_BRIDGE; -- Execute this st
ALTER TABLE BMS_CBI_2_DAY_HIST DROP CONSTRAINT FK_BMS_CBI_2_DAY_HIST_PON_APP_USERS; -- Execute
ALTER TABLE BMSSCPEV_HEADER DROP CONSTRAINT FK_BMSSCPEV_HEADER_BRIDGE; -- Execute this statemen
ALTER TABLE BMSSNDEL_HEADER DROP CONSTRAINT FK_BMSSNDEL_HEADER_BRIDGE; -- Execute this statemen
ALTER TABLE PROCESS_REPORT DROP CONSTRAINT FK_PROCESS_REPORT_PON_REPORT_REGISTER; -- Execute th
ALTER TABLE BMS_ST_SPEC_EQ DROP CONSTRAINT FK_BMS_ST_SPEC_EQ_BRIDGE; -- Execute this statement
ALTER TABLE BMS_ST_SPEC_INSP DROP CONSTRAINT FK_BMS_ST_SPEC_INSP; -- Execute this statement bef
ALTER TABLE BMS_RATG_EVNT_HST DROP CONSTRAINT FK_BMS_RATG_EVNT_HST_BRIDGE; -- Execute this stat
ALTER TABLE USERUSERS DROP CONSTRAINT FK_USERUSERS_PON_APP_USERS; -- Execute this statement bef
ALTER TABLE BMSBRDET_HEADER DROP CONSTRAINT FK_BMSBRDET_HEADER_BRIDGE; -- Execute this statemen
!!! SCRIPTS STOPPED DUE TO CUSTOM OBJECTS EXISTING THAT WOULD PREVENT SUCCESSFUL UPGRADE. !!!
```

ERD Diagram

- ERD diagram for 5.2.2 DB

- Fully updated for 5.2.2 database

- Included with the documentation

ERD Diagram

Questions

- **Website:** www.aashtowarebridge.com

- **JIRA:** https://bridgeware.atlassian.net/

- **Email:** BrM@bentley.com