127.0.0.1,13001 Documentation

MidtermDatabase

Table of Contents

📇 *127.0.0.1,13001*

Databases (1)

- 🗄 MidtermDatabase

Server Properties

Property	Value
Product	Microsoft SQL Server
Version	15.0.4236.7
Language	English
Platform	NT x64
Edition	Developer Edition (64-bit)
Engine Edition	3 (Enterprise)
Processors	4
OS Version	6.2 (9200)
Physical Memory	10225
Is Clustered	False
Root Directory	C:\
Collation	SQL_Latin1_General_CP1_CI_AS

Server Settings

Property	Value
Default data file path	/var/opt/mssql/data/
Default backup file path	/var/opt/mssql/backup/
Default log file path	/var/opt/mssql/log/
Recovery Interval (minutes)	0
Default index fill factor	0
Default backup media retention	0
Compress Backup	False

Advanced Server Settings

Property	Value
Locks	0
Nested triggers enabled	True
Allow triggers to fire others	True
Default language	English

Network packet size	4096
Default fulltext language LCID	1033
Two-digit year cutoff	2049
Remote login timeout	10
Cursor threshold	-1
Max text replication size	65536
Parallelism cost threshold	5
Max degree of parallelism	0
Min server memory	16
Max server memory	2147483647
Scan for startup procs	False
Transform noise words	False
CLR enabled	False
Blocked process threshold	0
Filestream access level	False
Optimize for ad hoc workloads	False
CLR strict security	True

🗀 User databases

Databases (1)

- ▤ MidtermDatabase

⊟ MidtermDatabase Database

Database Properties

Property	Value
SQL Server Version	Max
Compatibility Level	Max
Last backup time	-
Last log backup time	-
Creation date	Oct 29 2022
Users	4
Database Encryption Enabled	False
Database Encryption Algorithm	None
Database size	16.00 MB
Unallocated space	4.52 MB

Database Options

Property	Value
Compatibility Level	150
Database collation	SQL_Latin1_General_CP1_CI_AS
Restrict access	MULTI_USER
Is read-only	False
Auto close	False
Auto shrink	False
Database status	ONLINE
In standby	False
Cleanly shutdown	False
Supplemental logging enabled	False
Snapshot isolation state	OFF
Read committed snapshot on	False
Recovery model	FULL
Page verify option	CHECKSUM
Auto create statistics	True
Auto update statistics	True
Auto update statistics asynchronously	False
ANSI NULL default	False
ANSI NULL enabled	False
ANSI padding enabled	False

ANSI warnings enabled	False
Arithmetic abort enabled	False
Concatenating NULL yields NULL	False
Numeric roundabort enabled	False
Quoted Identifier On	False
Recursive triggers enabled	False
Close cursors on commit	False
Local cursors by default	False
Fulltext enabled	True
Trustworthy	False
Database chaining	False
Forced parameterization	False
Master key encrypted by server	False
Published	False
Subscribed	False
Merge published	False
Is distribution database	False
Sync with backup	False
Service broker GUID	3e8f05f4-add5-43a6-a563-3852d6896765
Service broker enabled	True
Log reuse wait	OLDEST_PAGE
Date correlation	False
CDC enabled	False
Encrypted	False
Honor broker priority	False
Default language	English
Default fulltext language LCID	1033
Nested triggers enabled	True
Transform noise words	False
Two-digit year cutoff	2049
Containment	NONE
Target recovery time	60
Database owner	sa

Files

Name	Type	Size	Maxsize	Autogrowth	File Name
MidtermDatabase	Data	8.00 MB	unlimited	64.00 MB	/var/opt/mssql/data/Midterm-Database.mdf
MidtermDatabase_log	Log	8.00 MB	2048.00 GB	64.00 MB	/var/opt/mssql/log/Midterm-Database_log.ldf

🖽 *Tables*

Objects

Name
Data.Membership
dbo.Nums
DbSecurity.UserAuthorization
HumanResources.Employee
Production.Category
Production.Product
Production.Supplier
Sales.Customer
Sales.OrderDetail
Sales.Orders
Sales.Shipper
Service.Feedback
SystemVersioned.Employee
Triggered.AuditTriggeredEmployeeHistory
Triggered.Employee

🖽 [Data].[Membership]

Properties

Property	Value
Collation	SQL_Latin1_General_CP1_CI_AS
Row Count (~)	0
Created	1:05:28 PM Saturday, October 29, 2022
Last Modified	1:05:32 PM Saturday, October 29, 2022

Columns

Key	Name	Data Type	Max Length (Bytes)	Nullability	Identity	Default
PK C	MemberID	[Udt].[udtSurrogateKeyInt]	4	NOT NULL	1 - 1	
	FirstName	[Udt].[udtFirstName]	50	NULL allowed		
	LastName	[Udt].[udtLastName]	70	NOT NULL		
	Phone	[Udt].[udtTelephoneNumber]	36	NULL allowed		
	Email	[dbo].[udtEmail]	100	NOT NULL		
	DiscountCode	[Udt].[udtPercentage]	8	NULL allowed		((0))
	BirthDay	[dbo].[udtBirthDate]	8	NULL allowed		(getdate())

Indexes

Key	Name	Key Columns	Unique
PK C	PK__Membersh__0CF04B38AF0D3873	MemberID	True

SQL Script

```
CREATE TABLE [Data].[Membership]
(
[MemberID] [Udt].[udtSurrogateKeyInt] NOT NULL IDENTITY(1, 1),
[FirstName] [Udt].[udtFirstName] MASKED WITH (FUNCTION = 'partial(1, "xxxxx", 1)')
NULL,
[LastName] [Udt].[udtLastName] MASKED WITH (FUNCTION = 'default()') NOT NULL,
[Phone] [Udt].[udtTelephoneNumber] MASKED WITH (FUNCTION = 'default()') NULL,
[Email] [dbo].[udtEmail] MASKED WITH (FUNCTION = 'email()') NOT NULL,
[DiscountCode] [Udt].[udtPercentage] MASKED WITH (FUNCTION = 'random(1, 100)') NULL
```

```
CONSTRAINT [DF_Number_Zero_2124314267] DEFAULT ((0)),
[BirthDay] [dbo].[udtBirthDate] MASKED WITH (FUNCTION = 'default()') NULL CONSTRAINT
[DF_YYYYMMDD_Today_867066557] DEFAULT (getdate())
) ON [PRIMARY]
GO
ALTER TABLE [Data].[Membership] ADD CONSTRAINT [PK__Membersh__0CF04B38AF0D3873] PRIMARY
KEY CLUSTERED  ([MemberID]) ON [PRIMARY]
GO
ALTER TABLE [Data].[Membership] ENABLE CHANGE_TRACKING
GO
```

Uses

[dbo].[udtBirthDate]

[dbo].[udtEmail]

[Udt].[udtFirstName]

[Udt].[udtLastName]

[Udt].[udtPercentage]

[Udt].[udtSurrogateKeyInt]

[Udt].[udtTelephoneNumber]

Data

▦ [dbo].[Nums]

Properties

Property	Value
Row Count (~)	0
Created	1:05:28 PM Saturday, October 29, 2022
Last Modified	1:05:32 PM Saturday, October 29, 2022

Columns

Key	Name	Data Type	Max Length (Bytes)	Nullability
PK/C	N	[Udt].[udtSurrogateKeyInt]	4	NOT NULL

Indexes

Key	Name	Key Columns	Unique
PK/C	PK_Nums	N	True

SQL Script

```
CREATE TABLE [dbo].[Nums]
(
[N] [Udt].[udtSurrogateKeyInt] NOT NULL
) ON [PRIMARY]
GO
ALTER TABLE [dbo].[Nums] ADD CONSTRAINT [PK_Nums] PRIMARY KEY CLUSTERED  ([N]) ON
[PRIMARY]
GO
ALTER TABLE [dbo].[Nums] ENABLE CHANGE_TRACKING
GO
```

Uses

[Udt].[udtSurrogateKeyInt]

⊞ [DbSecurity].[UserAuthorization]

Properties

Property	Value
Collation	SQL_Latin1_General_CP1_CI_AS
Row Count (~)	4
Created	1:05:28 PM Saturday, October 29, 2022
Last Modified	1:05:32 PM Saturday, October 29, 2022

Columns

Key	Name	Data Type	Max Length (Bytes)	Nullability	Identity	Default
PK C	UserAuthorizationId	[Udt].[udtSurrogateKeyInt]	4	NOT NULL	1 - 1	
	ClassTime	[dbo].[udtHHMM]	5	NULL allowed		('00:00')
	IndividualProject	[dbo].[udtProjectName]	120	NULL allowed		
	GroupMemberLastName	[Udt].[udtLastName]	70	NULL allowed		
	GroupMemberFirstName	[Udt].[udtFirstName]	50	NULL allowed		
	GroupName	[Udt].[udtName]	40	NULL allowed		
	DateAdded	[Udt].[udtTimeStampNow3]	7	NOT NULL		(getdate())
	DateOfLastUpdate	[Udt].[udtTimeStampNow3]	7	NOT NULL		(getdate())

Indexes

Key	Name	Key Columns	Unique
PK C	XPKUserAuthorization	UserAuthorizationId	True

Triggers

Name	ANSI Nulls On	Quoted Identifier On	On
tD_UserAuthorization	True	True	After Delete
tU_UserAuthorization	True	True	After Update

SQL Script

```sql
CREATE TABLE [DbSecurity].[UserAuthorization]
(
[UserAuthorizationId] [Udt].[udtSurrogateKeyInt] NOT NULL IDENTITY(1, 1),
[ClassTime] [dbo].[udtHHMM] NULL CONSTRAINT [DF_Time_HHMM_1670105324] DEFAULT
('00:00'),
[IndividualProject] [dbo].[udtProjectName] NULL,
[GroupMemberLastName] [Udt].[udtLastName] NULL,
[GroupMemberFirstName] [Udt].[udtFirstName] NULL,
[GroupName] [Udt].[udtName] NULL,
[DateAdded] [Udt].[udtTimeStampNow3] NOT NULL CONSTRAINT [DF_TimeStampNow_-
YYYYMMDDHHMMSS_891037028] DEFAULT (getdate()),
[DateOfLastUpdate] [Udt].[udtTimeStampNow3] NOT NULL CONSTRAINT [DF_TimeStampNow_-
YYYYMMDDHHMMSS_472584688] DEFAULT (getdate())
) ON [PRIMARY]
GO
CREATE TRIGGER [DbSecurity].[tD_UserAuthorization] ON [DbSecurity].[UserAuthorization]
FOR DELETE AS
/* erwin Builtin Trigger */
/* DELETE trigger on UserAuthorization */
BEGIN
  DECLARE  @errno    int,
           @severity int,
           @state    int,
           @errmsg  varchar(255)
    /* erwin Builtin Trigger */
    /* DbSecurity.UserAuthorization  Sales.OrderDetail on parent delete no action */
    /* ERWIN_RELATION:CHECKSUM="0009855b", PARENT_OWNER="DbSecurity", PARENT_-
TABLE="UserAuthorization"
    CHILD_OWNER="Sales", CHILD_TABLE="OrderDetail"
    P2C_VERB_PHRASE="", C2P_VERB_PHRASE="",
    FK_CONSTRAINT="R_32", FK_COLUMNS="UserAuthorizationId" */
    IF EXISTS (
      SELECT * FROM deleted,Sales.OrderDetail
      WHERE
        /*  %JoinFKPK(Sales.OrderDetail,deleted," = "," AND") */
        Sales.OrderDetail.UserAuthorizationId = deleted.UserAuthorizationId
    )
    BEGIN
      SELECT @errno  = 30001,
             @errmsg = 'Cannot delete DbSecurity.UserAuthorization because Sales.Order-
Detail exists.'
      GOTO error
    END

    /* erwin Builtin Trigger */
    /* DbSecurity.UserAuthorization  Production.Category on parent delete no action */
    /* ERWIN_RELATION:CHECKSUM="00000000", PARENT_OWNER="DbSecurity", PARENT_-
TABLE="UserAuthorization"
    CHILD_OWNER="Production", CHILD_TABLE="Category"
    P2C_VERB_PHRASE="", C2P_VERB_PHRASE="",
    FK_CONSTRAINT="R_31", FK_COLUMNS="UserAuthorizationId" */
    IF EXISTS (
      SELECT * FROM deleted,Production.Category
```

```sql
      WHERE
        /*  %JoinFKPK(Production.Category,deleted," = "," AND") */
        Production.Category.UserAuthorizationId = deleted.UserAuthorizationId
    )
    BEGIN
      SELECT @errno  = 30001,
             @errmsg = 'Cannot delete DbSecurity.UserAuthorization because
Production.Category exists.'
      GOTO error
    END


    /* erwin Builtin Trigger */
    /* DbSecurity.UserAuthorization  Sales.Orders on parent delete no action */
    /* ERWIN_RELATION:CHECKSUM="00000000", PARENT_OWNER="DbSecurity", PARENT_-
TABLE="UserAuthorization"
    CHILD_OWNER="Sales", CHILD_TABLE="Orders"
    P2C_VERB_PHRASE="", C2P_VERB_PHRASE="",
    FK_CONSTRAINT="R_30", FK_COLUMNS="UserAuthorizationId" */
    IF EXISTS (
      SELECT * FROM deleted,Sales.Orders
      WHERE
        /*  %JoinFKPK(Sales.Orders,deleted," = "," AND") */
        Sales.Orders.UserAuthorizationId = deleted.UserAuthorizationId
    )
    BEGIN
      SELECT @errno  = 30001,
             @errmsg = 'Cannot delete DbSecurity.UserAuthorization because Sales.Orders
exists.'
      GOTO error
    END


    /* erwin Builtin Trigger */
    /* DbSecurity.UserAuthorization  Sales.Customer on parent delete no action */
    /* ERWIN_RELATION:CHECKSUM="00000000", PARENT_OWNER="DbSecurity", PARENT_-
TABLE="UserAuthorization"
    CHILD_OWNER="Sales", CHILD_TABLE="Customer"
    P2C_VERB_PHRASE="", C2P_VERB_PHRASE="",
    FK_CONSTRAINT="R_29", FK_COLUMNS="UserAuthorizationId" */
    IF EXISTS (
      SELECT * FROM deleted,Sales.Customer
      WHERE
        /*  %JoinFKPK(Sales.Customer,deleted," = "," AND") */
        Sales.Customer.UserAuthorizationId = deleted.UserAuthorizationId
    )
    BEGIN
      SELECT @errno  = 30001,
             @errmsg = 'Cannot delete DbSecurity.UserAuthorization because
Sales.Customer exists.'
      GOTO error
    END


    /* erwin Builtin Trigger */
    /* DbSecurity.UserAuthorization  HumanResources.Employee on parent delete no action
*/
    /* ERWIN_RELATION:CHECKSUM="00000000", PARENT_OWNER="DbSecurity", PARENT_-
```

```
TABLE="UserAuthorization"
    CHILD_OWNER="HumanResources", CHILD_TABLE="Employee"
    P2C_VERB_PHRASE="", C2P_VERB_PHRASE="",
    FK_CONSTRAINT="R_28", FK_COLUMNS="UserAuthorizationId" */
    IF EXISTS (
      SELECT * FROM deleted,HumanResources.Employee
      WHERE
        /*  %JoinFKPK(HumanResources.Employee,deleted," = "," AND") */
        HumanResources.Employee.UserAuthorizationId = deleted.UserAuthorizationId
    )
    BEGIN
      SELECT @errno  = 30001,
             @errmsg = 'Cannot delete DbSecurity.UserAuthorization because Human-
Resources.Employee exists.'
      GOTO error
    END


    /* erwin Builtin Trigger */
    /* DbSecurity.UserAuthorization  Production.Supplier on parent delete no action */
    /* ERWIN_RELATION:CHECKSUM="00000000", PARENT_OWNER="DbSecurity", PARENT_-
TABLE="UserAuthorization"
    CHILD_OWNER="Production", CHILD_TABLE="Supplier"
    P2C_VERB_PHRASE="", C2P_VERB_PHRASE="",
    FK_CONSTRAINT="R_27", FK_COLUMNS="UserAuthorizationId" */
    IF EXISTS (
      SELECT * FROM deleted,Production.Supplier
      WHERE
        /*  %JoinFKPK(Production.Supplier,deleted," = "," AND") */
        Production.Supplier.UserAuthorizationId = deleted.UserAuthorizationId
    )
    BEGIN
      SELECT @errno  = 30001,
             @errmsg = 'Cannot delete DbSecurity.UserAuthorization because
Production.Supplier exists.'
      GOTO error
    END

    /* erwin Builtin Trigger */
    /* DbSecurity.UserAuthorization  Production.Product on parent delete no action */
    /* ERWIN_RELATION:CHECKSUM="00000000", PARENT_OWNER="DbSecurity", PARENT_-
TABLE="UserAuthorization"
    CHILD_OWNER="Production", CHILD_TABLE="Product"
    P2C_VERB_PHRASE="", C2P_VERB_PHRASE="",
    FK_CONSTRAINT="R_26", FK_COLUMNS="UserAuthorizationId" */
    IF EXISTS (
      SELECT * FROM deleted,Production.Product
      WHERE
        /*  %JoinFKPK(Production.Product,deleted," = "," AND") */
        Production.Product.UserAuthorizationId = deleted.UserAuthorizationId
    )
    BEGIN
      SELECT @errno  = 30001,
             @errmsg = 'Cannot delete DbSecurity.UserAuthorization because
Production.Product exists.'
```

```
      GOTO error
    END


    /* erwin Builtin Trigger */
    /* DbSecurity.UserAuthorization  Sales.Shipper on parent delete no action */
    /* ERWIN_RELATION:CHECKSUM="00000000", PARENT_OWNER="DbSecurity", PARENT_-
TABLE="UserAuthorization"
    CHILD_OWNER="Sales", CHILD_TABLE="Shipper"
    P2C_VERB_PHRASE="", C2P_VERB_PHRASE="",
    FK_CONSTRAINT="R_25", FK_COLUMNS="UserAuthorizationId" */
    IF EXISTS (
      SELECT * FROM deleted,Sales.Shipper
      WHERE
        /*  %JoinFKPK(Sales.Shipper,deleted," = "," AND") */
        Sales.Shipper.UserAuthorizationId = deleted.UserAuthorizationId
    )
    BEGIN
      SELECT @errno  = 30001,
             @errmsg = 'Cannot delete DbSecurity.UserAuthorization because
Sales.Shipper exists.'
      GOTO error
    END


    /* erwin Builtin Trigger */
    RETURN
error:
   RAISERROR (@errmsg, -- Message text.
              @severity, -- Severity (0~25).
              @state) -- State (0~255).
    rollback transaction
END
GO
CREATE TRIGGER [DbSecurity].[tU_UserAuthorization] ON [DbSecurity].[UserAuthorization]
FOR UPDATE AS
/* erwin Builtin Trigger */
/* UPDATE trigger on UserAuthorization */
BEGIN
  DECLARE  @numrows int,
           @nullcnt int,
           @validcnt int,
           @insUserAuthorizationId Udt.udtSurrogateKeyInt,
           @errno   int,
           @severity int,
           @state    int,
           @errmsg  varchar(255)

  SELECT @numrows = @@rowcount
  /* erwin Builtin Trigger */
  /* DbSecurity.UserAuthorization  Sales.OrderDetail on parent update no action */
  /* ERWIN_RELATION:CHECKSUM="000a8b3b", PARENT_OWNER="DbSecurity", PARENT_TABLE="User-
Authorization"
    CHILD_OWNER="Sales", CHILD_TABLE="OrderDetail"
    P2C_VERB_PHRASE="", C2P_VERB_PHRASE="",
```

```
      FK_CONSTRAINT="R_32", FK_COLUMNS="UserAuthorizationId" */
  IF
    /* %ParentPK(" OR",UPDATE) */
    UPDATE(UserAuthorizationId)
  BEGIN
    IF EXISTS (
      SELECT * FROM deleted,Sales.OrderDetail
      WHERE
        /* %JoinFKPK(Sales.OrderDetail,deleted," = "," AND") */
        Sales.OrderDetail.UserAuthorizationId = deleted.UserAuthorizationId
    )
    BEGIN
      SELECT @errno  = 30005,
             @errmsg = 'Cannot update DbSecurity.UserAuthorization because Sales.Order-
Detail exists.'
      GOTO error
    END
  END

  /* erwin Builtin Trigger */
  /* DbSecurity.UserAuthorization  Production.Category on parent update no action */
  /* ERWIN_RELATION:CHECKSUM="00000000", PARENT_OWNER="DbSecurity", PARENT_TABLE="User-
Authorization"
    CHILD_OWNER="Production", CHILD_TABLE="Category"
    P2C_VERB_PHRASE="", C2P_VERB_PHRASE="",
    FK_CONSTRAINT="R_31", FK_COLUMNS="UserAuthorizationId" */
  IF
    /* %ParentPK(" OR",UPDATE) */
    UPDATE(UserAuthorizationId)
  BEGIN
    IF EXISTS (
      SELECT * FROM deleted,Production.Category
      WHERE
        /* %JoinFKPK(Production.Category,deleted," = "," AND") */
        Production.Category.UserAuthorizationId = deleted.UserAuthorizationId
    )
    BEGIN
      SELECT @errno  = 30005,
             @errmsg = 'Cannot update DbSecurity.UserAuthorization because
Production.Category exists.'
      GOTO error
    END
  END

  /* erwin Builtin Trigger */
  /* DbSecurity.UserAuthorization  Sales.Orders on parent update no action */
  /* ERWIN_RELATION:CHECKSUM="00000000", PARENT_OWNER="DbSecurity", PARENT_TABLE="User-
Authorization"
    CHILD_OWNER="Sales", CHILD_TABLE="Orders"
    P2C_VERB_PHRASE="", C2P_VERB_PHRASE="",
    FK_CONSTRAINT="R_30", FK_COLUMNS="UserAuthorizationId" */
  IF
    /* %ParentPK(" OR",UPDATE) */
    UPDATE(UserAuthorizationId)
```

```sql
  BEGIN
    IF EXISTS (
      SELECT * FROM deleted,Sales.Orders
      WHERE
        /*  %JoinFKPK(Sales.Orders,deleted," = "," AND") */
        Sales.Orders.UserAuthorizationId = deleted.UserAuthorizationId
    )
    BEGIN
      SELECT @errno  = 30005,
             @errmsg = 'Cannot update DbSecurity.UserAuthorization because Sales.Orders
exists.'
      GOTO error
    END
  END

  /* erwin Builtin Trigger */
  /* DbSecurity.UserAuthorization  Sales.Customer on parent update no action */
  /* ERWIN_RELATION:CHECKSUM="00000000", PARENT_OWNER="DbSecurity", PARENT_TABLE="User-
Authorization"
    CHILD_OWNER="Sales", CHILD_TABLE="Customer"
    P2C_VERB_PHRASE="", C2P_VERB_PHRASE="",
    FK_CONSTRAINT="R_29", FK_COLUMNS="UserAuthorizationId" */
  IF
    /* %ParentPK(" OR",UPDATE) */
    UPDATE(UserAuthorizationId)
  BEGIN
    IF EXISTS (
      SELECT * FROM deleted,Sales.Customer
      WHERE
        /*  %JoinFKPK(Sales.Customer,deleted," = "," AND") */
        Sales.Customer.UserAuthorizationId = deleted.UserAuthorizationId
    )
    BEGIN
      SELECT @errno  = 30005,
             @errmsg = 'Cannot update DbSecurity.UserAuthorization because
Sales.Customer exists.'
      GOTO error
    END
  END

  /* erwin Builtin Trigger */
  /* DbSecurity.UserAuthorization  HumanResources.Employee on parent update no action
*/
  /* ERWIN_RELATION:CHECKSUM="00000000", PARENT_OWNER="DbSecurity", PARENT_TABLE="User-
Authorization"
    CHILD_OWNER="HumanResources", CHILD_TABLE="Employee"
    P2C_VERB_PHRASE="", C2P_VERB_PHRASE="",
    FK_CONSTRAINT="R_28", FK_COLUMNS="UserAuthorizationId" */
  IF
    /* %ParentPK(" OR",UPDATE) */
    UPDATE(UserAuthorizationId)
  BEGIN
    IF EXISTS (
      SELECT * FROM deleted,HumanResources.Employee
```

```
          WHERE
            /*  %JoinFKPK(HumanResources.Employee,deleted," = "," AND") */
            HumanResources.Employee.UserAuthorizationId = deleted.UserAuthorizationId
        )
      BEGIN
        SELECT @errno  = 30005,
               @errmsg = 'Cannot update DbSecurity.UserAuthorization because Human-
Resources.Employee exists.'
        GOTO error
      END
  END

  /* erwin Builtin Trigger */
  /* DbSecurity.UserAuthorization  Production.Supplier on parent update no action */
  /* ERWIN_RELATION:CHECKSUM="00000000", PARENT_OWNER="DbSecurity", PARENT_TABLE="User-
Authorization"
     CHILD_OWNER="Production", CHILD_TABLE="Supplier"
     P2C_VERB_PHRASE="", C2P_VERB_PHRASE="",
     FK_CONSTRAINT="R_27", FK_COLUMNS="UserAuthorizationId" */
  IF
    /* %ParentPK(" OR",UPDATE) */
    UPDATE(UserAuthorizationId)
  BEGIN
    IF EXISTS (
      SELECT * FROM deleted,Production.Supplier
      WHERE
        /*  %JoinFKPK(Production.Supplier,deleted," = "," AND") */
        Production.Supplier.UserAuthorizationId = deleted.UserAuthorizationId
    )
    BEGIN
      SELECT @errno  = 30005,
             @errmsg = 'Cannot update DbSecurity.UserAuthorization because
Production.Supplier exists.'
      GOTO error
    END
  END

  /* erwin Builtin Trigger */
  /* DbSecurity.UserAuthorization  Production.Product on parent update no action */
  /* ERWIN_RELATION:CHECKSUM="00000000", PARENT_OWNER="DbSecurity", PARENT_TABLE="User-
Authorization"
     CHILD_OWNER="Production", CHILD_TABLE="Product"
     P2C_VERB_PHRASE="", C2P_VERB_PHRASE="",
     FK_CONSTRAINT="R_26", FK_COLUMNS="UserAuthorizationId" */
  IF
    /* %ParentPK(" OR",UPDATE) */
    UPDATE(UserAuthorizationId)
  BEGIN
    IF EXISTS (
      SELECT * FROM deleted,Production.Product
      WHERE
        /*  %JoinFKPK(Production.Product,deleted," = "," AND") */
        Production.Product.UserAuthorizationId = deleted.UserAuthorizationId
    )
```

```
    BEGIN
      SELECT @errno  = 30005,
             @errmsg = 'Cannot update DbSecurity.UserAuthorization because
Production.Product exists.'
      GOTO error
    END
  END


  /* erwin Builtin Trigger */
  /* DbSecurity.UserAuthorization  Sales.Shipper on parent update no action */
  /* ERWIN_RELATION:CHECKSUM="00000000", PARENT_OWNER="DbSecurity", PARENT_TABLE="User-
Authorization"
    CHILD_OWNER="Sales", CHILD_TABLE="Shipper"
    P2C_VERB_PHRASE="", C2P_VERB_PHRASE="",
    FK_CONSTRAINT="R_25", FK_COLUMNS="UserAuthorizationId" */
  IF
    /* %ParentPK(" OR",UPDATE) */
    UPDATE(UserAuthorizationId)
  BEGIN
    IF EXISTS (
      SELECT * FROM deleted,Sales.Shipper
      WHERE
        /*  %JoinFKPK(Sales.Shipper,deleted," = "," AND") */
        Sales.Shipper.UserAuthorizationId = deleted.UserAuthorizationId
    )
    BEGIN
      SELECT @errno  = 30005,
             @errmsg = 'Cannot update DbSecurity.UserAuthorization because
Sales.Shipper exists.'
      GOTO error
    END
  END



  /* erwin Builtin Trigger */
  RETURN
error:
   RAISERROR (@errmsg, -- Message text.
              @severity, -- Severity (0~25).
              @state) -- State (0~255).
    rollback transaction
END
GO
ALTER TABLE [DbSecurity].[UserAuthorization] ADD CONSTRAINT [XPKUserAuthorization]
PRIMARY KEY CLUSTERED  ([UserAuthorizationId]) ON [PRIMARY]
GO
```

Uses

[dbo].[udtHHMM]
[dbo].[udtProjectName]
[Udt].[udtFirstName]

[Udt].[udtLastName]
[Udt].[udtName]
[Udt].[udtSurrogateKeyInt]
[Udt].[udtTimeStampNow3]
DbSecurity

Used By

[HumanResources].[Employee]
[Production].[Category]
[Production].[Product]
[Production].[Supplier]
[Sales].[Customer]
[Sales].[OrderDetail]
[Sales].[Orders]
[Sales].[Shipper]

⊞ [HumanResources].[Employee]

Properties

Property	Value
Collation	SQL_Latin1_General_CP1_CI_AS
Row Count (~)	0
Created	1:05:28 PM Saturday, October 29, 2022
Last Modified	1:05:32 PM Saturday, October 29, 2022

Columns

Key	Name	Data Type	Max Length (Bytes)	Nullability	Identity	Default
PK C	EmployeeId	[Udt].[udtSurrogateKeyInt]	4	NOT NULL	1 - 1	
	EmployeeLastName	[Udt].[udtLastName]	70	NOT NULL		
	EmployeeFirstName	[Udt].[udtFirstName]	50	NOT NULL		
	EmployeeTitle	[Udt].[udtTitle]	18	NOT NULL		
	EmployeeTitleOfCourtesy	[Udt].[udtTitleOfCourtesy]	18	NOT NULL		
⊞	BirthDate	[dbo].[udtBirthDate]	8	NOT NULL		(getdate())
	HireDate	[Udt].[udtYYYYMMDD]	8	NOT NULL		
	EmployeeAddress	[Udt].[udtAddress]	50	NOT NULL		
	EmployeeCity	[Udt].[udtCity]	28	NULL allowed		
	EmployeeRegion	[Udt].[udtRegion]	60	NULL allowed		
	EmployeePostalCode	[Udt].[udtPostalCode]	10	NULL allowed		
	EmployeeCountry	[Udt].[udtCountry]	112	NOT NULL		
	EmployeePhoneNumber	[Udt].[udtTelephoneNumber]	36	NOT NULL		
FK	EmployeeManagerId	[Udt].[udtSurrogateKeyInt]	4	NULL allowed		
FK	UserAuthorizationId	[Udt].[udtSurrogateKeyInt]	4	NULL allowed		
	DateAdded	[Udt].[udtTimeStampNow3]	7	NOT		(getdate()

				NULL		)
	DateOfLastUpdate	[Udt].[udtTimeStampNow3]	7	NOT NULL		(getdate())

Indexes

Key	Name	Key Columns	Unique
PK C	PK_Employees	EmployeeId	True

Triggers

Name	ANSI Nulls On	Quoted Identifier On	On
tD_Employee	True	True	After Delete
TI_HumanResources_Employee_LastUpdated	True	True	After Update

Check Constraints

Name	On Column	Constraint
CHK_Birthdate	BirthDate	([BirthDate]>='1900-01-01' AND [BirthDate]<=getdate())

Foreign Keys

Name	Columns
FK_Employees_Employees	EmployeeManagerId->[HumanResources].[Employee].[EmployeeId]
R_28	UserAuthorizationId->[DbSecurity].[UserAuthorization].[UserAuthorizationId]

SQL Script

```
CREATE TABLE [HumanResources].[Employee]
(
[EmployeeId] [Udt].[udtSurrogateKeyInt] NOT NULL IDENTITY(1, 1),
[EmployeeLastName] [Udt].[udtLastName] NOT NULL,
[EmployeeFirstName] [Udt].[udtFirstName] NOT NULL,
[EmployeeTitle] [Udt].[udtTitle] NOT NULL,
[EmployeeTitleOfCourtesy] [Udt].[udtTitleOfCourtesy] NOT NULL,
[BirthDate] [dbo].[udtBirthDate] NOT NULL CONSTRAINT [DF_YYYYMMDD_Today_48485300]
DEFAULT (getdate()),
[HireDate] [Udt].[udtYYYYMMDD] NOT NULL,
[EmployeeAddress] [Udt].[udtAddress] NOT NULL,
[EmployeeCity] [Udt].[udtCity] NULL,
[EmployeeRegion] [Udt].[udtRegion] NULL,
[EmployeePostalCode] [Udt].[udtPostalCode] NULL,
[EmployeeCountry] [Udt].[udtCountry] NOT NULL,
[EmployeePhoneNumber] [Udt].[udtTelephoneNumber] NOT NULL,
```

```
[EmployeeManagerId] [Udt].[udtSurrogateKeyInt] NULL,
[UserAuthorizationId] [Udt].[udtSurrogateKeyInt] NULL,
[DateAdded] [Udt].[udtTimeStampNow3] NOT NULL CONSTRAINT [DF_TimeStampNow_-
YYYYMMDDHHMMSS_822173557] DEFAULT (getdate()),
[DateOfLastUpdate] [Udt].[udtTimeStampNow3] NOT NULL CONSTRAINT [DF_TimeStampNow_-
YYYYMMDDHHMMSS_187641014] DEFAULT (getdate())
) ON [PRIMARY]
GO
CREATE TRIGGER [HumanResources].[tD_Employee] ON [HumanResources].[Employee] FOR DELETE
AS
/* erwin Builtin Trigger */
/* DELETE trigger on Employee */
BEGIN
  DECLARE  @errno    int,
           @severity int,
           @state    int,
           @errmsg  varchar(255)
    /* erwin Builtin Trigger */
    /* HumanResources.Employee  HumanResources.Employee on parent delete no action */
    /* ERWIN_RELATION:CHECKSUM="0005af20", PARENT_OWNER="HumanResources", PARENT_-
TABLE="Employee"
    CHILD_OWNER="HumanResources", CHILD_TABLE="Employee"
    P2C_VERB_PHRASE="", C2P_VERB_PHRASE="",
    FK_CONSTRAINT="FK_Employees_Employees", FK_COLUMNS="EmployeeManagerId" */
    IF EXISTS (
      SELECT * FROM deleted,HumanResources.Employee
      WHERE
        /*  %JoinFKPK(HumanResources.Employee,deleted," = "," AND") */
        HumanResources.Employee.EmployeeManagerId = deleted.EmployeeId
    )
    BEGIN
      SELECT @errno  = 30001,
             @errmsg = 'Cannot delete HumanResources.Employee because Human-
Resources.Employee exists.'
      GOTO error
    END

    /* erwin Builtin Trigger */
    /* HumanResources.Employee  Sales.Orders on parent delete no action */
    /* ERWIN_RELATION:CHECKSUM="00000000", PARENT_OWNER="HumanResources", PARENT_-
TABLE="Employee"
    CHILD_OWNER="Sales", CHILD_TABLE="Orders"
    P2C_VERB_PHRASE="", C2P_VERB_PHRASE="",
    FK_CONSTRAINT="FK_Order_Employee", FK_COLUMNS="EmployeeId" */
    IF EXISTS (
      SELECT * FROM deleted,Sales.Orders
      WHERE
        /*  %JoinFKPK(Sales.Orders,deleted," = "," AND") */
        Sales.Orders.EmployeeId = deleted.EmployeeId
    )
    BEGIN
      SELECT @errno  = 30001,
             @errmsg = 'Cannot delete HumanResources.Employee because Sales.Orders
exists.'
      GOTO error
```

```
    END

    /* erwin Builtin Trigger */
    /* DbSecurity.UserAuthorization  HumanResources.Employee on child delete no action
*/
    /* ERWIN_RELATION:CHECKSUM="00000000", PARENT_OWNER="DbSecurity", PARENT_-
TABLE="UserAuthorization"
    CHILD_OWNER="HumanResources", CHILD_TABLE="Employee"
    P2C_VERB_PHRASE="", C2P_VERB_PHRASE="",
    FK_CONSTRAINT="R_28", FK_COLUMNS="UserAuthorizationId" */
    IF EXISTS (SELECT * FROM deleted,DbSecurity.UserAuthorization
      WHERE
        /* %JoinFKPK(deleted,DbSecurity.UserAuthorization," = "," AND") */
        deleted.UserAuthorizationId = DbSecurity.UserAuthorization.UserAuthorizationId
AND
        NOT EXISTS (
          SELECT * FROM HumanResources.Employee
          WHERE
           /* %JoinFKPK(HumanResources.Employee,DbSecurity.UserAuthorization," = ","
AND") */
           HumanResources.Employee.UserAuthorizationId = DbSecurity.User-
Authorization.UserAuthorizationId
        )
    )
    BEGIN
      SELECT @errno  = 30010,
             @errmsg = 'Cannot delete last HumanResources.Employee because Db-
Security.UserAuthorization exists.'
      GOTO error
    END

    /* erwin Builtin Trigger */
    /* HumanResources.Employee  HumanResources.Employee on child delete no action */
    /* ERWIN_RELATION:CHECKSUM="00000000", PARENT_OWNER="HumanResources", PARENT_-
TABLE="Employee"
    CHILD_OWNER="HumanResources", CHILD_TABLE="Employee"
    P2C_VERB_PHRASE="", C2P_VERB_PHRASE="",
    FK_CONSTRAINT="FK_Employees_Employees", FK_COLUMNS="EmployeeManagerId" */
    IF EXISTS (SELECT * FROM deleted,HumanResources.Employee
      WHERE
        /* %JoinFKPK(deleted,HumanResources.Employee," = "," AND") */
        deleted.EmployeeManagerId = HumanResources.Employee.EmployeeId AND
        NOT EXISTS (
          SELECT * FROM HumanResources.Employee
          WHERE
           /* %JoinFKPK(HumanResources.Employee,HumanResources.Employee," = "," AND")
*/
           HumanResources.Employee.EmployeeManagerId = Human-
Resources.Employee.EmployeeId
        )
    )
    BEGIN
      SELECT @errno  = 30010,
             @errmsg = 'Cannot delete last HumanResources.Employee because Human-
Resources.Employee exists.'
      GOTO error
```

```sql
    END


    /* erwin Builtin Trigger */
    RETURN
error:
   RAISERROR (@errmsg, -- Message text.
              @severity, -- Severity (0~25).
              @state) -- State (0~255).
    rollback transaction
END
GO
CREATE TRIGGER [HumanResources].[TI_HumanResources_Employee_LastUpdated] ON [Human-
Resources].[Employee]
    AFTER UPDATE

  AS

  UPDATE
      HumanResources.[Employee]
  SET
      DateOfLastUpdate = GETDATE()
  FROM
      HumanResources.[Employee] as c
  INNER JOIN
      Inserted i
  ON c.EmployeeId = i.EmployeeId

GO
ALTER TABLE [HumanResources].[Employee] ADD CONSTRAINT [CHK_Birthdate] CHECK (([Birth-
Date]>='1900-01-01' AND [BirthDate]<=getdate()))
GO
ALTER TABLE [HumanResources].[Employee] ADD CONSTRAINT [PK_Employees] PRIMARY KEY
CLUSTERED  ([EmployeeId]) ON [PRIMARY]
GO
ALTER TABLE [HumanResources].[Employee] ADD CONSTRAINT [FK_Employees_Employees] FOREIGN
KEY ([EmployeeManagerId]) REFERENCES [HumanResources].[Employee] ([EmployeeId])
GO
ALTER TABLE [HumanResources].[Employee] ADD CONSTRAINT [R_28] FOREIGN KEY ([User-
AuthorizationId]) REFERENCES [DbSecurity].[UserAuthorization] ([UserAuthorizationId])
GO
ALTER TABLE [HumanResources].[Employee] ENABLE CHANGE_TRACKING
GO
```

Uses

[DbSecurity].[UserAuthorization]
[dbo].[udtBirthDate]
[Udt].[udtAddress]
[Udt].[udtCity]
[Udt].[udtCountry]
[Udt].[udtFirstName]
[Udt].[udtLastName]

[Udt].[udtPostalCode]
[Udt].[udtRegion]
[Udt].[udtSurrogateKeyInt]
[Udt].[udtTelephoneNumber]
[Udt].[udtTimeStampNow3]
[Udt].[udtTitle]
[Udt].[udtTitleOfCourtesy]
[Udt].[udtYYYYMMDD]
HumanResources

Used By

[Sales].[Orders]
[JsonOutput].[uvw_HumanResourcesEmployee]
[JsonOutput].[MongoOrder]

🏷️ [Production].[Category]

Properties

Property	Value
Collation	SQL_Latin1_General_CP1_CI_AS
Row Count (~)	0
Created	1:05:28 PM Saturday, October 29, 2022
Last Modified	1:05:32 PM Saturday, October 29, 2022

Columns

Key	Name	Data Type	Max Length (Bytes)	Nullability	Identity	Default
PK C	CategoryId	[Udt].[udtSurrogateKeyInt]	4	NOT NULL	1 - 1	
	CategoryName	[Udt].[udtCategoryName]	30	NOT NULL		
	Description	[Udt].[udtDescription]	500	NOT NULL		
FK	UserAuthorizationId	[Udt].[udtSurrogateKeyInt]	4	NULL allowed		
	DateAdded	[Udt].[udtTimeStampNow3]	7	NOT NULL		(getdate())
	DateOfLastUpdate	[Udt].[udtTimeStampNow3]	7	NOT NULL		(getdate())

Indexes

Key	Name	Key Columns	Unique
PK C	PK_Categories	CategoryId	True

Triggers

Name	ANSI Nulls On	Quoted Identifier On	On
tD_Category	True	True	After Delete
TI_Production_Category_LastUpdated	True	True	After Update

Foreign Keys

Name	Columns

R_31	UserAuthorizationId->[DbSecurity].[UserAuthorization].[UserAuthorizationId]

SQL Script

```
CREATE TABLE [Production].[Category]
(
[CategoryId] [Udt].[udtSurrogateKeyInt] NOT NULL IDENTITY(1, 1),
[CategoryName] [Udt].[udtCategoryName] NOT NULL,
[Description] [Udt].[udtDescription] NOT NULL,
[UserAuthorizationId] [Udt].[udtSurrogateKeyInt] NULL,
[DateAdded] [Udt].[udtTimeStampNow3] NOT NULL CONSTRAINT [DF_TimeStampNow_-
YYYYMMDDHHMMSS_1039616390] DEFAULT (getdate()),
[DateOfLastUpdate] [Udt].[udtTimeStampNow3] NOT NULL CONSTRAINT [DF_TimeStampNow_-
YYYYMMDDHHMMSS_98421045] DEFAULT (getdate())
) ON [PRIMARY]
GO
CREATE TRIGGER [Production].[tD_Category] ON [Production].[Category] FOR DELETE AS
/* erwin Builtin Trigger */
/* DELETE trigger on Category */
BEGIN
  DECLARE  @errno   int,
           @severity int,
           @state    int,
           @errmsg  varchar(255)
    /* erwin Builtin Trigger */
    /* Production.Category  Production.Product on parent delete no action */
    /* ERWIN_RELATION:CHECKSUM="0002fa44", PARENT_OWNER="Production", PARENT_-
TABLE="Category"
    CHILD_OWNER="Production", CHILD_TABLE="Product"
    P2C_VERB_PHRASE="", C2P_VERB_PHRASE="",
    FK_CONSTRAINT="FK_Product_Category", FK_COLUMNS="CategoryId" */
    IF EXISTS (
      SELECT * FROM deleted,Production.Product
      WHERE
        /*  %JoinFKPK(Production.Product,deleted," = "," AND") */
        Production.Product.CategoryId = deleted.CategoryId
    )
    BEGIN
      SELECT @errno  = 30001,
             @errmsg = 'Cannot delete Production.Category because Production.Product
exists.'
      GOTO error
    END

    /* erwin Builtin Trigger */
    /* DbSecurity.UserAuthorization  Production.Category on child delete no action */
    /* ERWIN_RELATION:CHECKSUM="00000000", PARENT_OWNER="DbSecurity", PARENT_-
TABLE="UserAuthorization"
    CHILD_OWNER="Production", CHILD_TABLE="Category"
    P2C_VERB_PHRASE="", C2P_VERB_PHRASE="",
    FK_CONSTRAINT="R_31", FK_COLUMNS="UserAuthorizationId" */
    IF EXISTS (SELECT * FROM deleted,DbSecurity.UserAuthorization
      WHERE
```

```
        /* %JoinFKPK(deleted,DbSecurity.UserAuthorization," = "," AND") */
        deleted.UserAuthorizationId = DbSecurity.UserAuthorization.UserAuthorizationId
AND
        NOT EXISTS (
          SELECT * FROM Production.Category
          WHERE
            /* %JoinFKPK(Production.Category,DbSecurity.UserAuthorization," = "," AND")
*/
            Production.Category.UserAuthorizationId = DbSecurity.UserAuthorization.User-
AuthorizationId
        )
    )
    BEGIN
      SELECT @errno  = 30010,
             @errmsg = 'Cannot delete last Production.Category because DbSecurity.User-
Authorization exists.'
      GOTO error
    END


    /* erwin Builtin Trigger */
    RETURN
error:
   RAISERROR (@errmsg, -- Message text.
              @severity, -- Severity (0~25).
              @state) -- State (0~255).
    rollback transaction
END
GO
CREATE TRIGGER [Production].[TI_Production_Category_LastUpdated] ON
[Production].[Category]
    AFTER UPDATE

  AS

  UPDATE
      Production.[Category]
  SET
      DateOfLastUpdate = GETDATE()
  FROM
      Production.[Category] as c
  INNER JOIN
      Inserted i
  ON c.CategoryId = i.CategoryId

GO
ALTER TABLE [Production].[Category] ADD CONSTRAINT [PK_Categories] PRIMARY KEY
CLUSTERED  ([CategoryId]) ON [PRIMARY]
GO
ALTER TABLE [Production].[Category] ADD CONSTRAINT [R_31] FOREIGN KEY ([User-
AuthorizationId]) REFERENCES [DbSecurity].[UserAuthorization] ([UserAuthorizationId])
GO
ALTER TABLE [Production].[Category] ENABLE CHANGE_TRACKING
GO
```

Uses

[DbSecurity].[UserAuthorization]
[Udt].[udtCategoryName]
[Udt].[udtDescription]
[Udt].[udtSurrogateKeyInt]
[Udt].[udtTimeStampNow3]
Production

Used By

[Production].[Product]
[JsonOutput].[uvw_ProductionCategory]
[JsonOutput].[uvw_ProductionProduct]
[JsonOutput].[MongoOrderDetail]

📇 [Production].[Product]

Properties

Property	Value
Collation	SQL_Latin1_General_CP1_CI_AS
Row Count (~)	0
Created	1:05:28 PM Saturday, October 29, 2022
Last Modified	1:05:32 PM Saturday, October 29, 2022

Columns

Key	Name	Data Type	Max Length (Bytes)	Nullability	Identity	Default
PK C	ProductId	[Udt].[udtSurrogateKeyInt]	4	NOT NULL	1 - 1	
	ProductName	[Udt].[udtProductName]	60	NOT NULL		
FK	SupplierId	[Udt].[udtSurrogateKeyInt]	4	NOT NULL		
FK	CategoryId	[Udt].[udtSurrogateKeyInt]	4	NOT NULL		
📇	UnitPrice	[Udt].[udtCurrency]	8	NOT NULL		((0))
	Discontinued	[Udt].[udtFlagBit]	1	NOT NULL		((0))
FK	UserAuthorizationId	[Udt].[udtSurrogateKeyInt]	4	NULL allowed		
	DateAdded	[Udt].[udtTimeStampNow3]	7	NOT NULL		(getdate())
	DateOfLastUpdate	[Udt].[udtTimeStampNow3]	7	NOT NULL		(getdate())

Indexes

Key	Name	Key Columns	Unique
PK C	PK_Products	ProductId	True

Triggers

Name	ANSI Nulls On	Quoted Identifier On	On
tD_Product	True	True	After Delete

TI_Production_Product_LastUpdated	True	True	After Update

Check Constraints

Name	On Column	Constraint
CHK_Products_unitprice	UnitPrice	([UnitPrice]>=(0))

Foreign Keys

Name	Columns
FK_Product_Category	CategoryId->[Production].[Category].[CategoryId]
FK_product_supplier	SupplierId->[Production].[Supplier].[SupplierId]
R_26	UserAuthorizationId->[DbSecurity].[UserAuthorization].[UserAuthorizationId]

SQL Script

```
CREATE TABLE [Production].[Product]
(
[ProductId] [Udt].[udtSurrogateKeyInt] NOT NULL IDENTITY(1, 1),
[ProductName] [Udt].[udtProductName] NOT NULL,
[SupplierId] [Udt].[udtSurrogateKeyInt] NOT NULL,
[CategoryId] [Udt].[udtSurrogateKeyInt] NOT NULL,
[UnitPrice] [Udt].[udtCurrency] NOT NULL CONSTRAINT [DFT_Products_unitprice] DEFAULT
((0)),
[Discontinued] [Udt].[udtFlagBit] NOT NULL CONSTRAINT [DFT_Products_discontinued]
DEFAULT ((0)),
[UserAuthorizationId] [Udt].[udtSurrogateKeyInt] NULL,
[DateAdded] [Udt].[udtTimeStampNow3] NOT NULL CONSTRAINT [DF_TimeStampNow_-
YYYYMMDDHHMMSS_1118912117] DEFAULT (getdate()),
[DateOfLastUpdate] [Udt].[udtTimeStampNow3] NOT NULL CONSTRAINT [DF_TimeStampNow_-
YYYYMMDDHHMMSS_186481879] DEFAULT (getdate())
) ON [PRIMARY]
GO
CREATE TRIGGER [Production].[tD_Product] ON [Production].[Product] FOR DELETE AS
/* erwin Builtin Trigger */
/* DELETE trigger on Product */
BEGIN
  DECLARE  @errno   int,
           @severity int,
           @state    int,
           @errmsg  varchar(255)
    /* erwin Builtin Trigger */
    /* Production.Product  Sales.OrderDetail on parent delete no action */
    /* ERWIN_RELATION:CHECKSUM="0005b4a2", PARENT_OWNER="Production", PARENT_-
TABLE="Product"
    CHILD_OWNER="Sales", CHILD_TABLE="OrderDetail"
    P2C_VERB_PHRASE="", C2P_VERB_PHRASE="",
    FK_CONSTRAINT="R_23", FK_COLUMNS="ProductId" */
    IF EXISTS (
```

```sql
      SELECT * FROM deleted,Sales.OrderDetail
      WHERE
        /*  %JoinFKPK(Sales.OrderDetail,deleted," = "," AND") */
        Sales.OrderDetail.ProductId = deleted.ProductId
    )
    BEGIN
      SELECT @errno  = 30001,
             @errmsg = 'Cannot delete Production.Product because Sales.OrderDetail
exists.'
      GOTO error
    END


    /* erwin Builtin Trigger */
    /* DbSecurity.UserAuthorization  Production.Product on child delete no action */
    /* ERWIN_RELATION:CHECKSUM="00000000", PARENT_OWNER="DbSecurity", PARENT_-
TABLE="UserAuthorization"
    CHILD_OWNER="Production", CHILD_TABLE="Product"
    P2C_VERB_PHRASE="", C2P_VERB_PHRASE="",
    FK_CONSTRAINT="R_26", FK_COLUMNS="UserAuthorizationId" */
    IF EXISTS (SELECT * FROM deleted,DbSecurity.UserAuthorization
      WHERE
        /* %JoinFKPK(deleted,DbSecurity.UserAuthorization," = "," AND") */
        deleted.UserAuthorizationId = DbSecurity.UserAuthorization.UserAuthorizationId
AND
        NOT EXISTS (
          SELECT * FROM Production.Product
          WHERE
            /* %JoinFKPK(Production.Product,DbSecurity.UserAuthorization," = "," AND")
*/
            Production.Product.UserAuthorizationId = DbSecurity.UserAuthorization.User-
AuthorizationId
        )
    )
    BEGIN
      SELECT @errno  = 30010,
             @errmsg = 'Cannot delete last Production.Product because DbSecurity.User-
Authorization exists.'
      GOTO error
    END


    /* erwin Builtin Trigger */
    /* Production.Supplier  Production.Product on child delete no action */
    /* ERWIN_RELATION:CHECKSUM="00000000", PARENT_OWNER="Production", PARENT_-
TABLE="Supplier"
    CHILD_OWNER="Production", CHILD_TABLE="Product"
    P2C_VERB_PHRASE="", C2P_VERB_PHRASE="",
    FK_CONSTRAINT="FK_product_supplier", FK_COLUMNS="SupplierId" */
    IF EXISTS (SELECT * FROM deleted,Production.Supplier
      WHERE
        /* %JoinFKPK(deleted,Production.Supplier," = "," AND") */
        deleted.SupplierId = Production.Supplier.SupplierId AND
        NOT EXISTS (
          SELECT * FROM Production.Product
          WHERE
            /* %JoinFKPK(Production.Product,Production.Supplier," = "," AND") */
```

```
                    Production.Product.SupplierId = Production.Supplier.SupplierId
        )
    )
    BEGIN
      SELECT @errno  = 30010,
             @errmsg = 'Cannot delete last Production.Product because
Production.Supplier exists.'
      GOTO error
    END


    /* erwin Builtin Trigger */
    /* Production.Category  Production.Product on child delete no action */
    /* ERWIN_RELATION:CHECKSUM="00000000", PARENT_OWNER="Production", PARENT_-
TABLE="Category"
    CHILD_OWNER="Production", CHILD_TABLE="Product"
    P2C_VERB_PHRASE="", C2P_VERB_PHRASE="",
    FK_CONSTRAINT="FK_Product_Category", FK_COLUMNS="CategoryId" */
    IF EXISTS (SELECT * FROM deleted,Production.Category
      WHERE
        /* %JoinFKPK(deleted,Production.Category," = "," AND") */
        deleted.CategoryId = Production.Category.CategoryId AND
        NOT EXISTS (
          SELECT * FROM Production.Product
          WHERE
            /* %JoinFKPK(Production.Product,Production.Category," = "," AND") */
            Production.Product.CategoryId = Production.Category.CategoryId
        )
    )
    BEGIN
      SELECT @errno  = 30010,
             @errmsg = 'Cannot delete last Production.Product because
Production.Category exists.'
      GOTO error
    END



    /* erwin Builtin Trigger */
    RETURN
error:
   RAISERROR (@errmsg, -- Message text.
              @severity, -- Severity (0~25).
              @state) -- State (0~255).
    rollback transaction
END
GO
CREATE TRIGGER [Production].[TI_Production_Product_LastUpdated] ON
[Production].[Product]
    AFTER UPDATE

  AS

  UPDATE
      Production.[Product]
  SET
```

```
      DateOfLastUpdate = GETDATE()
  FROM
      Production.[Product] as c
  INNER JOIN
      Inserted i
  ON c.ProductId = i.ProductId

GO
ALTER TABLE [Production].[Product] ADD CONSTRAINT [CHK_Products_unitprice] CHECK
(([UnitPrice]>=(0)))
GO
ALTER TABLE [Production].[Product] ADD CONSTRAINT [PK_Products] PRIMARY KEY CLUSTERED
([ProductId]) ON [PRIMARY]
GO
ALTER TABLE [Production].[Product] ADD CONSTRAINT [FK_Product_Category] FOREIGN KEY
([CategoryId]) REFERENCES [Production].[Category] ([CategoryId])
GO
ALTER TABLE [Production].[Product] ADD CONSTRAINT [FK_product_supplier] FOREIGN KEY
([SupplierId]) REFERENCES [Production].[Supplier] ([SupplierId])
GO
ALTER TABLE [Production].[Product] ADD CONSTRAINT [R_26] FOREIGN KEY ([User-
AuthorizationId]) REFERENCES [DbSecurity].[UserAuthorization] ([UserAuthorizationId])
GO
ALTER TABLE [Production].[Product] ENABLE CHANGE_TRACKING
GO
```

Uses

[DbSecurity].[UserAuthorization]
[Production].[Category]
[Production].[Supplier]
[Udt].[udtCurrency]
[Udt].[udtFlagBit]
[Udt].[udtProductName]
[Udt].[udtSurrogateKeyInt]
[Udt].[udtTimeStampNow3]
Production

Used By

[Sales].[OrderDetail]
[JsonOutput].[uvw_ProductionProduct]
[JsonOutput].[MongoOrderDetail]
[Sales].[utvf_FindAllCustomerOrder]

⊞ [Production].[Supplier]

Properties

Property	Value
Collation	SQL_Latin1_General_CP1_CI_AS
Row Count (~)	0
Created	1:05:28 PM Saturday, October 29, 2022
Last Modified	1:05:32 PM Saturday, October 29, 2022

Columns

Key	Name	Data Type	Max Length (Bytes)	Nullability	Identity	Default
PK C	SupplierId	[Udt].[udtSurrogateKeyInt]	4	NOT NULL	1 - 1	
	SupplierCompanyName	[Udt].[udtCompanyName]	60	NOT NULL		
	SupplierContactName	[Udt].[udtFullName]	124	NOT NULL		
⊞	SupplierContactTitle	[Udt].[udtContactTitle]	20	NOT NULL		('')
	SupplierAddress	[Udt].[udtAddress]	50	NOT NULL		
	SupplierCity	[Udt].[udtCity]	28	NOT NULL		
	SupplierRegion	[Udt].[udtRegion]	60	NULL allowed		
	SupplierPostalCode	[Udt].[udtPostalCode]	10	NULL allowed		
	SupplierCountry	[Udt].[udtCountry]	112	NOT NULL		
	SupplierPhoneNumber	[Udt].[udtTelephoneNumber]	36	NOT NULL		
	SupplierFaxNumber	[Udt].[udtTelephoneNumber]	36	NULL allowed		
FK	UserAuthorizationId	[Udt].[udtSurrogateKeyInt]	4	NULL allowed		
	DateAdded	[Udt].[udtTimeStampNow3]	7	NOT NULL		(getdate())
	DateOfLastUpdate	[Udt].[udtTimeStampNow3]	7	NOT NULL		(getdate())

Indexes

Key	Name	Key Columns	Unique
PK C	PK_Suppliers	SupplierId	True

Triggers

Name	ANSI Nulls On	Quoted Identifier On	On
tD_Supplier	True	True	After Delete
TI_Production_Supplier_LastUpdated	True	True	After Update

Check Constraints

Name	On Column	Constraint
CHK_ContactTitle_543910528	SupplierContactTitle	([SupplierContactTitle]='Sir' OR [SupplierContact-Title]='Madam' OR [SupplierContactTitle]='Mr.' OR [SupplierContactTitle]='Mrs.' OR [SupplierContact-Title]='Ms.' OR [SupplierContactTitle]='Miss' OR [SupplierContactTitle]='Dr.' OR [SupplierContact-Title]='Professor' OR [SupplierContactTitle]='')

Foreign Keys

Name	Columns
R_27	UserAuthorizationId->[DbSecurity].[UserAuthorization].[UserAuthorizationId]

SQL Script

```
CREATE TABLE [Production].[Supplier]
(
[SupplierId] [Udt].[udtSurrogateKeyInt] NOT NULL IDENTITY(1, 1),
[SupplierCompanyName] [Udt].[udtCompanyName] NOT NULL,
[SupplierContactName] [Udt].[udtFullName] NOT NULL,
[SupplierContactTitle] [Udt].[udtContactTitle] NOT NULL CONSTRAINT [DF_Empty-String_1092354455] DEFAULT (''),
[SupplierAddress] [Udt].[udtAddress] NOT NULL,
[SupplierCity] [Udt].[udtCity] NOT NULL,
[SupplierRegion] [Udt].[udtRegion] NULL,
[SupplierPostalCode] [Udt].[udtPostalCode] NULL,
[SupplierCountry] [Udt].[udtCountry] NOT NULL,
[SupplierPhoneNumber] [Udt].[udtTelephoneNumber] NOT NULL,
[SupplierFaxNumber] [Udt].[udtTelephoneNumber] NULL,
[UserAuthorizationId] [Udt].[udtSurrogateKeyInt] NULL,
[DateAdded] [Udt].[udtTimeStampNow3] NOT NULL CONSTRAINT [DF_TimeStampNow_-YYYYMMDDHHMMSS_1108105077] DEFAULT (getdate()),
[DateOfLastUpdate] [Udt].[udtTimeStampNow3] NOT NULL CONSTRAINT [DF_TimeStampNow_-YYYYMMDDHHMMSS_186524094] DEFAULT (getdate())
) ON [PRIMARY]
```

```
GO
CREATE TRIGGER [Production].[tD_Supplier] ON [Production].[Supplier] FOR DELETE AS
/* erwin Builtin Trigger */
/* DELETE trigger on Supplier */
BEGIN
  DECLARE  @errno   int,
           @severity int,
           @state    int,
           @errmsg  varchar(255)
    /* erwin Builtin Trigger */
    /* Production.Supplier  Production.Product on parent delete no action */
    /* ERWIN_RELATION:CHECKSUM="0002e86e", PARENT_OWNER="Production", PARENT_-
TABLE="Supplier"
    CHILD_OWNER="Production", CHILD_TABLE="Product"
    P2C_VERB_PHRASE="", C2P_VERB_PHRASE="",
    FK_CONSTRAINT="FK_product_supplier", FK_COLUMNS="SupplierId" */
    IF EXISTS (
      SELECT * FROM deleted,Production.Product
      WHERE
        /*  %JoinFKPK(Production.Product,deleted," = "," AND") */
        Production.Product.SupplierId = deleted.SupplierId
    )
    BEGIN
      SELECT @errno  = 30001,
             @errmsg = 'Cannot delete Production.Supplier because Production.Product
exists.'
      GOTO error
    END

    /* erwin Builtin Trigger */
    /* DbSecurity.UserAuthorization  Production.Supplier on child delete no action */
    /* ERWIN_RELATION:CHECKSUM="00000000", PARENT_OWNER="DbSecurity", PARENT_-
TABLE="UserAuthorization"
    CHILD_OWNER="Production", CHILD_TABLE="Supplier"
    P2C_VERB_PHRASE="", C2P_VERB_PHRASE="",
    FK_CONSTRAINT="R_27", FK_COLUMNS="UserAuthorizationId" */
    IF EXISTS (SELECT * FROM deleted,DbSecurity.UserAuthorization
      WHERE
        /* %JoinFKPK(deleted,DbSecurity.UserAuthorization," = "," AND") */
        deleted.UserAuthorizationId = DbSecurity.UserAuthorization.UserAuthorizationId
AND
        NOT EXISTS (
          SELECT * FROM Production.Supplier
          WHERE
          /* %JoinFKPK(Production.Supplier,DbSecurity.UserAuthorization," = "," AND")
*/
          Production.Supplier.UserAuthorizationId = DbSecurity.UserAuthorization.User-
AuthorizationId
        )
    )
    BEGIN
      SELECT @errno  = 30010,
             @errmsg = 'Cannot delete last Production.Supplier because DbSecurity.User-
Authorization exists.'
      GOTO error
```

```sql
        END


    /* erwin Builtin Trigger */
    RETURN
error:
   RAISERROR (@errmsg, -- Message text.
              @severity, -- Severity (0~25).
              @state) -- State (0~255).
    rollback transaction
END
GO
CREATE TRIGGER [Production].[TI_Production_Supplier_LastUpdated] ON
[Production].[Supplier]
    AFTER UPDATE

  AS

  UPDATE
      Production.[Supplier]
  SET
      DateOfLastUpdate = GETDATE()
  FROM
      Production.[Supplier] as c
  INNER JOIN
      Inserted i
  ON c.SupplierId = i.SupplierId


GO
ALTER TABLE [Production].[Supplier] ADD CONSTRAINT [CHK_ContactTitle_543910528] CHECK
(([SupplierContactTitle]='Sir' OR [SupplierContactTitle]='Madam' OR [SupplierContact-
Title]='Mr.' OR [SupplierContactTitle]='Mrs.' OR [SupplierContactTitle]='Ms.' OR
[SupplierContactTitle]='Miss' OR [SupplierContactTitle]='Dr.' OR [SupplierContact-
Title]='Professor' OR [SupplierContactTitle]=''))
GO
ALTER TABLE [Production].[Supplier] ADD CONSTRAINT [PK_Suppliers] PRIMARY KEY CLUSTERED
([SupplierId]) ON [PRIMARY]
GO
ALTER TABLE [Production].[Supplier] ADD CONSTRAINT [R_27] FOREIGN KEY ([User-
AuthorizationId]) REFERENCES [DbSecurity].[UserAuthorization] ([UserAuthorizationId])
GO
ALTER TABLE [Production].[Supplier] ENABLE CHANGE_TRACKING
GO
```

Uses

[DbSecurity].[UserAuthorization]
[Udt].[udtAddress]
[Udt].[udtCity]
[Udt].[udtCompanyName]
[Udt].[udtContactTitle]
[Udt].[udtCountry]
[Udt].[udtFullName]

[Udt].[udtPostalCode]
[Udt].[udtRegion]
[Udt].[udtSurrogateKeyInt]
[Udt].[udtTelephoneNumber]
[Udt].[udtTimeStampNow3]
Production

Used By

[Production].[Product]
[JsonOutput].[uvw_ProductionProduct]
[JsonOutput].[uvw_ProductionSupplier]
[JsonOutput].[MongoOrderDetail]
[Sales].[utvf_FindAllCustomerOrder]

▦ [Sales].[Customer]

Properties

Property	Value
Collation	SQL_Latin1_General_CP1_CI_AS
Row Count (~)	0
Created	1:05:28 PM Saturday, October 29, 2022
Last Modified	1:05:32 PM Saturday, October 29, 2022

Columns

Key	Name	Data Type	Max Length (Bytes)	Nullability	Identity	Default
PK C	CustomerId	[Udt].[udtSurrogateKeyInt]	4	NOT NULL	1 - 1	
	CustomerCompanyName	[Udt].[udtCompanyName]	60	NOT NULL		
	CustomerContactName	[Udt].[udtFullName]	124	NOT NULL		
	CustomerContactTitle	[Udt].[udtTitle]	18	NOT NULL		
	CustomerAddress	[Udt].[udtAddress]	50	NOT NULL		
	CustomerCity	[Udt].[udtCity]	28	NOT NULL		
	CustomerRegion	[Udt].[udtRegion]	60	NULL allowed		
	CustomerPostalCode	[Udt].[udtPostalCode]	10	NULL allowed		
	CustomerCountry	[Udt].[udtCountry]	112	NOT NULL		
	CustomerPhoneNumber	[Udt].[udtTelephoneNumber]	36	NOT NULL		
	CustomerFaxNumber	[Udt].[udtTelephoneNumber]	36	NULL allowed		
FK	UserAuthorizationId	[Udt].[udtSurrogateKeyInt]	4	NULL allowed		
	DateAdded	[Udt].[udtTimeStampNow3]	7	NOT NULL		(getdate())
	DateOfLastUpdate	[Udt].[udtTimeStampNow3]	7	NOT NULL		(getdate())

Indexes

Key	Name	Key Columns	Unique
PK C	PK_Customers	CustomerId	True

Triggers

Name	ANSI Nulls On	Quoted Identifier On	On
tD_Customer	True	True	After Delete
TI_Sales_Customer_LastUpdated	True	True	After Update

Foreign Keys

Name	Columns
R_29	UserAuthorizationId->[DbSecurity].[UserAuthorization].[UserAuthorizationId]

SQL Script

```
CREATE TABLE [Sales].[Customer]
(
[CustomerId] [Udt].[udtSurrogateKeyInt] NOT NULL IDENTITY(1, 1),
[CustomerCompanyName] [Udt].[udtCompanyName] NOT NULL,
[CustomerContactName] [Udt].[udtFullName] NOT NULL,
[CustomerContactTitle] [Udt].[udtTitle] NOT NULL,
[CustomerAddress] [Udt].[udtAddress] NOT NULL,
[CustomerCity] [Udt].[udtCity] NOT NULL,
[CustomerRegion] [Udt].[udtRegion] NULL,
[CustomerPostalCode] [Udt].[udtPostalCode] NULL,
[CustomerCountry] [Udt].[udtCountry] NOT NULL,
[CustomerPhoneNumber] [Udt].[udtTelephoneNumber] NOT NULL,
[CustomerFaxNumber] [Udt].[udtTelephoneNumber] NULL,
[UserAuthorizationId] [Udt].[udtSurrogateKeyInt] NULL,
[DateAdded] [Udt].[udtTimeStampNow3] NOT NULL CONSTRAINT [DF_TimeStampNow_-
YYYYMMDDHHMMSS_1174363000] DEFAULT (getdate()),
[DateOfLastUpdate] [Udt].[udtTimeStampNow3] NOT NULL CONSTRAINT [DF_TimeStampNow_-
YYYYMMDDHHMMSS_135933626] DEFAULT (getdate())
) ON [PRIMARY]
GO
CREATE TRIGGER [Sales].[tD_Customer] ON [Sales].[Customer] FOR DELETE AS
/* erwin Builtin Trigger */
/* DELETE trigger on Customer */
BEGIN
  DECLARE  @errno    int,
           @severity int,
           @state    int,
           @errmsg   varchar(255)
    /* erwin Builtin Trigger */
    /* Sales.Customer  Sales.Orders on parent delete no action */
```

```sql
    /* ERWIN_RELATION:CHECKSUM="0002b10e", PARENT_OWNER="Sales", PARENT_-
TABLE="Customer"
    CHILD_OWNER="Sales", CHILD_TABLE="Orders"
    P2C_VERB_PHRASE="", C2P_VERB_PHRASE="",
    FK_CONSTRAINT="FK_Order_Customer1", FK_COLUMNS="CustomerId" */
    IF EXISTS (
      SELECT * FROM deleted,Sales.Orders
      WHERE
        /*  %JoinFKPK(Sales.Orders,deleted," = "," AND") */
        Sales.Orders.CustomerId = deleted.CustomerId
    )
    BEGIN
      SELECT @errno  = 30001,
             @errmsg = 'Cannot delete Sales.Customer because Sales.Orders exists.'
      GOTO error
    END


    /* erwin Builtin Trigger */
    /* DbSecurity.UserAuthorization  Sales.Customer on child delete no action */
    /* ERWIN_RELATION:CHECKSUM="00000000", PARENT_OWNER="DbSecurity", PARENT_-
TABLE="UserAuthorization"
    CHILD_OWNER="Sales", CHILD_TABLE="Customer"
    P2C_VERB_PHRASE="", C2P_VERB_PHRASE="",
    FK_CONSTRAINT="R_29", FK_COLUMNS="UserAuthorizationId" */
    IF EXISTS (SELECT * FROM deleted,DbSecurity.UserAuthorization
      WHERE
        /* %JoinFKPK(deleted,DbSecurity.UserAuthorization," = "," AND") */
        deleted.UserAuthorizationId = DbSecurity.UserAuthorization.UserAuthorizationId
AND
        NOT EXISTS (
          SELECT * FROM Sales.Customer
          WHERE
            /* %JoinFKPK(Sales.Customer,DbSecurity.UserAuthorization," = "," AND") */
            Sales.Customer.UserAuthorizationId = DbSecurity.UserAuthorization.User-
AuthorizationId
        )
    )
    BEGIN
      SELECT @errno  = 30010,
             @errmsg = 'Cannot delete last Sales.Customer because DbSecurity.User-
Authorization exists.'
      GOTO error
    END



    /* erwin Builtin Trigger */
    RETURN
error:
  RAISERROR (@errmsg, -- Message text.
             @severity, -- Severity (0~25).
             @state) -- State (0~255).
    rollback transaction
END
GO
```

```
CREATE TRIGGER [Sales].[TI_Sales_Customer_LastUpdated] ON [Sales].[Customer]
    AFTER UPDATE


  AS


  UPDATE
      Sales.[Customer]
  SET
      DateOfLastUpdate = GETDATE()
  FROM
      Sales.[Customer] as c
  INNER JOIN
      Inserted i
  ON c.CustomerId = i.CustomerId

GO
ALTER TABLE [Sales].[Customer] ADD CONSTRAINT [PK_Customers] PRIMARY KEY CLUSTERED
([CustomerId]) ON [PRIMARY]
GO
ALTER TABLE [Sales].[Customer] ADD CONSTRAINT [R_29] FOREIGN KEY ([UserAuthorization-
Id]) REFERENCES [DbSecurity].[UserAuthorization] ([UserAuthorizationId])
GO
ALTER TABLE [Sales].[Customer] ENABLE CHANGE_TRACKING
GO
```

Uses

[DbSecurity].[UserAuthorization]
[Udt].[udtAddress]
[Udt].[udtCity]
[Udt].[udtCompanyName]
[Udt].[udtCountry]
[Udt].[udtFullName]
[Udt].[udtPostalCode]
[Udt].[udtRegion]
[Udt].[udtSurrogateKeyInt]
[Udt].[udtTelephoneNumber]
[Udt].[udtTimeStampNow3]
[Udt].[udtTitle]
Sales

Used By

[Sales].[Orders]
[JsonOutput].[uvw_SalesCustomer]
[JsonOutput].[MongoOrder]

▦ [Sales].[OrderDetail]

Properties

Property	Value
Collation	SQL_Latin1_General_CP1_CI_AS
Row Count (~)	0
Created	1:05:28 PM Saturday, October 29, 2022
Last Modified	1:05:32 PM Saturday, October 29, 2022

Columns

Key	Name	Data Type	Max Length (Bytes)	Nullability	Default
▦	UnitPrice	[Udt].[udtCurrency]	8	NOT NULL	((0))
▦	Quantity	[Udt].[udtQuantitySmall]	18	NOT NULL	((1))
▦	DiscountPercentage	[Udt].[udtPercentage]	8	NOT NULL	((0))
FK	UserAuthorizationId	[Udt].[udtSurrogateKeyInt]	4	NULL allowed	
	DateAdded	[Udt].[udtTimeStampNow3]	7	NOT NULL	(getdate())
	DateOfLastUpdate	[Udt].[udtTimeStampNow3]	7	NOT NULL	(getdate())
PK C FK	OrderId	[Udt].[udtSurrogateKeyInt]	4	NOT NULL	
PK C FK	ProductId	[Udt].[udtSurrogateKeyInt]	4	NOT NULL	

Indexes

Key	Name	Key Columns	Unique
PK C	PK_OrderDetails	OrderId, ProductId	True

Triggers

Name	ANSI Nulls On	Quoted Identifier On	On
tD_OrderDetail	True	True	After Delete
TI_Sales_OrderDetail_LastUpdated	True	True	After Update

Check Constraints

Name	On Column	Constraint
CHK_DiscountPercentage	DiscountPercentage	([DiscountPercentage]>=(0) AND [Discount-Percentage]<=(1))
CHK_IsDeletion_303262850	UnitPrice	([UnitPrice]='Y' OR [UnitPrice]='N')
CHK_Quantity	Quantity	([Quantity]>(0))

Foreign Keys

Name	Columns
R_22	OrderId->[Sales].[Orders].[OrderId]
R_23	ProductId->[Production].[Product].[ProductId]
R_32	UserAuthorizationId->[DbSecurity].[UserAuthorization].[UserAuthorizationId]

SQL Script

```
CREATE TABLE [Sales].[OrderDetail]
(
[UnitPrice] [Udt].[udtCurrency] NOT NULL CONSTRAINT [DFT_OrderDetails_UnitPrice]
DEFAULT ((0)),
[Quantity] [Udt].[udtQuantitySmall] NOT NULL CONSTRAINT [DFT_OrderDetails_Quantity]
DEFAULT ((1)),
[DiscountPercentage] [Udt].[udtPercentage] NOT NULL CONSTRAINT [DFT_OrderDetails_-
DiscountPercentage] DEFAULT ((0)),
[UserAuthorizationId] [Udt].[udtSurrogateKeyInt] NULL,
[DateAdded] [Udt].[udtTimeStampNow3] NOT NULL CONSTRAINT [DF_TimeStampNow_-
YYYYMMDDHHMMSS_1792631873] DEFAULT (getdate()),
[DateOfLastUpdate] [Udt].[udtTimeStampNow3] NOT NULL CONSTRAINT [DF_TimeStampNow_-
YYYYMMDDHHMMSS_1060436103] DEFAULT (getdate()),
[OrderId] [Udt].[udtSurrogateKeyInt] NOT NULL,
[ProductId] [Udt].[udtSurrogateKeyInt] NOT NULL
) ON [PRIMARY]
GO
CREATE TRIGGER [Sales].[tD_OrderDetail] ON [Sales].[OrderDetail] FOR DELETE AS
/* erwin Builtin Trigger */
/* DELETE trigger on OrderDetail */
BEGIN
  DECLARE  @errno   int,
           @severity int,
           @state    int,
           @errmsg   varchar(255)
    /* erwin Builtin Trigger */
    /* DbSecurity.UserAuthorization  Sales.OrderDetail on child delete no action */
    /* ERWIN_RELATION:CHECKSUM="00048203", PARENT_OWNER="DbSecurity", PARENT_-
TABLE="UserAuthorization"
    CHILD_OWNER="Sales", CHILD_TABLE="OrderDetail"
    P2C_VERB_PHRASE="", C2P_VERB_PHRASE="",
    FK_CONSTRAINT="R_32", FK_COLUMNS="UserAuthorizationId" */
    IF EXISTS (SELECT * FROM deleted,DbSecurity.UserAuthorization
```

```
      WHERE
       /* %JoinFKPK(deleted,DbSecurity.UserAuthorization," = "," AND") */
       deleted.UserAuthorizationId = DbSecurity.UserAuthorization.UserAuthorizationId
AND
       NOT EXISTS (
         SELECT * FROM Sales.OrderDetail
         WHERE
          /* %JoinFKPK(Sales.OrderDetail,DbSecurity.UserAuthorization," = "," AND")
*/
          Sales.OrderDetail.UserAuthorizationId = DbSecurity.UserAuthorization.User-
AuthorizationId
       )
   )
   BEGIN
     SELECT @errno  = 30010,
            @errmsg = 'Cannot delete last Sales.OrderDetail because DbSecurity.User-
Authorization exists.'
     GOTO error
   END

   /* erwin Builtin Trigger */
   /* Production.Product  Sales.OrderDetail on child delete no action */
   /* ERWIN_RELATION:CHECKSUM="00000000", PARENT_OWNER="Production", PARENT_-
TABLE="Product"
   CHILD_OWNER="Sales", CHILD_TABLE="OrderDetail"
   P2C_VERB_PHRASE="", C2P_VERB_PHRASE="",
   FK_CONSTRAINT="R_23", FK_COLUMNS="ProductId" */
   IF EXISTS (SELECT * FROM deleted,Production.Product
     WHERE
       /* %JoinFKPK(deleted,Production.Product," = "," AND") */
       deleted.ProductId = Production.Product.ProductId AND
       NOT EXISTS (
         SELECT * FROM Sales.OrderDetail
         WHERE
          /* %JoinFKPK(Sales.OrderDetail,Production.Product," = "," AND") */
          Sales.OrderDetail.ProductId = Production.Product.ProductId
       )
   )
   BEGIN
     SELECT @errno  = 30010,
            @errmsg = 'Cannot delete last Sales.OrderDetail because Production.Product
exists.'
     GOTO error
   END

   /* erwin Builtin Trigger */
   /* Sales.Orders  Sales.OrderDetail on child delete no action */
   /* ERWIN_RELATION:CHECKSUM="00000000", PARENT_OWNER="Sales", PARENT_TABLE="Orders"
   CHILD_OWNER="Sales", CHILD_TABLE="OrderDetail"
   P2C_VERB_PHRASE="", C2P_VERB_PHRASE="",
   FK_CONSTRAINT="R_22", FK_COLUMNS="OrderId" */
   IF EXISTS (SELECT * FROM deleted,Sales.Orders
     WHERE
       /* %JoinFKPK(deleted,Sales.Orders," = "," AND") */
       deleted.OrderId = Sales.Orders.OrderId AND
```

```
        NOT EXISTS (
            SELECT * FROM Sales.OrderDetail
            WHERE
              /* %JoinFKPK(Sales.OrderDetail,Sales.Orders," = "," AND") */
              Sales.OrderDetail.OrderId = Sales.Orders.OrderId
        )
    )
    BEGIN
      SELECT @errno  = 30010,
             @errmsg = 'Cannot delete last Sales.OrderDetail because Sales.Orders
exists.'
      GOTO error
    END


    /* erwin Builtin Trigger */
    RETURN
error:
   RAISERROR (@errmsg, -- Message text.
              @severity, -- Severity (0~25).
              @state) -- State (0~255).
    rollback transaction
END
GO
CREATE TRIGGER [Sales].[TI_Sales_OrderDetail_LastUpdated] ON [Sales].[OrderDetail]
    AFTER UPDATE

  AS

  UPDATE
      Sales.[OrderDetail]
  SET
      DateOfLastUpdate = GETDATE()
  FROM
      Sales.[OrderDetail] as c
  INNER JOIN
      Inserted i
  ON c.OrderId = i.OrderId and c.ProductId = i.ProductId

GO
ALTER TABLE [Sales].[OrderDetail] ADD CONSTRAINT [CHK_DiscountPercentage] CHECK
((([DiscountPercentage]>=(0) AND [DiscountPercentage]<=(1)))
GO
ALTER TABLE [Sales].[OrderDetail] ADD CONSTRAINT [CHK_IsDeletion_303262850] CHECK
((([UnitPrice]='Y' OR [UnitPrice]='N'))
GO
ALTER TABLE [Sales].[OrderDetail] ADD CONSTRAINT [CHK_Quantity] CHECK
((([Quantity]>(0)))
GO
ALTER TABLE [Sales].[OrderDetail] ADD CONSTRAINT [PK_OrderDetails] PRIMARY KEY
CLUSTERED  ([OrderId], [ProductId]) ON [PRIMARY]
GO
ALTER TABLE [Sales].[OrderDetail] ADD CONSTRAINT [R_22] FOREIGN KEY ([OrderId])
REFERENCES [Sales].[Orders] ([OrderId])
GO
```

```sql
ALTER TABLE [Sales].[OrderDetail] ADD CONSTRAINT [R_23] FOREIGN KEY ([ProductId])
REFERENCES [Production].[Product] ([ProductId])
GO
ALTER TABLE [Sales].[OrderDetail] ADD CONSTRAINT [R_32] FOREIGN KEY ([UserAuthorization-
Id]) REFERENCES [DbSecurity].[UserAuthorization] ([UserAuthorizationId])
GO
ALTER TABLE [Sales].[OrderDetail] ENABLE CHANGE_TRACKING
GO
```

Uses

[DbSecurity].[UserAuthorization]

[Production].[Product]

[Sales].[Orders]

[Udt].[udtCurrency]

[Udt].[udtPercentage]

[Udt].[udtQuantitySmall]

[Udt].[udtSurrogateKeyInt]

[Udt].[udtTimeStampNow3]

Sales

Used By

[JsonOutput].[MongoOrderDetail]

[Sales].[utvf_FindAllCustomerOrder]

```sql
ALTER TABLE [Sales].[OrderDetail] ADD CONSTRAINT [R_23] FOREIGN KEY ([ProductId])
REFERENCES [Production].[Product] ([ProductId])
GO
```

🖼 [Sales].[Orders]

Properties

Property	Value
Collation	SQL_Latin1_General_CP1_CI_AS
Row Count (~)	0
Created	1:05:28 PM Saturday, October 29, 2022
Last Modified	1:05:32 PM Saturday, October 29, 2022

Columns

Key	Name	Data Type	Max Length (Bytes)	Nullability	Identity	Default
PK C	OrderId	[Udt].[udtSurrogateKeyInt]	4	NOT NULL	1 - 1	
FK	CustomerId	[Udt].[udtSurrogateKeyInt]	4	NULL allowed		
FK	EmployeeId	[Udt].[udtSurrogateKeyInt]	4	NOT NULL		
FK	ShipperId	[Udt].[udtSurrogateKeyInt]	4	NOT NULL		
	OrderDate	[Udt].[udtYYYYMMDD]	8	NOT NULL		
	RequiredDate	[Udt].[udtYYYYMMDD]	8	NOT NULL		
	ShipToDate	[Udt].[udtYYYYMMDD]	8	NULL allowed		
🖼	Freight	[Udt].[udtCurrency]	8	NOT NULL		((0))
	ShipToName	[Udt].[udtFullName]	124	NOT NULL		
	ShipToAddress	[Udt].[udtAddress]	50	NOT NULL		
	ShipToCity	[Udt].[udtCity]	28	NOT NULL		
	ShipToRegion	[Udt].[udtRegion]	60	NULL allowed		
	ShipToPostalCode	[Udt].[udtPostalCode]	10	NULL allowed		
	ShipToCountry	[Udt].[udtCountry]	112	NOT NULL		
FK	UserAuthorizationId	[Udt].[udtSurrogateKeyInt]	4	NULL allowed		
	DateAdded	[Udt].[udtTimeStampNow3]	7	NOT		(getdate())

				NULL		
	DateOfLastUpdate	[Udt].[udtTimeStampNow3]	7	NOT NULL		(getdate())

Indexes

Key	Name	Key Columns	Unique
PK C	PK_Orders	OrderId	True

Triggers

Name	ANSI Nulls On	Quoted Identifier On	On
tD_Orders	True	True	After Delete
TI_Sales_Orders_LastUpdated	True	True	After Update

Check Constraints

Name	On Column	Constraint
CHK_IsDeletion_1154070433	Freight	([Freight]='Y' OR [Freight]='N')

Foreign Keys

Name	Columns
FK_Order_Customer1	CustomerId->[Sales].[Customer].[CustomerId]
FK_Order_Employee	EmployeeId->[HumanResources].[Employee].[EmployeeId]
FK_Order_Shipper	ShipperId->[Sales].[Shipper].[ShipperId]
R_30	UserAuthorizationId->[DbSecurity].[UserAuthorization].[UserAuthorizationId]

SQL Script

```
CREATE TABLE [Sales].[Orders]
(
[OrderId] [Udt].[udtSurrogateKeyInt] NOT NULL IDENTITY(1, 1),
[CustomerId] [Udt].[udtSurrogateKeyInt] NULL,
[EmployeeId] [Udt].[udtSurrogateKeyInt] NOT NULL,
[ShipperId] [Udt].[udtSurrogateKeyInt] NOT NULL,
[OrderDate] [Udt].[udtYYYYMMDD] NOT NULL,
[RequiredDate] [Udt].[udtYYYYMMDD] NOT NULL,
[ShipToDate] [Udt].[udtYYYYMMDD] NULL,
[Freight] [Udt].[udtCurrency] NOT NULL CONSTRAINT [DFT_Orders_freight] DEFAULT ((0)),
[ShipToName] [Udt].[udtFullName] NOT NULL,
[ShipToAddress] [Udt].[udtAddress] NOT NULL,
[ShipToCity] [Udt].[udtCity] NOT NULL,
[ShipToRegion] [Udt].[udtRegion] NULL,
```

```
[ShipToPostalCode] [Udt].[udtPostalCode] NULL,
[ShipToCountry] [Udt].[udtCountry] NOT NULL,
[UserAuthorizationId] [Udt].[udtSurrogateKeyInt] NULL,
[DateAdded] [Udt].[udtTimeStampNow3] NOT NULL CONSTRAINT [DF_TimeStampNow_-
YYYYMMDDHHMMSS_1152441953] DEFAULT (getdate()),
[DateOfLastUpdate] [Udt].[udtTimeStampNow3] NOT NULL CONSTRAINT [DF_TimeStampNow_-
YYYYMMDDHHMMSS_521895223] DEFAULT (getdate())
) ON [PRIMARY]
GO
CREATE TRIGGER [Sales].[tD_Orders] ON [Sales].[Orders] FOR DELETE AS
/* erwin Builtin Trigger */
/* DELETE trigger on Orders */
BEGIN
  DECLARE  @errno    int,
           @severity int,
           @state    int,
           @errmsg  varchar(255)
    /* erwin Builtin Trigger */
    /* Sales.Orders  Sales.OrderDetail on parent delete no action */
    /* ERWIN_RELATION:CHECKSUM="0006bf53", PARENT_OWNER="Sales", PARENT_TABLE="Orders"
    CHILD_OWNER="Sales", CHILD_TABLE="OrderDetail"
    P2C_VERB_PHRASE="", C2P_VERB_PHRASE="",
    FK_CONSTRAINT="R_22", FK_COLUMNS="OrderId" */
    IF EXISTS (
      SELECT * FROM deleted,Sales.OrderDetail
      WHERE
        /*  %JoinFKPK(Sales.OrderDetail,deleted," = "," AND") */
        Sales.OrderDetail.OrderId = deleted.OrderId
    )
    BEGIN
      SELECT @errno  = 30001,
             @errmsg = 'Cannot delete Sales.Orders because Sales.OrderDetail exists.'
      GOTO error
    END

    /* erwin Builtin Trigger */
    /* DbSecurity.UserAuthorization  Sales.Orders on child delete no action */
    /* ERWIN_RELATION:CHECKSUM="00000000", PARENT_OWNER="DbSecurity", PARENT_-
TABLE="UserAuthorization"
    CHILD_OWNER="Sales", CHILD_TABLE="Orders"
    P2C_VERB_PHRASE="", C2P_VERB_PHRASE="",
    FK_CONSTRAINT="R_30", FK_COLUMNS="UserAuthorizationId" */
    IF EXISTS (SELECT * FROM deleted,DbSecurity.UserAuthorization
      WHERE
        /* %JoinFKPK(deleted,DbSecurity.UserAuthorization," = "," AND") */
        deleted.UserAuthorizationId = DbSecurity.UserAuthorization.UserAuthorizationId
AND
        NOT EXISTS (
          SELECT * FROM Sales.Orders
          WHERE
            /* %JoinFKPK(Sales.Orders,DbSecurity.UserAuthorization," = "," AND") */
            Sales.Orders.UserAuthorizationId = DbSecurity.UserAuthorization.User-
AuthorizationId
        )
```

```
    )
    BEGIN
      SELECT @errno  = 30010,
             @errmsg = 'Cannot delete last Sales.Orders because DbSecurity.User-
Authorization exists.'
      GOTO error
    END

    /* erwin Builtin Trigger */
    /* Sales.Shipper  Sales.Orders on child delete no action */
    /* ERWIN_RELATION:CHECKSUM="00000000", PARENT_OWNER="Sales", PARENT_TABLE="Shipper"
    CHILD_OWNER="Sales", CHILD_TABLE="Orders"
    P2C_VERB_PHRASE="", C2P_VERB_PHRASE="",
    FK_CONSTRAINT="FK_Order_Shipper", FK_COLUMNS="ShipperId" */
    IF EXISTS (SELECT * FROM deleted,Sales.Shipper
      WHERE
        /* %JoinFKPK(deleted,Sales.Shipper," = "," AND") */
        deleted.ShipperId = Sales.Shipper.ShipperId AND
        NOT EXISTS (
          SELECT * FROM Sales.Orders
          WHERE
            /* %JoinFKPK(Sales.Orders,Sales.Shipper," = "," AND") */
            Sales.Orders.ShipperId = Sales.Shipper.ShipperId
        )
    )
    BEGIN
      SELECT @errno  = 30010,
             @errmsg = 'Cannot delete last Sales.Orders because Sales.Shipper exists.'
      GOTO error
    END

    /* erwin Builtin Trigger */
    /* HumanResources.Employee  Sales.Orders on child delete no action */
    /* ERWIN_RELATION:CHECKSUM="00000000", PARENT_OWNER="HumanResources", PARENT_-
TABLE="Employee"
    CHILD_OWNER="Sales", CHILD_TABLE="Orders"
    P2C_VERB_PHRASE="", C2P_VERB_PHRASE="",
    FK_CONSTRAINT="FK_Order_Employee", FK_COLUMNS="EmployeeId" */
    IF EXISTS (SELECT * FROM deleted,HumanResources.Employee
      WHERE
        /* %JoinFKPK(deleted,HumanResources.Employee," = "," AND") */
        deleted.EmployeeId = HumanResources.Employee.EmployeeId AND
        NOT EXISTS (
          SELECT * FROM Sales.Orders
          WHERE
            /* %JoinFKPK(Sales.Orders,HumanResources.Employee," = "," AND") */
            Sales.Orders.EmployeeId = HumanResources.Employee.EmployeeId
        )
    )
    BEGIN
      SELECT @errno  = 30010,
             @errmsg = 'Cannot delete last Sales.Orders because HumanResources.Employee
exists.'
      GOTO error
```

```
        END

    /* erwin Builtin Trigger */
    /* Sales.Customer  Sales.Orders on child delete no action */
    /* ERWIN_RELATION:CHECKSUM="00000000", PARENT_OWNER="Sales", PARENT_-
TABLE="Customer"
    CHILD_OWNER="Sales", CHILD_TABLE="Orders"
    P2C_VERB_PHRASE="", C2P_VERB_PHRASE="",
    FK_CONSTRAINT="FK_Order_Customer1", FK_COLUMNS="CustomerId" */
    IF EXISTS (SELECT * FROM deleted,Sales.Customer
      WHERE
        /* %JoinFKPK(deleted,Sales.Customer," = "," AND") */
        deleted.CustomerId = Sales.Customer.CustomerId AND
        NOT EXISTS (
          SELECT * FROM Sales.Orders
          WHERE
            /* %JoinFKPK(Sales.Orders,Sales.Customer," = "," AND") */
            Sales.Orders.CustomerId = Sales.Customer.CustomerId
        )
    )
    BEGIN
      SELECT @errno  = 30010,
             @errmsg = 'Cannot delete last Sales.Orders because Sales.Customer exists.'
      GOTO error
    END


    /* erwin Builtin Trigger */
    RETURN
error:
   RAISERROR (@errmsg, -- Message text.
             @severity, -- Severity (0~25).
             @state) -- State (0~255).
    rollback transaction
END
GO
CREATE TRIGGER [Sales].[TI_Sales_Orders_LastUpdated] ON [Sales].[Orders]
    AFTER UPDATE

  AS

  UPDATE
      Sales.[Orders]
  SET
      DateOfLastUpdate = GETDATE()
  FROM
      Sales.[Orders] as c
  INNER JOIN
      Inserted i
  ON c.OrderId = i.OrderId

GO
ALTER TABLE [Sales].[Orders] ADD CONSTRAINT [CHK_IsDeletion_1154070433] CHECK
(([Freight]='Y' OR [Freight]='N'))
```

```
GO
ALTER TABLE [Sales].[Orders] ADD CONSTRAINT [PK_Orders] PRIMARY KEY CLUSTERED  ([Order-
Id]) ON [PRIMARY]
GO
ALTER TABLE [Sales].[Orders] ADD CONSTRAINT [FK_Order_Customer1] FOREIGN KEY ([Customer-
Id]) REFERENCES [Sales].[Customer] ([CustomerId])
GO
ALTER TABLE [Sales].[Orders] ADD CONSTRAINT [FK_Order_Employee] FOREIGN KEY ([Employee-
Id]) REFERENCES [HumanResources].[Employee] ([EmployeeId])
GO
ALTER TABLE [Sales].[Orders] ADD CONSTRAINT [FK_Order_Shipper] FOREIGN KEY ([Shipper-
Id]) REFERENCES [Sales].[Shipper] ([ShipperId])
GO
ALTER TABLE [Sales].[Orders] ADD CONSTRAINT [R_30] FOREIGN KEY ([UserAuthorizationId])
REFERENCES [DbSecurity].[UserAuthorization] ([UserAuthorizationId])
GO
ALTER TABLE [Sales].[Orders] ENABLE CHANGE_TRACKING
GO
```

Uses

[DbSecurity].[UserAuthorization]

[HumanResources].[Employee]

[Sales].[Customer]

[Sales].[Shipper]

[Udt].[udtAddress]

[Udt].[udtCity]

[Udt].[udtCountry]

[Udt].[udtCurrency]

[Udt].[udtFullName]

[Udt].[udtPostalCode]

[Udt].[udtRegion]

[Udt].[udtSurrogateKeyInt]

[Udt].[udtTimeStampNow3]

[Udt].[udtYYYYMMDD]

Sales

Used By

[Sales].[OrderDetail]

[JsonOutput].[uvw_Order]

[JsonOutput].[MongoOrder]

[Sales].[utvf_FindAllCustomerOrder]

▦ [Sales].[Shipper]

Properties

Property	Value
Collation	SQL_Latin1_General_CP1_CI_AS
Row Count (~)	22
Created	1:05:28 PM Saturday, October 29, 2022
Last Modified	1:05:32 PM Saturday, October 29, 2022

Columns

Key	Name	Data Type	Max Length (Bytes)	Nullability	Identity	Default
PK C	ShipperId	[Udt].[udtSurrogateKeyInt]	4	NOT NULL	1 - 1	
	ShipperCompanyName	[Udt].[udtCompanyName]	60	NOT NULL		
	PhoneNumber	[Udt].[udtTelephoneNumber]	36	NOT NULL		
FK	UserAuthorizationId	[Udt].[udtSurrogateKeyInt]	4	NULL allowed		
	DateAdded	[Udt].[udtTimeStampNow3]	7	NOT NULL		(getdate())
	DateOfLastUpdate	[Udt].[udtTimeStampNow3]	7	NOT NULL		(getdate())

Indexes

Key	Name	Key Columns	Unique
PK C	PK_Shippers	ShipperId	True

Triggers

Name	ANSI Nulls On	Quoted Identifier On	On
tD_Shipper	True	True	After Delete
TI_Sales_Shipper_LastUpdated	True	True	After Insert Update
tU_Shipper	True	True	After Update

Foreign Keys

Name	Columns
R_25	UserAuthorizationId->[DbSecurity].[UserAuthorization].[UserAuthorizationId]

SQL Script

```
CREATE TABLE [Sales].[Shipper]
(
[ShipperId] [Udt].[udtSurrogateKeyInt] NOT NULL IDENTITY(1, 1),
[ShipperCompanyName] [Udt].[udtCompanyName] NOT NULL,
[PhoneNumber] [Udt].[udtTelephoneNumber] NOT NULL,
[UserAuthorizationId] [Udt].[udtSurrogateKeyInt] NULL,
[DateAdded] [Udt].[udtTimeStampNow3] NOT NULL CONSTRAINT [DF_TimeStampNow_-
YYYYMMDDHHMMSS_985480301] DEFAULT (getdate()),
[DateOfLastUpdate] [Udt].[udtTimeStampNow3] NOT NULL CONSTRAINT [DF_TimeStampNow_-
YYYYMMDDHHMMSS_321220825] DEFAULT (getdate())
) ON [PRIMARY]
GO
CREATE TRIGGER [Sales].[tD_Shipper] ON [Sales].[Shipper] FOR DELETE AS
/* erwin Builtin Trigger */
/* DELETE trigger on Shipper */
BEGIN
  DECLARE  @errno   int,
           @severity int,
           @state    int,
           @errmsg  varchar(255)
    /* erwin Builtin Trigger */
    /* Sales.Shipper  Sales.Orders on parent delete no action */
    /* ERWIN_RELATION:CHECKSUM="0002bbcf", PARENT_OWNER="Sales", PARENT_TABLE="Shipper"
    CHILD_OWNER="Sales", CHILD_TABLE="Orders"
    P2C_VERB_PHRASE="", C2P_VERB_PHRASE="",
    FK_CONSTRAINT="FK_Order_Shipper", FK_COLUMNS="ShipperId" */
    IF EXISTS (
      SELECT * FROM deleted,Sales.Orders
      WHERE
        /*  %JoinFKPK(Sales.Orders,deleted," = "," AND") */
        Sales.Orders.ShipperId = deleted.ShipperId
    )
    BEGIN
      SELECT @errno  = 30001,
             @errmsg = 'Cannot delete Sales.Shipper because Sales.Orders exists.'
      GOTO error
    END

    /* erwin Builtin Trigger */
    /* DbSecurity.UserAuthorization  Sales.Shipper on child delete no action */
    /* ERWIN_RELATION:CHECKSUM="00000000", PARENT_OWNER="DbSecurity", PARENT_-
TABLE="UserAuthorization"
    CHILD_OWNER="Sales", CHILD_TABLE="Shipper"
    P2C_VERB_PHRASE="", C2P_VERB_PHRASE="",
    FK_CONSTRAINT="R_25", FK_COLUMNS="UserAuthorizationId" */
```

```
    IF EXISTS (SELECT * FROM deleted,DbSecurity.UserAuthorization
      WHERE
        /* %JoinFKPK(deleted,DbSecurity.UserAuthorization," = "," AND") */
        deleted.UserAuthorizationId = DbSecurity.UserAuthorization.UserAuthorizationId
AND
        NOT EXISTS (
          SELECT * FROM Sales.Shipper
          WHERE
            /* %JoinFKPK(Sales.Shipper,DbSecurity.UserAuthorization," = "," AND") */
            Sales.Shipper.UserAuthorizationId = DbSecurity.UserAuthorization.User-
AuthorizationId
        )
    )
    BEGIN
      SELECT @errno  = 30010,
             @errmsg = 'Cannot delete last Sales.Shipper because DbSecurity.User-
Authorization exists.'
      GOTO error
    END


    /* erwin Builtin Trigger */
    RETURN
error:
   RAISERROR (@errmsg, -- Message text.
              @severity, -- Severity (0~25).
              @state) -- State (0~255).
    rollback transaction
END
GO
CREATE TRIGGER [Sales].[TI_Sales_Shipper_LastUpdated] ON [Sales].[Shipper]
    AFTER INSERT,UPDATE

  AS

  UPDATE
      Sales.[Shipper]
  SET
      DateOfLastUpdate = GETDATE()

  FROM
      Sales.[Shipper] as c
  INNER JOIN
      Inserted i
  ON c.ShipperId = i.ShipperId

GO
CREATE TRIGGER [Sales].[tU_Shipper] ON [Sales].[Shipper] FOR UPDATE AS
/* erwin Builtin Trigger */
/* UPDATE trigger on Shipper */
BEGIN
  DECLARE  @numrows int,
           @nullcnt int,
           @validcnt int,
```

```sql
            @insShipperId Udt.udtSurrogateKeyInt,
            @errno   int,
            @severity int,
            @state    int,
            @errmsg  varchar(255)

  SELECT @numrows = @@rowcount
  /* erwin Builtin Trigger */
  /* Sales.Shipper  Sales.Orders on parent update no action */
  /* ERWIN_RELATION:CHECKSUM="0002f5d5", PARENT_OWNER="Sales", PARENT_TABLE="Shipper"
    CHILD_OWNER="Sales", CHILD_TABLE="Orders"
    P2C_VERB_PHRASE="", C2P_VERB_PHRASE="",
    FK_CONSTRAINT="FK_Order_Shipper", FK_COLUMNS="ShipperId" */
  IF
    /* %ParentPK(" OR",UPDATE) */
    UPDATE(ShipperId)
  BEGIN
    IF EXISTS (
      SELECT * FROM deleted,Sales.Orders
      WHERE
        /*  %JoinFKPK(Sales.Orders,deleted," = "," AND") */
        Sales.Orders.ShipperId = deleted.ShipperId
    )
    BEGIN
      SELECT @errno  = 30005,
             @errmsg = 'Cannot update Sales.Shipper because Sales.Orders exists.'
      GOTO error
    END
  END

  /* erwin Builtin Trigger */
  /* DbSecurity.UserAuthorization  Sales.Shipper on child update no action */
  /* ERWIN_RELATION:CHECKSUM="00000000", PARENT_OWNER="DbSecurity", PARENT_TABLE="User-
Authorization"
    CHILD_OWNER="Sales", CHILD_TABLE="Shipper"
    P2C_VERB_PHRASE="", C2P_VERB_PHRASE="",
    FK_CONSTRAINT="R_25", FK_COLUMNS="UserAuthorizationId" */
  IF
    /* %ChildFK(" OR",UPDATE) */
    UPDATE(UserAuthorizationId)
  BEGIN
    SELECT @nullcnt = 0
    SELECT @validcnt = count(*)
      FROM inserted,DbSecurity.UserAuthorization
        WHERE
          /* %JoinFKPK(inserted,DbSecurity.UserAuthorization) */
          inserted.UserAuthorizationId = DbSecurity.UserAuthorization.UserAuthorization-
Id
    /* %NotnullFK(inserted," IS NULL","select @nullcnt = count(*) from inserted
where"," AND") */
    select @nullcnt = count(*) from inserted where
      inserted.UserAuthorizationId IS NULL
    IF @validcnt + @nullcnt != @numrows
    BEGIN
```

```
        SELECT @errno  = 30007,
                @errmsg = 'Cannot update Sales.Shipper because DbSecurity.User-
Authorization does not exist.'
        GOTO error
      END
  END


  /* erwin Builtin Trigger */
  RETURN
error:
    RAISERROR (@errmsg, -- Message text.
                @severity, -- Severity (0~25).
                @state) -- State (0~255).
    rollback transaction
END
GO
ALTER TABLE [Sales].[Shipper] ADD CONSTRAINT [PK_Shippers] PRIMARY KEY CLUSTERED
([ShipperId]) ON [PRIMARY]
GO
ALTER TABLE [Sales].[Shipper] ADD CONSTRAINT [R_25] FOREIGN KEY ([UserAuthorizationId])
REFERENCES [DbSecurity].[UserAuthorization] ([UserAuthorizationId])
GO
ALTER TABLE [Sales].[Shipper] ENABLE CHANGE_TRACKING
GO
```

Uses

[DbSecurity].[UserAuthorization]
[Udt].[udtCompanyName]
[Udt].[udtSurrogateKeyInt]
[Udt].[udtTelephoneNumber]
[Udt].[udtTimeStampNow3]
Sales

Used By

[Sales].[Orders]
[JsonOutput].[uvw_SalesShipper]
[JsonOutput].[MongoOrder]
[Sales].[utvf_FindAllCustomerOrder]

▣ [Service].[Feedback]

Properties

Property	Value
Collation	SQL_Latin1_General_CP1_CI_AS
Row Count (~)	0
Created	1:05:28 PM Saturday, October 29, 2022
Last Modified	1:05:32 PM Saturday, October 29, 2022

Columns

Key	Name	Data Type	Max Length (Bytes)	Nullability	Identity
PK C	MemberID	[Udt].[udtSurrogateKeyInt]	4	NOT NULL	1 - 1
	Feedback	[Udt].[udtDescription]	500	NULL allowed	
	Rating	[Udt].[udtScore]	4	NULL allowed	
	Received_On	[dbo].[udtDateTime]	4	NULL allowed	

Indexes

Key	Name	Key Columns	Unique
PK C	PK__Feedback__0CF04B38E2275530	MemberID	True

SQL Script

```
CREATE TABLE [Service].[Feedback]
(
[MemberID] [Udt].[udtSurrogateKeyInt] NOT NULL IDENTITY(1, 1),
[Feedback] [Udt].[udtDescription] MASKED WITH (FUNCTION = 'default()') NULL,
[Rating] [Udt].[udtScore] MASKED WITH (FUNCTION = 'default()') NULL,
[Received_On] [dbo].[udtDateTime] NULL
) ON [PRIMARY]
GO
ALTER TABLE [Service].[Feedback] ADD CONSTRAINT [PK__Feedback__0CF04B38E2275530]
PRIMARY KEY CLUSTERED ([MemberID]) ON [PRIMARY]
GO
ALTER TABLE [Service].[Feedback] ENABLE CHANGE_TRACKING
GO
```

Uses

[dbo].[udtDateTime]
[Udt].[udtDescription]
[Udt].[udtScore]
[Udt].[udtSurrogateKeyInt]
Service

▦ [SystemVersioned].[Employee]

Properties

Property	Value
Collation	SQL_Latin1_General_CP1_CI_AS
Heap	True
Row Count (~)	0
Created	1:05:28 PM Saturday, October 29, 2022
Last Modified	1:05:32 PM Saturday, October 29, 2022
System Versioned	True
Remote Data Archive	Disabled
History Table	[Audit].[VersionedEmployeeHistory]
History Table Row Count (~)	0
History Table Created	1:05:28 PM Saturday, October 29, 2022
History Table Last Modified	1:05:29 PM Saturday, October 29, 2022

Columns

Key	Name	Data Type	Max Length (Bytes)	Nullability
PK	EmployeeId	[Udt].[udtSurrogateKeyInt]	4	NOT NULL
	EmployeeFullName	[Udt].[udtFullName]	124	NOT NULL
	Department	[dbo].[udtDepartment]	100	NOT NULL
	Salary	[dbo].[udtSalary]	4	NOT NULL
	Notes	[Udt].[udtNote]	120	NOT NULL

Indexes

Key	Name	Key Columns	Unique
PK	PK_EmployeeVersioned	EmployeeId	True

SQL Script

```
CREATE TABLE [Audit].[VersionedEmployeeHistory]
(
[EmployeeId] [Udt].[udtSurrogateKeyInt] NOT NULL,
[EmployeeFullName] [Udt].[udtFullName] NOT NULL,
[Department] [dbo].[udtDepartment] NOT NULL,
[Salary] [dbo].[udtSalary] NOT NULL,
[Notes] [Udt].[udtNote] NOT NULL,
```

```
[SysStart] [dbo].[udtTimeStampNow4] NOT NULL,
[SysEnd] [dbo].[udtTimeStampNow4] NOT NULL
) ON [PRIMARY]
GO
CREATE CLUSTERED INDEX [ix_VersionedEmployeeHistory] ON [Audit].[VersionedEmployee-
History] ([SysEnd], [SysStart]) ON [PRIMARY]
GO
CREATE TABLE [SystemVersioned].[Employee]
(
[EmployeeId] [Udt].[udtSurrogateKeyInt] NOT NULL,
[EmployeeFullName] [Udt].[udtFullName] NOT NULL,
[Department] [dbo].[udtDepartment] NOT NULL,
[Salary] [dbo].[udtSalary] NOT NULL,
[Notes] [Udt].[udtNote] NOT NULL,
[SysStart] [dbo].[udtTimeStampNow4] GENERATED ALWAYS AS ROW START HIDDEN NOT NULL,
[SysEnd] [dbo].[udtTimeStampNow4] GENERATED ALWAYS AS ROW END HIDDEN NOT NULL,
PERIOD FOR SYSTEM_TIME (SysStart, SysEnd),
CONSTRAINT [PK_EmployeeVersioned] PRIMARY KEY NONCLUSTERED  ([EmployeeId]) ON [PRIMARY]
) ON [PRIMARY]
WITH
(
SYSTEM_VERSIONING = ON (HISTORY_TABLE = [Audit].[VersionedEmployeeHistory])
)
GO
ALTER TABLE [SystemVersioned].[Employee] ENABLE CHANGE_TRACKING
GO
```

Uses

[dbo].[udtDepartment]
[dbo].[udtSalary]
[dbo].[udtTimeStampNow4]
[Udt].[udtFullName]
[Udt].[udtNote]
[Udt].[udtSurrogateKeyInt]
SystemVersioned

⊞ [Triggered].[AuditTriggeredEmployeeHistory]

Properties

Property	Value
Collation	SQL_Latin1_General_CP1_CI_AS
Row Count (~)	0
Created	1:05:28 PM Saturday, October 29, 2022
Last Modified	1:05:32 PM Saturday, October 29, 2022

Columns

Key	Name	Data Type	Max Length (Bytes)	Nullability	Identity	Default
PK	TriggeredEmployeeHistoryId	[Udt].[udtSurrogateKeyInt]	4	NOT NULL	1 - 1	
	AuditTriggeredEmployeeHistory-Timestamp	[Udt].[udtTimeStamp-Now3]	7	NULL allowed		(sysdat etime())
	TriggerOption	[Udt].[udtTriggerOption]	1	NULL allowed		
🔑	EmployeeId	[Udt].[udtSurrogateKeyInt]	4	NOT NULL		
	EmployeeFullName	[Udt].[udtFullName]	124	NOT NULL		
	Department	[dbo].[udtDepartment]	100	NOT NULL		
	Salary	[dbo].[udtSalary]	4	NOT NULL		
	Notes	[Udt].[udtNote]	120	NOT NULL		
⊞	IsDeleted	[Udt].[udtFlagChar]	1	NULL allowed		('N')
	TransactionNumber	[Udt].[udtSequenceNo]	4	NULL allowed		((1))
	UserAuthenticatedKey	[Udt].[udtSurrogateKeyInt]	4	NULL allowed		((37))
🔑	SysStartTime	[dbo].[udtTimeStamp-Now4]	7	NULL allowed		
🔑	SysEndTime	[dbo].[udtTimeStamp-Now4]	7	NULL allowed		
	TimestampRowChanged	[dbo].[udtTimeStamp-Now4]	7	NULL allowed		

Indexes

Key	Name	Key Columns	Unique
PK🔑	PK_TriggeredEmployeeHistoryId	TriggeredEmployeeHistoryId	True
🔑	ix_Employees	EmployeeId, SysStartTime, SysEndTime, TriggeredEmployeeHistoryId	True

Check Constraints

Name	On Column	Constraint
CHK_Flag_Char_1188749860	IsDeleted	([IsDeleted]='U' OR [IsDeleted]='D')

SQL Script

```sql
CREATE TABLE [Triggered].[AuditTriggeredEmployeeHistory]
(
[TriggeredEmployeeHistoryId] [Udt].[udtSurrogateKeyInt] NOT NULL IDENTITY(1, 1),
[AuditTriggeredEmployeeHistoryTimestamp] [Udt].[udtTimeStampNow3] NULL CONSTRAINT [DF__AuditTrig__Audit__6383C8BA] DEFAULT (sysdatetime()),
[TriggerOption] [Udt].[udtTriggerOption] NULL,
[EmployeeId] [Udt].[udtSurrogateKeyInt] NOT NULL,
[EmployeeFullName] [Udt].[udtFullName] NOT NULL,
[Department] [dbo].[udtDepartment] NOT NULL,
[Salary] [dbo].[udtSalary] NOT NULL,
[Notes] [Udt].[udtNote] NOT NULL,
[IsDeleted] [Udt].[udtFlagChar] NULL CONSTRAINT [DF__AuditTrig__IsDel__656C112C] DEFAULT ('N'),
[TransactionNumber] [Udt].[udtSequenceNo] NULL CONSTRAINT [DF__AuditTrig__Trans__66603565] DEFAULT ((1)),
[UserAuthenticatedKey] [Udt].[udtSurrogateKeyInt] NULL CONSTRAINT [DF__AuditTrig__UserA__6754599E] DEFAULT ((37)),
[SysStartTime] [dbo].[udtTimeStampNow4] NULL,
[SysEndTime] [dbo].[udtTimeStampNow4] NULL,
[TimestampRowChanged] [dbo].[udtTimeStampNow4] NULL
) ON [PRIMARY]
GO
ALTER TABLE [Triggered].[AuditTriggeredEmployeeHistory] ADD CONSTRAINT [CHK_Flag_Char_1188749860] CHECK (([IsDeleted]='U' OR [IsDeleted]='D'))
GO
ALTER TABLE [Triggered].[AuditTriggeredEmployeeHistory] ADD CONSTRAINT [PK_Triggered-EmployeeHistoryId] PRIMARY KEY NONCLUSTERED  ([TriggeredEmployeeHistoryId]) ON [PRIMARY]
GO
CREATE UNIQUE CLUSTERED INDEX [ix_Employees] ON [Triggered].[AuditTriggeredEmployee-History] ([EmployeeId], [SysStartTime], [SysEndTime], [TriggeredEmployeeHistoryId]) ON [PRIMARY]
GO
ALTER TABLE [Triggered].[AuditTriggeredEmployeeHistory] ENABLE CHANGE_TRACKING
GO
```

Uses

[dbo].[udtDepartment]
[dbo].[udtSalary]
[dbo].[udtTimeStampNow4]
[Udt].[udtFlagChar]
[Udt].[udtFullName]
[Udt].[udtNote]
[Udt].[udtSequenceNo]
[Udt].[udtSurrogateKeyInt]
[Udt].[udtTimeStampNow3]
[Udt].[udtTriggerOption]
Triggered

Used By

[Triggered].[utvf_EmployeeCurrentAndHistory]
[Triggered].[utvf_EmployeeCurrentAndHistoryCTE]

▦ [Triggered].[Employee]

Properties

Property	Value
Collation	SQL_Latin1_General_CP1_CI_AS
Row Count (~)	0
Created	1:05:28 PM Saturday, October 29, 2022
Last Modified	1:05:32 PM Saturday, October 29, 2022

Columns

Key	Name	Data Type	Max Length (Bytes)	Nullability	Default
PK🔑	EmployeeId	[Udt].[udtSurrogateKeyInt]	4	NOT NULL	
	EmployeeFullName	[Udt].[udtName]	40	NOT NULL	
	Department	[Udt].[udtName]	40	NOT NULL	
▦	Salary	[Udt].[udtCurrency]	8	NOT NULL	
	Notes	[Udt].[udtNote]	120	NOT NULL	
▦	IsDeleted	[Udt].[udtFlagChar]	1	NULL allowed	('N')
	TransactionNumber	[Udt].[udtSequenceNo]	4	NULL allowed	((1))
	UserAuthenticatedKey	[Udt].[udtSurrogateKeyInt]	4	NULL allowed	((37))
🔑	SysStartTime	[dbo].[udtTimeStampNow4]	7	NULL allowed	
🔑	SysEndTime	[dbo].[udtTimeStampNow4]	7	NULL allowed	
	TimestampRowChanged	[dbo].[udtTimeStampNow4]	7	NULL allowed	

Indexes

Key	Name	Key Columns	Unique
PK🔑	PK_TriggeredEmployee	EmployeeId	True
🔑	ix_Employees	EmployeeId, SysStartTime, SysEndTime	

Triggers

Name	ANSI Nulls On	Quoted Identifier On	On
uTdu_AuditTriggeredEmployeeHistory	True	True	After Delete Update

Check Constraints

Name	On Column	Constraint
CHK_Flag_Char_2035157222	IsDeleted	([IsDeleted]='U' OR [IsDeleted]='D')
CHK_IsDeletion_2129636034	Salary	([Salary]='Y' OR [Salary]='N')

SQL Script

```sql
CREATE TABLE [Triggered].[Employee]
(
[EmployeeId] [Udt].[udtSurrogateKeyInt] NOT NULL,
[EmployeeFullName] [Udt].[udtName] NOT NULL,
[Department] [Udt].[udtName] NOT NULL,
[Salary] [Udt].[udtCurrency] NOT NULL,
[Notes] [Udt].[udtNote] NOT NULL,
[IsDeleted] [Udt].[udtFlagChar] NULL CONSTRAINT [DF__Employee__IsDele__6B24EA82]
DEFAULT ('N'),
[TransactionNumber] [Udt].[udtSequenceNo] NULL CONSTRAINT [DF__Employee__-
Transa__6C190EBB] DEFAULT ((1)),
[UserAuthenticatedKey] [Udt].[udtSurrogateKeyInt] NULL CONSTRAINT [DF__Employee__User-
Au__6D0D32F4] DEFAULT ((37)),
[SysStartTime] [dbo].[udtTimeStampNow4] NULL,
[SysEndTime] [dbo].[udtTimeStampNow4] NULL,
[TimestampRowChanged] [dbo].[udtTimeStampNow4] NULL
) ON [PRIMARY]
GO
CREATE TRIGGER [Triggered].[uTdu_AuditTriggeredEmployeeHistory] ON
[Triggered].[Employee]
   WITH
 EXECUTE AS CALLER  AFTER DELETE,UPDATE

  AS

begin
        declare @action char(1) = 'I';
        declare @IsDeleted char(1) = 'N';
        declare @DeletedMessage char(25) = 'Rows has been deleted';
        declare @SysStartTimeAsSysEnd datetime2;
        --
        if (exists (select * from inserted) and exists (select * from deleted))
        begin
            set @action = 'U';
            SELECT @SysStartTimeAsSysEnd = Inserted.SysStartTime FROM Inserted
        end;
        else if (exists (select * from deleted))
```

```
            begin
                set @action = 'D';
                set @IsDeleted = 'Y';
            end;
            else
                set @action = 'I';

            if (@action <> 'I')
                insert into Triggered.AuditTriggeredEmployeeHistory
                (
                    AuditTriggeredEmployeeHistoryTimestamp
                  , TriggerOption
                  , EmployeeId
                  , EmployeeFullName
                  , Department
                  , Salary
                  , Notes
                  , IsDeleted
                  , TransactionNumber
                  , UserAuthenticatedKey
                  , TimestampRowChanged
                  , SysStartTime
                  , SysEndTime
                )
                select sysdatetime()       as AuditTriggeredEmployeeHistoryTimestamp
                     , @action              as TriggerOption
                     , EmployeeId
                     , EmployeeFullName
                     , Department
                     , Salary
                     , case
                           when @action <> 'D' then
                               Deleted.Notes
                           else
                               @DeletedMessage
                       end
                     , @IsDeleted          as IsDeleted
                     , Deleted.TransactionNumber
                     , UserAuthenticatedKey
                     , TimestampRowChanged
                     , Deleted.SysStartTime
                     , case
                           when @action <> 'D' then
                               @SysStartTimeAsSysEnd
                           else
                               sysdatetime()
                       end as SysEndTime
                from Deleted;
        end;


GO
ALTER TABLE [Triggered].[Employee] ADD CONSTRAINT [CHK_Flag_Char_2035157222] CHECK
```

```
((([IsDeleted]='U' OR [IsDeleted]='D'))
GO
ALTER TABLE [Triggered].[Employee] ADD CONSTRAINT [CHK_IsDeletion_2129636034] CHECK
(([Salary]='Y' OR [Salary]='N'))
GO
ALTER TABLE [Triggered].[Employee] ADD CONSTRAINT [PK_TriggeredEmployee] PRIMARY KEY
NONCLUSTERED  ([EmployeeId]) ON [PRIMARY]
GO
CREATE CLUSTERED INDEX [ix_Employees] ON [Triggered].[Employee] ([EmployeeId], [Sys-
StartTime], [SysEndTime]) ON [PRIMARY]
GO
ALTER TABLE [Triggered].[Employee] ENABLE CHANGE_TRACKING
GO
```

Uses

[dbo].[udtTimeStampNow4]
[Udt].[udtCurrency]
[Udt].[udtFlagChar]
[Udt].[udtName]
[Udt].[udtNote]
[Udt].[udtSequenceNo]
[Udt].[udtSurrogateKeyInt]
Triggered

Used By

[Triggered].[utvf_EmployeeCurrentAndHistory]
[Triggered].[utvf_EmployeeCurrentAndHistoryCTE]

🖼 *Views*

Objects

Name
JsonOutput.uvw_HumanResourcesEmployee
JsonOutput.uvw_Order
JsonOutput.uvw_ProductionCategory
JsonOutput.uvw_ProductionProduct
JsonOutput.uvw_ProductionSupplier
JsonOutput.uvw_SalesCustomer
JsonOutput.uvw_SalesShipper
Utils.uvw_FindColumnDefinitionPlusDefaultAndCheckConstraint
Utils.uw_FindAllDatabaseColumnsOnTheServer

▦ [JsonOutput].[uvw_HumanResourcesEmployee]

Properties

Property	Value
Collation	SQL_Latin1_General_CP1_CI_AS
ANSI Nulls On	True
Quoted Identifier On	True
Created	1:05:29 PM Saturday, October 29, 2022
Last Modified	1:05:29 PM Saturday, October 29, 2022

Columns

Name	Data Type	Max Length (Bytes)	Identity
EmployeeObjectId	[Udt].[udtSurrogateKeyInt]	4	0 - 0
EmployeeLastName	[Udt].[udtLastName]	70	
EmployeeFirstName	[Udt].[udtFirstName]	50	
EmployeeTitle	[Udt].[udtTitle]	18	
EmployeeTitleOfCourtesy	[Udt].[udtTitleOfCourtesy]	18	
BirthDate	[dbo].[udtBirthDate]	8	
HireDate	[Udt].[udtYYYYMMDD]	8	
EmployeeAddress	[Udt].[udtAddress]	50	
EmployeeCity	[Udt].[udtCity]	28	
EmployeeRegion	[Udt].[udtRegion]	60	
EmployeePostalCode	[Udt].[udtPostalCode]	10	
EmployeeCountry	[Udt].[udtCountry]	112	
EmployeePhoneNumber	[Udt].[udtTelephoneNumber]	36	
EmployeeManagerId	[Udt].[udtSurrogateKeyInt]	4	

SQL Script

```
CREATE VIEW [JsonOutput].[uvw_HumanResourcesEmployee]([EmployeeObjectId],[EmployeeLast-
Name],[EmployeeFirstName],[EmployeeTitle],[EmployeeTitleOfCourtesy],[BirthDate],[Hire-
Date],[EmployeeAddress],[EmployeeCity],[EmployeeRegion],[EmployeePostalCode],[Employee-
Country],[EmployeePhoneNumber],[EmployeeManagerId])
AS
SELECT E.[EmployeeId],E.[EmployeeLastName],E.[EmployeeFirstName],E.[Employee-
Title],E.[EmployeeTitleOfCourtesy],E.[BirthDate],E.[HireDate],E.[Employee-
Address],E.[EmployeeCity],E.[EmployeeRegion],E.[EmployeePostalCode],E.[Employee-
Country],E.[EmployeePhoneNumber],E.[EmployeeManagerId]
    FROM [HumanResources].[Employee] E
GO
```

Uses

[HumanResources].[Employee]
[dbo].[udtBirthDate]
[Udt].[udtAddress]
[Udt].[udtCity]
[Udt].[udtCountry]
[Udt].[udtFirstName]
[Udt].[udtLastName]
[Udt].[udtPostalCode]
[Udt].[udtRegion]
[Udt].[udtSurrogateKeyInt]
[Udt].[udtTelephoneNumber]
[Udt].[udtTitle]
[Udt].[udtTitleOfCourtesy]
[Udt].[udtYYYYMMDD]
JsonOutput

[JsonOutput].[uvw_Order]

Properties

Property	Value
Collation	SQL_Latin1_General_CP1_CI_AS
ANSI Nulls On	True
Quoted Identifier On	True
Created	1:05:29 PM Saturday, October 29, 2022
Last Modified	1:05:29 PM Saturday, October 29, 2022

Columns

Name	Data Type	Max Length (Bytes)	Identity
OrderId	[Udt].[udtSurrogateKeyInt]	4	0 - 0
CustomerId	[Udt].[udtSurrogateKeyInt]	4	
EmployeeId	[Udt].[udtSurrogateKeyInt]	4	
ShipperId	[Udt].[udtSurrogateKeyInt]	4	
OrderDate	[Udt].[udtYYYYMMDD]	8	
RequiredDate	[Udt].[udtYYYYMMDD]	8	
ShipToDate	[Udt].[udtYYYYMMDD]	8	
Freight	[Udt].[udtCurrency]	8	
ShipToName	[Udt].[udtFullName]	124	
ShipToAddress	[Udt].[udtAddress]	50	
ShipToCity	[Udt].[udtCity]	28	
ShipToRegion	[Udt].[udtRegion]	60	
ShipToPostalCode	[Udt].[udtPostalCode]	10	
ShipToCountry	[Udt].[udtCountry]	112	

SQL Script

```
CREATE VIEW [JsonOutput].[uvw_Order]([OrderId],[CustomerId],[EmployeeId],[Shipper-
Id],[OrderDate],[RequiredDate],[ShipToDate],[Freight],[ShipToName],[ShipTo-
Address],[ShipToCity],[ShipToRegion],[ShipToPostalCode],[ShipToCountry])
AS
SELECT O.[OrderId],O.[CustomerId],O.[EmployeeId],O.[ShipperId],O.[Order-
Date],O.[RequiredDate],O.[ShipToDate],O.[Freight],O.[ShipToName],O.[ShipTo-
Address],O.[ShipToCity],O.[ShipToRegion],O.[ShipToPostalCode],O.[ShipToCountry]
    FROM [Sales].[Orders] O
GO
```

Uses

[Sales].[Orders]
[Udt].[udtAddress]
[Udt].[udtCity]
[Udt].[udtCountry]
[Udt].[udtCurrency]
[Udt].[udtFullName]
[Udt].[udtPostalCode]
[Udt].[udtRegion]
[Udt].[udtSurrogateKeyInt]
[Udt].[udtYYYYMMDD]
JsonOutput

▦ [JsonOutput].[uvw_ProductionCategory]

Properties

Property	Value
Collation	SQL_Latin1_General_CP1_CI_AS
ANSI Nulls On	True
Quoted Identifier On	True
Created	1:05:29 PM Saturday, October 29, 2022
Last Modified	1:05:29 PM Saturday, October 29, 2022

Columns

Name	Data Type	Max Length (Bytes)	Identity
CategoryObjectId	[Udt].[udtSurrogateKeyInt]	4	0 - 0
CategoryName	[Udt].[udtCategoryName]	30	
Description	[Udt].[udtDescription]	500	

SQL Script

```
CREATE VIEW [JsonOutput].[uvw_ProductionCategory]([CategoryObjectId],[Category-
Name],[Description])
AS
SELECT [Production].[Category].[CategoryId],[Production].[Category].[Category-
Name],[Production].[Category].[Description]
    FROM [Production].[Category]
GO
```

Uses

[Production].[Category]
[Udt].[udtCategoryName]
[Udt].[udtDescription]
[Udt].[udtSurrogateKeyInt]
JsonOutput

▥ [JsonOutput].[uvw_ProductionProduct]

Properties

Property	Value
Collation	SQL_Latin1_General_CP1_CI_AS
ANSI Nulls On	True
Quoted Identifier On	True
Created	1:05:29 PM Saturday, October 29, 2022
Last Modified	1:05:29 PM Saturday, October 29, 2022

Columns

Name	Data Type	Max Length (Bytes)
ProductObjectId	[Udt].[udtSurrogateKeyInt]	4
ProductName	[Udt].[udtProductName]	60
SupplierId	[Udt].[udtSurrogateKeyInt]	4
CategoryId	[Udt].[udtSurrogateKeyInt]	4
UnitPrice	[Udt].[udtCurrency]	8
Discontinued	[Udt].[udtFlagBit]	1
CategoryObjectId	[Udt].[udtSurrogateKeyInt]	4
CategoryName	[Udt].[udtCategoryName]	30
Description	[Udt].[udtDescription]	500
SupplierCompanyName	[Udt].[udtCompanyName]	60
SupplierContactName	[Udt].[udtFullName]	124
SupplierPhoneNumber	[Udt].[udtTelephoneNumber]	36
SupplierFaxNumber	[Udt].[udtTelephoneNumber]	36

SQL Script

```
CREATE VIEW [JsonOutput].[uvw_ProductionProduct]([ProductObjectId],[Product-
Name],[SupplierId],[CategoryId],[UnitPrice],[Discontinued],[CategoryObjectId],[Category-
Name],[Description],[SupplierCompanyName],[SupplierContactName],[SupplierPhone-
Number],[SupplierFaxNumber])
AS
SELECT P.[ProductId],P.[ProductName],S.[SupplierId],P.[CategoryId],P.[Unit-
Price],P.[Discontinued],C.[CategoryId],C.[CategoryName],C.[Description],S.[Supplier-
CompanyName],S.[SupplierContactName],S.[SupplierPhoneNumber],S.[SupplierFaxNumber]
    FROM [Production].[Supplier] S,[Production].[Category] C,[Production].[Product] P
GO
```

Uses

[Production].[Category]
[Production].[Product]
[Production].[Supplier]
[Udt].[udtCategoryName]
[Udt].[udtCompanyName]
[Udt].[udtCurrency]
[Udt].[udtDescription]
[Udt].[udtFlagBit]
[Udt].[udtFullName]
[Udt].[udtProductName]
[Udt].[udtSurrogateKeyInt]
[Udt].[udtTelephoneNumber]
JsonOutput

⊞ [JsonOutput].[uvw_ProductionSupplier]

Properties

Property	Value
Collation	SQL_Latin1_General_CP1_CI_AS
ANSI Nulls On	True
Quoted Identifier On	True
Created	1:05:29 PM Saturday, October 29, 2022
Last Modified	1:05:29 PM Saturday, October 29, 2022

Columns

Name	Data Type	Max Length (Bytes)	Identity
SupplierObjectId	[Udt].[udtSurrogateKeyInt]	4	0 - 0
SupplierCompanyName	[Udt].[udtCompanyName]	60	
SupplierContactName	[Udt].[udtFullName]	124	
SupplierContactTitle	[Udt].[udtContactTitle]	20	
SupplierAddress	[Udt].[udtAddress]	50	
SupplierCity	[Udt].[udtCity]	28	
SupplierRegion	[Udt].[udtRegion]	60	
SupplierPostalCode	[Udt].[udtPostalCode]	10	
SupplierCountry	[Udt].[udtCountry]	112	
SupplierPhoneNumber	[Udt].[udtTelephoneNumber]	36	
SupplierFaxNumber	[Udt].[udtTelephoneNumber]	36	

SQL Script

```
CREATE VIEW [JsonOutput].[uvw_ProductionSupplier]([SupplierObjectId],[SupplierCompany-
Name],[SupplierContactName],[SupplierContactTitle],[SupplierAddress],[Supplier-
City],[SupplierRegion],[SupplierPostalCode],[SupplierCountry],[SupplierPhone-
Number],[SupplierFaxNumber])
AS
SELECT S.[SupplierId],S.[SupplierCompanyName],S.[SupplierContactName],S.[Supplier-
ContactTitle],S.[SupplierAddress],S.[SupplierCity],S.[SupplierRegion],S.[SupplierPostal-
Code],S.[SupplierCountry],S.[SupplierPhoneNumber],S.[SupplierFaxNumber]
    FROM [Production].[Supplier] S
GO
```

Uses

[Production].[Supplier]
[Udt].[udtAddress]
[Udt].[udtCity]
[Udt].[udtCompanyName]
[Udt].[udtContactTitle]
[Udt].[udtCountry]
[Udt].[udtFullName]
[Udt].[udtPostalCode]
[Udt].[udtRegion]
[Udt].[udtSurrogateKeyInt]
[Udt].[udtTelephoneNumber]
JsonOutput

▦ [JsonOutput].[uvw_SalesCustomer]

Properties

Property	Value
Collation	SQL_Latin1_General_CP1_CI_AS
ANSI Nulls On	True
Quoted Identifier On	True
Created	1:05:29 PM Saturday, October 29, 2022
Last Modified	1:05:29 PM Saturday, October 29, 2022

Columns

Name	Data Type	Max Length (Bytes)	Identity
CustomerObjectId	[Udt].[udtSurrogateKeyInt]	4	0 - 0
CustomerCompanyName	[Udt].[udtCompanyName]	60	
CustomerContactName	[Udt].[udtFullName]	124	
CustomerContactTitle	[Udt].[udtTitle]	18	
CustomerAddress	[Udt].[udtAddress]	50	
CustomerCity	[Udt].[udtCity]	28	
CustomerRegion	[Udt].[udtRegion]	60	
CustomerPostalCode	[Udt].[udtPostalCode]	10	
CustomerCountry	[Udt].[udtCountry]	112	
CustomerPhoneNumber	[Udt].[udtTelephoneNumber]	36	
CustomerFaxNumber	[Udt].[udtTelephoneNumber]	36	

SQL Script

```
CREATE VIEW [JsonOutput].[uvw_SalesCustomer]([CustomerObjectId],[CustomerCompany-
Name],[CustomerContactName],[CustomerContactTitle],[CustomerAddress],[Customer-
City],[CustomerRegion],[CustomerPostalCode],[CustomerCountry],[CustomerPhone-
Number],[CustomerFaxNumber])
AS
SELECT C.[CustomerId],C.[CustomerCompanyName],C.[CustomerContactName],C.[Customer-
ContactTitle],C.[CustomerAddress],C.[CustomerCity],C.[CustomerRegion],C.[CustomerPostal-
Code],C.[CustomerCountry],C.[CustomerPhoneNumber],C.[CustomerFaxNumber]
    FROM [Sales].[Customer] C
GO
```

Uses

[Sales].[Customer]
[Udt].[udtAddress]
[Udt].[udtCity]
[Udt].[udtCompanyName]
[Udt].[udtCountry]
[Udt].[udtFullName]
[Udt].[udtPostalCode]
[Udt].[udtRegion]
[Udt].[udtSurrogateKeyInt]
[Udt].[udtTelephoneNumber]
[Udt].[udtTitle]
JsonOutput

▦ [JsonOutput].[uvw_SalesShipper]

Properties

Property	Value
Collation	SQL_Latin1_General_CP1_CI_AS
ANSI Nulls On	True
Quoted Identifier On	True
Created	1:05:29 PM Saturday, October 29, 2022
Last Modified	1:05:29 PM Saturday, October 29, 2022

Columns

Name	Data Type	Max Length (Bytes)	Identity
ShipperObjectId	[Udt].[udtSurrogateKeyInt]	4	0 - 0
ShipperCompanyName	[Udt].[udtCompanyName]	60	
PhoneNumber	[Udt].[udtTelephoneNumber]	36	

SQL Script

```
CREATE VIEW [JsonOutput].[uvw_SalesShipper]([ShipperObjectId],[ShipperCompany-
Name],[PhoneNumber])
AS
SELECT S.[ShipperId],S.[ShipperCompanyName],S.[PhoneNumber]
    FROM [Sales].[Shipper] S
GO
```

Uses

[Sales].[Shipper]
[Udt].[udtCompanyName]
[Udt].[udtSurrogateKeyInt]
[Udt].[udtTelephoneNumber]
JsonOutput

🔲 [Utils].[uvw_FindColumnDefinitionPlusDefaultAndCheckConstraint]

Properties

Property	Value
Collation	SQL_Latin1_General_CP1_CI_AS
ANSI Nulls On	True
Quoted Identifier On	True
Created	1:05:29 PM Saturday, October 29, 2022
Last Modified	1:05:29 PM Saturday, October 29, 2022

Columns

Name	Data Type	Max Length (Bytes)
FullyQualifiedTableName	nvarchar(257)	514
SchemaName	[sys].[sysname]	256
TableName	[sys].[sysname]	256
ColumnName	[sys].[sysname]	256
OrdinalPosition	int	4
FullyQualifiedDomainName	nvarchar(257)	514
DomainName	[sys].[sysname]	256
DataType	nvarchar(128)	256
IsNullable	varchar(3)	3
DefaultName	[sys].[sysname]	256
DefaultNameDefinition	nvarchar(4000)	8000
CheckConstraintRuleName	[sys].[sysname]	256
CheckConstraintRuleNameDefinition	nvarchar(4000)	8000

SQL Script

```
CREATE VIEW [Utils].[uvw_FindColumnDefinitionPlusDefaultAndCheckConstraint] AS  SELECT
concat( tbl.TABLE_SCHEMA , '.' , tbl.TABLE_NAME )  AS FullyQualifiedTableName,
tbl.TABLE_SCHEMA AS SchemaName, tbl.TABLE_NAME AS TableName, col.COLUMN_NAME AS Column-
Name, col.ORDINAL_POSITION AS OrdinalPosition,  concat( col.DOMAIN_SCHEMA , '.' ,
col.DOMAIN_NAME )  AS FullyQualifiedDomainName, col.DOMAIN_NAME AS DomainName, CASE
WHEN col.DATA_TYPE = 'varchar' THEN  concat( 'varchar(' , CHARACTER_MAXIMUM_LENGTH ,
')' )  WHEN col.DATA_TYPE = 'char' THEN  concat( 'char(' , CHARACTER_MAXIMUM_LENGTH ,
')' )  WHEN col.DATA_TYPE = 'nvarchar' THEN  concat( 'nvarchar(' , CHARACTER_MAXIMUM_-
LENGTH , ')' )  WHEN col.DATA_TYPE = 'nchar' THEN  concat( 'nchar(' , CHARACTER_-
MAXIMUM_LENGTH , ')' )  WHEN col.DATA_TYPE = 'numeric' THEN  concat( 'numeric(' ,
NUMERIC_PRECISION_RADIX , ', ' , NUMERIC_SCALE , ')' )  WHEN col.DATA_TYPE = 'decimal'
THEN  concat( 'decimal(' , NUMERIC_PRECISION_RADIX , ', ' , NUMERIC_SCALE , ')' )  ELSE
col.DATA_TYPE END AS DataType, col.IS_NULLABLE AS IsNullable, dcn.DefaultName,
col.COLUMN_DEFAULT AS DefaultNameDefinition, cc.CONSTRAINT_NAME AS CheckConstraintRule-
Name, cc.CHECK_CLAUSE AS CheckConstraintRuleNameDefinition FROM (  SELECT TABLE_-
```

```
CATALOG, TABLE_SCHEMA, TABLE_NAME, TABLE_TYPE FROM INFORMATION_SCHEMA.TABLES WHERE (
TABLE_TYPE = 'BASE TABLE' ) ) AS tbl     INNER JOIN   ( SELECT TABLE_CATALOG, TABLE_-
SCHEMA, TABLE_NAME, COLUMN_NAME, ORDINAL_POSITION, COLUMN_DEFAULT, IS_NULLABLE, DATA_-
TYPE, CHARACTER_MAXIMUM_LENGTH, CHARACTER_OCTET_LENGTH, NUMERIC_PRECISION, NUMERIC_-
PRECISION_RADIX, NUMERIC_SCALE, DATETIME_PRECISION, CHARACTER_SET_CATALOG, CHARACTER_-
SET_SCHEMA, CHARACTER_SET_NAME, COLLATION_CATALOG, COLLATION_SCHEMA, COLLATION_NAME,
DOMAIN_CATALOG, DOMAIN_SCHEMA, DOMAIN_NAME FROM INFORMATION_SCHEMA.COLUMNS ) AS col   ON
col.TABLE_CATALOG = tbl.TABLE_CATALOG AND col.TABLE_SCHEMA = tbl.TABLE_SCHEMA AND
col.TABLE_NAME = tbl.TABLE_NAME   LEFT OUTER JOIN   ( SELECT t.name AS TableName,
schema_name( s.schema_id )   AS SchemaName, ac.name AS ColumnName, d.name AS DefaultName
FROM sys.all_columns AS ac   INNER JOIN   sys.tables AS t ON ac.object_id = t.object_id
INNER JOIN   sys.schemas AS s ON t.schema_id = s.schema_id   INNER JOIN
sys.default_constraints AS d ON ac.default_object_id = d.object_id ) AS dcn   ON
dcn.SchemaName = tbl.TABLE_SCHEMA AND dcn.TableName = tbl.TABLE_NAME AND dcn.ColumnName
= col.COLUMN_NAME   LEFT OUTER JOIN   ( SELECT cu.TABLE_CATALOG, cu.TABLE_SCHEMA,
cu.TABLE_NAME, cu.COLUMN_NAME, c.CONSTRAINT_CATALOG, c.CONSTRAINT_SCHEMA, c.CONSTRAINT_-
NAME, c.CHECK_CLAUSE FROM INFORMATION_SCHEMA.CONSTRAINT_COLUMN_USAGE AS cu   INNER JOIN
INFORMATION_SCHEMA.CHECK_CONSTRAINTS AS c ON c.CONSTRAINT_NAME = cu.CONSTRAINT_NAME )
AS cc   ON cc.TABLE_SCHEMA = tbl.TABLE_SCHEMA AND cc.TABLE_NAME = tbl.TABLE_NAME AND
cc.COLUMN_NAME = col.COLUMN_NAME
GO
```

Uses

Utils

Used By

[Utils].[uw_FindAllDatabaseColumnsOnTheServer]

🔲 [Utils].[uw_FindAllDatabaseColumnsOnTheServer]

Properties

Property	Value
Collation	SQL_Latin1_General_CP1_CI_AS
ANSI Nulls On	True
Quoted Identifier On	True
Created	1:05:29 PM Saturday, October 29, 2022
Last Modified	1:05:29 PM Saturday, October 29, 2022

Columns

Name	Data Type	Max Length (Bytes)
FullyQualifiedTableName	nvarchar(257)	514
SchemaName	[sys].[sysname]	256
ColumnName	[sys].[sysname]	256
OrdinalPosition	int	4
FullyQualifiedDomainName	nvarchar(257)	514
DataType	nvarchar(128)	256
IsNullable	varchar(3)	3
DefaultName	[sys].[sysname]	256
DefaultNameDefinition	nvarchar(4000)	8000
CheckConstraintRuleName	[sys].[sysname]	256
CheckConstraintRuleNameDefinition	nvarchar(4000)	8000
Server_Name	nvarchar(128)	256
Target_Database_Version	nvarchar(300)	600
Instance_Name	nvarchar(128)	256
Database_Name	nvarchar(128)	256
Host_Name	nvarchar(128)	256

SQL Script

```
CREATE VIEW [Utils].[uw_FindAllDatabaseColumnsOnTheServer]([FullyQualifiedTable-
Name],[SchemaName],[ColumnName],[OrdinalPosition],[FullyQualifiedDomainName],[Data-
Type],[IsNullable],[DefaultName],[DefaultNameDefinition],[CheckConstraintRule-
Name],[CheckConstraintRuleNameDefinition],[Server_Name],[Target_Database_-
Version],[Instance_Name],[Database_Name],[Host_Name])
AS
SELECT vw.FullyQualifiedTableName,vw.SchemaName,vw.ColumnName,vw.Ordinal-
Position,vw.FullyQualifiedDomainName,vw.DataType,vw.IsNullable,vw.Default-
Name,vw.DefaultNameDefinition,vw.CheckConstraintRuleName,vw.CheckConstraintRuleName-
```

```
Definition,@@servername,@@version,@@servicename,db_name(),host_name()
    FROM [Utils].[uvw_FindColumnDefinitionPlusDefaultAndCheckConstraint] vw
        WHERE vw.SchemaName IN ('Sales' , 'Production' , 'HumanResources')
GO
```

Uses

[Utils].[uvw_FindColumnDefinitionPlusDefaultAndCheckConstraint]
Utils

🖹 *Stored Procedures*

Objects

Name
Sales.usp_getorders

📄 [Sales].[usp_getorders]

Properties

Property	Value
ANSI Nulls On	True
Quoted Identifier On	True

Parameters

Name	Data Type	Max Length (Bytes)
@country	nvarchar(40)	80

SQL Script

```
CREATE PROCEDURE [Sales].[usp_getorders] @country nvarchar(40)

 AS begin
    select o.OrderId
        , o.CustomerId
        , o.EmployeeId
        , o.OrderDate
        ,@country as Country
    from Sales.[Order] as o
    where o.ShipToCountry = @country;
end;
GO
```

Uses

Sales

☰ *Table-valued Functions*

Objects

Name
JsonOutput.MongoOrder
JsonOutput.MongoOrderDetail
Sales.utvf_FindAllCustomerOrder
Triggered.utvf_EmployeeCurrentAndHistory
Triggered.utvf_EmployeeCurrentAndHistoryCTE

▣ [JsonOutput].[MongoOrder]

Properties

Property	Value
ANSI Nulls On	True
Quoted Identifier On	True

SQL Script

```
CREATE FUNCTION [JsonOutput].[MongoOrder] ()
  RETURNS TABLE


as RETURN
(
    select o.OrderId as OrderObjectId
         , o.OrderDate
         , o.RequiredDate
         , o.ShipToDate
         , o.Freight
         , o.ShipToName
         , o.ShipToAddress
         , o.ShipToCity
         , o.ShipToRegion
         , o.ShipToPostalCode
         , o.ShipToCountry
         , (
             select SalesCustomer.CustomerId          as 'CustomerObjectId'
                  , SalesCustomer.CustomerCompanyName as 'CustomerCompanyName'
                  , SalesCustomer.CustomerContactName as 'CustomerContactName'
                  , SalesCustomer.CustomerPhoneNumber as 'CustomerPhoneNumber'
                  , SalesCustomer.CustomerFaxNumber   as 'CustomerFaxNumber'
             from Sales.[Orders]            as o2
                inner join Sales.Customer as SalesCustomer
                    on SalesCustomer.CustomerId = o.CustomerId
             where o.OrderId = o2.OrderId
             for json path, include_null_values
           )          as SalesCustomer
         , (
             select HumanResourcesEmployee.EmployeeId          as 'EmployeeObjectId'
                  , HumanResourcesEmployee.EmployeeLastName     as 'EmployeeLastName'
                  , HumanResourcesEmployee.EmployeeFirstName    as 'EmployeeFirstName'
                  , HumanResourcesEmployee.EmployeePhoneNumber as 'EmployeePhone-
Number'
                  , HumanResourcesEmployee.EmployeeManagerId    as 'EmployeeManagerId'
             from Sales.[Orders]                     as o2
```

```
                    inner join HumanResources.Employee as HumanResourcesEmployee
                        on HumanResourcesEmployee.EmployeeId = o2.EmployeeId
                where o.OrderId = o2.OrderId
                for json path, include_null_values
            )           as HumanResourcesEmployee
        , (
                select SalesShipper.ShipperId          as 'ShipperObjectId'
                    , SalesShipper.ShipperCompanyName as 'ShipperCompanyName'
                    , SalesShipper.PhoneNumber        as 'PhoneNumber'
                from Sales.[Orders]          as o2
                    inner join Sales.Shipper as SalesShipper
                        on SalesShipper.ShipperId = o2.ShipperId
                where o.OrderId = o2.OrderId
                for json path, include_null_values
            )           as SalesShipper
    from Sales.[Orders]                     as o
        inner join Sales.Customer          as SalesCustomer
            on SalesCustomer.CustomerId = o.CustomerId
        inner join HumanResources.Employee as HumanResourcesEmployee
            on HumanResourcesEmployee.EmployeeId = o.EmployeeId
        inner join Sales.Shipper           as SalesShipper
            on SalesShipper.ShipperId = o.ShipperId
);



GO
```

Uses

[HumanResources].[Employee]
[Sales].[Customer]
[Sales].[Orders]
[Sales].[Shipper]
[Udt].[udtAddress]
[Udt].[udtCity]
[Udt].[udtCountry]
[Udt].[udtCurrency]
[Udt].[udtFullName]
[Udt].[udtPostalCode]
[Udt].[udtRegion]
[Udt].[udtSurrogateKeyInt]
[Udt].[udtYYYYMMDD]
JsonOutput

▣ [JsonOutput].[MongoOrderDetail]

Properties

Property	Value
ANSI Nulls On	True
Quoted Identifier On	True

Parameters

Name	Data Type	Max Length (Bytes)
@OrderId	int	4

SQL Script

```
CREATE FUNCTION [JsonOutput].[MongoOrderDetail] (@OrderId int )
  RETURNS TABLE


as RETURN
(
    select OrderDetail.OrderId
as OrderObjectId
        , row_number() over (partition by OrderDetail.OrderId order by Order-
Detail.OrderId)      as LineItemNumer
        , OrderDetail.UnitPrice
        , OrderDetail.Quantity
        , OrderDetail.DiscountPercentage
        , OrderDetail.UnitPrice * OrderDetail.Quantity
as TotalCost
        , (OrderDetail.UnitPrice * OrderDetail.Quantity) * (1. - OrderDetail.Discount-
Percentage) as TotalDiscountedCost
        , OrderDetail.OrderId
        , (
            select distinct
                    ProductionProduct.ProductId    as 'ProductionProduct.Product-
ObjectId'
                  , ProductionProduct.ProductName  as 'ProductionProduct.ProductName'
                  , ProductionProduct.SupplierId   as 'ProductionProduct.SupplierId'
                  , ProductionProduct.CategoryId   as 'ProductionProduct.CategoryId'
                  , ProductionProduct.UnitPrice    as 'ProductionProduct.UnitPrice'
                  , ProductionProduct.Discontinued as 'Production-
Product.Discontinued'
              from Production.Product          as ProductionProduct
                  inner join Production.Category as ProductionCategory
                      on ProductionCategory.CategoryId = ProductionProduct.CategoryId
                  inner join Production.Supplier as ProductionSupplier
```

```
                         on ProductionSupplier.SupplierId = ProductionProduct.SupplierId
                    inner join Sales.OrderDetail   as od
                        on OrderDetail.ProductId = ProductionProduct.ProductId
                where od.OrderId = OrderDetail.OrderId
                for json path, include_null_values
        )
as ProductionProduct
        , (
                select distinct
                        ProductionCategory.CategoryId   as 'ProductionCategory.Category-
ObjectId'
                        , ProductionCategory.CategoryName as 'ProductionCategory.Category-
Name'
                        , ProductionCategory.Description   as 'Production-
Category.Description'
                from Production.Product          as ProductionProduct
                    inner join Production.Category as ProductionCategory
                        on ProductionCategory.CategoryId = ProductionProduct.CategoryId
                    inner join Sales.OrderDetail   as od
                        on OrderDetail.ProductId = ProductionProduct.ProductId
                where od.OrderId = OrderDetail.OrderId
                for json path, include_null_values
        )
as ProductionCategory
        , (
                select distinct
                        ProductionSupplier.SupplierId        as 'Production-
Supplier.SupplierObjectId'
                        , ProductionSupplier.SupplierCompanyName as 'Production-
Supplier.SupplierCompanyName'
                        , ProductionSupplier.SupplierContactName as 'Production-
Supplier.SupplierContactName'
                        , ProductionSupplier.SupplierPhoneNumber as 'Production-
Supplier.SupplierPhoneNumber'
                        , ProductionSupplier.SupplierFaxNumber   as 'Production-
Supplier.SupplierFaxNumber'
                from Production.Product          as ProductionProduct
                    inner join Production.Supplier as ProductionSupplier
                        on ProductionSupplier.SupplierId = ProductionProduct.SupplierId
                    inner join Sales.OrderDetail   as od
                        on OrderDetail.ProductId = ProductionProduct.ProductId
                where od.OrderId = OrderDetail.OrderId
                for json path, include_null_values
        )
as ProductionSupplier
    from Production.Product          as ProductionProduct
        inner join Production.Category as ProductionCategory
            on ProductionCategory.CategoryId = ProductionProduct.CategoryId
        inner join Production.Supplier as ProductionSupplier
            on ProductionSupplier.SupplierId = ProductionProduct.SupplierId
        inner join Sales.OrderDetail   as OrderDetail
            on OrderDetail.ProductId = ProductionProduct.ProductId
    where OrderDetail.OrderId = @OrderId
);
```

GO

Uses

[Production].[Category]
[Production].[Product]
[Production].[Supplier]
[Sales].[OrderDetail]
[Udt].[udtCurrency]
[Udt].[udtPercentage]
[Udt].[udtQuantitySmall]
[Udt].[udtSurrogateKeyInt]
JsonOutput

ⒻⓍ [Sales].[utvf_FindAllCustomerOrder]

Properties

Property	Value
ANSI Nulls On	True
Quoted Identifier On	True

Parameters

Name	Data Type	Max Length (Bytes)
@CustomerId	int	4

SQL Script

```
CREATE FUNCTION [Sales].[utvf_FindAllCustomerOrder] (@CustomerId int )
  RETURNS TABLE


as RETURN
(
    select o.OrderId
         , o.OrderDate
         , o.RequiredDate
         , o.ShipToDate
         , o.EmployeeId
         , o.ShipperId
         , sh.ShipperCompanyName
         , p.ProductName
         , su.SupplierCompanyName
         , su.SupplierCountry
         , o.Freight
         , (od.Quantity * od.UnitPrice) * (1.0 - od.DiscountPercentage) as LineAmount
         , (od.Quantity * od.UnitPrice) * (1.0 - od.DiscountPercentage) as LineAmount-
Discounted
         , od.Quantity
         , od.UnitPrice
         , od.DiscountPercentage
    from Sales.[Orders]             as o
        inner join Sales.OrderDetail    as od
            on od.OrderId = o.OrderId
        inner join Production.Product   as p
            on p.ProductId = od.ProductId
        inner join Production.Supplier  as su
            on su.SupplierId = p.SupplierId
        inner join Sales.Shipper        as sh
```

```
            on sh.ShipperId = o.ShipperId
    where o.CustomerId = @CustomerId
);




GO
```

Uses

[Production].[Product]
[Production].[Supplier]
[Sales].[OrderDetail]
[Sales].[Orders]
[Sales].[Shipper]
[Udt].[udtCompanyName]
[Udt].[udtCountry]
[Udt].[udtCurrency]
[Udt].[udtPercentage]
[Udt].[udtProductName]
[Udt].[udtQuantitySmall]
[Udt].[udtSurrogateKeyInt]
[Udt].[udtYYYYMMDD]
Sales

ⓕ [Triggered].[utvf_EmployeeCurrentAndHistory]

Properties

Property	Value
ANSI Nulls On	True
Quoted Identifier On	True

Parameters

Name	Data Type	Max Length (Bytes)
@EmployeeId	int	4

SQL Script

```
CREATE FUNCTION [Triggered].[utvf_EmployeeCurrentAndHistory] (@EmployeeId int )
  RETURNS TABLE


as RETURN
        (
          select 'Current row' as TransactionRow
                , EmployeeId
                , EmployeeFullName
                , Department
                , Salary
                , Notes
                , IsDeleted
                , TransactionNumber
                , UserAuthenticatedKey
                , SysStartTime
                , SysEndTime
                , TimestampRowChanged
          from [Triggered].[Employee]
          where EmployeeId = @EmployeeId
          union all
          select case
                    when IsDeleted = 'N' then
                        'History row'
                    else
                        'Deleted Row'
                 end as TransactionRow
                , EmployeeId
                , EmployeeFullName
                , Department
                , Salary
```

```
                , Notes
                , IsDeleted
                , TransactionNumber
                , UserAuthenticatedKey
                , SysStartTime
                , SysEndTime
                , TimestampRowChanged
        from [Triggered].[AuditTriggeredEmployeeHistory]
        where EmployeeId = @EmployeeId
    );




GO
```

Uses

[Triggered].[AuditTriggeredEmployeeHistory]
[Triggered].[Employee]
[Udt].[udtFlagChar]
[Udt].[udtNote]
[Udt].[udtSequenceNo]
[Udt].[udtSurrogateKeyInt]
Triggered

📠 [Triggered].[utvf_EmployeeCurrentAndHistoryCTE]

Properties

Property	Value
ANSI Nulls On	True
Quoted Identifier On	True

Parameters

Name	Data Type	Max Length (Bytes)
@EmployeeId	int	4

SQL Script

```
CREATE FUNCTION [Triggered].[utvf_EmployeeCurrentAndHistoryCTE] (@EmployeeId int )
  RETURNS TABLE


as RETURN
    (
        with AllTransactions
        as (select 'Current row' as TransactionRow
                , EmployeeId
                , EmployeeFullName
                , Department
                , Salary
                , Notes
                , IsDeleted
                , TransactionNumber
                , UserAuthenticatedKey
                , SysStartTime
                , SysEndTime
                , TimestampRowChanged
            from [Triggered].[Employee]
            where EmployeeId = @EmployeeId
            union
            select case
                    when IsDeleted = 'N' then
                        'History row'
                    else
                        'Deleted row'
                end as TransactionRow
                , EmployeeId
                , EmployeeFullName
                , Department
```

```
                    , Salary
                    , Notes
                    , IsDeleted
                    , TransactionNumber
                    , UserAuthenticatedKey
                    , SysStartTime
                    , SysEndTime
                    , TimestampRowChanged
            from [Triggered].[AuditTriggeredEmployeeHistory]
            where EmployeeId = @EmployeeId)
        select AllTransactions.TransactionRow
            , AllTransactions.EmployeeId
            , AllTransactions.EmployeeFullName
            , AllTransactions.Department
            , AllTransactions.Salary
            , AllTransactions.Notes
            , AllTransactions.IsDeleted
            , AllTransactions.TransactionNumber
            , AllTransactions.UserAuthenticatedKey
            , AllTransactions.SysStartTime
            , AllTransactions.SysEndTime
            , AllTransactions.TimestampRowChanged
        from AllTransactions
    );



GO
```

Uses

[Triggered].[AuditTriggeredEmployeeHistory]
[Triggered].[Employee]
[Udt].[udtFlagChar]
[Udt].[udtNote]
[Udt].[udtSequenceNo]
[Udt].[udtSurrogateKeyInt]
Triggered

🔢ₓ *Scalar-valued Functions*

Objects

Name
dbo.fn_diagramobjects
Hashing.CreateRowSha2_256HashKey
Hashing.CreateVarbinaryRowSha2_256HashKey
Hashing.CreateVarbinarySha2_256HashKey
Hashing.CreateVarcharHashKeySha2_256
Utils.CreateHashKeyMD5

🔢fx [dbo].[fn_diagramobjects]

Properties

Property	Value
ANSI Nulls On	True
Quoted Identifier On	True

SQL Script

```
CREATE FUNCTION [dbo].[fn_diagramobjects] ()
  RETURNS int

AS BEGIN
        declare @id_upgraddiagrams          int
        declare @id_sysdiagrams               int
        declare @id_helpdiagrams          int
        declare @id_helpdiagramdefinition    int
        declare @id_creatediagram      int
        declare @id_renamediagram      int
        declare @id_alterdiagram       int
        declare @id_dropdiagram         int
        declare @InstalledObjects      int

        select @InstalledObjects = 0

        select    @id_upgraddiagrams = object_id(N'dbo.sp_upgraddiagrams'),
            @id_sysdiagrams = object_id(N'dbo.sysdiagrams'),
            @id_helpdiagrams = object_id(N'dbo.sp_helpdiagrams'),
            @id_helpdiagramdefinition = object_id(N'dbo.sp_helpdiagramdefinition'),
            @id_creatediagram = object_id(N'dbo.sp_creatediagram'),
            @id_renamediagram = object_id(N'dbo.sp_renamediagram'),
            @id_alterdiagram = object_id(N'dbo.sp_alterdiagram'),
            @id_dropdiagram = object_id(N'dbo.sp_dropdiagram')

        if @id_upgraddiagrams is not null
            select @InstalledObjects = @InstalledObjects + 1
        if @id_sysdiagrams is not null
            select @InstalledObjects = @InstalledObjects + 2
        if @id_helpdiagrams is not null
            select @InstalledObjects = @InstalledObjects + 4
        if @id_helpdiagramdefinition is not null
            select @InstalledObjects = @InstalledObjects + 8
        if @id_creatediagram is not null
            select @InstalledObjects = @InstalledObjects + 16
        if @id_renamediagram is not null
            select @InstalledObjects = @InstalledObjects + 32
```

```
        if @id_alterdiagram  is not null
            select @InstalledObjects = @InstalledObjects + 64
        if @id_dropdiagram is not null
            select @InstalledObjects = @InstalledObjects + 128


        return @InstalledObjects
    END
GO
```

🔢fx [Hashing].[CreateRowSha2_256HashKey]

Properties

Property	Value
ANSI Nulls On	True
Quoted Identifier On	True

Parameters

Name	Data Type	Max Length (Bytes)
@ConcatenatedRowColumns	varchar(4096)	4096

SQL Script

```
CREATE FUNCTION [Hashing].[CreateRowSha2_256HashKey] (@ConcatenatedRowColumns
varchar(4096) )
  RETURNS varbinary(32)

AS BEGIN
    RETURN  HASHBYTES('SHA2_256', @ConcatenatedRowColumns)

END;
GO
```

Uses

Hashing

[Hashing].[CreateVarbinaryRowSha2_256HashKey]

Properties

Property	Value
ANSI Nulls On	True
Quoted Identifier On	True

Parameters

Name	Data Type	Max Length (Bytes)
@ConcatenatedRowColumns	varchar(4096)	4096

SQL Script

```
CREATE FUNCTION [Hashing].[CreateVarbinaryRowSha2_256HashKey] (@ConcatenatedRowColumns
varchar(4096) )
  RETURNS varbinary(32)

as BEGIN
    RETURN  HASHBYTES('SHA2_256', @ConcatenatedRowColumns)

END;
GO
```

Uses

Hashing

🔢fx [Hashing].[CreateVarbinarySha2_256HashKey]

Properties

Property	Value
ANSI Nulls On	True
Quoted Identifier On	True

Parameters

Name	Data Type	Max Length (Bytes)
@ConcatenatedColumns	varchar(4096)	4096

SQL Script

```
CREATE FUNCTION [Hashing].[CreateVarbinarySha2_256HashKey] (@ConcatenatedColumns
varchar(4096) )
  RETURNS varbinary(32)

as BEGIN
    return  hashbytes('SHA2_256', @ConcatenatedColumns)

END;
GO
```

Uses

Hashing

🔢ƒx [Hashing].[CreateVarcharHashKeySha2_256]

Properties

Property	Value
ANSI Nulls On	True
Quoted Identifier On	True

Parameters

Name	Data Type	Max Length (Bytes)
@DisplayNumberOfBytes	int	4
@ConcatenatedColumns	varchar(4096)	4096

SQL Script

```
CREATE FUNCTION [Hashing].[CreateVarcharHashKeySha2_256] (@DisplayNumberOfBytes int ,
@ConcatenatedColumns varchar(4096) )
  RETURNS varchar(32)

as BEGIN
    return case when @DisplayNumberOfBytes between 5 and 31 then
substring(convert(varchar(32), hashbytes('SHA2_256', @ConcatenatedColumns),
2),1,@DisplayNumberOfBytes)
    else convert(varchar(32), hashbytes('SHA2_256', @ConcatenatedColumns), 2)
    end;

end;
GO
```

Uses

Hashing

🔢 [Utils].[CreateHashKeyMD5]

Properties

Property	Value
ANSI Nulls On	True
Quoted Identifier On	True

Parameters

Name	Data Type	Max Length (Bytes)
@AccountOrMeterNumber	varchar(15)	15

SQL Script

```
CREATE FUNCTION [Utils].[CreateHashKeyMD5] (@AccountOrMeterNumber varchar(15) )
  RETURNS varchar(32)

as BEGIN
    return convert(varchar(32), hashbytes('md5', @AccountOrMeterNumber), 2);

end;
GO
```

Uses

Utils

🗐 *User-Defined Data Types*

Objects

Name
dbo.dMyApp
dbo.sdDatesAndTime
dbo.sdFlagsAndLetters
dbo.sdNumerics
dbo.sdStrings
dbo.udtBirthDate
dbo.udtDateTime
dbo.udtDepartment
dbo.udtEmail
dbo.udtHHMM
dbo.udtProjectName
dbo.udtSalary
dbo.udtTimeStampNow4
dbo.udtYYYYMMDDHHMM
dbo.udtYYYYMMDDHHMMSS
Udt.udtAddress
Udt.udtCategoryName
Udt.udtCity
Udt.udtCompanyName
Udt.udtContactTitle
Udt.udtCountry
Udt.udtCurrency
Udt.udtDescription
Udt.udtFirstName
Udt.udtFlagBit
Udt.udtFlagChar
Udt.udtFullName
Udt.udtGrade
Udt.udtIsDeletion
Udt.udtLastName
Udt.udtName
Udt.udtNote
Udt.udtPercentage
Udt.udtPostalCode

Udt.udtProductName
Udt.udtQuantitySmall
Udt.udtRegion
Udt.udtScore
Udt.udtSequenceNo
Udt.udtShortDescription
Udt.udtStateName
Udt.udtStudentIdentification
Udt.udtSurrogateKeyInt
Udt.udtTelephoneNumber
Udt.udtTextKeyVarchar10
Udt.udtTimeStampNow3
Udt.udtTitle
Udt.udtTitleOfCourtesy
Udt.udtTriggerOption
Udt.udtVersion
Udt.udtYYYY
Udt.udtYYYYMMDD

🗔 [dbo].[dMyApp]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	char
Length	18

SQL Script

```
CREATE TYPE [dbo].[dMyApp] FROM char (18) NULL
GO
```

📼 [dbo].[sdDatesAndTime]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	char
Length	18

SQL Script

```
CREATE TYPE [dbo].[sdDatesAndTime] FROM char (18) NULL
GO
```

▦ [dbo].[sdFlagsAndLetters]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	char
Length	18

SQL Script

```
CREATE TYPE [dbo].[sdFlagsAndLetters] FROM char (18) NULL
GO
```

[dbo].[sdNumerics]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	char
Length	18

SQL Script

```
CREATE TYPE [dbo].[sdNumerics] FROM char (18) NULL
GO
```

[dbo].[sdStrings]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	char
Length	18

SQL Script

```
CREATE TYPE [dbo].[sdStrings] FROM char (18) NULL
GO
```

🗎 [dbo].[udtBirthDate]

Properties

Property	Value
Nullability	NOT NULL
Base Type Name	datetime
Length	8

SQL Script

```
CREATE TYPE [dbo].[udtBirthDate] FROM datetime NOT NULL
GO
```

Used By

[Data].[Membership]

[HumanResources].[Employee]

[JsonOutput].[uvw_HumanResourcesEmployee]

[dbo].[udtDateTime]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	smalldatetime
Length	4

SQL Script

```
CREATE TYPE [dbo].[udtDateTime] FROM smalldatetime NULL
GO
```

Used By

[Service].[Feedback]

[dbo].[udtDepartment]

Properties
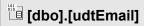
Property	Value
Nullability	NULL allowed
Base Type Name	nvarchar
Length	50

SQL Script

```
CREATE TYPE [dbo].[udtDepartment] FROM nvarchar (50) NULL
GO
```

Used By

[SystemVersioned].[Employee]

[Triggered].[AuditTriggeredEmployeeHistory]

🔲 [dbo].[udtEmail]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	nvarchar
Length	50

SQL Script
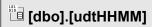
```
CREATE TYPE [dbo].[udtEmail] FROM nvarchar (50) NULL
GO
```

Used By

[Data].[Membership]

[dbo].[udtHHMM]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	char
Length	5

SQL Script

```
CREATE TYPE [dbo].[udtHHMM] FROM char (5) NULL
GO
```

Used By

[DbSecurity].[UserAuthorization]

[dbo].[udtProjectName]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	nvarchar
Length	60

SQL Script

```
CREATE TYPE [dbo].[udtProjectName] FROM nvarchar (60) NULL
GO
```

Used By

[DbSecurity].[UserAuthorization]

🔟 [dbo].[udtSalary]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	int
Length	4

SQL Script

```
CREATE TYPE [dbo].[udtSalary] FROM int NULL
GO
```

Used By

[SystemVersioned].[Employee]

[Triggered].[AuditTriggeredEmployeeHistory]

🔢 [dbo].[udtTimeStampNow4]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	datetime2
Length	7

SQL Script

```
CREATE TYPE [dbo].[udtTimeStampNow4] FROM datetime2 (4) NULL
GO
```

Used By

[SystemVersioned].[Employee]

[Triggered].[AuditTriggeredEmployeeHistory]

[Triggered].[Employee]

[dbo].[udtYYYYMMDDHHMM]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	smalldatetime
Length	4

SQL Script

```
CREATE TYPE [dbo].[udtYYYYMMDDHHMM] FROM smalldatetime NULL
GO
```

[dbo].[udtYYYYMMDDHHMMSS]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	datetime2
Length	8

SQL Script

```
CREATE TYPE [dbo].[udtYYYYMMDDHHMMSS] FROM datetime2 NULL
GO
```

🗒 [Udt].[udtAddress]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	nvarchar
Length	25

SQL Script

```
CREATE TYPE [Udt].[udtAddress] FROM nvarchar (25) NULL
GO
```

Uses

Udt

Used By

[HumanResources].[Employee]
[Production].[Supplier]
[Sales].[Customer]
[Sales].[Orders]
[JsonOutput].[uvw_HumanResourcesEmployee]
[JsonOutput].[uvw_Order]
[JsonOutput].[uvw_ProductionSupplier]
[JsonOutput].[uvw_SalesCustomer]
[JsonOutput].[MongoOrder]

🔳 [Udt].[udtCategoryName]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	char
Length	30

SQL Script

```
CREATE TYPE [Udt].[udtCategoryName] FROM char (30) NULL
GO
```

Uses

Udt

Used By

[Production].[Category]
[JsonOutput].[uvw_ProductionCategory]
[JsonOutput].[uvw_ProductionProduct]

[Udt].[udtCity]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	char
Length	28

SQL Script

```
CREATE TYPE [Udt].[udtCity] FROM char (28) NULL
GO
```

Uses

Udt

Used By

[HumanResources].[Employee]

[Production].[Supplier]

[Sales].[Customer]

[Sales].[Orders]

[JsonOutput].[uvw_HumanResourcesEmployee]

[JsonOutput].[uvw_Order]

[JsonOutput].[uvw_ProductionSupplier]

[JsonOutput].[uvw_SalesCustomer]

[JsonOutput].[MongoOrder]

🔲 [Udt].[udtCompanyName]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	nvarchar
Length	30

SQL Script

```
CREATE TYPE [Udt].[udtCompanyName] FROM nvarchar (30) NULL
GO
```

Uses

Udt

Used By

[Production].[Supplier]
[Sales].[Customer]
[Sales].[Shipper]
[JsonOutput].[uvw_ProductionProduct]
[JsonOutput].[uvw_ProductionSupplier]
[JsonOutput].[uvw_SalesCustomer]
[JsonOutput].[uvw_SalesShipper]
[Sales].[utvf_FindAllCustomerOrder]

[Udt].[udtContactTitle]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	nchar
Length	10

SQL Script

```
CREATE TYPE [Udt].[udtContactTitle] FROM nchar (10) NULL
GO
```

Uses

Udt

Used By

[Production].[Supplier]
[JsonOutput].[uvw_ProductionSupplier]

▦ [Udt].[udtCountry]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	nvarchar
Length	56

SQL Script

```
CREATE TYPE [Udt].[udtCountry] FROM nvarchar (56) NULL
GO
```

Uses

Udt

Used By

[HumanResources].[Employee]

[Production].[Supplier]

[Sales].[Customer]

[Sales].[Orders]

[JsonOutput].[uvw_HumanResourcesEmployee]

[JsonOutput].[uvw_Order]

[JsonOutput].[uvw_ProductionSupplier]

[JsonOutput].[uvw_SalesCustomer]

[JsonOutput].[MongoOrder]

[Sales].[utvf_FindAllCustomerOrder]

▣ [Udt].[udtCurrency]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	float
Length	8

SQL Script

```
CREATE TYPE [Udt].[udtCurrency] FROM float NULL
GO
```

Uses

Udt

Used By

[Production].[Product]
[Sales].[OrderDetail]
[Sales].[Orders]
[Triggered].[Employee]
[JsonOutput].[uvw_Order]
[JsonOutput].[uvw_ProductionProduct]
[JsonOutput].[MongoOrder]
[JsonOutput].[MongoOrderDetail]
[Sales].[utvf_FindAllCustomerOrder]

🔲 [Udt].[udtDescription]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	nvarchar
Length	250

SQL Script

```
CREATE TYPE [Udt].[udtDescription] FROM nvarchar (250) NULL
GO
```

Uses

Udt

Used By

[Production].[Category]
[Service].[Feedback]
[JsonOutput].[uvw_ProductionCategory]
[JsonOutput].[uvw_ProductionProduct]

🖳 [Udt].[udtFirstName]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	nvarchar
Length	25

SQL Script

```
CREATE TYPE [Udt].[udtFirstName] FROM nvarchar (25) NULL
GO
```

Uses

Udt

Used By

[Data].[Membership]
[DbSecurity].[UserAuthorization]
[HumanResources].[Employee]
[JsonOutput].[uvw_HumanResourcesEmployee]

📇 [Udt].[udtFlagBit]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	bit
Length	1

SQL Script

```
CREATE TYPE [Udt].[udtFlagBit] FROM bit NULL
GO
```

Uses

Udt

Used By

[Production].[Product]
[JsonOutput].[uvw_ProductionProduct]

▣ [Udt].[udtFlagChar]

Properties

Property	Value
Nullability	NOT NULL
Base Type Name	char
Length	1

SQL Script

```
CREATE TYPE [Udt].[udtFlagChar] FROM char (1) NOT NULL
GO
```

Uses

Udt

Used By

[Triggered].[AuditTriggeredEmployeeHistory]
[Triggered].[Employee]
[Triggered].[utvf_EmployeeCurrentAndHistory]
[Triggered].[utvf_EmployeeCurrentAndHistoryCTE]

🖫 [Udt].[udtFullName]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	nvarchar
Length	62

SQL Script

```
CREATE TYPE [Udt].[udtFullName] FROM nvarchar (62) NULL
GO
```

Uses

Udt

Used By

[Production].[Supplier]

[Sales].[Customer]

[Sales].[Orders]

[SystemVersioned].[Employee]

[Triggered].[AuditTriggeredEmployeeHistory]

[JsonOutput].[uvw_Order]

[JsonOutput].[uvw_ProductionProduct]

[JsonOutput].[uvw_ProductionSupplier]

[JsonOutput].[uvw_SalesCustomer]

[JsonOutput].[MongoOrder]

🗔 [Udt].[udtGrade]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	tinyint
Length	1

SQL Script

```
CREATE TYPE [Udt].[udtGrade] FROM tinyint NULL
GO
```

Uses

Udt

🔲 [Udt].[udtIsDeletion]

Properties

Property	Value
Nullability	NOT NULL
Base Type Name	char
Length	1

SQL Script

```
CREATE TYPE [Udt].[udtIsDeletion] FROM char (1) NOT NULL
GO
```

Uses

Udt

[Udt].[udtLastName]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	nvarchar
Length	35

SQL Script

```
CREATE TYPE [Udt].[udtLastName] FROM nvarchar (35) NULL
GO
```

Uses

Udt

Used By

[Data].[Membership]
[DbSecurity].[UserAuthorization]
[HumanResources].[Employee]
[JsonOutput].[uvw_HumanResourcesEmployee]

[Udt].[udtName]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	nvarchar
Length	20

SQL Script

```
CREATE TYPE [Udt].[udtName] FROM nvarchar (20) NULL
GO
```

Uses

Udt

Used By

[DbSecurity].[UserAuthorization]
[Triggered].[Employee]

🔢 [Udt].[udtNote]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	nvarchar
Length	60

SQL Script

```
CREATE TYPE [Udt].[udtNote] FROM nvarchar (60) NULL
GO
```

Uses

Udt

Used By

[SystemVersioned].[Employee]

[Triggered].[AuditTriggeredEmployeeHistory]

[Triggered].[Employee]

[Triggered].[utvf_EmployeeCurrentAndHistory]

[Triggered].[utvf_EmployeeCurrentAndHistoryCTE]

🔢 [Udt].[udtPercentage]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	float
Length	8

SQL Script

```
CREATE TYPE [Udt].[udtPercentage] FROM float NULL
GO
```

Uses

Udt

Used By

[Data].[Membership]
[Sales].[OrderDetail]
[JsonOutput].[MongoOrderDetail]
[Sales].[utvf_FindAllCustomerOrder]

🔢 [Udt].[udtPostalCode]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	varchar
Length	10

SQL Script

```
CREATE TYPE [Udt].[udtPostalCode] FROM varchar (10) NULL
GO
```

Uses

Udt

Used By

[HumanResources].[Employee]

[Production].[Supplier]

[Sales].[Customer]

[Sales].[Orders]

[JsonOutput].[uvw_HumanResourcesEmployee]

[JsonOutput].[uvw_Order]

[JsonOutput].[uvw_ProductionSupplier]

[JsonOutput].[uvw_SalesCustomer]

[JsonOutput].[MongoOrder]

[Udt].[udtProductName]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	nvarchar
Length	30

SQL Script

```
CREATE TYPE [Udt].[udtProductName] FROM nvarchar (30) NULL
GO
```

Uses

Udt

Used By

[Production].[Product]
[JsonOutput].[uvw_ProductionProduct]
[Sales].[utvf_FindAllCustomerOrder]

[Udt].[udtQuantitySmall]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	char
Length	18

SQL Script

```
CREATE TYPE [Udt].[udtQuantitySmall] FROM char (18) NULL
GO
```

Uses

Udt

Used By

[Sales].[OrderDetail]
[JsonOutput].[MongoOrderDetail]
[Sales].[utvf_FindAllCustomerOrder]

[Udt].[udtRegion]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	nvarchar
Length	30

SQL Script

```
CREATE TYPE [Udt].[udtRegion] FROM nvarchar (30) NULL
GO
```

Uses

Udt

Used By

[HumanResources].[Employee]

[Production].[Supplier]

[Sales].[Customer]

[Sales].[Orders]

[JsonOutput].[uvw_HumanResourcesEmployee]

[JsonOutput].[uvw_Order]

[JsonOutput].[uvw_ProductionSupplier]

[JsonOutput].[uvw_SalesCustomer]

[JsonOutput].[MongoOrder]

📇 [Udt].[udtScore]

Properties

Property	Value
Nullability	NOT NULL
Base Type Name	int
Length	4

SQL Script

```
CREATE TYPE [Udt].[udtScore] FROM int NOT NULL
GO
```

Uses

Udt

Used By

[Service].[Feedback]

🔲 [Udt].[udtSequenceNo]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	int
Length	4

SQL Script

```
CREATE TYPE [Udt].[udtSequenceNo] FROM int NULL
GO
```

Uses

Udt

Used By

[Triggered].[AuditTriggeredEmployeeHistory]

[Triggered].[Employee]

[Triggered].[utvf_EmployeeCurrentAndHistory]

[Triggered].[utvf_EmployeeCurrentAndHistoryCTE]

📇 [Udt].[udtShortDescription]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	nvarchar
Length	100

SQL Script

```
CREATE TYPE [Udt].[udtShortDescription] FROM nvarchar (100) NULL
GO
```

Uses

Udt

🔲 [Udt].[udtStateName]

Properties

Property	Value
Nullability	NOT NULL
Base Type Name	nvarchar
Length	14

SQL Script

```
CREATE TYPE [Udt].[udtStateName] FROM nvarchar (14) NOT NULL
GO
```

Uses

Udt

[Udt].[udtStudentIdentification]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	char
Length	8

SQL Script

```
CREATE TYPE [Udt].[udtStudentIdentification] FROM char (8) NULL
GO
```

Uses

Udt

▦ [Udt].[udtSurrogateKeyInt]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	int
Length	4

SQL Script

```
CREATE TYPE [Udt].[udtSurrogateKeyInt] FROM int NULL
GO
```

Uses

Udt

Used By

[Data].[Membership]
[dbo].[Nums]
[DbSecurity].[UserAuthorization]
[HumanResources].[Employee]
[Production].[Category]
[Production].[Product]
[Production].[Supplier]
[Sales].[Customer]
[Sales].[OrderDetail]
[Sales].[Orders]
[Sales].[Shipper]
[Service].[Feedback]
[SystemVersioned].[Employee]
[Triggered].[AuditTriggeredEmployeeHistory]
[Triggered].[Employee]
[JsonOutput].[uvw_HumanResourcesEmployee]
[JsonOutput].[uvw_Order]
[JsonOutput].[uvw_ProductionCategory]
[JsonOutput].[uvw_ProductionProduct]
[JsonOutput].[uvw_ProductionSupplier]
[JsonOutput].[uvw_SalesCustomer]
[JsonOutput].[uvw_SalesShipper]
[JsonOutput].[MongoOrder]
[JsonOutput].[MongoOrderDetail]
[Sales].[utvf_FindAllCustomerOrder]

[Triggered].[utvf_EmployeeCurrentAndHistory]
[Triggered].[utvf_EmployeeCurrentAndHistoryCTE]

🔢 [Udt].[udtTelephoneNumber]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	nvarchar
Length	18

SQL Script

```
CREATE TYPE [Udt].[udtTelephoneNumber] FROM nvarchar (18) NULL
GO
```

Uses

Udt

Used By

[Data].[Membership]
[HumanResources].[Employee]
[Production].[Supplier]
[Sales].[Customer]
[Sales].[Shipper]
[JsonOutput].[uvw_HumanResourcesEmployee]
[JsonOutput].[uvw_ProductionProduct]
[JsonOutput].[uvw_ProductionSupplier]
[JsonOutput].[uvw_SalesCustomer]
[JsonOutput].[uvw_SalesShipper]

▦ [Udt].[udtTextKeyVarchar10]

Properties

Property	Value
Nullability	NOT NULL
Base Type Name	char
Length	18

SQL Script

```
CREATE TYPE [Udt].[udtTextKeyVarchar10] FROM char (18) NOT NULL
GO
```

Uses

Udt

🔳 [Udt].[udtTimeStampNow3]

Properties

Property	Value
Nullability	NOT NULL
Base Type Name	datetime2
Length	7

SQL Script

```
CREATE TYPE [Udt].[udtTimeStampNow3] FROM datetime2 (3) NOT NULL
GO
```

Uses

Udt

Used By

[DbSecurity].[UserAuthorization]
[HumanResources].[Employee]
[Production].[Category]
[Production].[Product]
[Production].[Supplier]
[Sales].[Customer]
[Sales].[OrderDetail]
[Sales].[Orders]
[Sales].[Shipper]
[Triggered].[AuditTriggeredEmployeeHistory]

🖳 [Udt].[udtTitle]

Properties

Property	Value
Nullability	NOT NULL
Base Type Name	char
Length	18

SQL Script

```
CREATE TYPE [Udt].[udtTitle] FROM char (18) NOT NULL
GO
```

Uses

Udt

Used By

[HumanResources].[Employee]
[Sales].[Customer]
[JsonOutput].[uvw_HumanResourcesEmployee]
[JsonOutput].[uvw_SalesCustomer]

🔢 [Udt].[udtTitleOfCourtesy]

Properties

Property	Value
Nullability	NOT NULL
Base Type Name	char
Length	18

SQL Script

```
CREATE TYPE [Udt].[udtTitleOfCourtesy] FROM char (18) NOT NULL
GO
```

Uses

Udt

Used By

[HumanResources].[Employee]
[JsonOutput].[uvw_HumanResourcesEmployee]

🖳 [Udt].[udtTriggerOption]

Properties

Property	Value
Nullability	NOT NULL
Base Type Name	char
Length	1

SQL Script

```
CREATE TYPE [Udt].[udtTriggerOption] FROM char (1) NOT NULL
GO
```

Uses

Udt

Used By

[Triggered].[AuditTriggeredEmployeeHistory]

🔢 [Udt].[udtVersion]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	char
Length	18

SQL Script

```
CREATE TYPE [Udt].[udtVersion] FROM char (18) NULL
GO
```

Uses

Udt

🔲 [Udt].[udtYYYY]

Properties

Property	Value
Nullability	NOT NULL
Base Type Name	char
Length	18

SQL Script

```
CREATE TYPE [Udt].[udtYYYY] FROM char (18) NOT NULL
GO
```

Uses

Udt

🔢 [Udt].[udtYYYYMMDD]

Properties

Property	Value
Nullability	NOT NULL
Base Type Name	datetime
Length	8

SQL Script

```
CREATE TYPE [Udt].[udtYYYYMMDD] FROM datetime NOT NULL
GO
```

Uses

Udt

Used By

[HumanResources].[Employee]
[Sales].[Orders]
[JsonOutput].[uvw_HumanResourcesEmployee]
[JsonOutput].[uvw_Order]
[JsonOutput].[MongoOrder]
[Sales].[utvf_FindAllCustomerOrder]

👤 *Users*

Objects

Name
dbo
guest

👤 dbo

Properties

Property	Value
Type	SqlUser
Login Name	sa
Default Schema	dbo

Database Level Permissions

Type	Action
CONNECT	Grant

SQL Script

```
GO
```

guest

Properties

Property	Value
Type	SqlUser
Default Schema	guest

SQL Script

GO

👥 *Database Roles*

Objects

Name
db_accessadmin
db_backupoperator
db_datareader
db_datawriter
db_ddladmin
db_denydatareader
db_denydatawriter
db_owner
db_securityadmin
public

👥 db_accessadmin

Properties

Property	Value
Owner	dbo

👥 db_backupoperator

Properties

Property	Value
Owner	dbo

👥 db_datareader

Properties

Property	Value
Owner	dbo

👥 db_datawriter

Properties

Property	Value
Owner	dbo

👥 db_ddladmin

Properties

Property	Value
Owner	dbo

👥 db_denydatareader

Properties

Property	Value
Owner	dbo

👥 db_denydatawriter

Properties

Property	Value
Owner	dbo

👥 db_owner

Properties

Property	Value
Owner	dbo

👥 db_securityadmin

Properties

Property	Value
Owner	dbo

👥 public

Properties

Property	Value
Owner	dbo

⋀ *Schemas*

Objects

Name
Audit
Data
DbSecurity
Example
Hashing
HumanResources
JsonOutput
Production
RelationalCalculii
RelationalCrossJoin
Sales
Service
SystemVersioned
Temporal
Triggered
Udt
Utils

Λ Audit

Properties

Property	Value
Owner	dbo

SQL Script

```
CREATE SCHEMA [Audit]
AUTHORIZATION [dbo]
GO
```

∧ Data

Properties

Property	Value
Owner	dbo

SQL Script

```
CREATE SCHEMA [Data]
AUTHORIZATION [dbo]
GO
```

Used By

[Data].[Membership]

⋀ DbSecurity

Properties

Property	Value
Owner	dbo

SQL Script

```
CREATE SCHEMA [DbSecurity]
AUTHORIZATION [dbo]
GO
```

Used By

[DbSecurity].[UserAuthorization]

⋀ Example

Properties

Property	Value
Owner	dbo

SQL Script

```
CREATE SCHEMA [Example]
AUTHORIZATION [dbo]
GO
```

⋀ Hashing

Properties

Property	Value
Owner	dbo

SQL Script

```
CREATE SCHEMA [Hashing]
AUTHORIZATION [dbo]
GO
```

Used By

[Hashing].[CreateRowSha2_256HashKey]

[Hashing].[CreateVarbinaryRowSha2_256HashKey]

[Hashing].[CreateVarbinarySha2_256HashKey]

[Hashing].[CreateVarcharHashKeySha2_256]

⋀ HumanResources

Properties

Property	Value
Owner	dbo

SQL Script

```
CREATE SCHEMA [HumanResources]
AUTHORIZATION [dbo]
GO
```

Used By

[HumanResources].[Employee]

⋏ JsonOutput

Properties

Property	Value
Owner	dbo

SQL Script

```
CREATE SCHEMA [JsonOutput]
AUTHORIZATION [dbo]
GO
```

Used By

[JsonOutput].[uvw_HumanResourcesEmployee]
[JsonOutput].[uvw_Order]
[JsonOutput].[uvw_ProductionCategory]
[JsonOutput].[uvw_ProductionProduct]
[JsonOutput].[uvw_ProductionSupplier]
[JsonOutput].[uvw_SalesCustomer]
[JsonOutput].[uvw_SalesShipper]
[JsonOutput].[MongoOrder]
[JsonOutput].[MongoOrderDetail]

∆ Production

Properties

Property	Value
Owner	dbo

SQL Script

```
CREATE SCHEMA [Production]
AUTHORIZATION [dbo]
GO
```

Used By

[Production].[Category]
[Production].[Product]
[Production].[Supplier]

⋀ RelationalCalculii

Properties

Property	Value
Owner	dbo

SQL Script

```
CREATE SCHEMA [RelationalCalculii]
AUTHORIZATION [dbo]
GO
```

⋀ RelationalCrossJoin

Properties

Property	Value
Owner	dbo

SQL Script

```
CREATE SCHEMA [RelationalCrossJoin]
AUTHORIZATION [dbo]
GO
```

⋀ Sales

Properties

Property	Value
Owner	dbo

SQL Script

```
CREATE SCHEMA [Sales]
AUTHORIZATION [dbo]
GO
```

Used By

[Sales].[Customer]
[Sales].[OrderDetail]
[Sales].[Orders]
[Sales].[Shipper]
[Sales].[usp_getorders]
[Sales].[utvf_FindAllCustomerOrder]

⋀ Service

Properties

Property	Value
Owner	dbo

SQL Script

```
CREATE SCHEMA [Service]
AUTHORIZATION [dbo]
GO
```

Used By

[Service].[Feedback]

⋀ SystemVersioned

Properties

Property	Value
Owner	dbo

SQL Script

```
CREATE SCHEMA [SystemVersioned]
AUTHORIZATION [dbo]
GO
```

Used By

[SystemVersioned].[Employee]

⋏ Temporal

Properties

Property	Value
Owner	dbo

SQL Script

```
CREATE SCHEMA [Temporal]
AUTHORIZATION [dbo]
GO
```

∧ Triggered

Properties

Property	Value
Owner	dbo

SQL Script

```
CREATE SCHEMA [Triggered]
AUTHORIZATION [dbo]
GO
```

Used By

[Triggered].[AuditTriggeredEmployeeHistory]

[Triggered].[Employee]

[Triggered].[utvf_EmployeeCurrentAndHistory]

[Triggered].[utvf_EmployeeCurrentAndHistoryCTE]

∧ Udt

Properties

Property	Value
Owner	dbo

SQL Script

```
CREATE SCHEMA [Udt]
AUTHORIZATION [dbo]
GO
```

Used By

[Udt].[udtAddress]
[Udt].[udtCategoryName]
[Udt].[udtCity]
[Udt].[udtCompanyName]
[Udt].[udtContactTitle]
[Udt].[udtCountry]
[Udt].[udtCurrency]
[Udt].[udtDescription]
[Udt].[udtFirstName]
[Udt].[udtFlagBit]
[Udt].[udtFlagChar]
[Udt].[udtFullName]
[Udt].[udtGrade]
[Udt].[udtIsDeletion]
[Udt].[udtLastName]
[Udt].[udtName]
[Udt].[udtNote]
[Udt].[udtPercentage]
[Udt].[udtPostalCode]
[Udt].[udtProductName]
[Udt].[udtQuantitySmall]
[Udt].[udtRegion]
[Udt].[udtScore]
[Udt].[udtSequenceNo]
[Udt].[udtShortDescription]
[Udt].[udtStateName]
[Udt].[udtStudentIdentification]
[Udt].[udtSurrogateKeyInt]
[Udt].[udtTelephoneNumber]
[Udt].[udtTextKeyVarchar10]
[Udt].[udtTimeStampNow3]

[Udt].[udtTitle]
[Udt].[udtTitleOfCourtesy]
[Udt].[udtTriggerOption]
[Udt].[udtVersion]
[Udt].[udtYYYY]
[Udt].[udtYYYYMMDD]

∧ Utils

Properties

Property	Value
Owner	dbo

SQL Script

```
CREATE SCHEMA [Utils]
AUTHORIZATION [dbo]
GO
```

Used By

[Utils].[uvw_FindColumnDefinitionPlusDefaultAndCheckConstraint]

[Utils].[uw_FindAllDatabaseColumnsOnTheServer]

[Utils].[CreateHashKeyMD5]