

Database Tables



Table Naming

TrakSYS **Table** names begin with **t**

- tArea
- tSystem
- tJob
- Etc...



Unique Identifier

Nearly all TrakSYS tables contain a unique ID Column
(there are a few exceptions)

dbo.tArea
Columns
ID (PK, int, not null)
Guid (nvarchar(100), not null)
Name (nvarchar(100), not null)
AltName (nvarchar(100), not null)
Description (nvarchar(500), not null)
Notes (nvarchar(1000), not null)



Foreign Key Convention

Naming...

- Typically, **RelatedTableNameID**
- In some cases, **PrefixRelatedTableNameID**

dbo.tSystem
Columns
ID (PK, int, not null)
Guid (nvarchar(100), not null)
IsTemplate (bit, not null)
TemplateParentID (int, null)
ExternalID (nvarchar(100), not null)
Name (nvarchar(100), not null)
AltName (nvarchar(100), not null)
Description (nvarchar(500), not null)
Notes (nvarchar(1000), not null)
SystemTypeID (int, null)
Key (nvarchar(100), not null)
AreaID (int, not null)
ParentSystemID (int, null)

Views, Stored Procedures and Functions



Naming

TrakSYS **View** names begin with **view**

- **view**Event
- **view**tJob
- Etc...

TrakSYS **Stored Procedure** names begin with **sp**

- **sp**Core_Sequence_NextID
- **sp**UpdateOeeInterval
- Etc...

TrakSYS **Function** names begin with **uf**

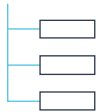
- **uf**ConvertIntToColorHex
- **uf**GetDateValue
- Etc...

- + dbo.viewEvent
- + dbo.viewEventCategory
- + dbo.viewJob
- + dbo.viewJobBatch
- + dbo.viewJobDiscrete
- + dbo.viewJobSystemActual
- + dbo.viewJournal
- + dbo.viewLog
- + dbo.viewMaterialUseActual
- + dbo.viewMaterialUseCompare
- + dbo.viewMaterialUsePlanned
- + dbo.viewOeeInterval
- + dbo.viewOeeIntervalCount
- + dbo.viewSampleSubGroupVariable
- + dbo.viewShiftHistory
- + dbo.viewTask

- + dbo.spCore_AuditUserActivity_GetID
- + dbo.spCore_BulkUpdateTagQuality
- + dbo.spCore_BulkUpdateTags
- + dbo.spCore_OeeIntervalRequest_SystemIntervalData
- + dbo.spCore_Sequence_NextID
- + dbo.spCore_Sequence_NextID_Out
- + dbo.spCore_Sequence_NextIDBatch
- + dbo.spCore_Sequence_NextLongID
- + dbo.spCore_Sequence_NextLongID_Out
- + dbo.spCore_Sequence_NextLongIDBatch
- + dbo.spSetContextInfoAuditHeaderID
- + dbo.spSetContextInfoDeleting
- + dbo.spUpdateOeeInterval
- + dbo.spUpdateOeeInterval_Extension
- + dbo.spUpdateOeeInterval_ExtensionTable
- + dbo.spUtilUpdateOeeIntervalsByDateRange
- + dbo.spVersionInformation

- + dbo.ufCalculatePointIntercept
- + dbo.ufConvertIntToColorHex
- + dbo.ufDateRangeIntersect
- + dbo.ufDateTimeOffsetRangeIntersect
- + dbo.ufDateTimeRangeIntersect
- + dbo.ufFormatDuration
- + dbo.ufGetDateInterval
- + dbo.ufGetDateOffsetInterval
- + dbo.ufGetDateOffsetValue
- + dbo.ufGetDateValue
- + dbo.ufGetDbTransferMode
- + dbo.ufGetTagHistoryDefinitionID
- + dbo.ufVariantStringToBit
- + dbo.ufVariantStringToFloat
- + dbo.ufVariantStringToInt

Database Sequences



Overview

- `tSequence` stores the highest ID value (last) for each TrakSYS Table
- New IDs are **assigned and managed** from within TrakSYS
- API DB Objects automatically **create new IDs** on Insert



Manual Record Creation

When creating (inserting) records into TrakSYS tables without using the API, special care must be taken!

- `Api.Util.Db.GetNextSequenceByKey`
- `spCore_Sequence_NextID_Out`



Never!

- Attempt to determine the next ID by `MAX`
- Manipulate the `tSequence` Table

dbo.tSequence

Columns

- Name (PK, nvarchar(100), not null)
- Value (bigint, not null)
- MaxValue (bigint, not null)
- ModifiedDateTime (datetimeoffset(3), null)
- UploadedDateTime (datetimeoffset(3), null)

Name	Value	MaxValue
AccessNameGroupID	1	2147483647
AccessNameHistorianStateID	0	2147483647
AccessNameID	11	2147483647
AccessNameOleDbParameterID	0	2147483647
AccessNameStateID	0	2147483647
AreaCustomPropertyID	0	2147483647
AreaID	5	2147483647
AreaTypeID	0	2147483647
AssemblyPackageID	0	2147483647
AuditHeaderID	9	2147483647
AuditUserActivityID	0	2147483647

Database Managed Columns



Modified and Uploaded DateTime

These are standard fields on most TrakSYS tables.

ModifiedDateTime

Not currently implemented, but in the future, will be system-controlled field and contain a date/time stamp of the [last time the record was inserted, or modified](#).

UploadedDateTime

A reserved field to be used to mark the [last time the information in a record was transferred/synced](#) to an external location. Can be written to in solution-specific implementations.



GUID

Standard field on most TrakSYS tables to [uniquely identify a configuration or data element](#) across multiple TrakSYS installations where the ID cannot be synced.

- .NET GUID
- Assigned on record Insert
- Assigned at the API Level
- Manual record creation requires Custom Handling
- Can be manipulated / updated during Custom Syncing

Database Extensibility



TrakSYS Schema

Do **NOT** modify any of the built-in TrakSYS database elements (Tables, Indexes, Views, Stored Procedures, Functions).



Custom Schema Naming

Strive to **consistently and distinctly name** custom schema elements to make them easily identifiable and separate from standard TrakSYS. Recommend prefixing with underscore and customer abbreviation (`_JM_Layers`).



Add New Schema

Feel free to **ADD** new elements as a specific solution may require (remaining **sensitive** to the customer's opinions on customization).



Custom Indexes

Feel free to **ADD** custom indexes to tables based on solution-specific needs. Note that altering TrakSYS indexes will be **reset** after platform updates.