Command Reference: CreateTimeSeriesEventTable()

Create a table that contains events associated with time series

Version 10.23.00, 2013-09-09

The `CreateTimeSeriesEventTable()` command creates an event table associated with time series. Time series events have the following properties:

- `EventID` – unique identifier for the event
- `EventType` – event type for the event data (e.g., natural disasters such as drought and flood, economic events, political or legal events)
- `EventStart` – starting date/time for the event
- `EventEnd` – ending date/time for the event
- `EventLocationType` – the type of location (e.g., County, State), used to join the event to time series by location
- `EventLocationID` – the location identifier (e.g., county name, state abbreviation), used to join the event to time series by location
- `EventLabel` – short string suitable for labeling a graph or map
- `EventDescription` – longer string suitable for a narrative description about the event
- `TSID` – time series identifier to uniquely identify the matching time series

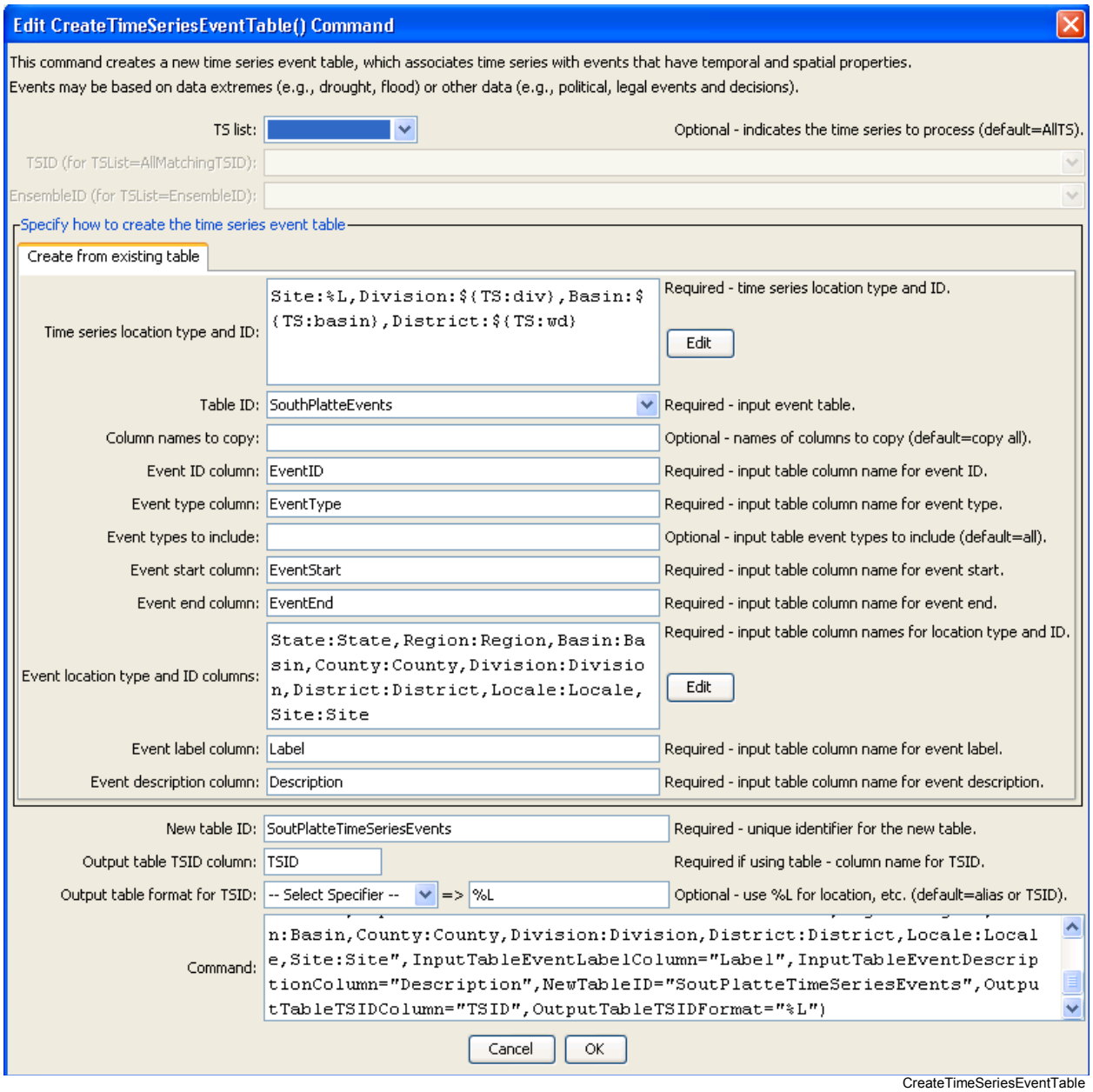
Basic event data are associated with time series using location data to create a "time series event", which can then be used to annotate time series graph products. The following figure illustrates event data in an Excel worksheet. The column names do not need to be as shown. Location data can be specified in multiple columns, as shown in the far right of the figure, where non-blank values indicate the locations that are applicable for a location type.

	A	B	C	D	E	F	J	K	L	M	N	O	P	Q
1	EventID	EventType	EventStart	EventEnd	Label	Description	State	Region	Basin	County	Division	District	Locale	Site
2	FirstWell	WellConstruction	1/1/1886		First Well	First irrigation well of record		East of Eaton						
3	Approx300Wells	WellConstruction	1/1/1890	1/1/1930	300 Wells Approx.	300 high capacity			South Platte		1			
4	McClellonVHurdle	ColoradoLawCour	1/1/1893		McClellon v Hurdle	Suit brought	CO							
5	ReturnFlowStudy	Study	1/1/1922		Parshall Return Flow S	R. Parshall return flow study on S.			South Platte		1			
6	1930sDrought	Drought	1/1/1930	12/31/1939		1930's Drought.	CO							
7	Approx1400Wells	WellConstruction	1/1/1930		1400 Wells Approx.	Additional 1400 we	Basin		South Platte		1			
8	1940Drought	Drought	1/1/1940			1940 Drought.	CO							
9	ElectricPower&Turbin	Technology	late 1940's		Rural Electricity & Turbine Pump	Electric power delivered to rural	CO							
10	Approx1200Wells	WellConstruction	early 1950's		1200 Wells Approx.	Drought reduced			South Platte		1			
11	1953 Act	ColoradoLawPass	1/1/1953		1953 Act - "Underground Water"	"Underground Water" law	CO							
12	Late1950sDrought	Drought	1/1/1955	12/31/1957	Late 1950s Drought	1955-1957 Drought.	CO							
13	ParshallSpeechtoRot	Study	1/1/1956		Parshall Speech to Rotary Club	R. Parshall presents to FC Rotary Club that seepage return flow in 1956 was "nil" partly			South Platte		1			
14	1957COGroundWaterL	ColoradoLawPass	1/1/1957		CO Ground Water Law of 1957	CO Ground Water Law of 1957 established that a permit from SE was a	CO							
						CO Ground Water								

CreateTimeSeriesEventTable_InputTable

Event Data before Relating to Time Series

The following dialog is used to edit the command and illustrates the syntax of the command (in this case illustrating how an input event table can be processed to create a time series event table). It is envisioned that additional methods will be enabled in the future to create time series events, for example to estimate extreme events from data.



CreateTimeSeriesEventTable() Command Editor

The command syntax is as follows:

```
CreateTimeSeriesEventTable(Parameter=Value,…)
```

Command Parameters

Parameter	Description	Default
TSList	Indicates the list of time series to be processed, one of: • AllMatchingTSID – all time series that match the TSID (single TSID or TSID with wildcards) will be processed. • AllTS – all time series before the command. • EnsembleID – all time series in the ensemble will be processed. • FirstMatchingTSID – the first time series that matches the TSID (single TSID or TSID with wildcards) will be processed. • LastMatchingTSID – the last time series that matches the TSID (single TSID or TSID with wildcards) will be processed. • SelectedTS – the time series are those selected with the SelectTimeSeries() command.	AllTS
TSID	The time series identifier or alias for the time series to be processed, using the * wildcard character to match multiple time series.	Required if TSList=*TSID.
EnsembleID	The ensemble to be processed, if processing an ensemble.	Required if TSList=EnsembleID.
TimeSeries Locations	A dictionary of event location type and time series identifier format specifiers: LocationType1:Specifier1,LocationType2:Specifier2 The specifiers can use the % formats that are commonly used for time series alias parameters (e.g., %L is location identifier) and also the ${TS:property} syntax that indicates general time series properties. For example, time series location properties are often read when the time series is read, or can be set later with the SetTimeSeriesPropertiesFromTable() command.	None – must be specified.
TableID	The identifier for the original event table (which has not been matched with time series).	None – must be specified.
IncludeColumns	The names of columns in the TableID table to copy, separated by commas. The required column tables listed below are always copied, but additional columns can be specified. This parameter is not enabled.	Only copy the required columns.
InputTable EventIDColumn	The name of the column in the TableID table containing event identifiers.	None – must be specified.
InputTable EventTypeColumn	The name of the column in the TableID table containing event types.	None – must be specified.

Parameter	Description	Default
`Include InputTable EventTypes`	The event types from the `TableID` table that should be included when processing (others will be ignored).	Include all event types.
`InputTable EventStart Column`	The name of the column in the `TableID` table containing event start date/time.	None – must be specified.
`InputTable EventEndColumn`	The name of the column in the `TableID` table containing event end date/time.	None – must be specified.
`InputTable EventLocation Columns`	A dictionary of location types mapped to column names in the `TableID` table, using syntax: `LocationType1:Column1,LocationType2:Column2`	None – must be specified.
`InputTable EventLabel Column`	The name of the column in the `TableID` table containing event labels.	None – must be specified.
`InputTable Event Description Column`	The name of the column in the `TableID` table containing event descriptions.	None – must be specified.
`NewTableID`	The identifier for the new time series event table, which will be a join of the `TableID` table and time series identifier column specified by the `OutputTableTSIDColumn`.	None – must be specified.
`OutputTable TSIDColumn`	The name of the column in the `NewTableID` table containing event types.	None – must be specified.
`OutputTable TSIDFormat`	The format specifier to be applied to the time series identifier to create the value for the `OutputTableTSIDColumn`.	None – must be specified.

The following figure illustrates the result of processing the input event table with a time series that has property `basin=South Platte` and `division=1`, which results in 21 of the 55 input rows being used in the output time series event table. The results can then be used when processing time series products to annotate the graphs (see the `ProcessTSProduct()` command).

EventID	EventType	EventStart	EventEnd	Label	Description	TSID
Approx300Wells	WellConstruction	1890-01-01	1930-01-01 00:00	300 Wells Approx.	300 high capacity wells c...	myloc
ReturnFlowStudy	Study	1922-01-01 00:00		Parshall Return Flow Study	R. Parshall return flow st...	myloc
Approx1400Wells	WellConstruction	1930-01-01 00:00		1400 Wells Approx.	Additional 1400 wells co...	myloc
Approx1200Wells	WellConstruction			1200 Wells Approx.	Drought reduced surface...	myloc
ParshallSpeechtoRotaryC...	Study	1956-01-01 00:00		Parshall Speech to Rotar...	R. Parshall presents to F...	myloc
SeniorRightsComplaints	Drought			Senior Surface Rights Co...	Complaints by senior surf...	myloc
CentralGMS	WellAugmentationGroup	1972-01-01 00:00		Central GMS Formed	Major well augmentation ...	myloc
GASP	WellAugmentationGroup	1973-01-01 00:00		GASP Formed	Major well augmentation ...	myloc
GMSLargeAugmentationP...	WellAugmentationGroup	2002-12-01 00:00		GMS Files Large Augmen...	Central GMS filed an appli...	myloc
SB03-73	ColoradoLawPassed	2003-04-30 00:00		Senate Bill 03-73 - Surfa...	From a committee commis...	myloc
SouthPlatteWellOwners	WellAugmentationGroup	2003-06-01 00:00		South Platte Well Owners	Group comprised of form...	myloc
DemiseOfGASP	WellAugmentationGroup	2004-01-01 00:00	2006-01-01 00:00	GASP Breaks-up/Dissolves	As a result of drought an...	myloc
CentralWAS	WellAugmentationGroup	2004-01-01 00:00		Central WAS Formed	Central CO Water Conser...	myloc
SB04-239	ColoradoLawPassed	2004-01-01 00:00		SB 04-239 - Augmentatio...	Colorado General Assem...	myloc
CentralGMSProjectionTool	Technology	2005-05-01 00:00		Central GMS Projection T...	After lengthy multi-party ...	myloc
WASWells	WellAugmentationGroup	2005-06-01 00:00		WAS Wells	WAS SWSP was approv...	myloc
WASWithdrewAugPlanAp...	WellAugmentationGroup	2006-01-01 00:00		WAS Withdraws Augme...	With the prospect of the ...	myloc

CreateTimeSeriesEventTable_OuputTable

Event Data after Relating to Time Series