
Command Reference: TS Alias = NewStatisticTimeSeriesFromEnsemble()

Create a time series containing a statistic determined from a time series ensemble

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The `TS Alias = NewStatisticTimeSeriesFromEnsemble()` command uses data from time series in an ensemble to calculate a statistic for each interval in the ensemble, and assigns the statistic value to the corresponding interval in the result. For example, for a statistic of Mean applied to a daily time series, all January 1, 1970 values will be used for the sample and the mean value will be assigned to January 1, 1970 in the output time series. Leap year values will be included if they are included in the period of the ensemble.

The following dialog is used to edit the command and illustrates the syntax for the command.

Edit TS Alias = NewStatisticTimeSeriesFromEnsemble() Command

Create a time series as a statistic determined from an ensemble of time series, giving the result an alias.
A statistic is a value computed from a sample consisting of values at an interval from each time series in the ensemble.
It is recommended that a new time series identifier (TSID) be specified for the result to avoid confusion with the original time series.

Time series alias: Required - often the location from the TSID, or a short string.

Ensemble to analyze (EnsembleID):

New time series ID: Specify to avoid confusion with TSID from original TS.

Statistic: Required - statistic to calculate.

Allow missing count: Optional - number of missing values allowed in sample (default=no limit).

Minimum sample size: Optional - minimum required sample size (default=determined by statistic).

Analysis start: Optional - analysis start date/time (default=full time series period).

Analysis end: Optional - analysis end date/time (default=full time series period).

Output start: Optional - output start date/time (default=full time series period).

Output end: Optional - output end date/time (default=full time series period).

Command:
TS Mean =
NewStatisticTimeSeriesFromEnsemble (EnsembleID="TestEnsemble", NewTSID="Test..Streamflow.Month.Mean", Statistic=Mean)

NewStatisticTimeSeriesFromEnsemble

TS Alias = NewStatisticTimeSeriesFromEnsemble() Command Editor

The command syntax is as follows:

```
TS Alias = NewStatisticTimeSeriesFromEnsemble(Parameter=Value,...)
```

Command Parameters

Parameter	Description	Default
Alias	The alias of the new time series, which can be used instead of the TSID in other commands.	None – must be specified.
EnsembleID	The identifier for the ensemble to analyze.	None – must be specified.
NewTSID	The time series identifier to be assigned to the new time series, which is useful to avoid confusion with the original time series. This parameter may be required in the future.	None – use the same identifier as the original time series.
Statistic	The statistic to compute. See the Available Statistics table below.	None – must be specified.
Allow Missing Count	The number of missing values allowed in the sample of values in order to produce a result. This capability should be used with care because it may result in data that are not representative of actual conditions.	Missing values are ignored in the sample used to compute the statistic.
MinimumSample Size	The minimum number of values in the sample that are required to compute the statistic.	Use the sample with no restrictions, although some statistics may have requirements.
AnalysisStart	The date/time for the analysis start, using a precision that matches the original time series.	Analyze the full period.
AnalysisEnd	The date/time for the analysis start, using a precision that matches the original time series.	Analyze the full period.
OutputStart	The date/time for the output start, using a precision that matches the original time series. An output period longer than the analysis period will result in missing values in output.	Output the full period.
OutputEnd	The date/time for the output start, using a precision that matches the original time series. An output period longer than the analysis period will result in missing values in output.	Output the full period.

Available Statistics

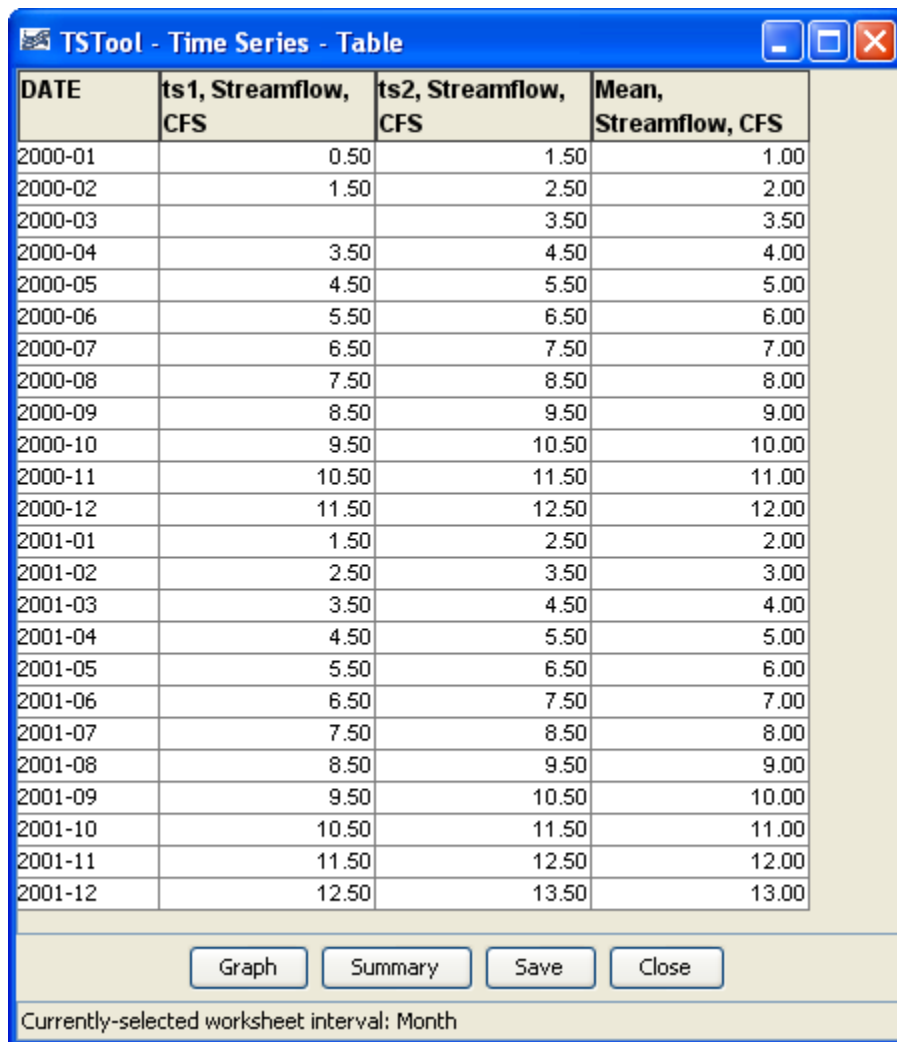
Statistic	Description	Limitations
Max	Maximum of all values in the sample.	None.
Mean	Mean of all values in the sample.	None.
Median	Median of all values in the sample.	None.
Min	Minimum of all values in the sample.	None.

Examples

The following example command file illustrates how to compute the mean statistic for one monthly data:

```
# Test computing a statistic time series for Month data where Statistic=Mean
StartLog(LogFile="Results/Test_NewStatisticTimeSeriesFromEnsemble_Month_Mean.TSTool.log")
# Define 2 years of data that when averaged equal even numbers
# The 2nd time series is shifted by 1 from the first.
# Include missing values in the first time series but not the second.
TS ts1 = NewPatternTimeSeries(NewTSID="ts1..Streamflow.Month",Description="test data 1",
SetStart="2000-01",SetEnd="2001-12",Units="CFS",
    PatternValues=".5,1.5,,3.5,4.5,5.5,6.5,7.5,8.5,9.5,10.5,11.5,
    1.5,2.5,3.5,4.5,5.5,6.5,7.5,8.5,9.5,10.5,11.5,12.5")
TS ts2 = NewPatternTimeSeries(NewTSID="ts2..Streamflow.Month",Description="test data 2",
SetStart="2000-01",SetEnd="2001-12",Units="CFS",
    PatternValues="1.5,2.5,3.5,4.5,5.5,6.5,7.5,8.5,9.5,10.5,11.5,12.5,
    2.5,3.5,4.5,5.5,6.5,7.5,8.5,9.5,10.5,11.5,12.5,13.5")
# Create an ensemble to hold the above time series
NewEnsemble(TSList=AllTS,NewEnsembleID="TestEnsemble",NewEnsembleName="Test Ensemble")
# Compute the statistic
TS Mean = NewStatisticTimeSeriesFromEnsemble(EnsembleID="TestEnsemble",
    NewTSID="Test..Streamflow.Month.Mean",
    Statistic=Mean)
```

The following figure illustrates the results:



DATE	ts1, Streamflow, CFS	ts2, Streamflow, CFS	Mean, Streamflow, CFS
2000-01	0.50	1.50	1.00
2000-02	1.50	2.50	2.00
2000-03		3.50	3.50
2000-04	3.50	4.50	4.00
2000-05	4.50	5.50	5.00
2000-06	5.50	6.50	6.00
2000-07	6.50	7.50	7.00
2000-08	7.50	8.50	8.00
2000-09	8.50	9.50	9.00
2000-10	9.50	10.50	10.00
2000-11	10.50	11.50	11.00
2000-12	11.50	12.50	12.00
2001-01	1.50	2.50	2.00
2001-02	2.50	3.50	3.00
2001-03	3.50	4.50	4.00
2001-04	4.50	5.50	5.00
2001-05	5.50	6.50	6.00
2001-06	6.50	7.50	7.00
2001-07	7.50	8.50	8.00
2001-08	8.50	9.50	9.00
2001-09	9.50	10.50	10.00
2001-10	10.50	11.50	11.00
2001-11	11.50	12.50	12.00
2001-12	12.50	13.50	13.00

Graph Summary Save Close

Currently-selected worksheet interval: Month

NewStatisticTimeSeriesFromEnsemble_Table

NewStatisticTimeSeriesFromEnsemble() Command Results