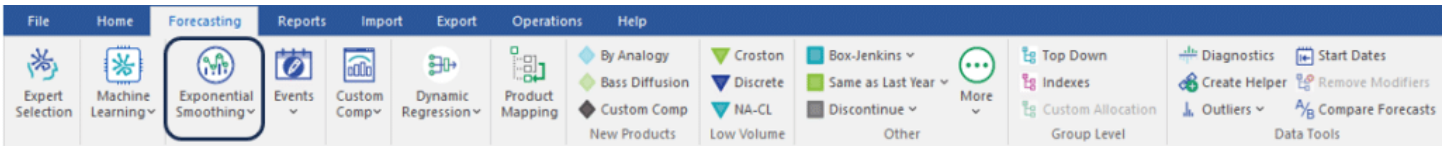
Exponential Smoothing

Forecasting Methodologies · https://www.forecastpro.com/documentation/forecast-pro-trac/forecasting-methodologies/exponential-smoothing/



Automatic Exponential Smoothing

Select *Automatic* from the **Exponential Smoothing** icon drop-down or simply click the icon for Forecast Pro to automatically select an exponential smoothing model.

- **\EXSM** is the modifier associated with Automatic Exponential Smoothing.

Simple Exponential Smoothing

Select *Simple* on the **Exponential Smooth** icon drop-down to use a simple exponential smoothing model.

- ***\SIMPLE*** is the modifier associated with Simple Exponential Smoothing.

Holt Exponential Smoothing

Select *Holt* on the **Exponential Smoothing** icon drop-down to use the Holt exponential smoothing model.

- ***\HOLT*** is the modifier associated with Holt Exponential Smoothing.

Winters Exponential Smoothing

Select *Winters* on the **Exponential Smoothing** icon drop-down to use the Winters exponential smoothing model.

- ***\WINTERS*** is the modifier associated with Winters Exponential Smoothing.

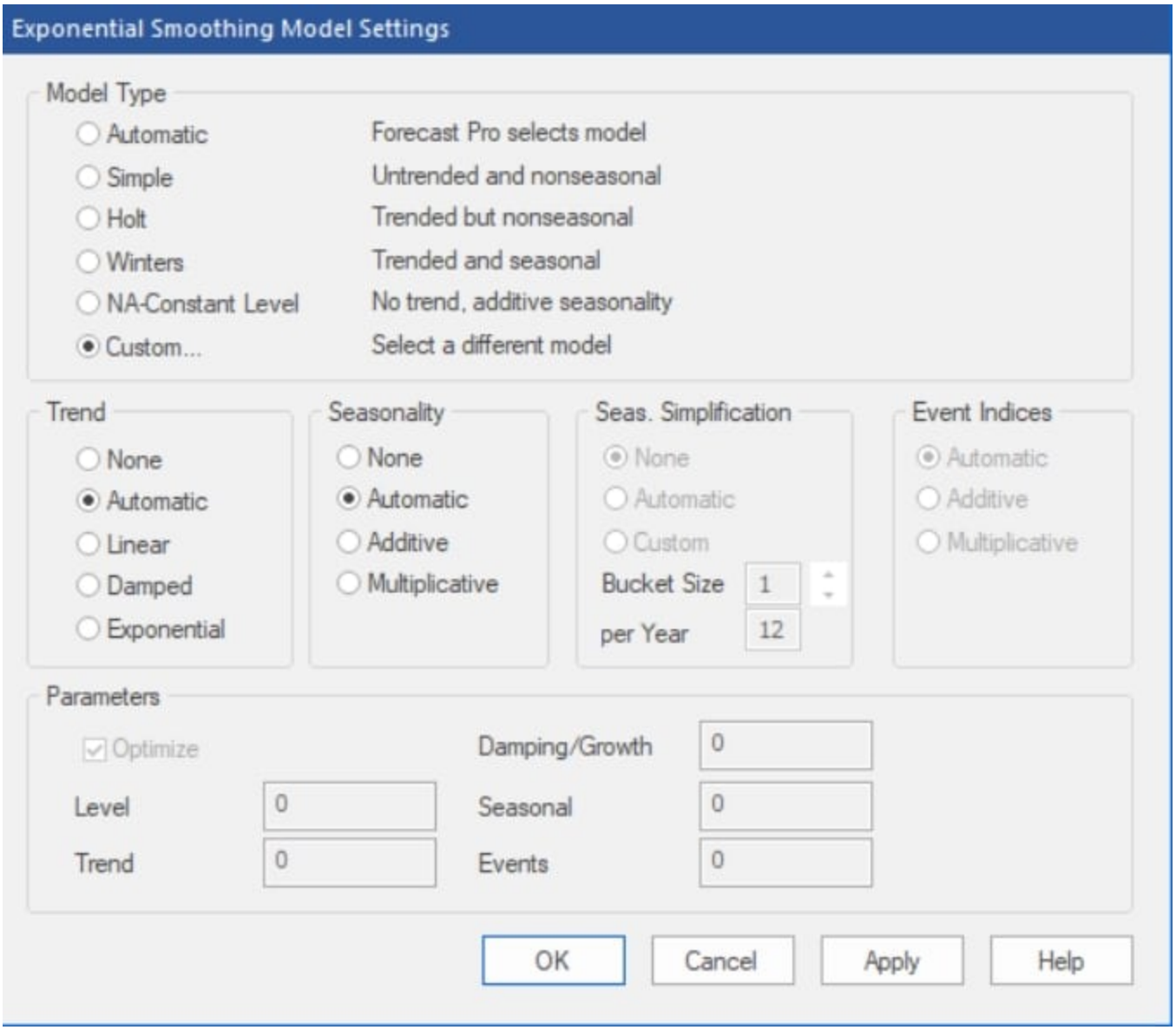
NA-CL Exponential Smoothing

Select *NA-CL* on the **Exponential Smoothing** icon drop-down or click the **NA-CL** icon in the Low Volume group to use a non-trended Additive Seasonality Constant Level exponential smoothing model. Note that NA-CL is included in the Low Volume group because it works well for items with seasonal, low volume demand.

- ***NA-CL** is the modifier associated with NA-CL Exponential Smoothing.

Custom Exponential Smoothing

Selecting *Custom* on the **Exponential Smooth** icon drop-down on the **Forecasting** tab or selecting *Forecasting>Exponential Smoothing* on the Navigator context menu invokes the Exponential Smoothing Model Settings dialog box shown below.



The ***Model Type*** section of the dialog box allows you to specify Automatic selection (i.e., Forecast Pro will automatically select the form of the exponential smoothing model to apply), one of the standard models or Custom. If you select Custom, you will need to specify the form of Trend and Seasonality to use.

If you are forecasting data where the periods per cycle is greater than 13 (e.g., weekly data) you can use the Seasonal Simplification options to reduce the number of seasonal indices to use. *None* instructs Forecast Pro to not use seasonal simplification. *Automatic* allows Forecast Pro to automatically select the number of indices using out-of-sample testing. *Custom* allows you to specify the number of indices by specifying the “bucket size” (i.e., how many periods to combine into each seasonal index) or by setting the number of indices to use per year. Note that seasonal simplification

cannot be used in conjunction with event models.

The ***Event Indices*** section allows you to specify the form of the event indices (additive, multiplicative or let Forecast Pro decide). This section will only be available if you have specified an event schedule. When events are used in conjunction with a seasonal model, the form of both the event indices and seasonal indices must match—so the Event Indices section will also be greyed out if Seasonality is set to anything other than None.

The ***Parameters*** section allows you to set the smoothing weights to specific values. In general, this is not a recommended practice (allowing Forecast Pro to optimize the smoothing weights is recommended). If you do wish to set the smoothing weights, you must specify a specific form for the trend and seasonality.

When you click the **OK** button Forecast Pro will apply the appropriate modifier on the Navigator and build the specified model.

The exponential smoothing modifiers include:

- ***EXSM=XY***: Use a custom exponential smoothing model with trend type X (N=no trend, L=linear trend, D=damped trend, E=exponential, *=Forecast Pro decides), seasonality type Y (N=nonseasonal, M=multiplicative seasonal, A=additive seasonal, *=Forecast Pro decides) and optimized smoothing weights.
- ***EXSM=XY(A,B,C,D)***: Use a custom exponential smoothing model with trend type X (N=no trend, L=linear trend, D=damped trend, E=exponential, *=Forecast Pro decides), seasonality type Y (N=nonseasonal, M=multiplicative seasonal, A=additive seasonal, *=Forecast Pro decides) and user defined smoothing weights (A=level, B=trend, C=damping/growth, D=seasonal).
- ***SS***: Use Forecast Pro's automatic identification procedure to determine whether to use seasonal simplification and the appropriate bucket size.
- ***SS=n***: Use seasonal simplification with n periods for each seasonal index or "bucket."