Distribution Fitting (Life Distribution)

Use to model a single continuous variable with a probability distribution and estimate a variety of parameters (e.g., mean, percentiles, probabilities). This platform is designed to fit and compare many different distributions and can analyze data that is censored (incomplete). Note: Though frequently used to analyze time-to-event data, the analysis methods can be used to model any continous variable (e.g., force-to-event).
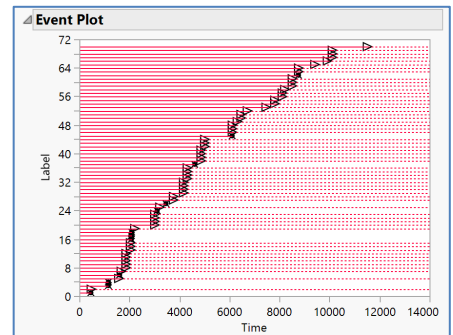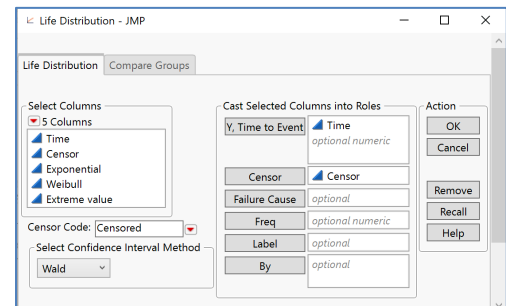
Distribution Fitting (Life Distribution)

Fan.jmp (Help > Sample Data Folder > Reliability)

1. From an open JMP® data table, select **Analyze > Reliability and Survival > Life Distribution.**

2. Select a continuous time variable from **Select Columns**, then click **Y, Time to Event** (continuous variables have blue triangles).

3. If the data contain censored values, select the censoring variable and click **Censor**. Change the **Censor Code** if needed (the default is Censored).

4. Select the **Confidence Interval Method** (the default is Wald), and click **OK**.

   JMP will display:

   - An **Event Plot** (click on the gray icon to open), which graphically depicts failures (denoted by X's) and censored events (denoted by triangles).
   - The **Compare Distributions** panel, which allows you to compare the fit of various distributions.
   - The **Statistics** panel, with summary statistics, parameter estimates and profilers for each distribution selected.

To Compare Distributions:

- Click a radio button under **Scale** to apply the scale for a distribution. If the selected distribution fits the data well, the plotted points will approximate a straight line.
- Check a box under **Compare Distributions** to fit a distribution and display a **fitted line**, shaded **confidence bands** and a **Profiler** for the distribution.
- Select **Fit All Distribution** or **Fit All Non-negative** under the **top red triangle** to compare all distributions using model comparison criteria such as AIC and BIC.
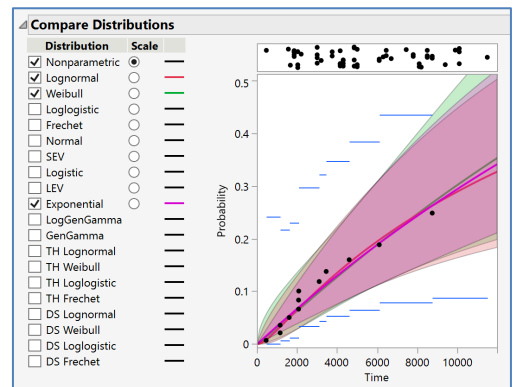
Tips:

- To compare the same life distribution across groups, use the **Compare Groups** option in the Life Distribution dialog. Other options, such as show survival curve and view tabbed report are available from the **top red triangle**.
- If studying competing failure causes, enter the variable in the **Failure Cause** field in the launch window.
- Continuous distributions can also be fit in **Analyze > Distribution**.

Visit **Reliability and Survival Methods > Life Distribution** in **JMP Help** to learn more.