

Optimizations and The layout process

1. Optimizations

- When a layout is triggered by a "resize" or a change in the **renderer position**(and not size), the **renders sizes** are **taken from a cache and not recalculated**.
- In some cases **only a sub tree is modified** and **layout does not start from the root**. This can happen in cases where the **change is local** and **does not affect its surroundings**— —like text inserted into text fields.

2. The layout process

1. Parent renderer determines its own **width**.(**dirty bit** is true)
2. Parent goes over children and:
 1. **Place** the child renderer (sets its x and y).
 2. Calls child **layout** if needed—they are dirty or we are in a global layout, or for some other reason—which calculates the child's height.
3. Parent uses children's **accumulative(累积的) heights and the heights of margins and padding** to set its own **height**— —this will be used by the parent renderer's parent.
4. Sets its **dirty bit** to false.

The background features a repeating pattern of overlapping triangles in two shades of light gray. Scattered throughout the triangles are small, dark gray icons of stars and crescent moons.

6.Painting