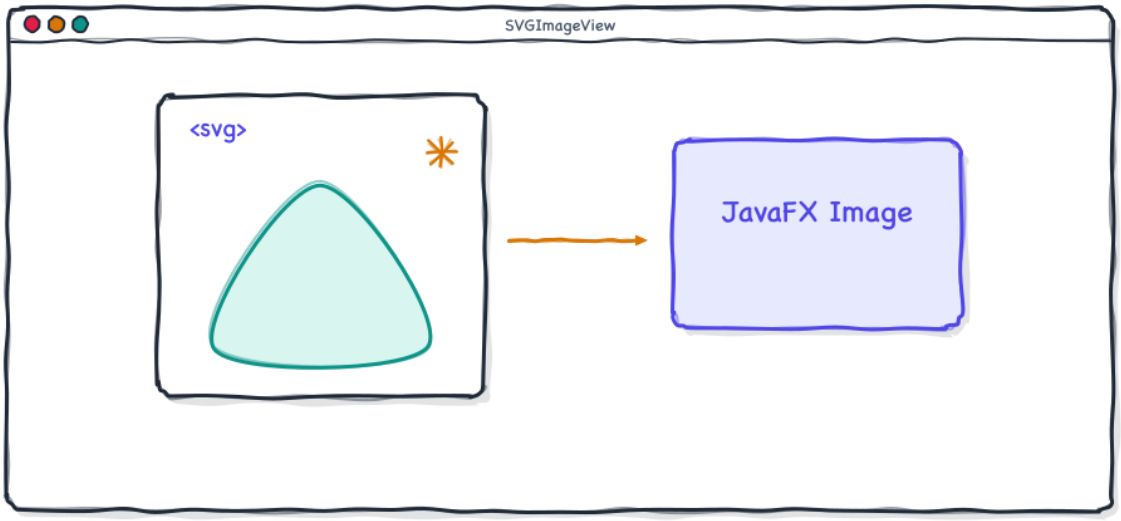
SVGImageView

Developer Manual

GemsFX • com.dlsc.gemsfx • JavaFX Custom Controls



Generated cartoon overview of SVGImageView.

SVGImageView renders SVG files into JavaFX Images via com.github.weisj:jsvg and displays them in an ImageView with fit width, fit height, smoothing and aspect-ratio controls.

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1. Introduction

SVGImageView SVGImageView renders SVG files into JavaFX Images via com.github.weisj:jsvg and displays them in an ImageView with fit width, fit height, smoothing and aspect-ratio controls.

1.1 Key features

- Uses com.github.weisj.jsvg through SVGUtil.
- svgUrl accepts absolute URLs or classpath resources and validates them.
- fitWidth and fitHeight default to 0, meaning intrinsic SVG size is used.
- preserveRatio and smooth default to true.
- backgroundLoading defaults to false; true uses a JavaFX Service.
- The skin reloads when URL, fit size or window render scale changes.

1.2 Maven dependency

```
<dependency>
    <groupId>com.dlsc.gemsfx</groupId>
    <artifactId>gemsfx</artifactId>
    <version>4.4.1</version>
</dependency>
```

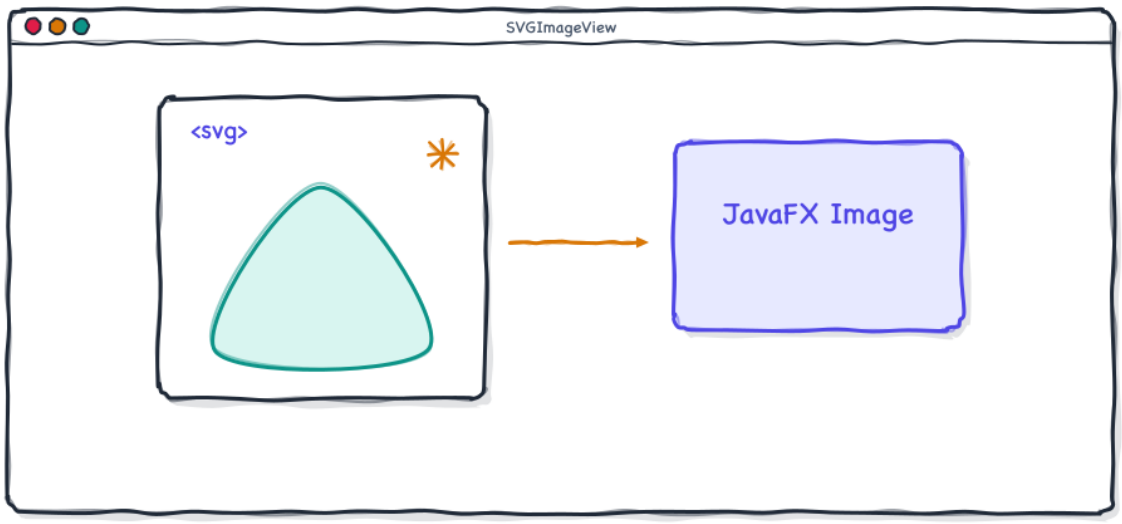
The control lives in module `com.dlsc.gemsfx`.

2. Getting started

The following snippet uses only public API verified in the control source.

```
SVGImageView icon = new SVGImageView();
icon.setSvgUrl(getClass().getResource("microphone.svg").toExternalForm());
icon.setFitWidth(96);
icon.setFitHeight(96);
icon.setPreserveRatio(true);
icon.setBackgroundLoading(false);
```

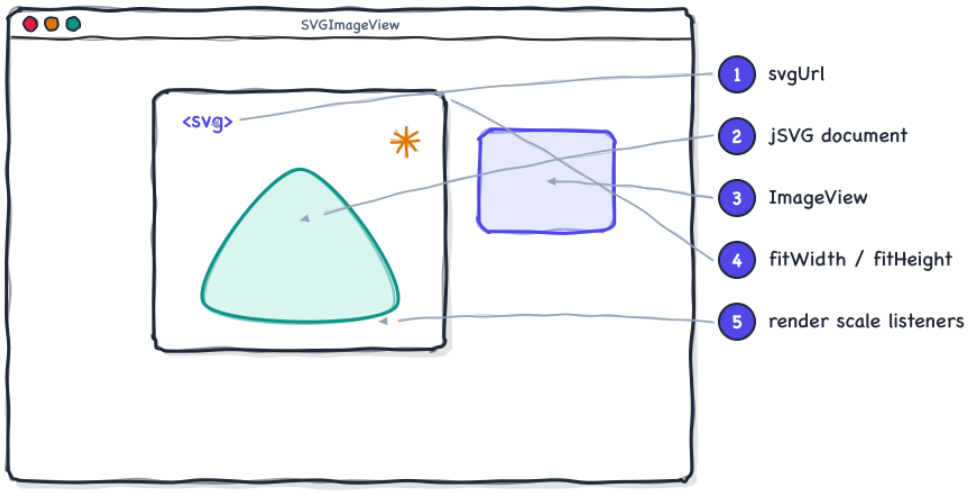
A compact setup for SVGImageView.



A generated overview of SVGImageView in use.

3. Anatomy

The anatomy diagram identifies the implementation pieces that matter when configuring, styling or debugging the control.



The parts of SVGImageView.

Part	Verified detail
Root	Style class `.svg-image-view` is added by the constructor.
Stylesheet	No user-agent stylesheet is returned by the control source.
Renderer	Skin uses `SVGUtil`, which renders through `com.github.weisj.jsvg` to a JavaFX Image.

4. Control API

4.1 Properties and callbacks

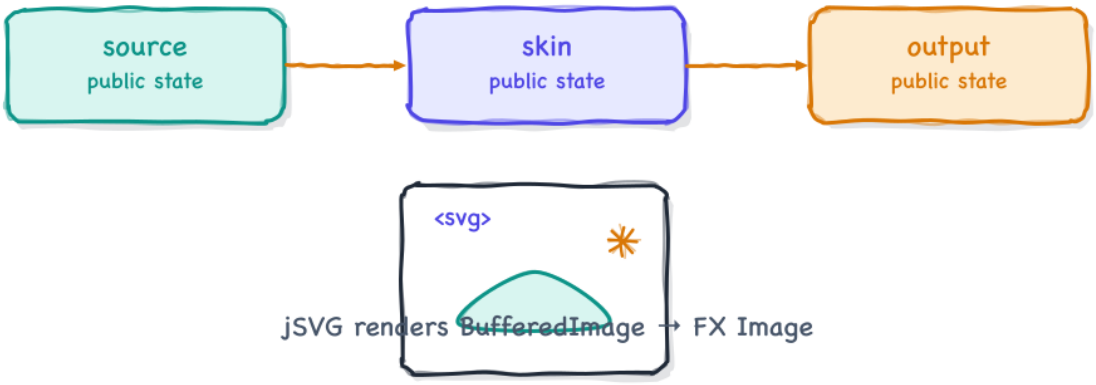
Property	Type	Default	Description
svgUrl	StringProperty	null	Validated URL or resource path for the SVG.
fitWidth	DoubleProperty	0	Requested fit box width; 0 uses intrinsic width.
fitHeight	DoubleProperty	0	Requested fit box height; 0 uses intrinsic height.
preserveRatio	BooleanProperty	true	Bound to ImageView.preserveRatio.
smooth	BooleanProperty	true	Bound to ImageView.smooth.
backgroundLoading	BooleanProperty	false	Loads through a Service when true.

Note. Defaults and property names in this table were checked against the Java source for this batch.

5. Behaviour

Important runtime states of SVGImageView.

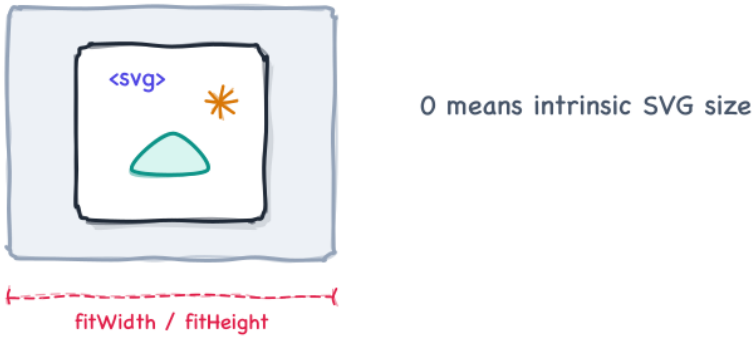
- validateUrl rejects null, blank and unresolved resource strings.
- The skin binds ImageView fitWidth, fitHeight, preserveRatio and smooth to the control.
- Synchronous loading calls SVGUtil.parseSVGFromUrl with fit size multiplied by window render scale.
- Background loading cancels any running service and restarts it.
- SVGUtil renders with jsvg to BufferedImage, then converts through SwingFXUtils.



How data and geometry flow through SVGImageView.

6. Layout and rendering

The SVG document is parsed by jsvg, rendered to a BufferedImage at the requested fit size and window render scale, then converted to a JavaFX Image for an ImageView.

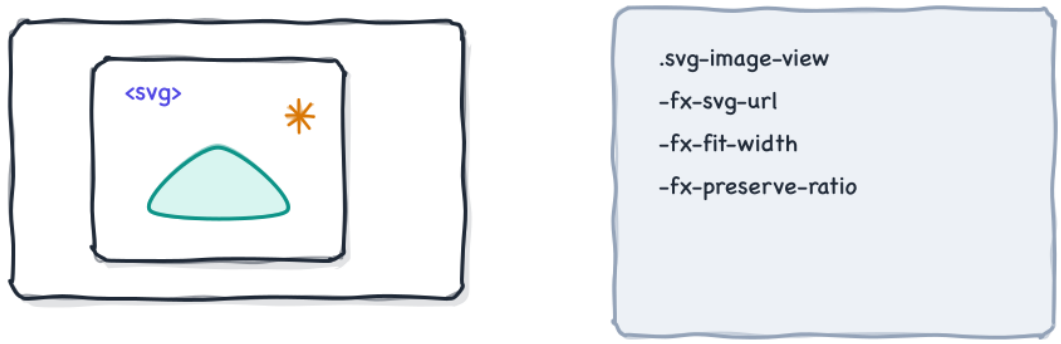


Rendering and sizing rules for SVGImageView.

Concern	Rule
Intrinsic size	fitWidth / fitHeight <= 0 keeps intrinsic SVG dimensions in SVGUtil.
Aspect ratio	SVGUtil derives the missing requested dimension from SVG aspect ratio; ImageView also binds preserveRatio.
Render scale	Window renderScaleX/Y triggers reload for HiDPI output.

7. Styling

SVGImageView does not return a user-agent stylesheet in the verified source, but it still exposes a root style class and styleable CSS properties where listed below.



Style hooks for SVGImageView.

7.1 Style classes and pseudo classes

Selector / pseudo class	Purpose
`.svg-image-view (root style class only)`	Verified in source, skin or CSS.

7.2 Styleable CSS properties

CSS property	Type	Default
`-fx-svg-url`	URL/String	null
`-fx-fit-width`	size	0
`-fx-fit-height`	size	0
`-fx-preserve-ratio`	boolean	true
`-fx-smooth`	boolean	true
`-fx-background-loading`	boolean	false

```
.svg-image-view {
    -fx-fit-width: 96px;
    -fx-fit-height: 96px;
    -fx-preserve-ratio: true;
}
```

CSS example using documented hooks.

8. Localization

The verified source has no ResourceBundleManager keys for SVGImageView.

9. Accessibility

SVGImageView sets AccessibleRole.IMAGE_VIEW and focusTraversable false. The source does not bind accessible text.

10. Recipes

10.1 Programmatic configuration

```
SVGImageView icon = new SVGImageView();
icon.setSvgUrl(getClass().getResource("microphone.svg").toExternalForm());
icon.setFitWidth(96);
icon.setFitHeight(96);
icon.setPreserveRatio(true);
icon.setBackgroundLoading(false);
```

10.2 Practical checklist

1. Pass classpath resources or fully qualified URLs to setSvgUrl.
2. Use backgroundLoading for remote or slow SVGs.
3. Use the public properties listed in the API chapter.
4. Style only through documented selectors and styleable properties.
5. Do not depend on private skin node structure except for documented CSS selectors.

11. Integration notes

No user-agent CSS file and no resource bundle exist for SVGImageView.

Topic	Recommendation
Threading	Keep image loading and expensive rendering off the UI path when the control exposes a background option.
Styling	Scope selectors under the documented root style class.
Accessibility	Preserve the source-defined accessible role and add app-specific text when the control does not bind it.
State	Prefer public properties over skin node lookup.

12. See also

- Demo application: `com.dlsc.gemsfx.demo.SVGImageViewApp` (run with `mvn javafx:run -f gemsfx-demo/pom.xml -Dmain.class=com.dlsc.gemsfx.demo.SVGImageViewApp`)
- Related GemsFX media controls: `AvatarView`, `PhotoView`, `SVGImageView`, `BeforeAfterView`, `MaskedView`, `ScreensView`.
- API documentation: https://dlsc-software-consulting-gmbh.github.io/GemsFX/api/