Fast Chart Widgets

User Guide

Version 1.1.0

For Unreal Engine 5.5+

Introduction

Welcome to Fast Chart Widgets, a high-performance data visualization plugin for Unreal Engine 5.5+. This plugin enables you to create beautiful, responsive charts directly in your UMG widgets with minimal setup.

Key Features

- ✓ 8 chart types: Line, Area, Scatter, Bar, Pie, Donut, Polar Area, and Radar
- ✓ 34 pre-built chart templates ready for immediate use
- ✓ Chart Template Marketplace for easy template browsing and insertion
- ✓ Native Slate rendering for maximum performance
- ✓ Fluent Builder API for intuitive chart configuration
- ✓ Full Blueprint and C++ support
- ✓ Smooth animation system with customizable transitions
- ✓ Comprehensive theming and styling options
- ✓ Built-in demo data sources for quick prototyping
- ✓ Multi-series support for comparative visualizations

What's New in 1.1.0

- **Chart Template Marketplace:** New editor UI for browsing and adding templates
- **34 Chart Templates:** Organized across 6 categories for different use cases
- **Multi-Series Data:** New demo data sources for dual and triple comparison charts
- **Improved Active Widget Detection:** Templates now add to the most recently active widget

Installation

From Fab Marketplace

1. Purchase and download Fast Chart Widgets from the Fab Marketplace
2. In Epic Games Launcher, go to Library → Vault
3. Find Fast Chart Widgets and click "Install to Engine"
4. Select your Unreal Engine 5.5+ installation
5. Enable the plugin in your project via Edit → Plugins → search "Fast Chart"
6. Restart the editor when prompted

Verifying Installation

After installation, verify the plugin is working:

1. Open any Widget Blueprint in your project
2. Look for the "Add Chart" button in the Widget Editor toolbar
3. Click it to open the Chart Template Marketplace

> **Note:** The Chart Template Marketplace button only appears when editing a Widget Blueprint. Open or create a Widget Blueprint to access it.

Chart Template Marketplace

The Chart Template Marketplace is a built-in editor window that provides easy access to all 34 pre-built chart templates. It's the fastest way to add charts to your widgets.

Accessing the Marketplace

1. Open a Widget Blueprint in the UMG Designer
2. Look for the **Add Chart** button in the toolbar (displays as a chart icon)
3. Click to open the Chart Template Marketplace window

Using Templates

The marketplace organizes templates into 6 categories:

- **Performance** - FPS, memory, frame time, and system monitoring charts
- **Gameplay** - Health, ammo, score, and game state visualizations
- **Multi-Data** - Dual and triple series comparison charts
- **Visual Styles** - Themed charts like Neon Glow and Retro CRT
- **Minimal** - Compact sparklines and micro charts
- **Other** - General purpose and utility templates

Adding a Template

1. Browse templates by category or scroll through all options
2. Click "Add to Widget" on your chosen template
3. The chart is automatically added to your Widget Blueprint's canvas
4. Position and resize as needed in the Designer

> **Tip:** When multiple Widget Blueprints are open, the template will be added to the most recently active one (the last widget you clicked on or edited).

Template Catalog

Fast Chart Widgets includes 34 pre-built templates organized into 6 categories. Each template is pre-configured with appropriate chart type, styling, and data source settings.

Performance Templates

These templates are designed for monitoring application and system performance. They feature real-time data sources for FPS, memory, and timing metrics.

FPS Monitor

Real-time frames-per-second tracking with performance zone coloring (green/yellow/red thresholds).

Line Chart

Mini FPS

Compact FPS display ideal for corner placement. Minimal styling with essential metrics only.

Line Chart

Frame Time

Frame time in milliseconds. Useful for identifying stutters and performance spikes.

Line Chart

Frame Time Variance

Visualizes frame time consistency. Lower variance indicates smoother gameplay.

Area Chart

Memory Usage

Process memory consumption in megabytes. Helps identify memory leaks over time.

Area Chart

Draw Calls

Render draw call count. Essential for graphics optimization and batching analysis.

Bar Chart

Game Thread Time

Game thread execution time. Identifies CPU-bound gameplay logic bottlenecks.

Line Chart

Render Thread Time

Render thread execution time. Monitors rendering command submission overhead.

Line Chart

GPU Time

GPU frame rendering time. Identifies GPU-bound scenarios and shader complexity issues.

Line Chart

CPU vs GPU

Dual-series comparison of CPU and GPU timing. Quickly identify which is the bottleneck.

Line Chart (2 Series)

Performance Bar

Horizontal bar comparison of multiple performance metrics at a glance.

Bar Chart

Gameplay Templates

Templates designed for in-game HUD elements showing player stats, economy, and game state information.

Health Tracker

Player health over time. Shows damage taken and healing patterns during gameplay.

Line Chart

Ammo Tracker

Ammunition consumption tracking. Visualizes firing rate and reload patterns.

Bar Chart

Score Progression

Player score accumulation over time. Great for competitive game analysis.

Area Chart

Economy Tracker

In-game currency or resource tracking. Shows income and spending patterns.

Line Chart

Damage Output

DPS (Damage Per Second) visualization. Track combat effectiveness over time.

Bar Chart

Player Stats

Multi-attribute player statistics displayed as a radar chart. Perfect for RPG stat screens.

Radar Chart

Speed Meter

Player movement speed visualization. Ideal for racing games or movement-focused gameplay.

Line Chart

Multi-Data Templates

Templates featuring multiple data series for comparative analysis. These use the new multi-series demo data sources.

Dual Comparison

Side-by-side comparison of two metrics. Ideal for before/after or A/B comparisons.

Line Chart (2 Series)

Triple Metrics

Three-way metric comparison. Perfect for comparing multiple options or time periods.

Line Chart (3 Series)

Data Dashboard

Dashboard-style overview with multiple data streams displayed together.

Line Chart (2 Series)

Visual Style Templates

Themed templates with distinctive visual styles. These prioritize aesthetics while maintaining functionality.

Neon Glow

Vibrant neon-styled chart with glow effects. Perfect for sci-fi or cyberpunk themed games.

Line Chart

Retro CRT

Vintage CRT monitor aesthetic with scan lines and phosphor glow simulation.

Line Chart

Audio Levels

VU meter style audio level visualization with gradient coloring.

Bar Chart

Heartbeat

EKG/ECG style heartbeat monitor. Medical aesthetic with authentic waveform pattern.

Line Chart

Signal Strength

Temperature Gauge

Network or radio signal strength indicator with stepped bars.

Bar Chart

Temperature visualization with color gradient from cold to hot zones.

Line Chart

Minimal Templates

Compact, low-profile charts designed for space-constrained UI areas. These templates show data with minimal visual overhead.

Spark Line

Ultra-compact inline sparkline. Perfect for embedding in text or small HUD elements.

Line Chart

Micro Chart

Tiny chart widget for dashboard tiles. Maximum information in minimum space.

Area Chart

Delta Change

Shows positive/negative change indicator. Ideal for stock or stat changes.

Line Chart

Moving Average

Smoothed data with moving average overlay. Reduces noise in volatile data.

Line Chart

Other Templates

General purpose templates for various use cases including financial data, statistics, and blank starting points.

Blank Template

Empty chart with sensible defaults. Use as a starting point for custom configurations.

Line Chart

Stock Chart

Financial stock price visualization with candlestick-style formatting.

Line Chart

Histogram

Frequency distribution visualization. Great for statistical data analysis.

Bar Chart

Efficiency Ratio

Efficiency metric over time. Shows productivity or performance ratios.

Line Chart

Chart Types

Fast Chart Widgets supports 8 distinct chart types, each suited for different data visualization needs.

Line Chart

Displays data as connected points along a line. Best for showing trends and changes over time.

- **Use cases:** Time series data, performance monitoring, trend analysis
- **Features:** Customizable line thickness, marker shapes, smooth curves

Area Chart

Similar to line charts but with the area beneath the line filled. Emphasizes magnitude of values.

- **Use cases:** Cumulative data, resource usage, market share
- **Features:** Gradient fills, transparency options, stacking support

Scatter Plot

Displays individual data points without connecting lines. Reveals patterns and correlations.

- **Use cases:** Correlation analysis, distribution visualization
- **Features:** Multiple marker shapes, size-based values, clustering

Bar Chart

Represents data with rectangular bars. Excellent for comparing discrete categories.

- **Use cases:** Category comparison, rankings, survey results
- **Features:** Vertical/horizontal orientation, grouped bars, stacking

Pie Chart

Circular chart divided into slices representing proportions of a whole.

- **Use cases:** Part-to-whole relationships, percentage breakdowns
- **Features:** Exploded slices, percentage labels, custom colors

Donut Chart

Pie chart with a hollow center. The center space can display summary information.

- **Use cases:** Progress indicators, completion percentages
- **Features:** Adjustable inner radius, center text, ring thickness

Polar Area Chart

Circular chart where segments extend from the center with varying radii.

- **Use cases:** Cyclic data, directional data, time-of-day analysis
- **Features:** Equal angles, variable radii, radial grid lines

Radar Chart

Displays multivariate data on axes starting from a common center point.

- **Use cases:** Skill comparisons, product ratings, performance profiles
- **Features:** Multiple series overlay, filled areas, custom axis labels

Working with Data

Data Sources

Charts can receive data from multiple sources:

Built-in Performance Data

Automatic data collection from engine systems:

- **FPS** - Frames per second
- **Frame Time** - Time per frame in milliseconds
- **Memory** - Process memory usage in MB
- **Draw Calls** - Render draw call count
- **Game Thread Time** - Game thread execution time
- **Render Thread Time** - Render thread execution time
- **GPU Time** - GPU rendering time

Demo Data Sources

Pre-built data patterns for prototyping and testing:

- **Sine Wave** - Smooth oscillating pattern
- **Random Walk** - Natural-looking random variations
- **Stock Price** - Financial-style price movements
- **Heartbeat** - EKG waveform pattern
- **Dual Series** - Two comparative data streams
- **Triple Series** - Three comparative data streams

Manual Data (Blueprint/C++)

Add data points programmatically using the Builder API or widget functions:

- `AddDataPoint(SeriesIndex, X, Y)` - Add single point
- `AddBulkDataPoints(SeriesIndex, Points)` - Add multiple points

- `ClearAllData()` - Remove all data
- `Refresh()` - Force chart redraw

Customization

Visual Styling

Every aspect of chart appearance can be customized:

- **Colors:** Line, fill, background, grid, axis colors
- **Thickness:** Line weight, axis thickness, grid line weight
- **Fonts:** Axis labels, legend text, value formatting
- **Dimensions:** Chart size, padding, margins

Axis Configuration

- Show/hide X and Y axes independently
- Enable auto-scaling or set fixed ranges
- Configure grid line density
- Set axis labels and formatting

Animation Settings

- Enable/disable entry animations
- Set animation duration
- Choose easing functions
- Configure data update transitions

Performance Zones

Optional colored background zones for threshold visualization:

- Define Good/Warning/Critical thresholds
- Set custom zone colors
- Useful for performance monitoring charts

Troubleshooting

Common Issues

"Add Chart" button not appearing

- Ensure you have a Widget Blueprint open in the Designer
- Verify the plugin is enabled in Edit → Plugins
- Try restarting the editor

Chart showing no data

- Check the Data Source Type in the template settings
- For demo sources, ensure Demo data is not set to "None"
- For performance data, verify the appropriate systems are running

Template not adding to correct widget

- Click on the target widget blueprint before opening the marketplace
- The chart adds to the most recently active widget
- Close other widget blueprints if needed

Chart appears blank or wrong size

- Check the chart widget's size in the Designer
- Ensure the canvas slot has valid position and size values
- Try calling Refresh() on the widget

Support

For additional support, please contact us through the Fab Marketplace or visit our documentation website.

Frequently Asked Questions

Can I use these charts at runtime in packaged games?

Yes! Fast Chart Widgets is a runtime plugin with no editor-only dependencies. All charts work in packaged builds.

How many data points can a chart handle?

Charts can display up to 1000 points per series. For larger datasets, consider downsampling or using a sliding window.

Can I create my own templates?

Yes! Templates are Data Assets. You can duplicate existing templates and modify them, or create new ones from scratch.

Do templates update when I update the plugin?

Plugin templates are stored in the plugin content folder. Your custom templates are safe in your project folder.

How do I add multiple series to a chart?

Use the Builder API's AddSeries() function to add additional series. Each series can have its own color and styling.

Can charts respond to Blueprint events?

Yes! You can call chart functions from Blueprint to add data, change styling, or trigger refreshes based on game events.

Fast Chart Widgets Plugin for Unreal Engine