webOS Design System Migration Guide

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This guide helps you migrate existing components to use the new webOS Design System tokens.

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Overview

The webOS Design System consolidates all design tokens into a single source of truth at `/styles/webos-design-system.css`. This migration ensures:

- ✅ Consistent visual appearance across all components
- ✅ Proper dark mode support
- ✅ Easy theming and customization
- ✅ Better maintainability

What Changed

Old System (Multiple Sources)

```
/* Scattered across multiple files */
/design-tokens/core.css
/design-tokens/semantic.css
/design-tokens/colors-extended.css
/* ... plus 7 more files */
```

New System (Single Source)

```
/* Single comprehensive file */
/styles/webos-design-system.css
```

Key Changes

1. **Pure Neutral Grays**: No more blue-tinted grays (warm-gray-*). Use pure neutral palette.
2. **Simplified Color Names**: More intuitive naming (bg-surface, text-primary, border-light)
3. **Component Tokens**: Pre-configured styling for common components
4. **Better Dark Mode**: Automatic inversion of colors

Migration Steps

Step 1: Update Color References

Backgrounds

```
// ❌ OLD
className="bg-white"
className="bg-gray-100"
className="bg-gray-200"

// ✅ NEW
className="bg-surface"        // Pure white cards
className="bg-tertiary"       // #f5f5f5 - Light surfaces
className="bg-secondary"      // #eeeeee - Secondary backgrounds
className="bg-primary"        // #e8e8e8 - Main app background
```

Text Colors

```
// ❌ OLD
className="text-black"
className="text-gray-900"
className="text-gray-600"
className="text-gray-500"
className="text-gray-400"

// ✅ NEW
className="text-primary"     // #000000 - Primary text
className="text-primary"     // #000000 - Body text
className="text-secondary"   // #666666 - Secondary text
className="text-tertiary"    // #999999 - Hints, placeholders
className="text-disabled"    // #cccccc - Disabled text
```

Borders

```
// ❌ OLD
className="border-gray-300"
className="border-gray-200"
className="border-gray-100"

// ✅ NEW
className="border border-light"     // #e0e0e0 - Default borders
className="border border-lightest"  // #eeeeee - Subtle borders
className="border border-medium"    // #d4d4d4 - Medium borders
className="border border-dark"      // #b0b0b0 - Strong borders
```

Hover & Active States

```
// ❌ OLD
className="hover:bg-gray-50"
className="hover:bg-gray-100"
className="active:bg-gray-200"

// ✅ NEW
className="hover:bg-hover"    // #fafafa - Hover state
className="active:bg-active"  // #f5f5f5 - Active state
```

Step 2: Update Hardcoded Colors

```
// ❌ OLD
style={{ backgroundColor: '#e8e8e8' }}
style={{ color: '#000000' }}

// ✅ NEW
className="bg-primary"
className="text-primary"
```

Step 3: Use Component Tokens

```
// ❌ OLD - Manual styling
<button className="h-12 px-4 bg-blue-500 text-white rounded-lg">

// ✅ NEW - Using component tokens
<button className="h-12 px-4 bg-accent-blue text-white rounded-md
                   hover:bg-accent-blue-dark transition-fast">

// ✅ OR - Using utility class
<button className="webos-button-primary">
```

Step 4: Update Spacing

```
// ❌ OLD - Arbitrary values
className="p-[16px]"
className="gap-[24px]"
className="mt-[32px]"

// ✅ NEW - Using spacing scale
className="p-4"      // 16px
className="gap-lg"   // 24px
className="mt-xl"    // 32px
```

Color Migration

Complete Color Mapping Table

Old Class	New Class	Token Value	Usage
`bg-white`	`bg-surface`	`#ffffff`	Cards, panels
`bg-gray-50`	`bg-hover`	`#fafafa`	Hover states
`bg-gray-100`	`bg-tertiary`	`#f5f5f5`	Light surfaces
`bg-gray-200`	`bg-secondary`	`#eeeeee`	Secondary backgrounds
`bg-gray-300`	`bg-primary`	`#e8e8e8`	Main background
`text-black`	`text-primary`	`#000000`	Primary text
`text-gray-900`	`text-primary`	`#000000`	Body text
`text-gray-700`	`text-secondary`	`#666666`	Secondary text
`text-gray-600`	`text-secondary`	`#666666`	Labels
`text-gray-500`	`text-tertiary`	`#999999`	Hints
`text-gray-400`	`text-disabled`	`#cccccc`	Disabled
`border-gray-300`	`border-light`	`#e0e0e0`	Default borders
`border-gray-200`	`border-lightest`	`#eeeeee`	Subtle borders

Status Colors

```
// Success
className="text-success"          // Success text
className="bg-success"            // Success background
className="border-success"        // Success border

// Error
className="text-error"            // Error text
className="bg-error"              // Error background
className="border-error"          // Error border

// Warning
className="text-warning"          // Warning text
className="bg-warning"            // Warning background

// Info
className="text-info"             // Info text
className="bg-info"               // Info background
```

Accent Colors

```
// Primary accent (webOS blue)
className="bg-accent-blue"        // #4a90e2
className="bg-accent-blue-light"  // Lighter variant
className="bg-accent-blue-dark"   // Darker variant
className="bg-accent-blue-subtle" // Subtle background
```

Spacing Migration

Spacing Scale Mapping

Old Class	New Class	Value	Usage
p-1	p-1	4px	Tiny padding
p-2	p-2	8px	Small padding
p-3	p-md	12px	Medium padding
p-4	p-4 or p-base	16px	Base padding
p-6	p-lg	24px	Large padding
p-8	p-xl	32px	Extra large
p-12	p-2xl	48px	2x extra large
p-16	p-3xl	64px	3x extra large

Gap Utilities

```
// ❌ OLD
className="gap-3"
className="gap-6"
className="gap-8"

// ✅ NEW
className="gap-md"    // 12px
className="gap-lg"    // 24px
className="gap-xl"    // 32px
```

Typography Migration

Font Sizes

```
// ❌ OLD
className="text-xs"      // 12px
className="text-sm"      // 14px
className="text-base"    // 16px
className="text-lg"      // 18px
className="text-xl"      // 20px
className="text-2xl"     // 24px

// ✅ NEW (webOS scale)
className="text-xs"      // 11px - Small labels
className="text-sm"      // 13px - Secondary text
className="text-base"    // 14px - Base body text
className="text-lg"      // 18px - Small headings
className="text-xl"      // 20px - Headings
className="text-2xl"     // 24px - Large headings
```

Font Weights

```
// ✅ Prefer light weights for elegance
className="font-light"    // 300 - Default for most text
className="font-normal"   // 400 - Emphasis only
className="font-medium"   // 500 - Strong emphasis

// ❌ Avoid heavy weights
className="font-semibold" // 600 - Rarely used
className="font-bold"     // 700 - Avoid
```

Component Examples

Example 1: Card Component

```
// ❌ OLD
<div className="bg-white p-6 rounded-xl shadow-lg border border-gray-200">
  <h3 className="text-lg font-semibold text-gray-900 mb-2">
    Card Title
  </h3>
  <p className="text-sm text-gray-600">
    Card content goes here.
  </p>
</div>

// ✅ NEW
<div className="bg-surface p-6 rounded-lg shadow-card border border-lightest">
  <h3 className="text-lg font-light text-primary mb-2">
    Card Title
  </h3>
  <p className="text-sm text-secondary">
    Card content goes here.
  </p>
</div>

// ✅ OR - Using utility class
<div className="webos-card">
  <h3 className="text-lg font-light text-primary mb-2">
    Card Title
  </h3>
  <p className="text-sm text-secondary">
    Card content goes here.
  </p>
</div>
```

Example 2: Button Component

```
// ❌ OLD
<button className="bg-blue-500 text-white px-6 py-3 rounded-lg
                   hover:bg-blue-600 font-medium">
  Click Me
</button>

// ✅ NEW
<button className="bg-accent-blue text-white px-6 py-3 rounded-md
                   hover:bg-accent-blue-dark transition-fast font-normal">
  Click Me
</button>

// ✅ OR - Using utility class
<button className="webos-button-primary">
  Click Me
</button>
```

Example 3: Input Component

```
// ❌ OLD
<input
  type="text"
  placeholder="Enter text..."
  className="w-full h-12 px-3 bg-white rounded-lg border border-gray-300
             focus:border-blue-500 focus:ring-2 focus:ring-blue-200
             text-gray-900 placeholder-gray-500"
/>

// ✅ NEW
<input
  type="text"
  placeholder="Enter text..."
  className="w-full h-12 px-3 bg-surface rounded-md border border-light
             focus:border-focus focus:shadow-focus
             text-primary placeholder:text-tertiary
             transition-fast"
/>

// ✅ OR - Using utility class
<input
  type="text"
  placeholder="Enter text..."
  className="webos-input w-full"
/>
```

Example 4: List Item

```
// ❌ OLD
<div className="flex items-center p-4 hover:bg-gray-50
                border-b border-gray-200">
  <div className="flex-1">
    <h4 className="font-medium text-gray-900">Item Title</h4>
    <p className="text-sm text-gray-600">Item description</p>
  </div>
</div>

// ✅ NEW
<div className="flex items-center p-4 hover:bg-hover
                border-b border-lightest transition-fast">
  <div className="flex-1">
    <h4 className="font-normal text-primary">Item Title</h4>
    <p className="text-sm text-secondary">Item description</p>
  </div>
</div>
```

Example 5: Modal

```
// ❌ OLD
<div className="fixed inset-0 bg-black/50 z-50">
  <div className="fixed inset-0 flex items-center justify-center p-4">
    <div className="bg-white rounded-2xl shadow-2xl p-6 max-w-lg w-full">
      <h2 className="text-2xl font-semibold text-gray-900 mb-4">
        Modal Title
      </h2>
      <p className="text-base text-gray-600">Modal content...</p>
    </div>
  </div>
</div>

// ✅ NEW
<div className="fixed inset-0 bg-glass-black-40 backdrop-blur-sm z-[600]">
  <div className="fixed inset-0 flex items-center justify-center p-4 z-[700]">
    <div className="bg-surface rounded-3xl shadow-modal p-6 max-w-lg w-full">
      <h2 className="text-2xl font-light text-primary mb-4">
        Modal Title
      </h2>
      <p className="text-base text-secondary">Modal content...</p>
    </div>
  </div>
</div>
```

Testing Checklist

After migrating a component, verify:

- [ ] Component renders correctly in light mode
- [ ] Component renders correctly in dark mode
- [ ] All interactive states work (hover, active, focus)
- [ ] Colors match the webOS aesthetic (neutral, clean)
- [ ] Spacing follows the 4px grid system
- [ ] Typography uses light weights (font-light preferred)
- [ ] No hardcoded colors or spacing values
- [ ] Glassmorphic effects work correctly (if applicable)
- [ ] Focus states are visible and accessible
- [ ] Component is responsive across breakpoints

Common Patterns

Pattern 1: Glassmorphic Card

```
<div className="bg-glass-white-80 backdrop-blur-lg rounded-2xl
                shadow-card p-6 border border-glass-border-light">
  {/* Content */}
</div>
```

Pattern 2: Dark Chrome Navigation

```
<nav className="bg-chrome-dark text-chrome-text h-14
                shadow-navbar px-4">
  {/* Navigation items */}
</nav>
```

Pattern 3: Status Badge

```
{/* Success */}
<span className="px-2 py-1 rounded-md bg-success text-white text-xs">
  Success
</span>

{/* Error */}
<span className="px-2 py-1 rounded-md bg-error text-white text-xs">
  Error
</span>

{/* Warning */}
<span className="px-2 py-1 rounded-md bg-warning text-white text-xs">
  Warning
</span>
```

Pattern 4: Hover Card

```
<div className="bg-surface rounded-lg shadow-card p-4
                border border-lightest
                hover:shadow-card-hover hover:border-light
                transition-normal cursor-pointer">
  {/* Card content */}
</div>
```

Pattern 5: Focus Ring

```
<button className="... focus:outline-none focus:shadow-focus">
  Button
</button>
```

FAQ

Q: Can I still use Tailwind's default colors?

A: While technically possible, it's not recommended. Using webOS design tokens ensures:

- Consistent appearance across the app
- Proper dark mode support
- Easy theming

Q: What if I need a custom color?

A: Add it to `/styles/webos-design-system.css` first:

```
:root {
  --custom-color: #ff6b9d;
}
```

Then update `tailwind.config.ts`:

```
colors: {
  'custom': 'var(--custom-color)',
}
```

Q: How do I test dark mode?

A:
1. System preferences: Set your OS to dark mode
2. Browser DevTools: Toggle `prefers-color-scheme: dark`
3. Next.js app: Use `next-themes` for manual toggle

Q: Should I migrate all components at once?

A: No! Migrate incrementally:
1. Start with new components
2. Migrate high-traffic components
3. Gradually update remaining components
4. The old tokens will coexist during transition

Support

For questions or issues:
- Check `/docs/DESIGN_SYSTEM.md` for full documentation
- Review `/styles/webos-design-system.css` for all available tokens
- See example components in this guide

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