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Solve Theme Problems with the "Enhanced Theme Provider" control

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Agenda

- Problems to solve

- Usage scenarios

- **Introduction to the "Enhanced Theme Provider" control,** how it was implemented and how to use it in SPFx
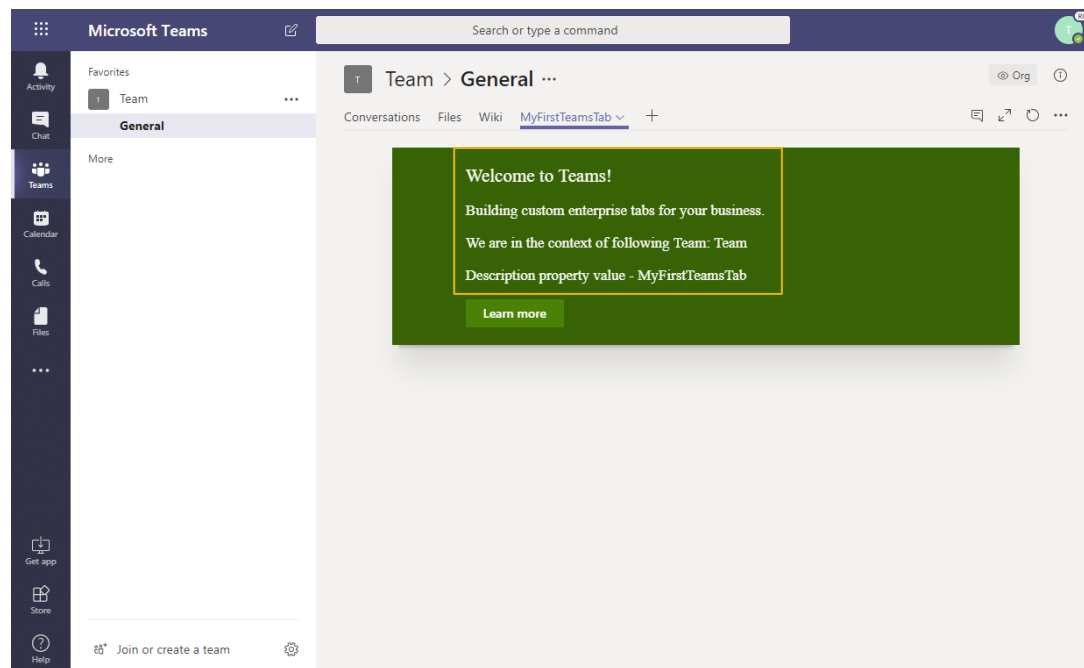
- Demo

- References

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Problems to solve

The reasons behind this control are relate to **solving basic style problems** using the Fluent UI controls currently officially supported by **SPFx**, namely:
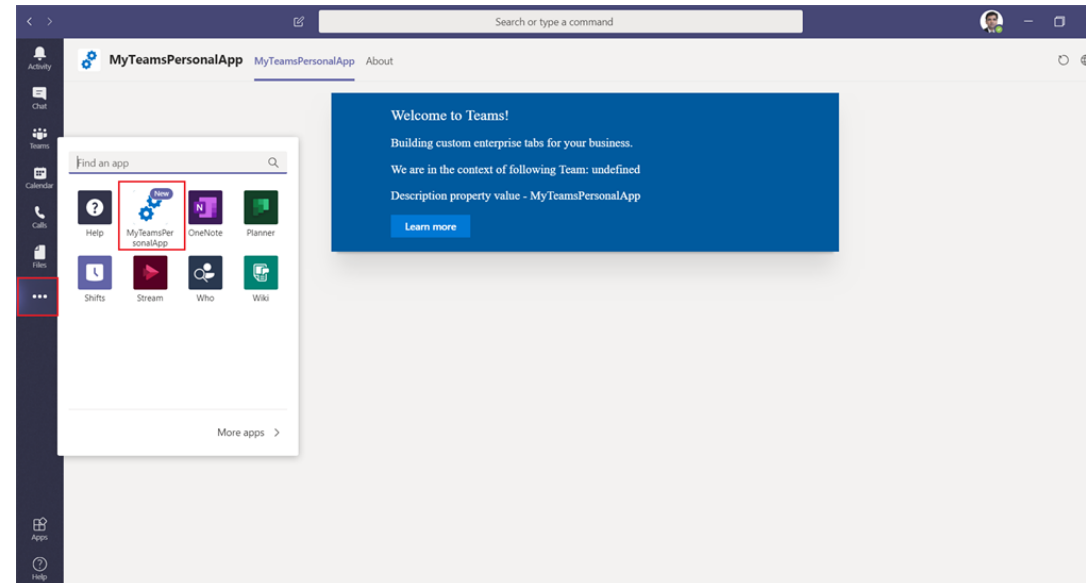
- **Problems with Teams theme support**, when hosting a Web Part like Tab or Personal App and specifically the lack of support by the version **of Fluent UI React supported by SPFx of Teams theme** (most problems with "high contrast theme").

- Lack of basic style, such as fonts, for basic HTML elements when
  - Creating Web Parts hosted in Teams as Tabs or Personal App.
  - Creating Web Parts in isolated mode aka the "Isolated Web Parts"

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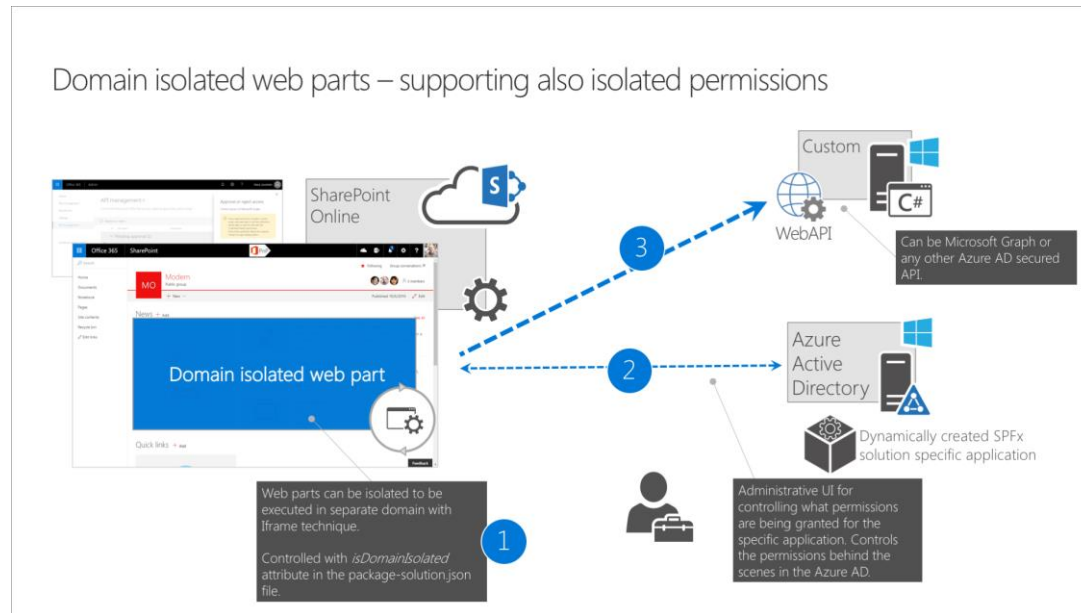
Usage scenarios - Teams
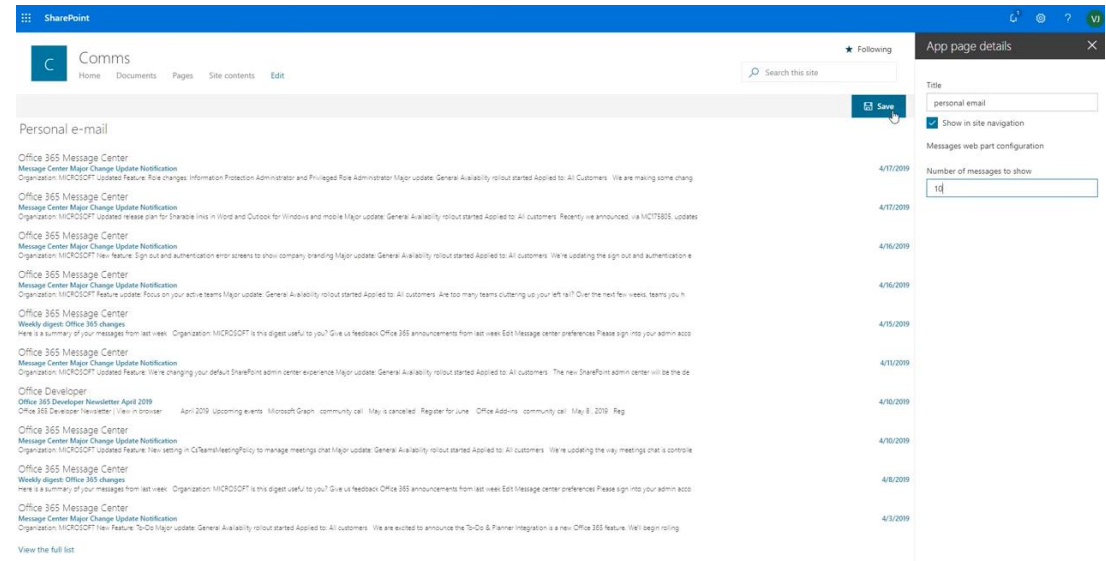
Team Tab

Personal App

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Usage scenarios - Isolated Web Parts

Isolated Web Parts

Usage "Isolated Web Part" as "Single Part App Page"

"Enhanced Theme Provider" control

- Considered as a sort of **wrapper for all react and non-react controls** that you want to add to the WebPart.

- **Extends the functionality of the Fluent UI ThemeProvider control** (currently in version 7) **by adding some logic** thanks to the information contained in the 'context' property:
  - If the Web Part is **hosted in SharePoint**, the theme passed through the **'Theme' property will be used or the default one** of the current site will be taken
  - If the Web Part is **hosted in Teams**, the "Theme" property will be ignored, using the "Context" property checks which **theme is currently applied** and will use the **custom** themes to mimic the Teams Themes.

Property	Type	Required	Description
context	WebPartContext	yes	Set the context from the SPFx Web Part.
as	React.ElementType	no	A component that should be used as the root element of the ThemeProvider component.
ref	React.Ref	no	Optional ref to the root element.
theme	PartialTheme | Theme	no	Defines the theme provided by the user.
renderer	StyleRenderer	no	Optional interface for registering dynamic styles. Defaults to using `merge-styles`. Use this to opt into a particular rendering implementation, such as `emotion`, `styled-components`, or `jss`. Note: performance will differ between all renders. Please measure your scenarios before using an alternative implementation.
applyTo	'element' | 'body' | 'none'	no	Defines where body-related theme is applied to. Setting to 'element' will apply body styles to the root element of ThemeProvider. Setting to 'body' will apply body styles to document body. Setting to 'none' will not apply body styles to either element or body.

"Enhanced Theme Provider" control

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Simple Usage

```
{/* Simple Usage */}
<EnhancedThemeProvider applyTo="body" context={this.props.context}>
  {/* controls to apply the theme to */}
</EnhancedThemeProvider>
```

Access theme from child component

```
{/* Access to theme from child component */}
export const ChildFunctionComponent = () => {
  const theme = useTheme();

  return (
    <DefaultButton theme={theme}>Example Child Control</DefaultButton>
  );
}

export class ChildClassComponent extends React.Component {
  public render() {
    return (
      <ThemeContext.Consumer>
        {theme =>
          <DefaultButton theme={theme}>Example Child Control</DefaultButton>
        }
      </ThemeContext.Consumer>
    )
  }
};

<EnhancedThemeProvider applyTo="body" context={this.props.context}>
  <ChildFunctionComponent />
  <ChildClassComponent />
</EnhancedThemeProvider>
```

"Enhanced Theme Provider" control

Portion of the source code

Source code of "Default Teams Theme"

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```
...
const themeToApply = useCallback(
    () => {
        let workingTheme: ITheme;

        if (isInTeams) {
            switch (teamsThemeName) {
                case "default": workingTheme = fluentUITeamsDefaultTheme;
                    break;
                case "dark": workingTheme = fluentUITeamsDarkTheme;
                    break;
                case "contrast": workingTheme = fluentUITeamsHighContrastTheme;
                    break;
                default: workingTheme = fluentUITeamsDefaultTheme;
                    break;
            }
        } else if (props.theme) {
            workingTheme = getVariant(props.theme, VariantThemeType.None);
        } else {
            workingTheme = getDefaultTheme();
        }

        return workingTheme;
    },
    [props.theme, teamsThemeName]);

return (
    <ThemeProvider
        {...props}
        theme={themeToApply()}>
        {props.children}
    </ThemeProvider>
);
...
```

```
import { createTheme } from "office-ui-fabric-react/lib/Styling";

export const fluentUITeamsDefaultTheme = createTheme({
    palette: {
        themePrimary: "#6264A7",
        themeLighterAlt: "#f7f7fb",
        themeLighter: "#e1e1f1",
        themeLight: "#c8c9e4",
        themeTertiary: "#989ac9",
        themeSecondary: "#7173b0",
        themeDarkAlt: "#585a95",
        themeDark: "#4a4c7e",
        themeDarker: "#37385d",
        neutralLighterAlt: "#eeeeee",
        neutralLighter: "#eaeaea",
        neutralLight: "#e1e1e1",
        neutralQuaternaryAlt: "#d1d1d1",
        neutralQuaternary: "#c8c8c8",
        neutralTertiaryAlt: "#c0c0c0",
        neutralTertiary: "#acacac",
        neutralSecondary: "#919191",
        neutralPrimaryAlt: "#767676",
        neutralPrimary: "#0b0b0b",
        neutralDark: "#404040",
        black: "#252525",
        white: "#F5F5F5"
    },
    isInverted: false
});
```

DEMO

Microsoft Teams

&

SharePoint Isolated Single Part App Page

About Me

I'm **CEO at Apvee Solutions**, startup focused on building solutions on top of Microsoft 365 ecosystem.

I'm a **Microsoft MVP** in **Office Development** and **Business Applications** categories.

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References

- https://docs.microsoft.com/en-us/sharepoint/dev/spfx/web-parts/get-started/using-web-part-as-ms-teams-tab
- https://docs.microsoft.com/en-us/sharepoint/dev/spfx/web-parts/isolated-web-parts
- https://www.npmjs.com/package/@fluentui/react-theme-provider

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Thank you!

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