Building Applications for Office 365 and SharePoint with the SharePoint Framework

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SharePoint *intersection*

Office 365 *intersection*

Development environment

Set up your SharePoint environment

- Cloud or on-premises
  - Office 365 tenant
  - SharePoint 2016, Feature Pack 2
- App catalog
- Developer site collection
- SharePoint workbench
  - Local
  - Tenant
  - On-premises

Set up your development environment

- NodeJS LTS v6.11.4 (https://nodejs.org/en)
  - Node package manager (npm) v3.10.10 automatically installed
  - NodeJS command prompt used to interact with npm
- Visual Studio Code
- Gulp
  - `npm install -g gulp`
- Yeoman
  - `npm install -g yo`
- SharePoint Generator
  - `npm install -g @Microsoft/generator-sharepoint`

Introducing SPFX extensions

Extensions

- Application customizer
  - Adds scripts to the page or extend placeholders
- Field customizer
  - Modifies the view of fields in a list
- Command set
  - Allows the creation of new actions

Demo

SPFX Extensions

Creating SPFX extensions

Generate Scaffolding

Write Code

Build Test URL

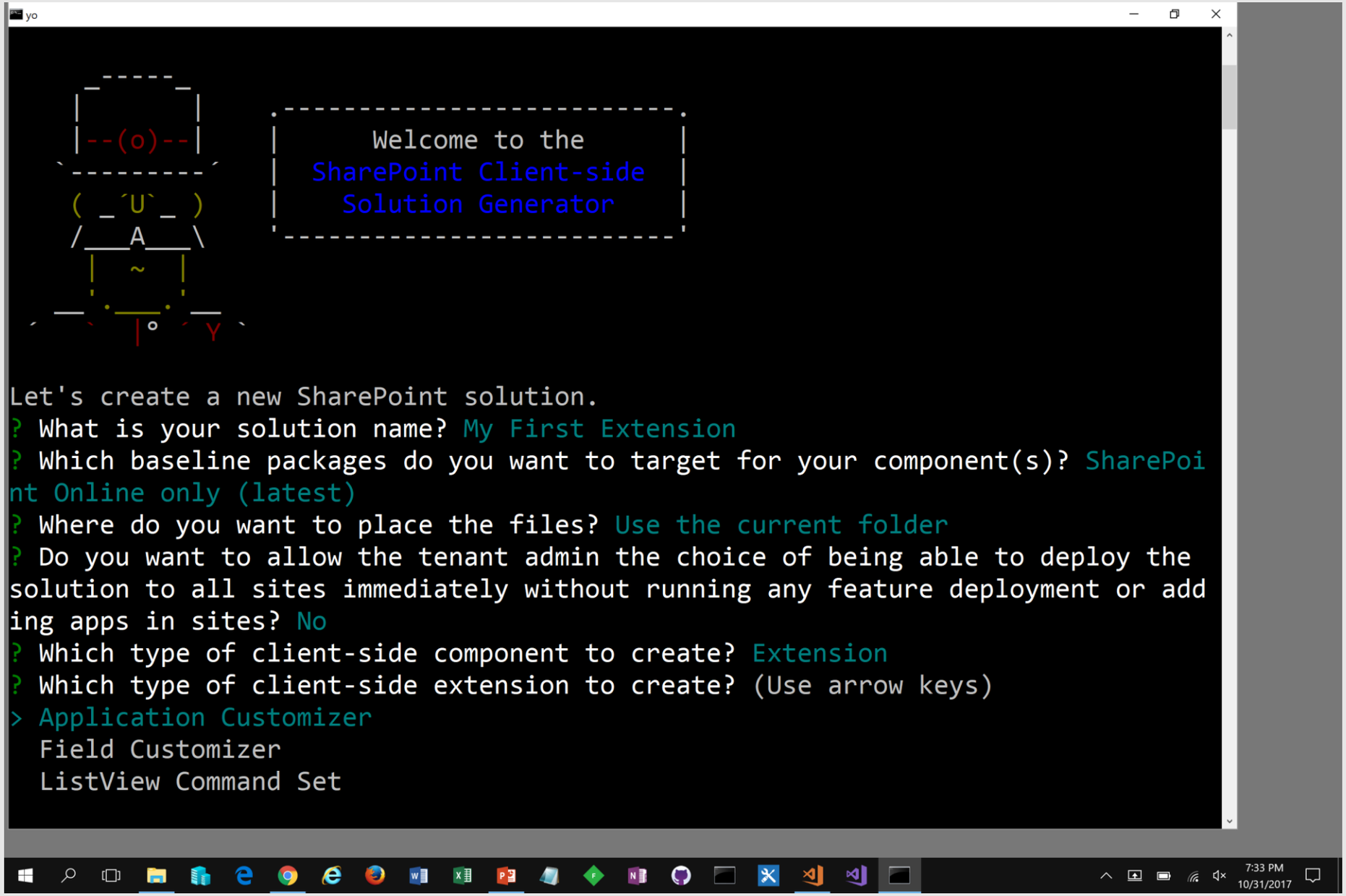
Open Test URL

Package

Deploy to CDN

Upload to App Catalog

Add to Site



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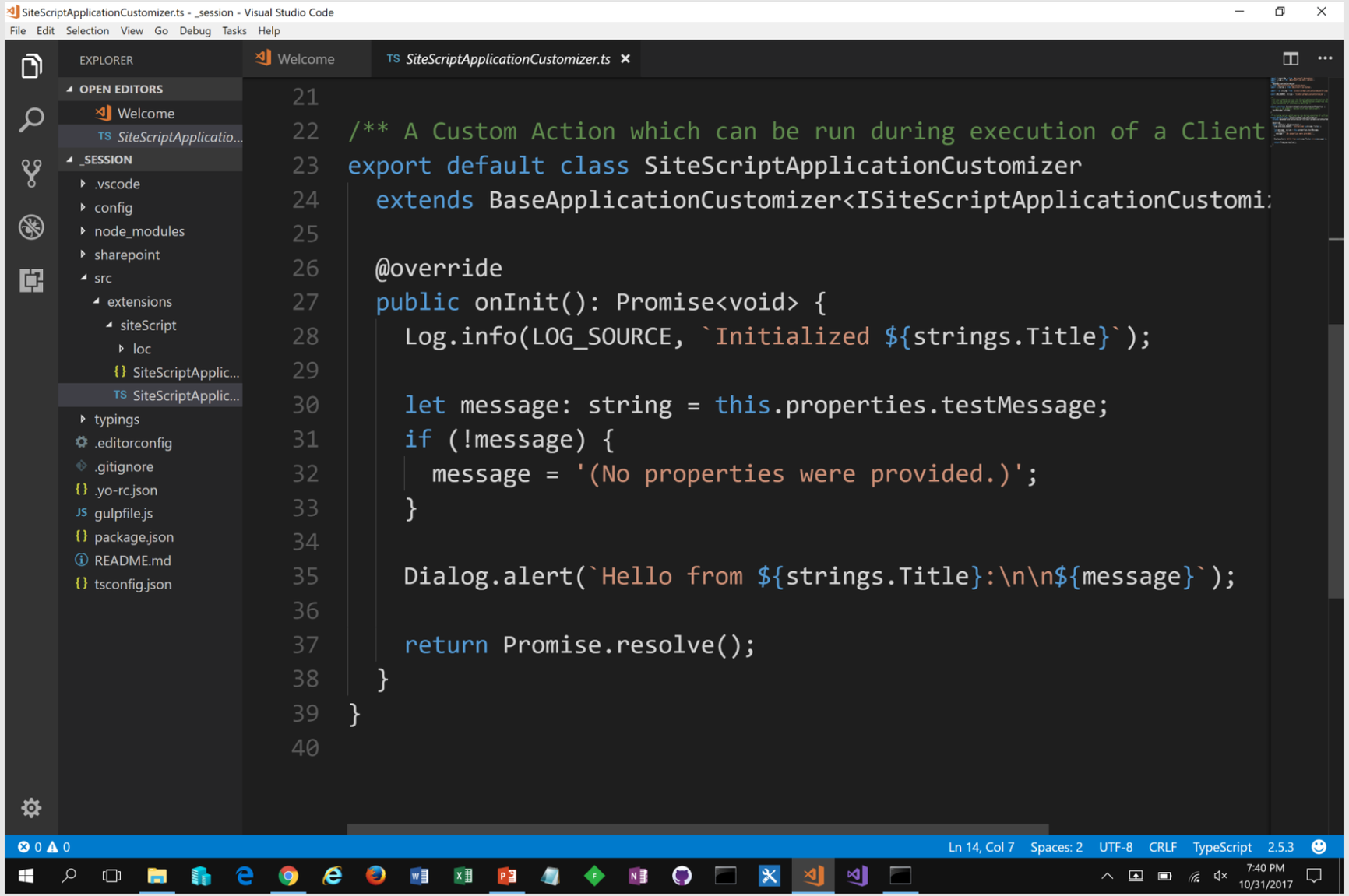

Extensions

- Application customizer
  - Extend `BaseApplicationCustomizer`
- Field customizer
  - Extend `BaseFieldCustomizer`
- Command set
  - Extend `BaseListViewCommandSet`

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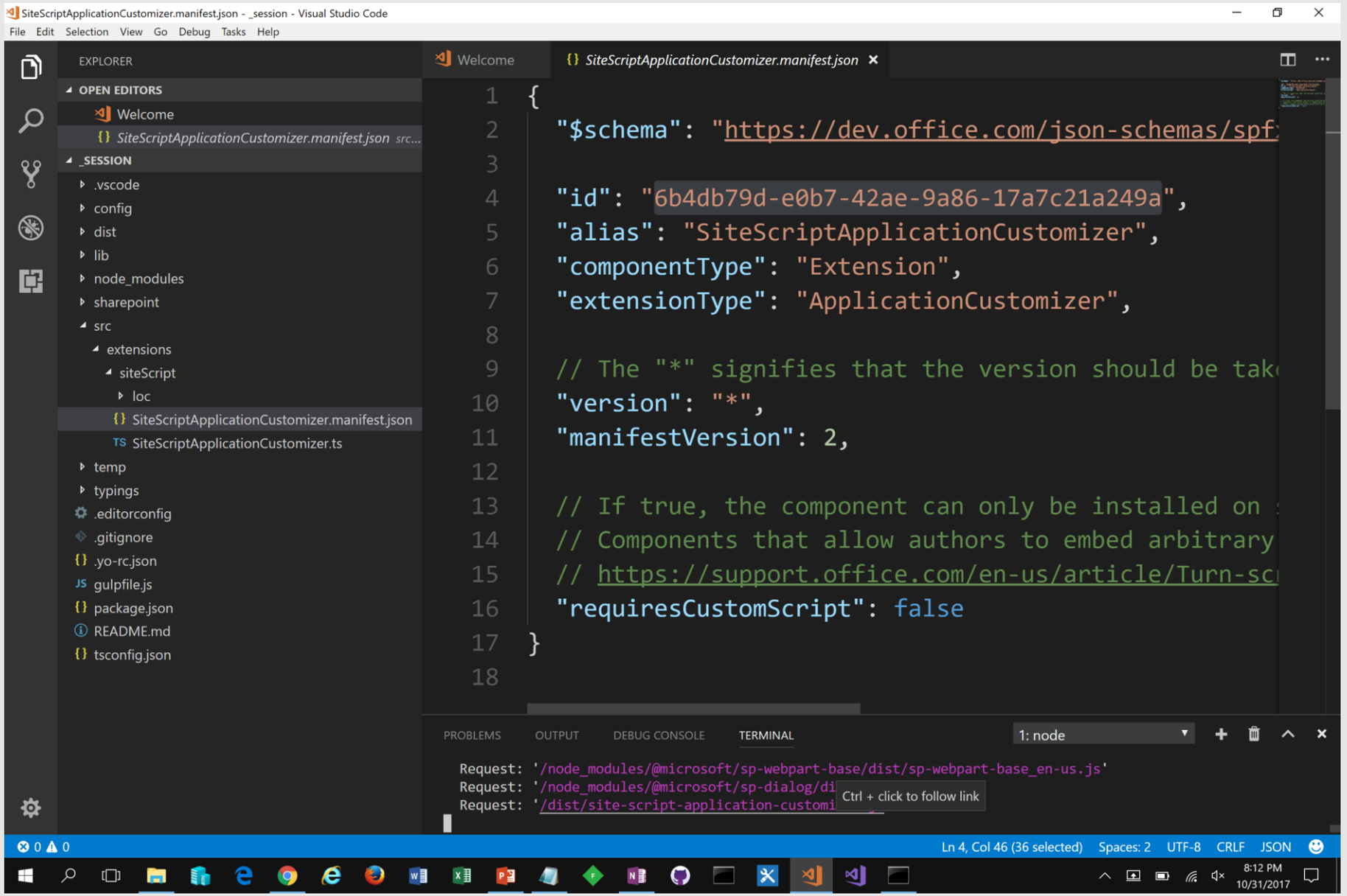

Test with query parameters

- A URL to a modern page or list
  - https://contoso.sharepoint.com/Lists/Contoso/AllItems.aspx
- The ID of the extension
  - {ExtensionName}ApplicationCustomizer.manifest.json
- Create the test URL
- **`gulp serve –nobrowser`**
- Open the test URL

Test URL

```
https://contoso.sharepoint.com/Lists/Contoso/AllItems.aspx?loadSPFX=true&
debugManifestsFile=https://localhost:4321/temp/manifests.js&
customActions={
              YOURGUID:{
                  "location":"ClientSideExtension.ApplicationCustomizer",
                  "properties":{"key": "value"}
                   }
              }
```

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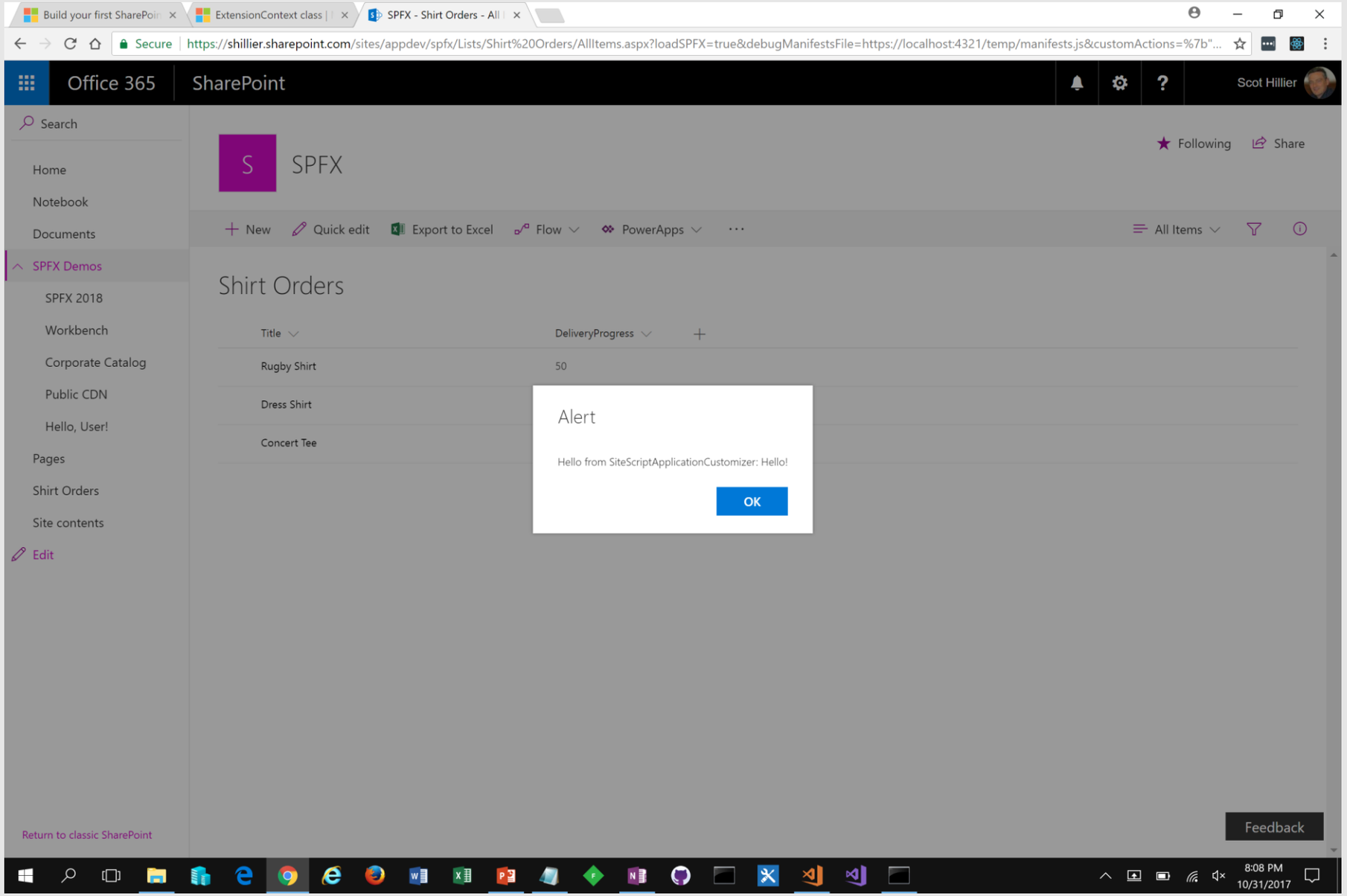

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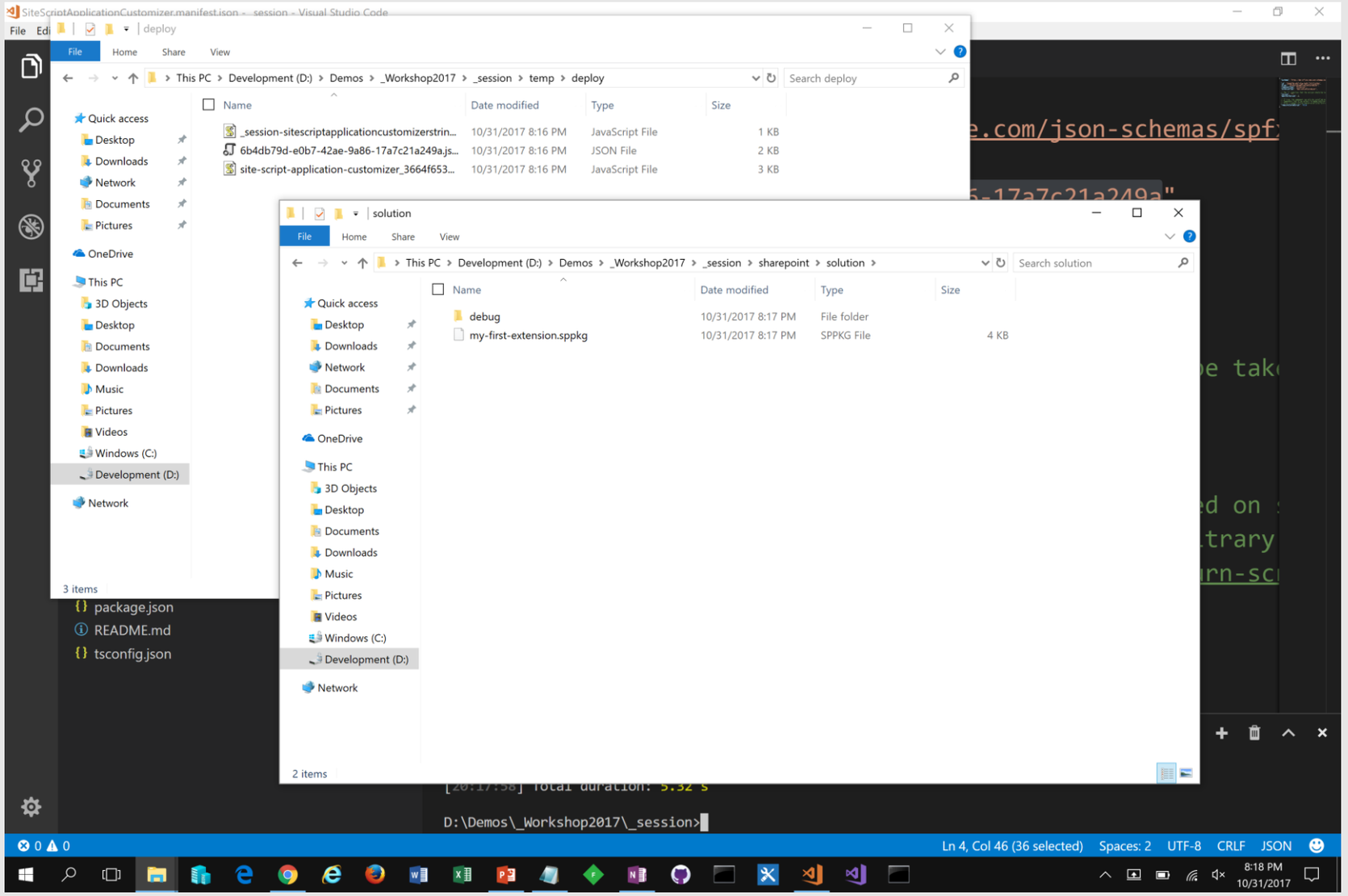

Update external references in config.js

```
{
    "entries": [
        {
            "entry": "./lib/webparts/ngBasics/NgBasicsWebPart.js",
            "manifest": "./src/webparts/ngBasics/NgBasicsWebPart.manifest.json",
            "outputPath": "./dist/ng-basics.bundle.js"
        }
    ],
    "externals": {
        "rxjs": "https://unpkg.com/rxjs"
    },
    "localizedResources": {
        "ngBasicsStrings": "webparts/ngBasics/loc/{locale}.js"
    }
}
```

Update elements.xml

```
<?xml version="1.0" encoding="utf-8"?>
<Elements xmlns="http://schemas.microsoft.com/sharepoint/">

    <CustomAction
        Title="SPFxApplicationCustomizer"
        Location="ClientSideExtension.ApplicationCustomizer"
        ClientSideComponentId="46606aa6-5dd8-4792-b017-1555ec0a43a4"
        ClientSideComponentProperties="{&quot;Top&quot;:&quot;Top area of the
                        page&quot;,&quot;Bottom&quot;:&quot;Bottom area in the page&quot;}">

    </CustomAction>

</Elements>
```

Update write-manifests.json

```
{
  "$schema":
  "https://dev.office.com/json-schemas/spfx-build/write-manifests.schema.json",
  "cdnBasePath":
  "https://publiccdn.sharepointonline.com/contoso.sharepoint.com/CDN/myextension"
}
```

Tenant-scoped deployment

```
{
  "solution": {
    "name": "tenant-deploy-client-side-solution",
    "id": "dd4feca4-6f7e-47f1-a0e2-97de8890e3fa",
    "version": "1.0.0.0",
    "skipFeatureDeployment": true
  },
  "paths": {
    "zippedPackage": "solution/tenant-deploy-true.sppkg"
  }
}
```

Bundle and package

```
gulp bundle –ship

gulp package-solution --ship
```

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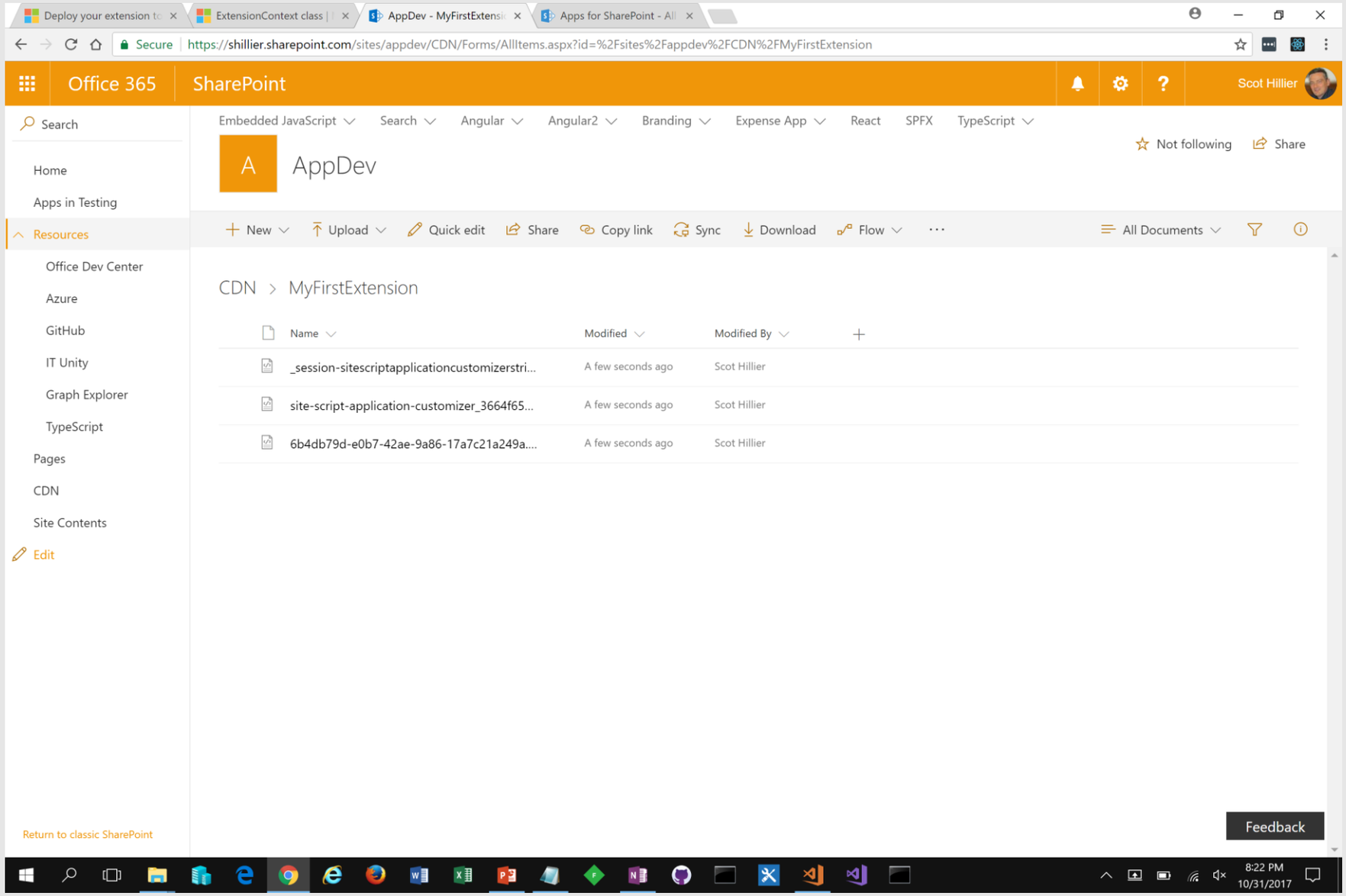

Create a CDN

- Enable the Office 365 CDN
  - `Set-SPOTenantCdnEnabled -CdnType Public`
  - Create a document library to act as the CDN endpoint
  - `Add-SPOTenantCdnOrigin -CdnType Public -OriginUrl */cdn`
- Utilize an Azure CDN
  - Storage account
  - Blob container
  - CDN profile
- Utilize an on-premises endpoint

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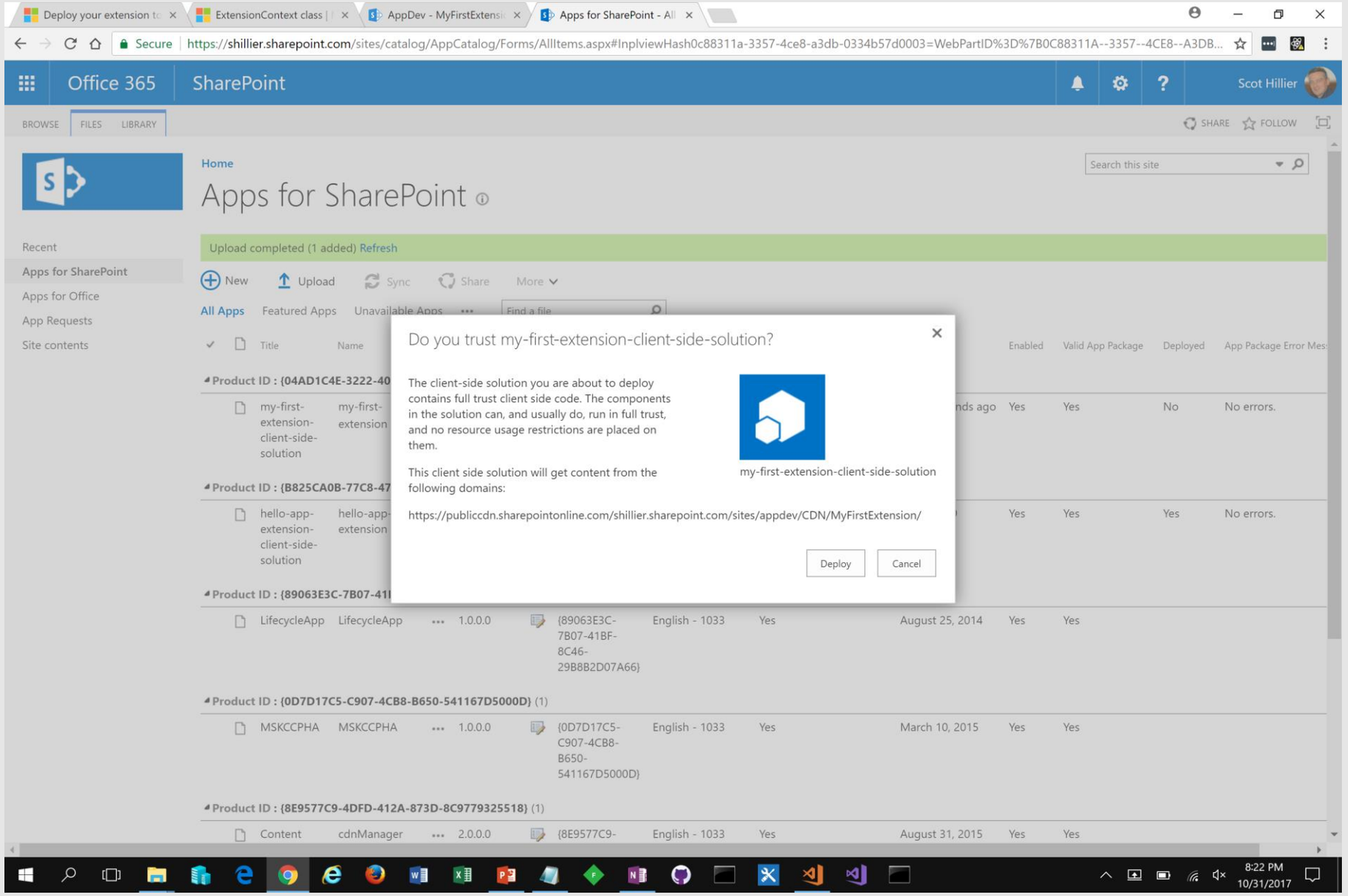

Create an App Catalog

- Office 365
  - Admin > Admin Centers > SharePoint
  - Apps > App Catalog
- On-Premises
  - Central Administration > App Management > Manage App Catalog

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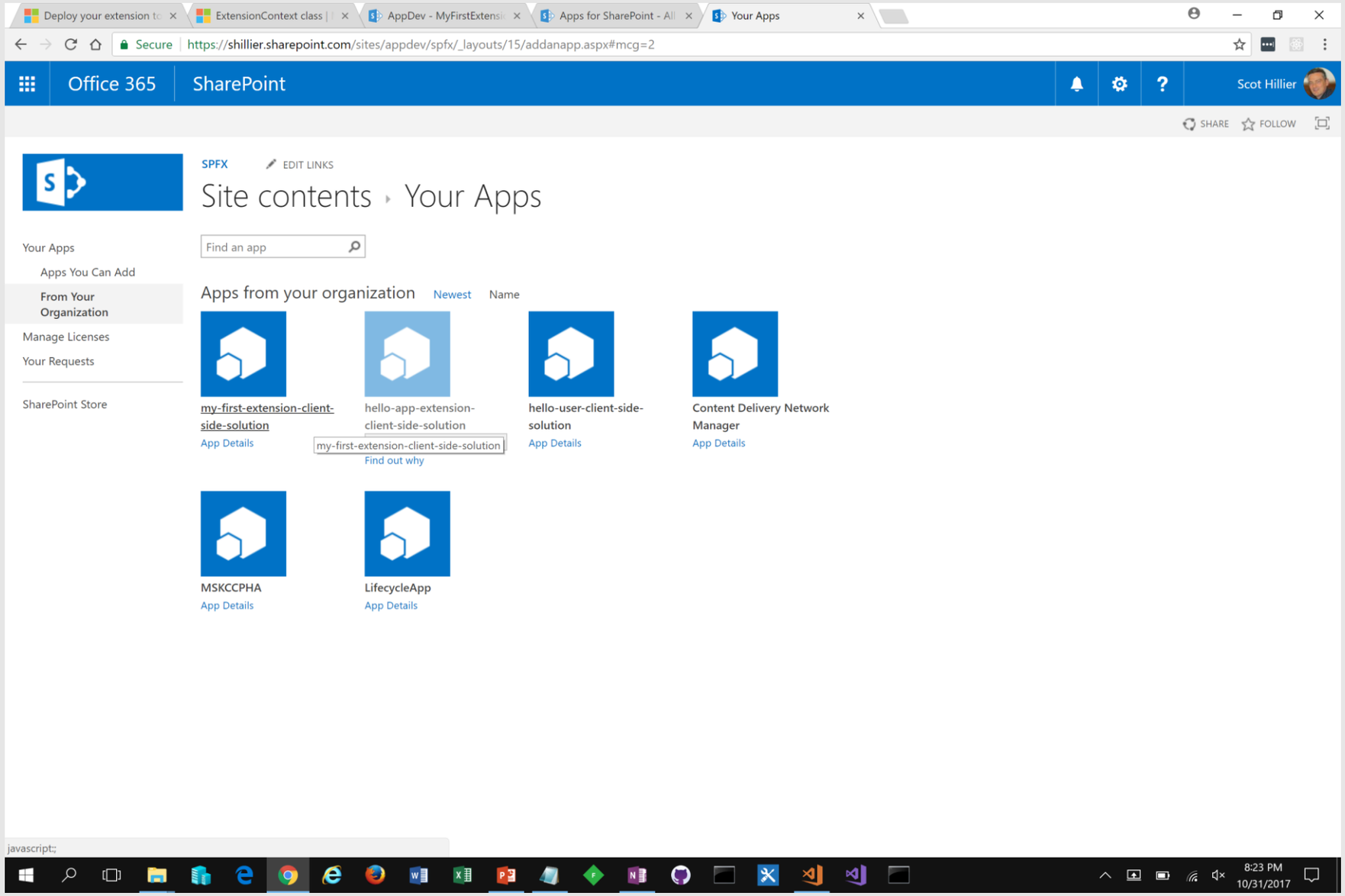

Demo

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