

#WWDC19

# What's New in Universal Links

Jonathan Grynspan, Software Engineer

Overview

Configuring Your Web Server

Configuring Your App

Best Practices

# Overview

# Overview

URLs that represent your content both on the Web and in your app

# Overview

URLs that represent your content both on the Web and in your app

Available in your iOS, tvOS, and macOS apps

# Overview

URLs that represent your content both on the Web and in your app

Available in your iOS, tvOS, and macOS apps

Securely associated between your app and your website

# Overview

URLs that represent your content both on the Web and in your app

Available in your iOS, tvOS, and macOS apps

Securely associated between your app and your website

Recommended over custom URL schemes

Overview

Configuring Your Web Server

Configuring Your App

Best Practices



# Configuring Your Web Server

# Configuring Your Web Server

Install a valid HTTPS certificate

# Configuring Your Web Server

Install a valid HTTPS certificate

Add your apple-app-site-association file

# Configuring Your Web Server

Install a valid HTTPS certificate

Add your apple-app-site-association file

```
https://example.com/.well-known/apple-app-site-association
```

# Configuring Your Web Server

Install a valid HTTPS certificate

Add your apple-app-site-association file

```
https://example.com/.well-known/apple-app-site-association
```

# Configuring Your Web Server

Install a valid HTTPS certificate

Add your apple-app-site-association file

```
https://example.com/.well-known/apple-app-site-association
```

# Configuring Your Web Server

Install a valid HTTPS certificate

Add your apple-app-site-association file

```
https://example.com/.well-known/apple-app-site-association
```

# Configuring Your Web Server

Install a valid HTTPS certificate

Add your apple-app-site-association file

```
https://example.com/.well-known/apple-app-site-association
```



# Configuring Your Web Server

Install a valid HTTPS certificate

Add your apple-app-site-association file

```
https://example.com/.well-known/apple-app-site-association
```

---

Do not sign this file!

```
// Your apple-app-site-association File
```

```
{  
  "applinks": {  
    "apps": [],  
    "details": [  
      {  
        "appID": "ABCDE12345.com.example.app",  
        "paths": [ "/path/*/filename" ]  
      }  
    ]  
  }  
}
```

```
// Your apple-app-site-association File
```

```
{  
  "applinks": {  
    "apps": [],  
    "details": [  
      {  
        "appID": "ABCDE12345.com.example.app",  
        "paths": [ "/path/*/filename" ]  
      }  
    ]  
  }  
}
```



NEW

```
// Your apple-app-site-association File
```

```
{  
  "applinks": {  
    "apps": [],  
    "details": [  
      {  
        "appID": "ABCDE12345.com.example.app",  
        "paths": [ "/path/*/filename" ]  
      }  
    ]  
  }  
}
```



NEW

```
// Your apple-app-site-association File
```

```
{  
  "applinks": {  
    "apps": [],  
    "details": [  
      {  
        "appID": "ABCDE12345.com.example.app",  
        "paths": [ "/path/*/filename" ]  
      }  
    ]  
  }  
}
```



NEW

```
// Your apple-app-site-association File
```

```
{  
  "applinks": {  
    "apps": [],  
    "details": [  
      {  
        "appID": "ABCDE12345.com.example.app",  
        "paths": [ "/path/*/filename" ]  
      }  
    ]  
  }  
}
```



NEW

```
// Your apple-app-site-association File
```

```
{  
  "applinks": {  
    "apps": [],  
    "details": [  
      {  
        "appID": "ABCDE12345.com.example.app",  
        "paths": [ "/path/*/filename" ]  
      }  
    ]  
  }  
}
```



NEW

```
// Your apple-app-site-association File
```

```
{  
  "applinks": {  
    "apps": [],  
    "details": [  
      {  
        "appID": "ABCDE12345.com.example.app",  
        "paths": [ "/path/*/filename" ]  
      }  
    ]  
  }  
}
```



NEW



```
// Your apple-app-site-association File
```

```
{  
  "applinks": {  
    "apps": [],  
    "details": [  
      {  
        "appID": "ABCDE12345.com.example.app",  
        "appIDs": [ "ABCDE12345.com.example.app", "ABCDE12345.com.example.app2" ],  
        "paths": [ "/path/*/filename" ]  
      }  
    ]  
  }  
}
```



NEW

```
// Your apple-app-site-association File
```

```
{  
  "applinks": {  
    "apps": [],  
    "details": [  
      {  
        "appID": "ABCDE12345.com.example.app",  
        "appIDs": [ "ABCDE12345.com.example.app", "ABCDE12345.com.example.app2" ],  
        "paths": [ "/path/*/filename" ],  
        "components": [  
          {  
            "/" : "/path/*/filename",  
          }  
        ]  
      }  
    ]  
  }  
}
```



NEW

```
// Your apple-app-site-association File
```

```
{  
  "applinks": {  
    "apps": [],  
    "details": [  
      {  
        "appID": "ABCDE12345.com.example.app",  
        "appIDs": [ "ABCDE12345.com.example.app", "ABCDE12345.com.example.app2" ],  
        "paths": [ "/path/*/filename" ],  
        "components": [  
          {  
            "/" : "/path/*/filename",  
            "#" : "*fragment",  
            "?" : "widget=?*"   
          }  
        ]  
      }  
    ]  
  }  
}
```



NEW



```
// Your apple-app-site-association File
```

```
{
  "applinks": {
    "apps": [],
    "details": [
      {
        "appID": "ABCDE12345.com.example.app",
        "appIDs": [ "ABCDE12345.com.example.app", "ABCDE12345.com.example.app2" ],
        "paths": [ "/path/*/filename" ],
        "components": [
          {
            "/" : "/path/*/filename",
            "#" : "*fragment",
            "?" : { "widget": "?*", "grommet": "please" }
          }
        ]
      }
    ]
  }
}
```

```
// Your apple-app-site-association File
```

NEW

```
{
  "applinks": {
    "apps": [],
    "details": [
      {
        "appID": "ABCDE12345.com.example.app",
        "appIDs": [ "ABCDE12345.com.example.app", "ABCDE12345.com.example.app2" ],
        "paths": [ "/path/*/filename" ],
        "components": [
          {
            "/": "/path/*/filename",
            "#": "*fragment",
            "?": { "widget": "?*", "grommet": "please" },
            "exclude": true
          }
        ]
      }
    ]
  }
}
```



## // Pattern-Matching Examples

```
"appIDs": [ "ABCDE12345.com.example.lunch" ],
"components": [
  {
    "/": "/*/order/"
  },
  {
    "/": "/taco/*",
    "?": { "cheese": "?*" }
  },
  {
    "#": "coupon-1???",
    "exclude": true
  },
  {
    "/": "",
    "#": "coupon-????"
  }
]
```

<https://example.com/taco/order/>  
<https://example.com/salad/order/>

<https://example.com/taco/?cheese=panela>

<https://example.com#coupon-1234>

<https://example.com#coupon-5678>



NEW

```
// Pattern-Matching Examples
```

```
"appIDs": [ "ABCDE12345.com.example.lunch" ],
"components": [
  {
    "/": "/*/order/"
  },
  {
    "/": "/taco/*",
    "?": { "cheese": "?*" }
  },
  {
    "#": "coupon-1???",
    "exclude": true
  },
  {
    "/": "",
    "#": "coupon-????"
  }
]
```

<https://example.com/taco/order/>  
<https://example.com/salad/order/>

<https://example.com/taco/?cheese=panela>

<https://example.com#coupon-1234>

<https://example.com#coupon-5678>

NEW

```
// Pattern-Matching Examples
```

```
"appIDs": [ "ABCDE12345.com.example.lunch" ],
```

```
"components": [
```

```
{  
  "/": "/*/order/"  
},
```

```
https://example.com/taco/order/  
https://example.com/salad/order/
```

```
{  
  "/": "/taco/*",  
  "?": { "cheese": "?*" }  
},
```

```
https://example.com/taco/?cheese=panela
```

```
{  
  "#": "coupon-1???",  
  "exclude": true  
},
```

```
https://example.com#coupon-1234
```

```
{  
  "/": "",  
  "#": "coupon-????"  
}
```

```
https://example.com#coupon-5678
```

```
]
```



NEW

```
// Pattern-Matching Examples
```

```
"appIDs": [ "ABCDE12345.com.example.lunch" ],
```

```
"components": [
```

```
{  
  "/": "/*/order/"  
},
```

```
https://example.com/taco/order/  
https://example.com/salad/order/
```

```
{  
  "/": "/taco/*",  
  "?": { "cheese": "?*" }  
},
```

```
https://example.com/taco/?cheese=panela
```

```
{  
  "#": "coupon-1???",  
  "exclude": true  
},
```

```
https://example.com#coupon-1234
```

```
{  
  "/": "",  
  "#": "coupon-????"  
}
```

```
https://example.com#coupon-5678
```

```
]
```

NEW

```
// Pattern-Matching Examples
```

```
"appIDs": [ "ABCDE12345.com.example.lunch" ],
"components": [
  {
    "/": "/*/order/"
  },
  {
    "/": "/taco/*",
    "?": { "cheese": "?*" }
  },
  {
    "#": "coupon-1???",
    "exclude": true
  },
  {
    "/": "",
    "#": "coupon-????"
  }
]
```

```
https://example.com/taco/order/
https://example.com/salad/order/
```

```
https://example.com/taco/?cheese=panela
```

```
https://example.com#coupon-1234
```

```
https://example.com#coupon-5678
```

NEW

```
// Pattern-Matching Examples
```

```
"appIDs": [ "ABCDE12345.com.example.lunch" ],
```

```
"components": [
```

```
{  
  "/": "/*/order/"  
},
```

```
https://example.com/taco/order/  
https://example.com/salad/order/
```

```
{  
  "/": "/taco/*",  
  "?": { "cheese": "?*" }  
},
```

```
https://example.com/taco/?cheese=panela
```

```
{  
  "#": "coupon-1???",  
  "exclude": true  
},
```

```
https://example.com#coupon-1234
```

```
{  
  "/": "",  
  "#": "coupon-????"  
}
```

```
https://example.com#coupon-5678
```

```
]
```

NEW

```
// Pattern-Matching Examples
```

```
"appIDs": [ "ABCDE12345.com.example.lunch" ],
```

```
"components": [
```

```
{  
  "/": "/*/order/"  
},
```

```
https://example.com/taco/order/  
https://example.com/salad/order/
```

```
{  
  "/": "/taco/*",  
  "?": { "cheese": "?*" }  
},
```

```
https://example.com/taco/?cheese=panela
```

```
{  
  "#": "coupon-1???",  
  "exclude": true  
},
```

```
https://example.com#coupon-1234
```

```
{  
  "/": "",  
  "#": "coupon-????"  
}
```

```
https://example.com#coupon-5678
```

```
]
```

NEW

```
// Pattern-Matching Examples
```

```
"appIDs": [ "ABCDE12345.com.example.lunch" ],
```

```
"components": [
```

```
{  
  "/": "/*/order/"  
},
```

```
https://example.com/taco/order/  
https://example.com/salad/order/
```

```
{  
  "/": "/taco/*",  
  "?": { "cheese": "?*" }  
},
```

```
https://example.com/taco/?cheese=panela
```

```
{  
  "#": "coupon-1???",  
  "exclude": true  
},
```

```
https://example.com#coupon-1234
```

```
{  
  "/": "",  
  "#": "coupon-????"  
}
```

```
https://example.com#coupon-5678
```

```
]
```



NEW

```
// Pattern-Matching Examples
```

```
"appIDs": [ "ABCDE12345.com.example.lunch" ],
```

```
"components": [
```

```
{  
  "/": "/*/order/"  
},
```

```
https://example.com/taco/order/  
https://example.com/salad/order/
```

```
{  
  "/": "/taco/*",  
  "?": { "cheese": "?*" }  
},
```

```
https://example.com/taco/?cheese=panela
```

```
{  
  "#": "coupon-1???",  
  "exclude": true  
},
```

```
https://example.com#coupon-1234
```

```
{  
  "/": "",  
  "#": "coupon-????"  
}
```

```
https://example.com#coupon-5678
```

```
]
```

NEW

```
// Pattern-Matching Examples
```

```
"appIDs": [ "ABCDE12345.com.example.lunch" ],
"components": [
  {
    "/" : "/*/order/"
  },
  {
    "/" : "/taco/*",
    "?" : { "cheese": "?*" }
  },
  {
    "#" : "coupon-1???",
    "exclude": true
  },
  {
    "/" : "",
    "#" : "coupon-????"
  }
]
```

<https://example.com/taco/order/>  
<https://example.com/salad/order/>

<https://example.com/taco/?cheese=panela>

<https://example.com#coupon-1234>

<https://example.com#coupon-5678>

NEW

```
// Pattern-Matching Examples
```

```
"appIDs": [ "ABCDE12345.com.example.lunch" ],
```

```
"components": [
```

```
{  
  "/": "/*/order/"  
},
```

```
https://example.com/taco/order/  
https://example.com/salad/order/
```

```
{  
  "/": "/taco/*",  
  "?": { "cheese": "?*" }  
},
```

```
https://example.com/taco/?cheese=panela
```

```
{  
  "#": "coupon-1???",  
  "exclude": true  
},
```

```
https://example.com#coupon-1234
```

```
{  
  "/": "",  
  "#": "coupon-????"  
}
```

```
https://example.com#coupon-5678
```

```
]
```



NEW

```
// Pattern-Matching Examples
```

```
"appIDs": [ "ABCDE12345.com.example.lunch" ],
```

```
"components": [
```

```
{  
  "/": "/*/order/"  
},
```

```
https://example.com/taco/order/  
https://example.com/salad/order/
```

```
{  
  "/": "/taco/*",  
  "?": { "cheese": "?*" }  
},
```

```
https://example.com/taco/?cheese=panela
```

```
{  
  "#": "coupon-1???",  
  "exclude": true  
},
```

```
https://example.com#coupon-1234
```

```
{  
  "/": "",  
  "#": "coupon-????"  
}
```

```
https://example.com#coupon-5678
```

```
]
```

NEW

```
// Pattern-Matching Examples
```

```
"appIDs": [ "ABCDE12345.com.example.lunch" ],
```

```
"components": [
```

```
{  
  "/": "/*/order/"  
},
```

```
https://example.com/taco/order/  
https://example.com/salad/order/
```

```
{  
  "/": "/taco/*",  
  "?": { "cheese": "?*" }  
},
```

```
https://example.com/taco/?cheese=panela
```

```
{  
  "#": "coupon-1???",  
  "exclude": true  
},
```

```
https://example.com#coupon-1234
```

```
{  
  "/": "",  
  "#": "coupon-????"  
}
```

```
https://example.com#coupon-5678
```

```
]
```

NEW

```
// Pattern-Matching Examples
```

```
"appIDs": [ "ABCDE12345.com.example.lunch" ],
```

```
"components": [
```

```
{  
  "/": "/*/order/"  
},
```

```
https://example.com/taco/order/  
https://example.com/salad/order/
```

```
{  
  "/": "/taco/*",  
  "?": { "cheese": "?*" }  
},
```

```
https://example.com/taco/?cheese=panela
```

```
{  
  "#": "coupon-1???",  
  "exclude": true  
},
```

```
https://example.com#coupon-1234
```

```
{  
  "/": "",  
  "#": "coupon-????"  
}
```

```
https://example.com#coupon-5678
```

```
]
```

NEW

```
// Pattern-Matching Examples
```

```
"appIDs": [ "ABCDE12345.com.example.lunch" ],
```

```
"components": [
```

```
{  
  "/" : "/*/order/"
```

```
https://example.com/taco/order/  
https://example.com/salad/order/
```

```
},  
  
{  
  "/" : "/taco/*",  
  "?" : { "cheese": "?*" }  
},
```

```
https://example.com/taco/?cheese=panela
```

```
{  
  "#": "coupon-1???",  
  "exclude": true  
},
```

```
https://example.com#coupon-1234
```

```
{  
  "/" : "",  
  "#": "coupon-????"  
}
```

```
https://example.com#coupon-5678
```

```
]
```

NEW

```
// Pattern-Matching Examples
```

```
"appIDs": [ "ABCDE12345.com.example.lunch" ],
"components": [
  {
    "/": "/*/order/"
  },
  {
    "/": "/taco/*",
    "?": { "cheese": "?*" }
  },
  {
    "#": "coupon-1???",
    "exclude": true
  },
  {
    "/": "",
    "#": "coupon-????"
  }
]
```

`https://example.com/taco/order/`  
`https://example.com/salad/order/`

`https://example.com/taco/?cheese=panela`

`https://example.com#coupon-1234`

`https://example.com#coupon-5678`



NEW

```
// Pattern-Matching Examples
```

```
"appIDs": [ "ABCDE12345.com.example.lunch" ],
"components": [
  {
    "/": "/*/order/"
  },
  {
    "/": "/taco/*",
    "?": { "cheese": "?*" }
  },
  {
    "#": "coupon-1???",
    "exclude": true
  },
  {
    "/": "",
    "#": "coupon-????"
  }
]
```

`https://example.com/taco/order/`  
`https://example.com/salad/order/`

`https://example.com/taco/?cheese=panela`

`https://example.com#coupon-1234`

`https://example.com#coupon-5678`

NEW

```
// Pattern-Matching Examples
```

```
"appIDs": [ "ABCDE12345.com.example.lunch" ],
"components": [
  {
    "/": "/*/order/"
  },
  {
    "/": "/taco/*",
    "?": { "cheese": "?*" }
  },
  {
    "#": "coupon-1???",
    "exclude": true
  },
  {
    "/": "",
    "#": "coupon-????"
  }
]
```

`https://example.com/taco/order/`  
`https://example.com/salad/order/`

`https://example.com/taco/?cheese=panela`

`https://example.com#coupon-1234`

`https://example.com#coupon-5678`



NEW

```
// Pattern-Matching Examples
```

```
"appIDs": [ "ABCDE12345.com.example.lunch" ],
"components": [
  {
    "/" : "/*/order/"
  },
  {
    "/" : "/taco/*",
    "?" : { "cheese": "?*" }
  },
  {
    "#" : "coupon-1???",
    "exclude": true
  },
  {
    "/" : "",
    "#" : "coupon-????"
  }
]
```

`https://example.com/taco/order/`  
`https://example.com/salad/order/`

`https://example.com/taco/?cheese=panela`

`https://example.com#coupon-1234`

`https://example.com#coupon-5678`

NEW

```
// Pattern-Matching Examples
```

```
"appIDs": [ "ABCDE12345.com.example.lunch" ],
"components": [
  {
    "/": "/*/order/"
  },
  {
    "/": "/taco/*",
    "?": { "cheese": "?*" }
  },
  {
    "#": "coupon-1???",
    "exclude": true
  },
  {
    "/": "",
    "#": "coupon-????"
  }
]
```

`https://example.com/taco/order/`  
`https://example.com/salad/order/`

`https://example.com/taco/?cheese=panela`

`https://example.com#coupon-1234`

`https://example.com#coupon-5678`

NEW

```
// Pattern-Matching Examples
```

```
"appIDs": [ "ABCDE12345.com.example.lunch" ],
"components": [
  {
    "/": "/*/order/"
  },
  {
    "/": "/taco/*",
    "?": { "cheese": "?*" }
  },
  {
    "#": "coupon-1???",
    "exclude": true
  },
  {
    "/": "",
    "#": "coupon-????"
  }
]
```

`https://example.com/taco/order/`  
`https://example.com/salad/order/`

`https://example.com/taco/?cheese=panela`

~~`https://example.com#coupon-1234`~~

`https://example.com#coupon-5678`



## // Pattern-Matching Examples

```
"appIDs": [ "ABCDE12345.com.example.lunch" ],
```

```
"components": [
```

```
{  
  "/": "/*/order/"  
},
```

```
https://example.com/taco/order/  
https://example.com/salad/order/
```

```
{  
  "/": "/taco/*",  
  "?": { "cheese": "?*" }  
},
```

```
https://example.com/taco/?cheese=panela
```

```
{  
  "#": "coupon-1???",  
  "exclude": true  
},
```

```
https://example.com#coupon-1234
```

```
{  
  "/": "",  
  "#": "coupon-????"  
}
```

```
https://example.com#coupon-5678
```

```
]
```

# Configuring Your Web Server

Internationalization

# Configuring Your Web Server

## Internationalization

URLs and pattern-matching are ASCII

# Configuring Your Web Server

## Internationalization

URLs and pattern-matching are ASCII

Reduce download size when internationalizing



# Configuring Your Web Server

## Internationalization

URLs and pattern-matching are ASCII

Reduce download size when internationalizing

```
{ "en", "fr", "mx", ... } → "??"  
{ "en_US", "fr_CA", "de_CH", ... } → "??_??"
```

# Configuring Your Web Server

## Internationalization

URLs and pattern-matching are ASCII

Reduce download size when internationalizing

```
{ "en", "fr", "mx", ... } → "??"  
{ "en_US", "fr_CA", "de_CH", ... } → "??_??"
```

iOS and macOS prioritize downloads from .com, .net, .org, and the user's ccTLD(s)

Overview

Configuring Your Web Server

**Configuring Your App**

Best Practices



AwesomeApp > My Mac Finished

AwesomeApp

AwesomeApp  
Products

General Signing & Capabilities Resource Tags Info Build Settings Build Phases Build Rules

Capability All Debug Release

Signing

Automatically manage signing  
Xcode will create and update profiles, app IDs, and certificates.

Capabilities

Capabilities Media

- App Groups
- App Transport Security Excepti...
- Apple Sign-In
- Associated Domains**
- Custom Network Protocol
- Game Center
- Hardened Runtime
- iCloud

**Associated Domains**

Allows an app to be associated with a specified domain for specific services such as accessing Safari saved passwords and activity continuation.

Pictures Folder	None	⌵
Music Folder	None	⌵
Movies Folder	None	⌵

+ Filter

MacBook Pro

# Configuring Your App

Add the Associated Domains Entitlement

# Configuring Your App

Add the Associated Domains Entitlement

```
<array>
```

```
</array>
```

# Configuring Your App

Add the Associated Domains Entitlement

```
<array>  
  <string>applinks:www.example.com</string>  
  
</array>
```



# Configuring Your App

Add the Associated Domains Entitlement

```
<array>  
  <string>applinks:www.example.com</string>  
  <string>applinks:*.example.com</string>  
  
</array>
```

# Configuring Your App

Add the Associated Domains Entitlement

```
<array>  
  <string>applinks:www.example.com</string>  
  <string>applinks:*.example.com</string>  
  
</array>
```

More specific subdomains have higher priority

# Configuring Your App

## Add the Associated Domains Entitlement

```
<array>  
  <string>applinks:www.example.com</string>  
  <string>applinks:*.example.com</string>  
  <string>applinks:xn--fhqz97e.example.xn--fiqs8s</string><!--上海.example.中国-->  
</array>
```

More specific subdomains have higher priority

# Configuring Your App

## Add the Associated Domains Entitlement

```
<array>
  <string>applinks:www.example.com</string>
  <string>applinks:*.example.com</string>
  <string>applinks:xn--fhqz97e.example.xn--fiqs8s</string><!--上海.example.中国-->
</array>
```

More specific subdomains have higher priority

Internationalized domains must be encoded as Punycode\*

---

\* For more information about Punycode, see RFC 3492

---



```
// Configuring Your App
func application(_ application: UIApplication, continue userActivity: NSUserActivity,
restorationHandler: @escaping ([UIUserActivityRestoring]?) -> Void) -> Bool {

    return true
}
```

```
// Configuring Your App
func application(_ application: UIApplication, continue userActivity: NSUserActivity,
restorationHandler: @escaping ([NSUserActivityRestoring]?) -> Void) -> Bool {

    return true
}
```



```
// Configuring Your App
func application(_ application: UIApplication, continue userActivity: NSUserActivity,
restorationHandler: @escaping ([UIUserActivityRestoring]?) -> Void) -> Bool {

    return true
}
```

```
// Configuring Your App
func application(_ application: UIApplication, continue userActivity: NSUserActivity,
restorationHandler: @escaping ([UIUserActivityRestoring]?) -> Void) -> Bool {
    guard userActivity.activityType == NSUserActivityTypeBrowsingWeb,

    return true
}
```

```
// Configuring Your App
func application(_ application: UIApplication, continue userActivity: NSUserActivity,
restorationHandler: @escaping ([UIUserActivityRestoring]?) -> Void) -> Bool {
    guard userActivity.activityType == NSUserActivityTypeBrowsingWeb,
    let url = userActivity.webpageURL,

    return true
}
```

```
// Configuring Your App
func application(_ application: UIApplication, continue userActivity: NSUserActivity,
restorationHandler: @escaping ([UIUserActivityRestoring]?) -> Void) -> Bool {
    guard userActivity.activityType == NSUserActivityTypeBrowsingWeb,
    let url = userActivity.webpageURL,
    let components = URLComponents(url: url, resolvingAgainstBaseURL: true) else {
        return false
    }

    return true
}
```

```
// Configuring Your App
func application(_ application: UIApplication, continue userActivity: NSUserActivity,
restorationHandler: @escaping ([UIUserActivityRestoring]?) -> Void) -> Bool {
    guard userActivity.activityType == NSUserActivityTypeBrowsingWeb,
    let url = userActivity.webpageURL,
    let components = URLComponents(url: url, resolvingAgainstBaseURL: true) else {
        return false
    }

    for queryItem in components.queryItems ?? [] {
        ...
    }

    return true
}
```



# Configuring Your App

## macOS Differences





# Configuring Your App

## macOS Differences

Open in the browser by default





# Configuring Your App

## macOS Differences

Open in the browser by default

App must be on a local volume





# Configuring Your App

## macOS Differences

Open in the browser by default

App must be on a local volume

App Store distribution recommended





# Configuring Your App

## macOS Differences

Open in the browser by default

App must be on a local volume

App Store distribution recommended

Developer ID-signed apps must be launched first





# Configuring Your App

Opening Universal Links

# Configuring Your App

## Opening Universal Links

### UIApplication

```
UIApplication.shared.open(url, options: [ .universalLinksOnly: true ]) {  
    ...  
}
```

# Configuring Your App

## Opening Universal Links

### UIApplication

```
UIApplication.shared.open(url, options: [ .universalLinksOnly: true ]) {  
    ...  
}
```

### NSWorkspace

```
let configuration = NSWorkspace.OpenConfiguration()  
configuration.requiresUniversalLinks = true  
NSWorkspace.shared.open(url, configuration: configuration) {  
    ...  
}
```

Overview

Configuring Your Web Server

Configuring Your App

**Best Practices**



# Best Practices

# Best Practices

Fail gracefully

# Best Practices

Fail gracefully

Use the Smart App Banner

# Best Practices

Fail gracefully

Use the Smart App Banner

Feedback is appreciated!

 WWDC19