XWT Lite

What is XWT-Lite?

The Prime-UI provides a lighter version of toolkit called eXtensible Widget Toolkit Lite(XWT-Lite). It is based on the Prime Design language and provides a commonly used set of widgets. The goal of xwt-lite is to provide a consistent experience for consumer, cloud and embedded device applications. Just like XWT, lite version is also a reusable and extensible set of widgets, intended for Web 2.0 based applications. This helps with accelerating the design realization.

The lite version is built using common JavaScript libraries like bootstrap, JQuery, D3 etc.

What XWT-Lite provides?

- A lightweight JavaScript library for widgets, primarily based on bootstrap and jquery.
- Common bootstrap widgets with some widgets from jquery like grid, calendar etc. See the complete list of widgets in the next section.
- A bare minimum footprint (~<1 MB)
- CSS styling to match Prime Design Language “Evolution” style.
- Inclusion of Charts* for basic chart types, using D3 graph.
- Inclusion of visualization widgets* using D3.
- Documentation – usage guidelines, API docs.

*: Not yet implemented. The specific chart types that will be included are yet to be decided, based on available application usecases.

XWT-Lite vs XWT

Prime UI already provides a robust javascript based toolkit called XWT. It is built on HTML5 and CSS3 standards and uses dojo as its base along with other modern web standards for icon fonts, AMD compliant, SVG, RequireJS, D3, etc.

Prime UI’s xwt-lite is also built on HTML5 and CSS3 standards, uses icon fonts and is based on bootstrap, jquery, D3 etc.

But while XWT is a feature rich set of 100+ widgets, with detailed interactions, consistent styling and content, suitable for large enterprise systems, security and network applications, XWT-Lite, with its minimum set of widgets and basic interactions is geared towards smaller customer facing applications for hosted solutions, Cloud and embedded device UI applications s where memory is constrained and a small footprint is the basic requirement; as well as applications where longer term integration with other applications is not likely.

The following table list the features supported by the two toolkits, at a very high level.

	Feature	XWT	XWT-LITE
1.	Technologies Used	Dojo, D3, RequireJS	Bootstrap, JQuery, Mustache, D3
2.	Widget set	120+ widgets	16 widgets
3.	Size	~20MB	~0.5MB
4.	Documentation	Detailed Reference Guide, API Docs, Specifications	Basic Usage Guidelines
5.	Target Applications	Large, multi-module, Enterprise and Service Provider applications	Hosted, Cloud and embedded device UIs
6.	Support Model	Complete support provided by Prime-UI including a reference Explorer showcasing detailed widget usage + Dedicated Forum Support	Self-service model with app teams can leverage the open source community for support.
7.	Integration with MVC Frameworks	Complete integration with Prime UI's home-grown WAP as well as POC's with Ruby on Rails, Angular, Backbone etc.	Angular*
8.	Prime UI – Evolution Style Compliant	100% compliant on Visuals and rich interactions	Best styling to match "Prime" theme effort while maintaining base technology interactions intact
9.	Testing	Automated Testing Framework using Ruby and Selenium	Since most of the base interactions are kept, no separate investment in testing framework
10.	Design Support	Design templates provided in the form of Stencil Library	Relies on Prime Design Language guidelines

Other features:

	Feature	XWT	XWT-LITE
1.	Based on JavaScript	✔	✔
2.	Rich Visuals & Interactions	✔	✗
3.	HTML5, CSS3	✔	✔
4.	Accessibility Complaint	✔	✔

5.	Internationalization Complaint	✔	✔
6.	Localization in various languages	✔	✗
7.	Prime UI Forum Support	✔	✗
8.	Detailed Documentation	✔	✗
9.	WAP Framework Support	✔	✗
10.	Supported on Major Browsers	✔	✔

List of supported widgets in 3.0:

	Widget	Visual Style Changes	Interaction Changes
1.	UI Shell Header	✔	✔
2.	UI Shell - GlobalNav	✔	✔
3.	About Box	✔	✔
4.	Login Page	✔	✔
5.	Textbox/TextArea	✔	✗
6.	Validation Textbox (Number, email, IP Address)	✔	✔
7.	RadioButton/Checkbox	✔	✗
8.	Tooltip	✔	✗
9.	Popover	✔	✗
10.	Dropdown	✔	✗
11.	Dialog	✔	✗
12.	Tab	✔	✗
13.	Bread Crumb	✔	✗

14.	Progress Indicators	✔	✗
15.	Notification Toaster	✔	✗
16.	Menu	✔	✗

When to use XWT-Lite?

Use xwt-lite when:

- you have small hosted application, embedded UIs
- memory is a constraint and a small application footprint is needed
- you just need a small set of widgets, readily available
- your team has enough UI execution experience and can work with a self-serve model
- you are aware of frameworks that can be used for UI integration

Do not use xwt-lite when:

- you have large enterprise or service provider applications
- your application needs feature rich interactions
- your UI team needs support
- you want to use WAP as a framework

How to use XWT-Lite

XWT Lite provides many of the same interactions and flows as the base bootstrap widgets. Application developers can therefore refer to the bootstrap APIs and documentation. For enhancements provided by XWT, reference samples and API docs are provided.

The reference samples are part of the source @ https://wwwin-svn-sjc.cisco.com/eng/xwt/branches/3.0.0/xwt-lite/src/main/webapp/tests

For APIs, see Appendix A below.

References and Recommendations

1. What third-party libraries does xwt-lite use?

Bootstrap 3.1, JQuery 1.9, Mustache 0.9

2. I want to know more about what bootstrap supports?

Goto http://getbootstrap.com/

3. Which testing tool can I use?

Look at jasmine http://jasmine.github.io/

4. What can I use to mock data for more complete testing?

See Angular http://docs.angularjs.org/api/ngMock or Mockito https://code.google.com/p/mockito/

5. Which IDE can I use?

There are many to choose from (free and licensed) - https://atom.io/ backed by github; http://brackets.io/ backed by adobe; or sublime text2 for simpler development. Even eclipse has a plugin.

Please note that the above are just some recommendations based on usage in the industry. Applications need to use what works for them.

Appendix A – APIs and Usage

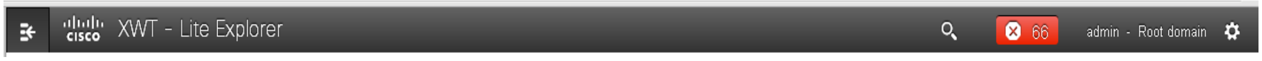
HEADER

Overview:

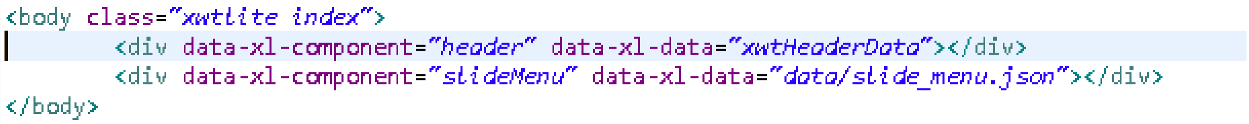
The Header widget positions the elements for the header bridgehead in a way that is consistent with the User Experience Standards. The Header widget addresses the following elements:

Icon for Global Navigation.
Logo for the company or application.
Application name.
Search area.
Notification/Alarms Panel
Username / Domain Switcher / Settings

Reference:

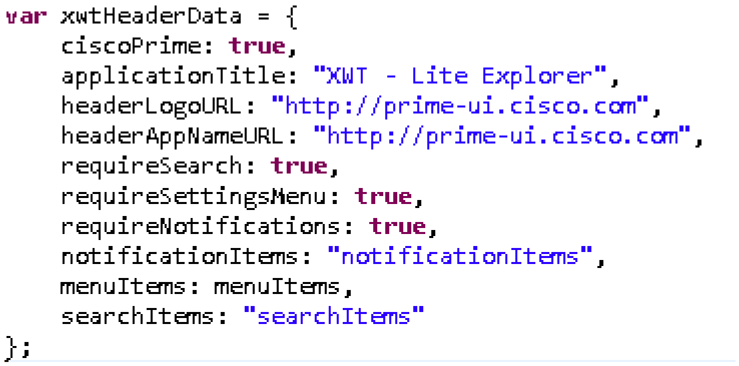


HTML :



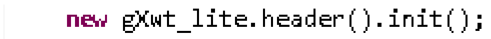
```
<body class="xwtlite index">
        <div data-xl-component="header" data-xl-data="xwtHeaderData"></div>
        <div data-xl-component="slideMenu" data-xl-data="data/slide_menu.json"></div>
</body>
```

DATA:



```
var xwtHeaderData = {
    ciscoPrime: true,
    applicationTitle: "XWT - Lite Explorer",
    headerLogoURL: "http://prime-ui.cisco.com",
    headerAppNameURL: "http://prime-ui.cisco.com",
    requireSearch: true,
    requireSettingsMenu: true,
    requireNotifications: true,
    notificationItems: "notificationItems",
    menuItems: menuItems,
    searchItems: "searchItems"
};
```

JAVASCRIPT:



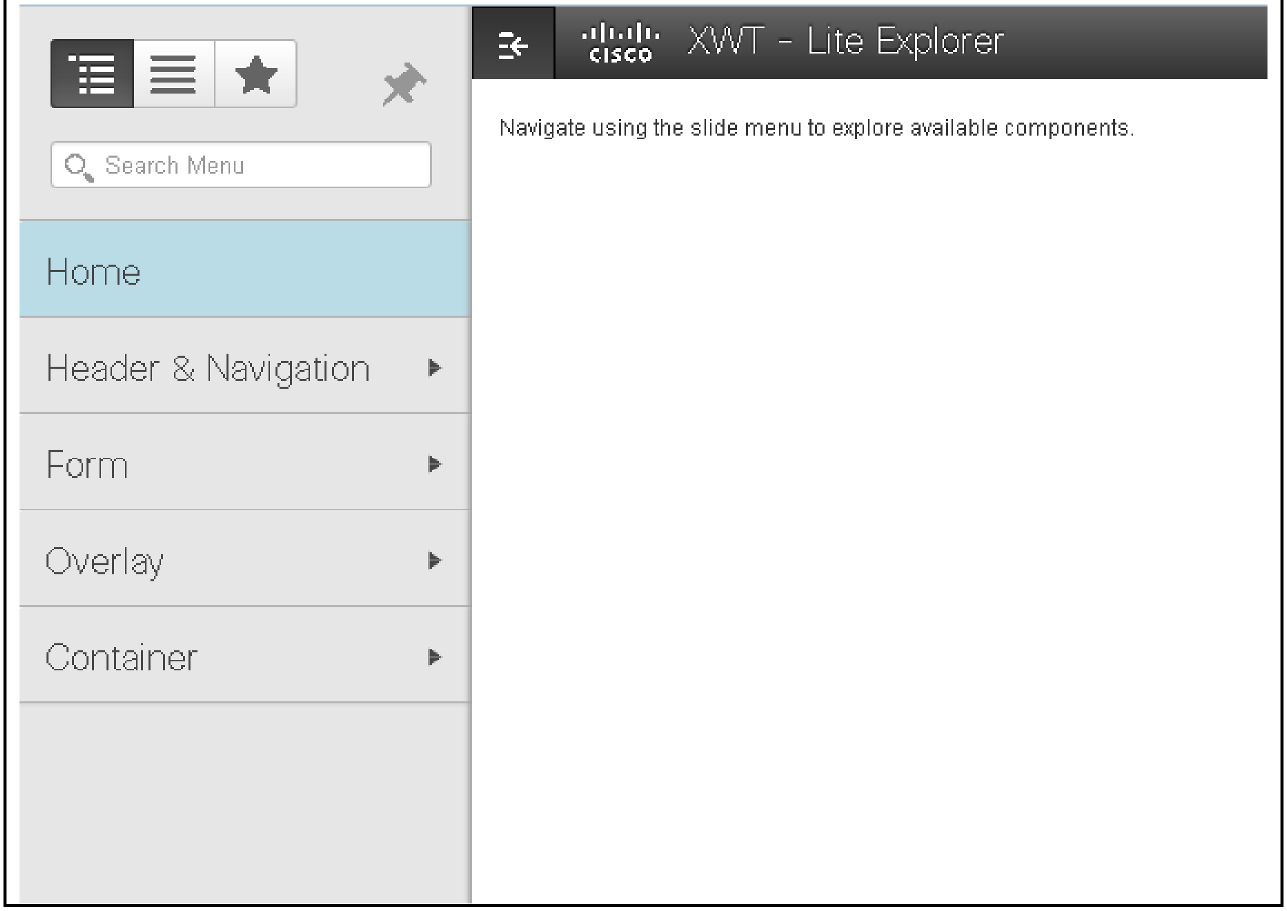
```
    new gXwt_lite.header().init();
```

GLOBAL NAVIGATION

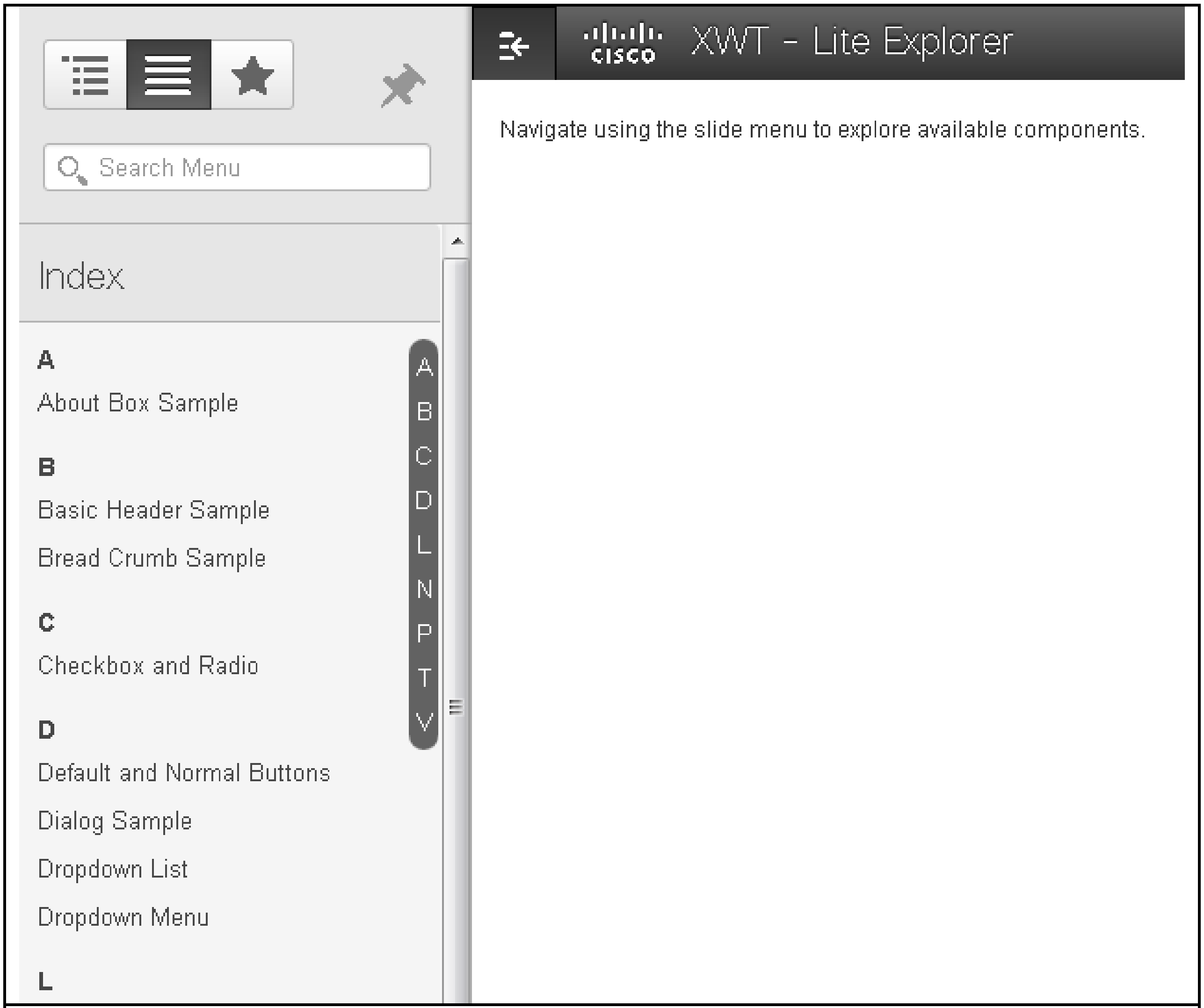
Overview:

when Navigation slider is added to Header it appears on click of Toggle icon

Reference:

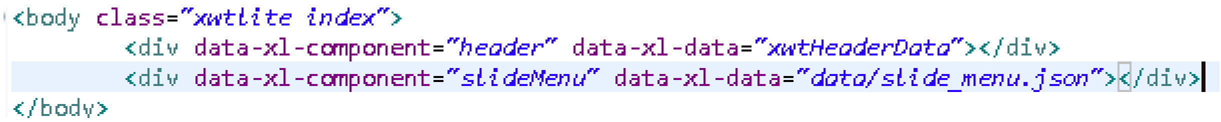


Navigate using the slide menu to explore available components.



Navigate using the slide menu to explore available components.

HTML :

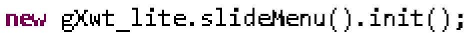


```
<body class="xwtlite index">
        <div data-xl-component="header" data-xl-data="xwtHeaderData"></div>
        <div data-xl-component="slideMenu" data-xl-data="data/slide_menu.json"></div>
</body>
```

DATA:

Refer External data file “slide_menu.json” in the code base

JAVASCRIPT:



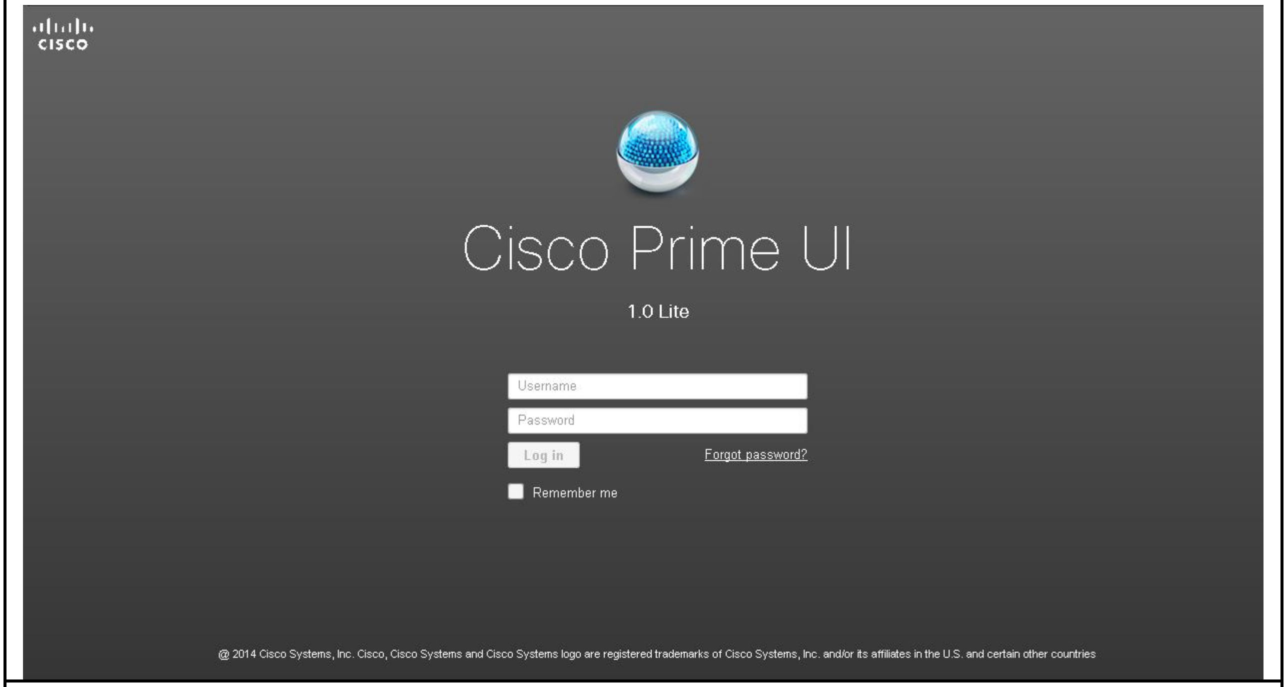
```
new gXwt_lite.slideMenu().init();
```

LOGIN PAGE

Overview:

Use the Login Lite widget to create the login lite. The Login lite provides the proper username and password information (at a minimum) and hence allows the user to log in to the application.

Reference:



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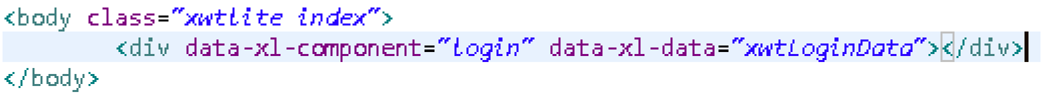
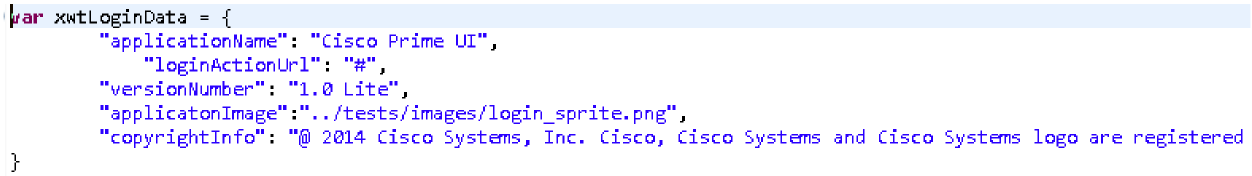
HTML :



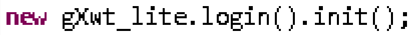
```
<body class="xwtLite index">
        <div data-xl-component="login" data-xl-data="xwtLoginData"></div>
</body>
```

DATA:



```
var xwtLoginData = {
        "applicationName": "Cisco Prime UI",
            "loginActionUrl": "#",
        "versionNumber": "1.0 Lite",
        "applicatonImage":"../tests/images/login_sprite.png",
        "copyrightInfo": "@ 2014 Cisco Systems, Inc. Cisco, Cisco Systems and Cisco Systems logo are registered
}
```

JAVASCRIPT:



```
new gXwt_lite.login().init();
```

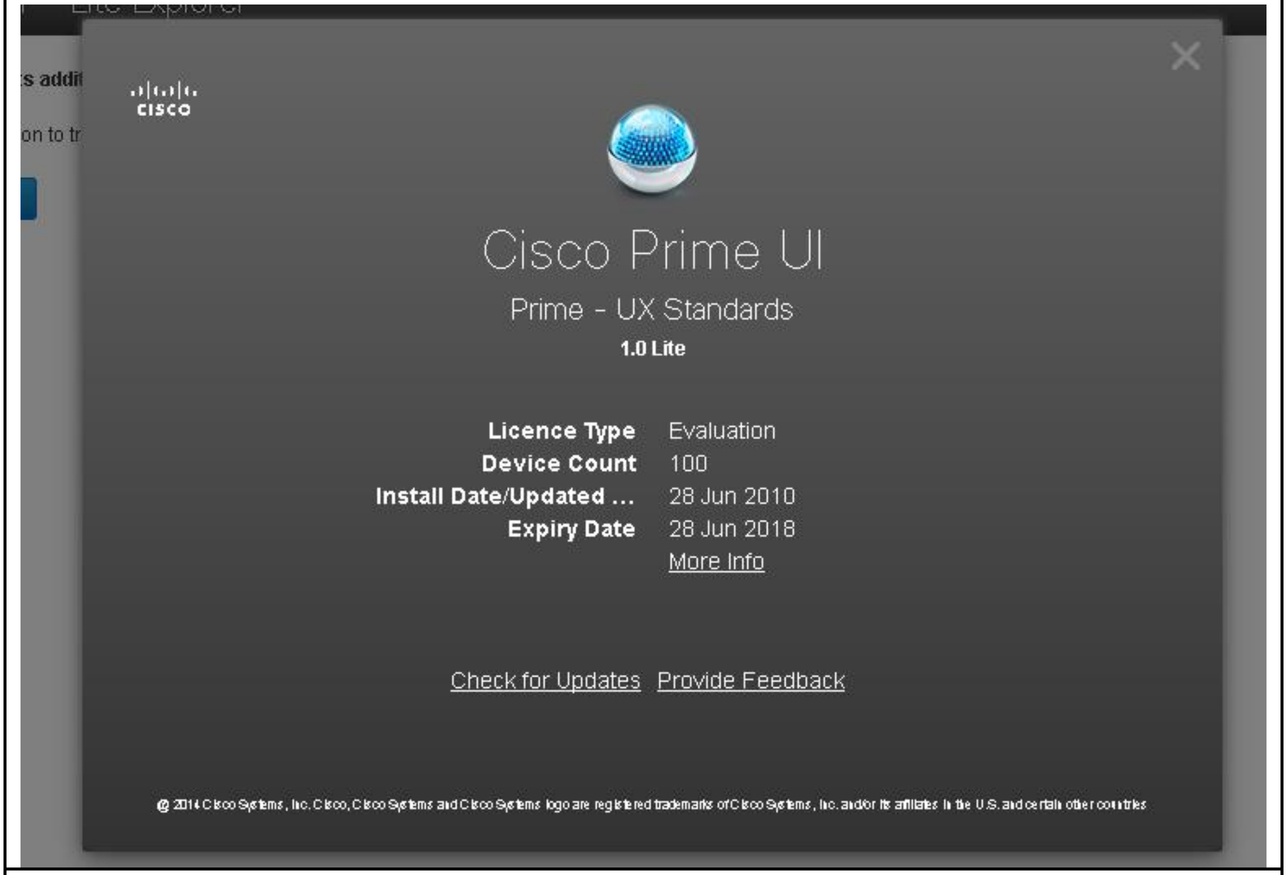
ABOUT BOX

Overview:

The About Box:

- Contains basic information about the application, including the software version and legal information (such as copyright notices).
- Is opened as a modeless layer on top of the main application UI.
- Can be of a stand alone in the application or can be triggered by means of any event say, a click on a button.

Reference:



Cisco Prime UI

Prime - UX Standards

1.0 Lite

Licence Type	Evaluation
Device Count	100
Install Date/Updated ...	28 Jun 2010
Expiry Date	28 Jun 2018

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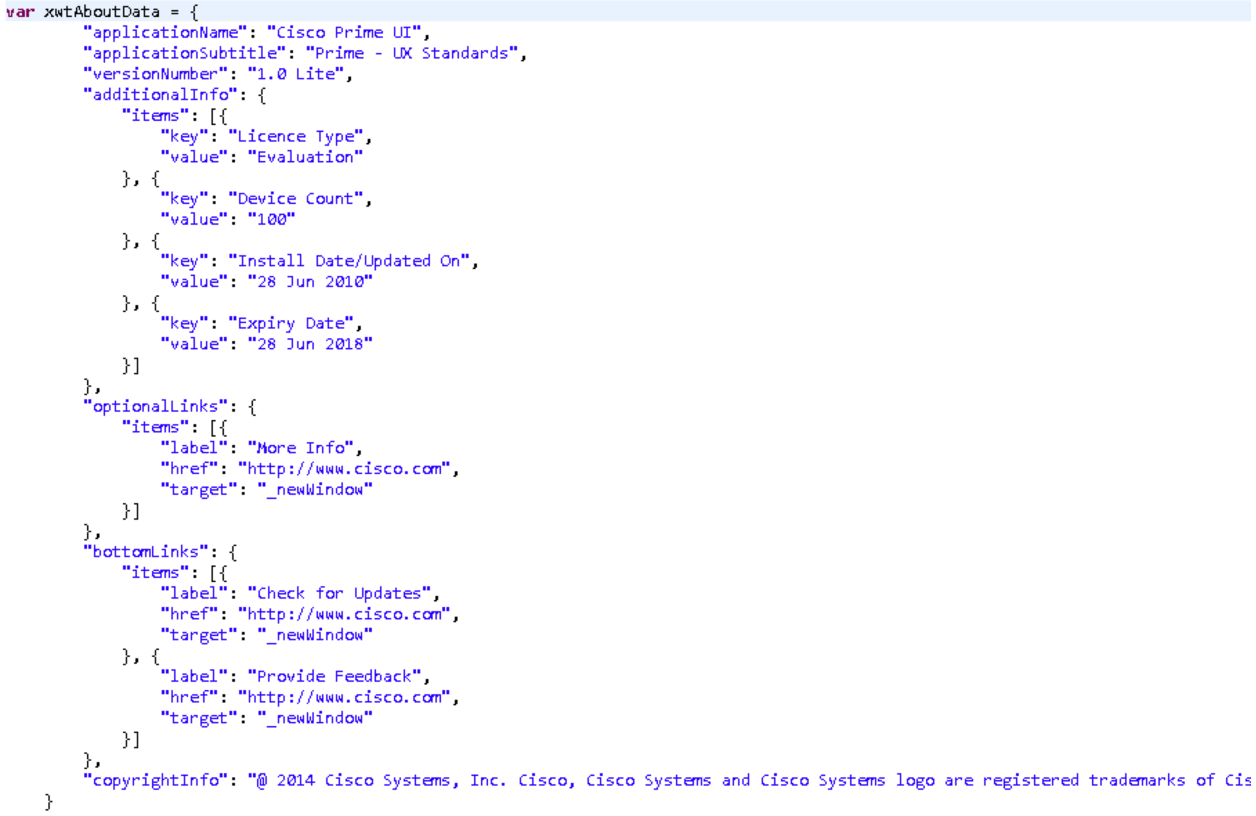
HTML :

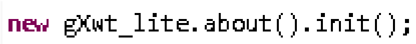
```
<body class="xwtlite index">
        <div data-xl-component="about" data-xl-data="xwtAboutData"></div>
</body>
```

DATA:



```
var xwtAboutData = {
        "applicationName": "Cisco Prime UI",
        "applicationSubtitle": "Prime - UX Standards",
        "versionNumber": "1.0 Lite",
        "additionalInfo": {
            "items": [{
                "key": "Licence Type",
                "value": "Evaluation"
            }, {
                "key": "Device Count",
                "value": "100"
            }, {
                "key": "Install Date/Updated On",
                "value": "28 Jun 2010"
            }, {
                "key": "Expiry Date",
                "value": "28 Jun 2018"
            }]
        },
        "optionalLinks": {
            "items": [{
                "label": "More Info",
                "href": "http://www.cisco.com",
                "target": "_newWindow"
            }]
        },
        "bottomLinks": {
            "items": [{
                "label": "Check for Updates",
                "href": "http://www.cisco.com",
                "target": "_newWindow"
            }, {
                "label": "Provide Feedback",
                "href": "http://www.cisco.com",
                "target": "_newWindow"
            }]
        },
        "copyrightInfo": "@ 2014 Cisco Systems, Inc. Cisco, Cisco Systems and Cisco Systems logo are registered trademarks of Cis
    }
```

JAVASCRIPT:



```
new gXwt_lite.about().init();
```

BREADCRUMB

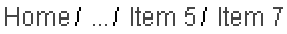
Overview:

Breadcrumbs are navigation tools that:

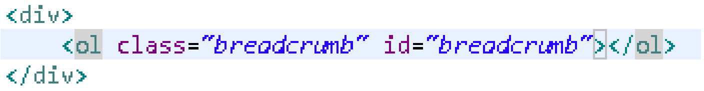
Allow a user to see where the current page or object is in relation to the application's navigation hierarchy and flow.

Provide links back to each previous page or object through which a user has navigated.

Reference:

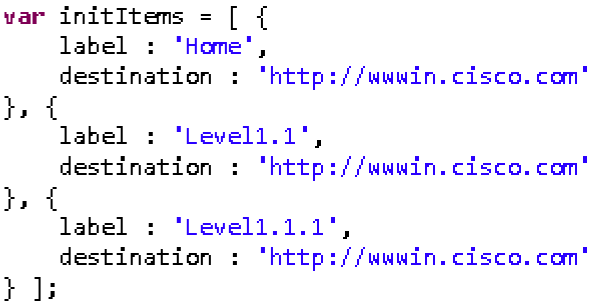


HTML :



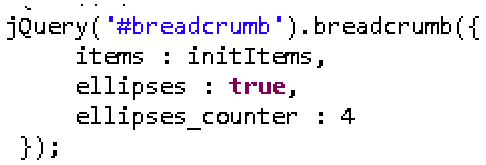
```
<div>
    <ol class="breadcrumb" id="breadcrumb"></ol>
</div>
```

DATA:



```
var initItems = [ {
    label : 'Home',
    destination : 'http://wwwin.cisco.com'
}, {
    label : 'Level1.1',
    destination : 'http://wwwin.cisco.com'
}, {
    label : 'Level1.1.1',
    destination : 'http://wwwin.cisco.com'
} ];
```

JAVASCRIPT:



```
jQuery('#breadcrumb').breadcrumb({
     items : initItems,
     ellipses : true,
     ellipses_counter : 4
 });
```

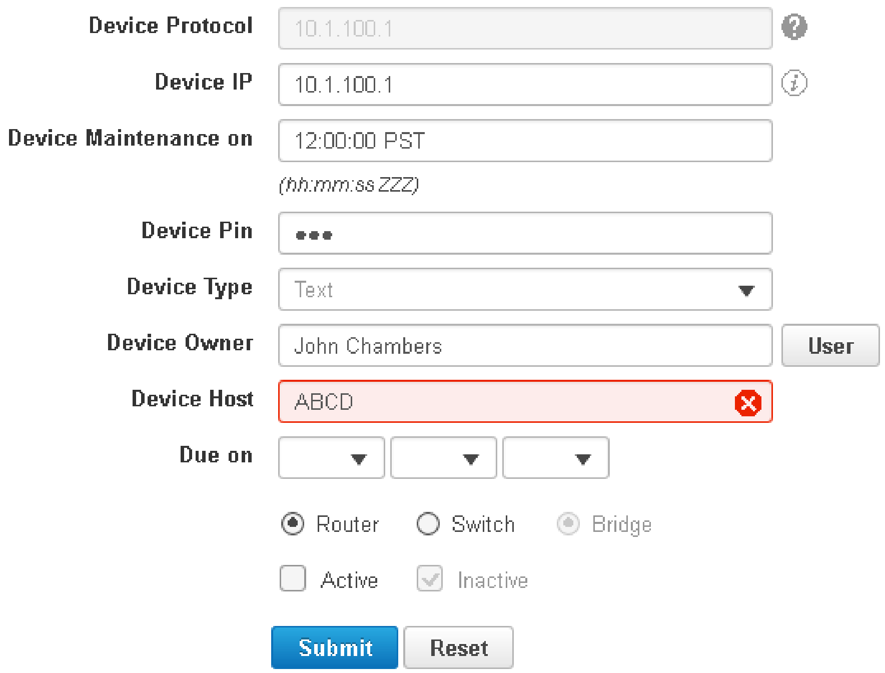
FORM CONTROLS

Overview:

Form controls contain:

Input type = text, password, button, submit, radio, checkbox, dropdown and all bootstrap 3.0 attributes of name type.

Reference:



Device Protocol: 10.1.100.1

Device IP: 10.1.100.1

Device Maintenance on: 12:00:00 PST

(hh:mm:ss ZZZ)

Device Pin: •••

Device Type: Text

Device Owner: John Chambers

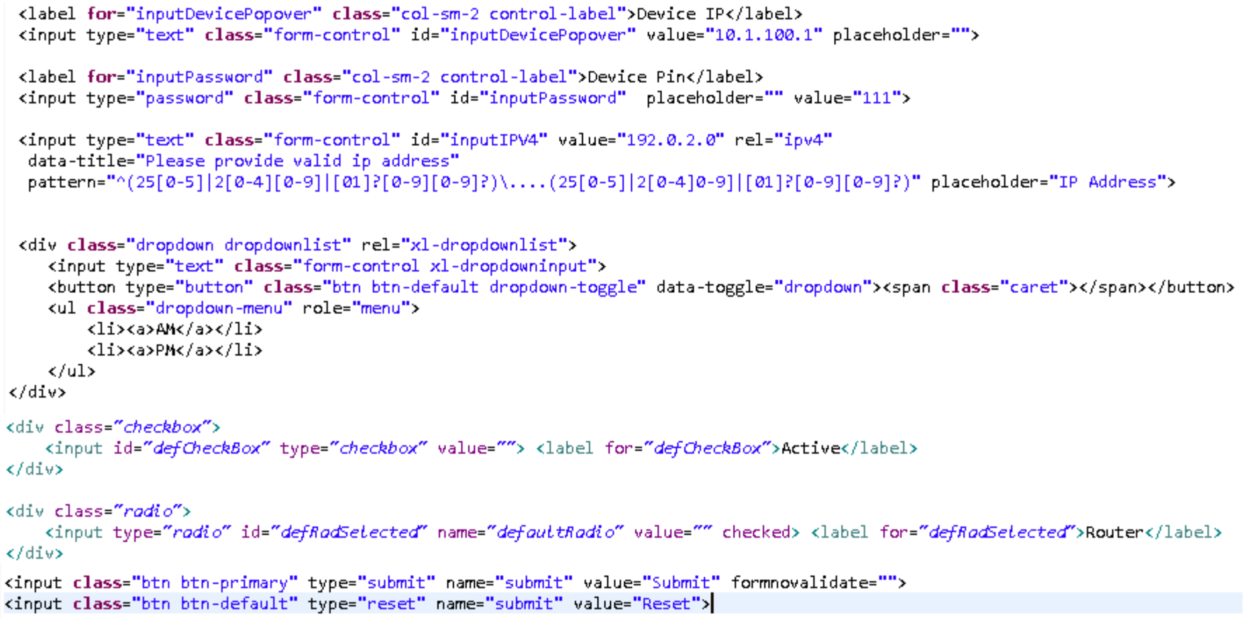
Device Host: ABCD

Due on:

● Router ○ Switch ◉ Bridge

□ Active ☑ Inactive

HTML :



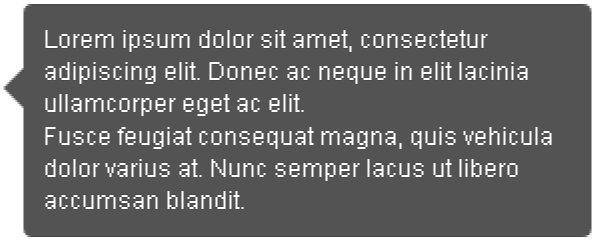
```
 <label for="inputDevicePopover" class="col-sm-2 control-label">Device IP</label>
 <input type="text" class="form-control" id="inputDevicePopover" value="10.1.100.1" placeholder="">

 <label for="inputPassword" class="col-sm-2 control-label">Device Pin</label>
 <input type="password" class="form-control" id="inputPassword"  placeholder="" value="111">

 <input type="text" class="form-control" id="inputIPV4" value="192.0.2.0" rel="ipv4"
  data-title="Please provide valid ip address"
  pattern="^(25[0-5]|2[0-4][0-9]|[01]?[0-9][0-9]?)\....(25[0-5]|2[0-4]0-9]|[01]?[0-9][0-9]?)" placeholder="IP Address">


 <div class="dropdown dropdownlist" rel="xl-dropdownlist">
    <input type="text" class="form-control xl-dropdowninput">
    <button type="button" class="btn btn-default dropdown-toggle" data-toggle="dropdown"><span class="caret"></span></button>
    <ul class="dropdown-menu" role="menu">
        <li><a>AM</a></li>
        <li><a>PM</a></li>
    </ul>
</div>

<div class=”checkbox”>
    <input id=”defCheckBox” type=”checkbox” value=””> <label for=”defCheckBox”>Active</label>
</div>

<div class=”radio”>
    <input type=”radio” id=”defRadSelected” name=”defaultRadio” value=”” checked> <label for=”defRadSelected”>Router</label>
</div>

<input class="btn btn-primary" type="submit" name="submit" value="Submit" formnovalidate="">
<input class="btn btn-default" type="reset" name="submit" value="Reset">
```

TOOLTIP

Overview:

A tooltip is a standard web paradigm for providing a description or status for a screen control or other object. It is a small container (usually in the shape of a rectangle or a balloon) that appears and displays information about an object when the mouse pointer hovers over the object.

Reference:



Lorem ipsum dolor sit amet, consectetur adipiscing elit. Donec ac neque in elit lacinia ullamcorper eget ac elit.
Fusce feugiat consequat magna, quis vehicula dolor varius at. Nunc semper lacus ut libero accumsan blandit.

Examples and Usage:

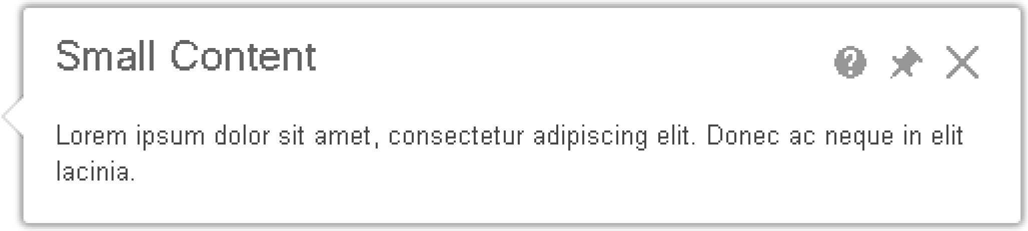
Refer http://getbootstrap.com/javascript/#tooltips

POPOVER

Overview:

The Popover widget is a generic overlay container used to provide additional information about, as well as additional actions the user can perform on, a particular item within a web application. From the container's perspective, the item is just an anchor that the Popover points to when it is opened for display.

Reference:



Small Content

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Donec ac neque in elit lacinia.

Examples and Usage :

Refer : http://getbootstrap.com/javascript/#popovers

PROGRESS BAR

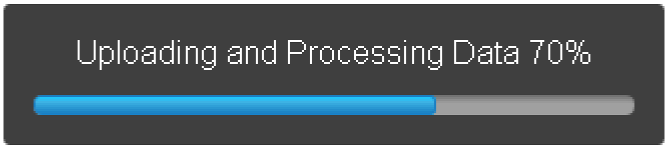
Overview:

This is a visual indicator that lets a user know that the application is waiting or that a process is being executed.

There are two types of Progress Bars:
Determinate Progress Bar - when the full duration of an operation can be estimated.
Indeterminate Progress Bar - when the duration of an operation cannot be estimated or determinate.

The Progress bar widget is a visual indicator that lets a user know that the application is waiting or that a process is being executed:

Reference:



Uploading and Processing Data 70%

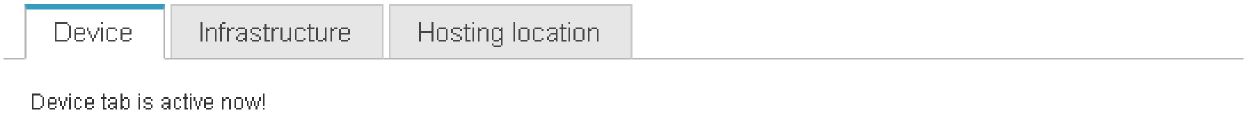
Examples and Usage :

Refer : http://getbootstrap.com/components/#progress

TAB

Overview:

Reference:



Device tab is active now!

Examples and Usage :

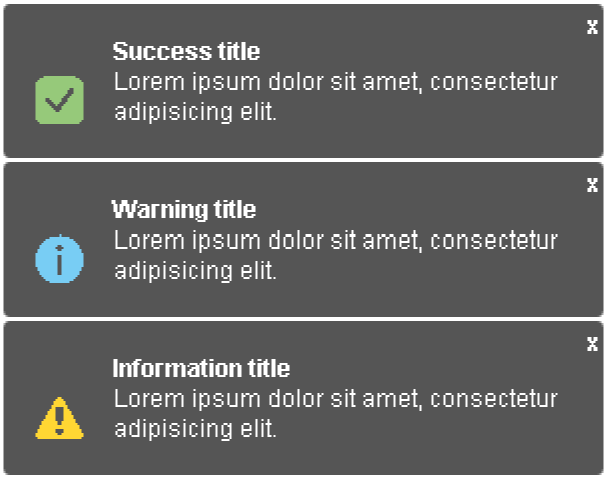
Refer : http://getbootstrap.com/javascript/#tabs
Refer : http://getbootstrap.com/components/#nav-tabs

NOTIFICATION TOASTER

Overview:

Notification Toaster provides message filtering and queuing without obstructing the current flow that the user in on, unlike an alert. The Toaster will automatically display in the lower right corner of the screen. If more toasters arrive at the same time, they will stack up. Each toaster has its own queue, and you can configure the number of messages to be shown on screen at one time. Additional toasters are shown only after the currently displayed toaster is dismissed.

Reference:



Success title
Lorem ipsum dolor sit amet, consectetur adipisicing elit.

Warning title
Lorem ipsum dolor sit amet, consectetur adipisicing elit.

Information title
Lorem ipsum dolor sit amet, consectetur adipisicing elit.

HTML :

```
<div data-xl-component="toaster"></div>
```

JAVASCRIPT:

```
new gXwt_lite.toaster().show({
    "type": "warning",
    "title": "Errors on form",
    "desc": "Description here"
});
```