

Composer Overview

Discount Coupon Links to UDEMY courses:



<https://www.udemy.com/hyperledger/?couponCode=DKHLF1099>



<https://www.udemy.com/ethereum-dapp/?couponCode=DKETH1099>



<https://www.udemy.com/rest-api/?couponCode=DKRST1099>



mentoring, seeking Blockchain part time work, project guidance, advice

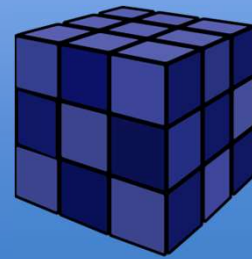
<http://www.bcmentors.com>

This deck is part of a online course on “Hyperledger Fabric Development with Composer”

raj@acloudfan.com

@acloudfan

<http://ACloudFan.com>



Introduction to Composer

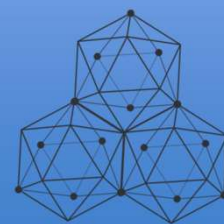
Learning Objectives:

- What is Fabric Composer?
- Why use Composer?
- High level overview

raj@acloudfan.com

@acloudfan

<http://ACloudFan.com>





Composer

Open Development Toolset

Creation and Management of Business Network Apps

- Reduced time to value
- Hides the complexity of the underlying infrastructure
- Business modeling capability
- Javascript for coding of transactions

<http://www.ACloudFan.com>



Composer

Open Development Toolset

Creation and Management of Business Network Apps



Tools for Dev/Architects



Tools for Operations

<http://www.ACloudFan.com>



Tools for Administrators



Tools for Business Analyst



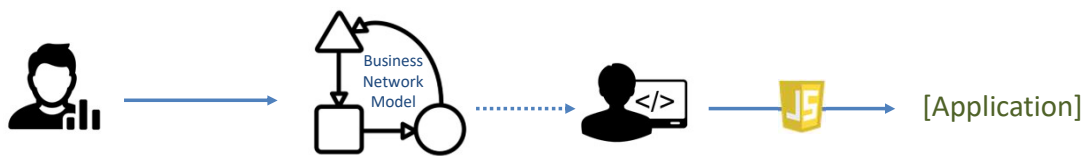
Composer Runtime



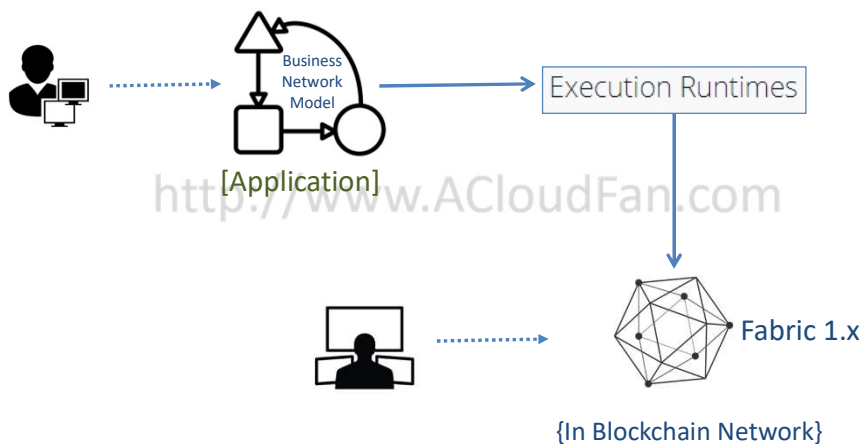
Composer Modeling Language

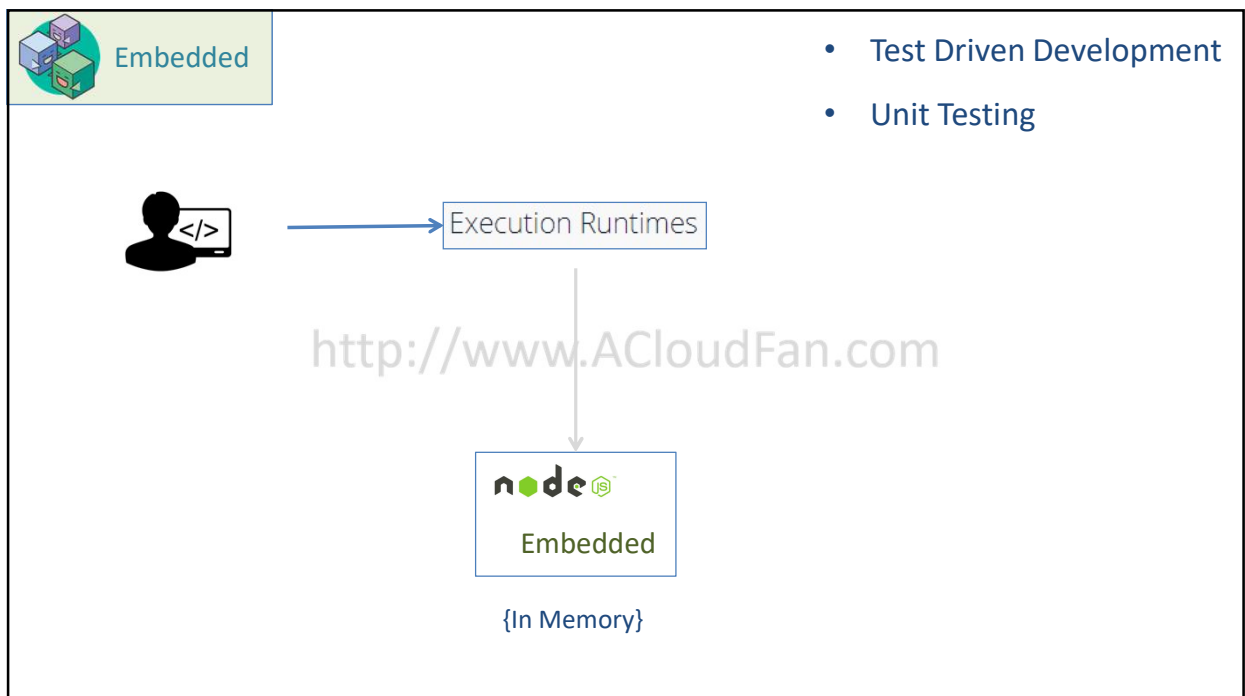
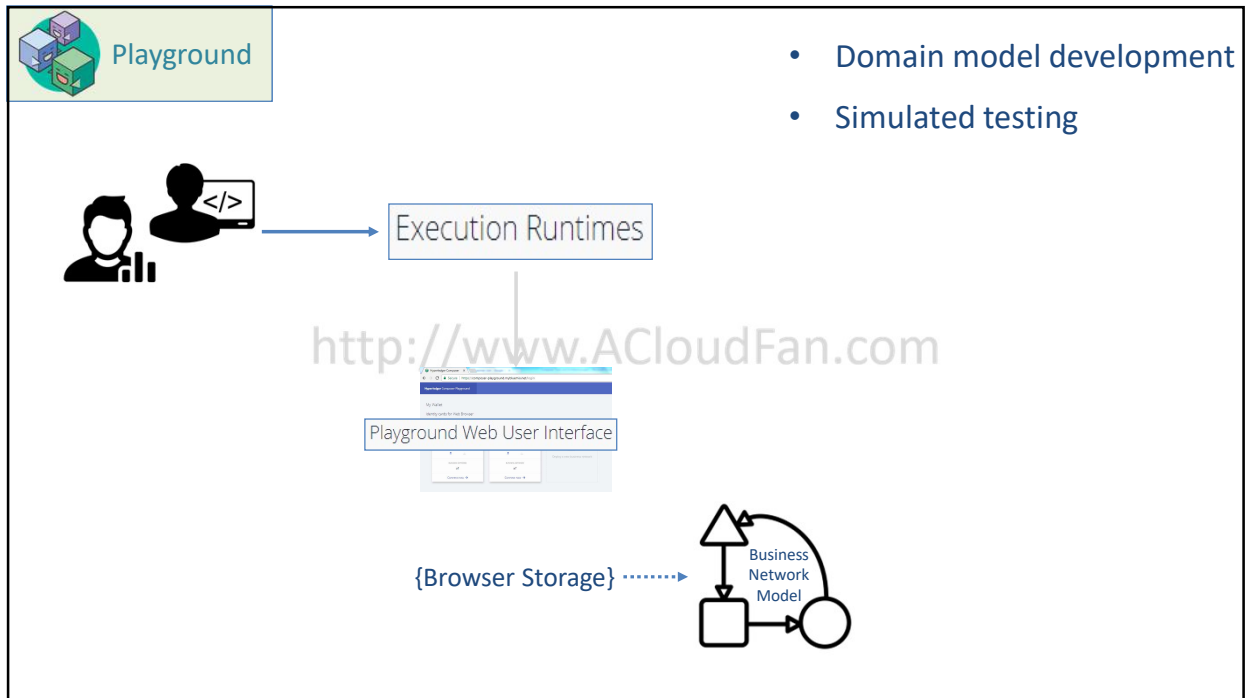
“

An object oriented language for defining the **domain model** for the business network



Runtimes





Composer Dev Tools Installation


Learning Objectives:

- Installation of Pre-requisites
- Composer tools

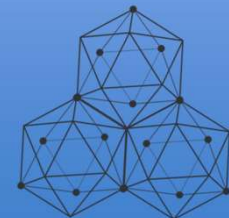
CLI Yo Generator REST Server

PS: All links available in the resources for this lecture

raj@acloudfan.com

 @acloudfan

<http://ACloudFan.com>



Node: 8.x


9.x Not supported

Install NodeJS

<https://nodejs.org/en/download/>

> node -v

January 2018






[HOME](#) | [ABOUT](#) | [DOWNLOADS](#) | [DOCS](#) | [GET INVOLVED](#) | [SECURITY](#) | [NEWS](#) | [FOUNDATION](#)

Downloads

Latest LTS Version **8.9.4 (includes npm 5.6.0)**

Download the Node.js source code or a pre-built installer for your platform, and start developing today.

LTS Recommended For Most Users	Current Latest Features
 Windows Installer <small>node-v8.9.4-x86.msi</small>	 macOS Installer <small>node-v8.9.4.pkg</small>
 Source Code <small>node-v8.9.4.tar.gz</small>	

Windows Installer (.msi)

Windows Binary (.zip)

macOS Installer (.pkg)

macOS Binaries (.tar.gz)

Linux Binaries (x86/x64)

Linux Binaries (ARM)

Source Code

32-bit	64-bit
32-bit	64-bit
64-bit	
64-bit	
32-bit	64-bit
ARMv6	ARMv7
ARMv8	
node-v8.9.4.tar.gz	



Version Manager (NVM)

- Supports installation of multiple node versions on the machine

<http://www.ACloudFan.com>



- Originally developed for MacOS



- Available on windows (*not from same developers*)

Link is in the resources




git: **2.9.x** or higher

Installation instructions:

<https://www.atlassian.com/git/tutorials/install-git>

> git --version

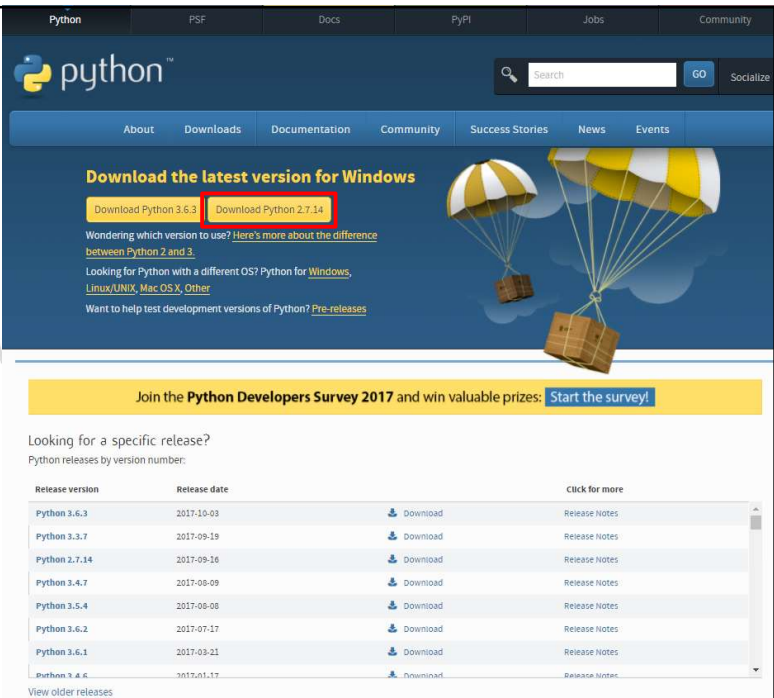


Python: **2.7.x**

http://


Add Python to PATH

> python -V



The screenshot shows the Python.org homepage. The 'Downloads' section is prominent, with a red box highlighting the 'Download Python 2.7.14' button. Below this, there is a table of releases by version number.

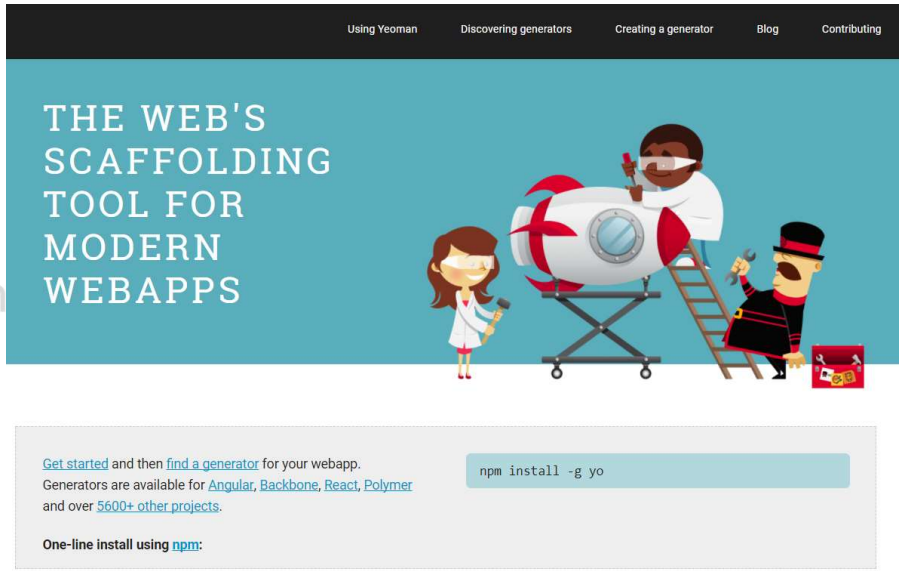
Release version	Release date	Download	Click for more
Python 3.6.3	2017-10-03	Download	Release Notes
Python 3.3.7	2017-09-19	Download	Release Notes
Python 2.7.14	2017-09-16	Download	Release Notes
Python 3.4.7	2017-08-09	Download	Release Notes
Python 3.5.4	2017-08-08	Download	Release Notes
Python 3.6.2	2017-07-17	Download	Release Notes
Python 3.6.1	2017-03-21	Download	Release Notes
Python 3.4.6	2015-01-17	Download	Release Notes



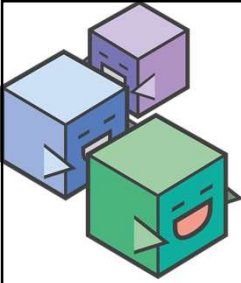
YEOMAN

Install:

> npm install -g yo



The screenshot shows the Yeoman website. The main heading is 'THE WEB'S SCAFFOLDING TOOL FOR MODERN WEBAPPS'. Below this, there is an illustration of a person working on a large, stylized web browser icon. The bottom section shows the installation command 'npm install -g yo'.



1


Install Composer CLI

```
> npm install -g composer-cli
```

Verify

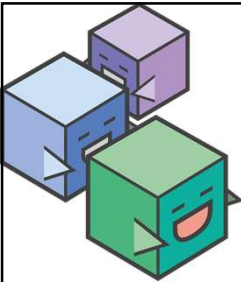
```
> composer -v
```

<http://www.ACloudFan.com>

 Windows

MSBUILD : error MSB3428: Could not load the Visual C++ component "VCBuild.exe". To fix this, 1) install the .NET Framework 2.0 SDK, 2) install Microsoft Visual Studio 2005 or 3) add the location of the component to the system path if it is installed elsewhere. [C:\Users\Rajeev\AppData\Roaming\npm\node_modules\composer-cli\node_modules\pkcs11js\build\binding.sln]

<https://github.com/nodejs/node-gyp>



2


Install Composer REST Server

```
> npm install -g composer-rest-server
```

Verify

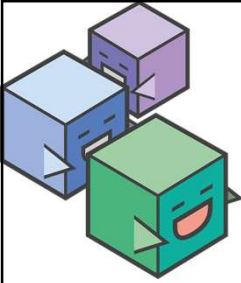
```
> composer-rest-server -v
```

<http://www.ACloudFan.com>

 Windows

MSBUILD : error MSB3428: Could not load the Visual C++ component "VCBuild.exe". To fix this, 1) install the .NET Framework 2.0 SDK, 2) install Microsoft Visual Studio 2005 or 3) add the location of the component to the system path if it is installed elsewhere. [C:\Users\Rajeev\AppData\Roaming\npm\node_modules\composer-cli\node_modules\pkcs11js\build\binding.sln]

<https://github.com/nodejs/node-gyp>



3


Install Yo Template for Network App

```
> npm install -g generator-hyperledger-composer
```

Verify

```
> yo --generators
```

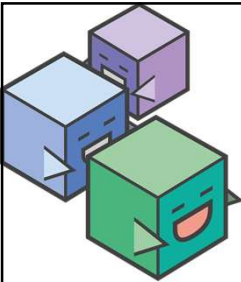
<http://www.ACloudFan.com>



Windows


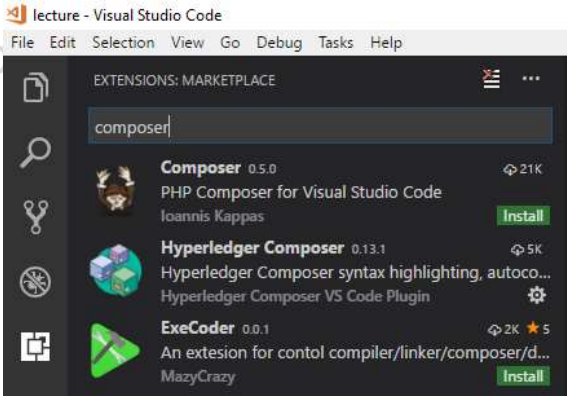
MSBUILD : error MSB3428: Could not load the Visual C++ component "VCBuild.exe". To fix this, 1) install the .NET Framework 2.0 SDK, 2) install Microsoft Visual Studio 2005 or 3) add the location of the component to the system path if it is installed elsewhere. [C:\Users\Rajeev\AppData\Roaming\npm\node_modules\composer-cli\node_modules\pkcs11js\build\binding.sln]

<https://github.com/nodejs/node-gyp>



4

Install Visual Code **Composer** extension

lecture - Visual Studio Code

File Edit Selection View Go Debug Tasks Help

EXTENSIONS: MARKETPLACE

composer


Extension Name	Version	Downloads	Rating	Action
Composer	0.5.0	21K		Install
PHP Composer for Visual Studio Code Ioannis Kappas				
Hyperledger Composer	0.13.1	5K		Install
Hyperledger Composer syntax highlighting, autoco... Hyperledger Composer VS Code Plugin				
ExeCoder	0.0.1	2K	5	Install
An extension for contol compiler/linker/composer/d...				
MazyCrazy				

Intro to Composer SDK

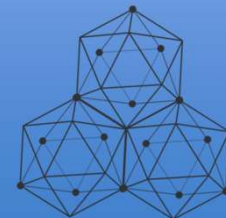
Learning Objectives:

- SDK overview
- Npm Module

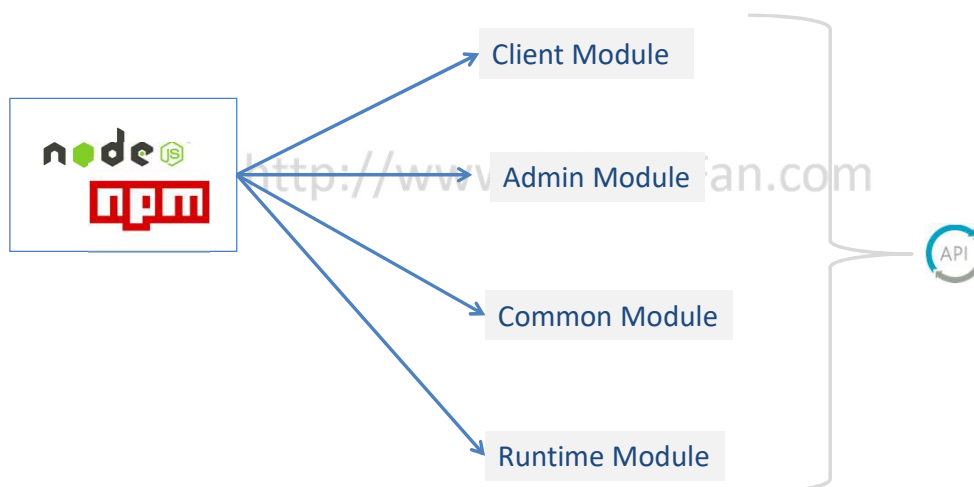
raj@acloudfan.com

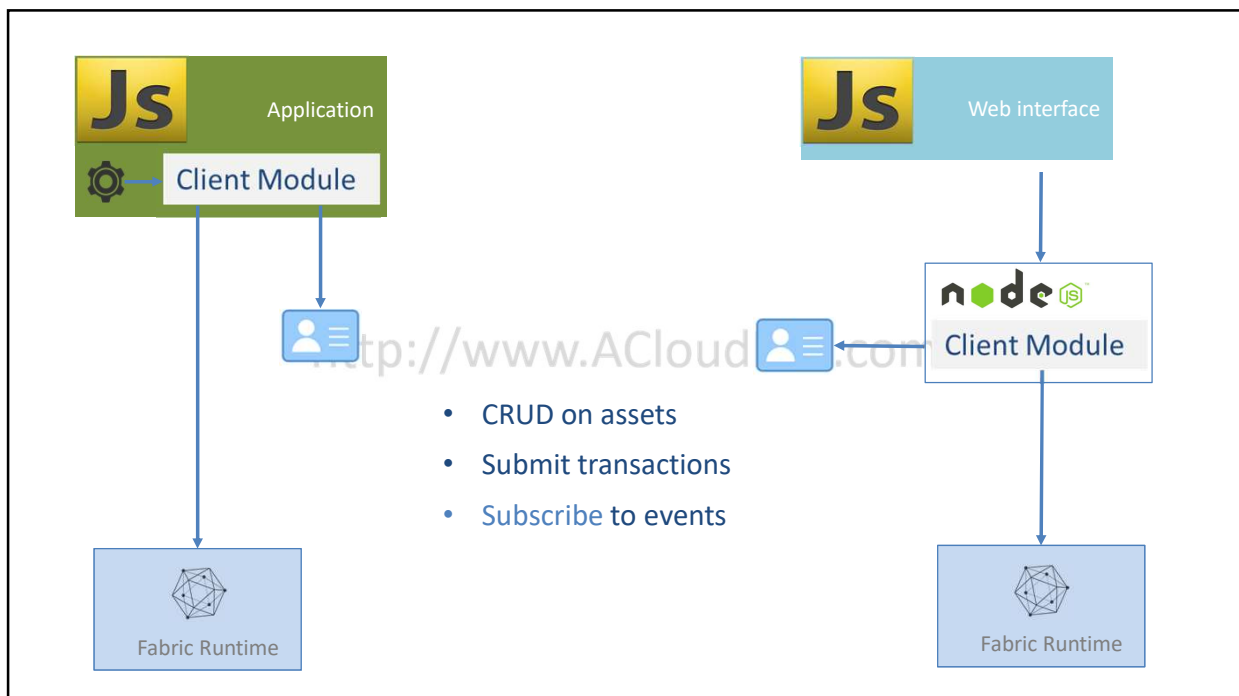
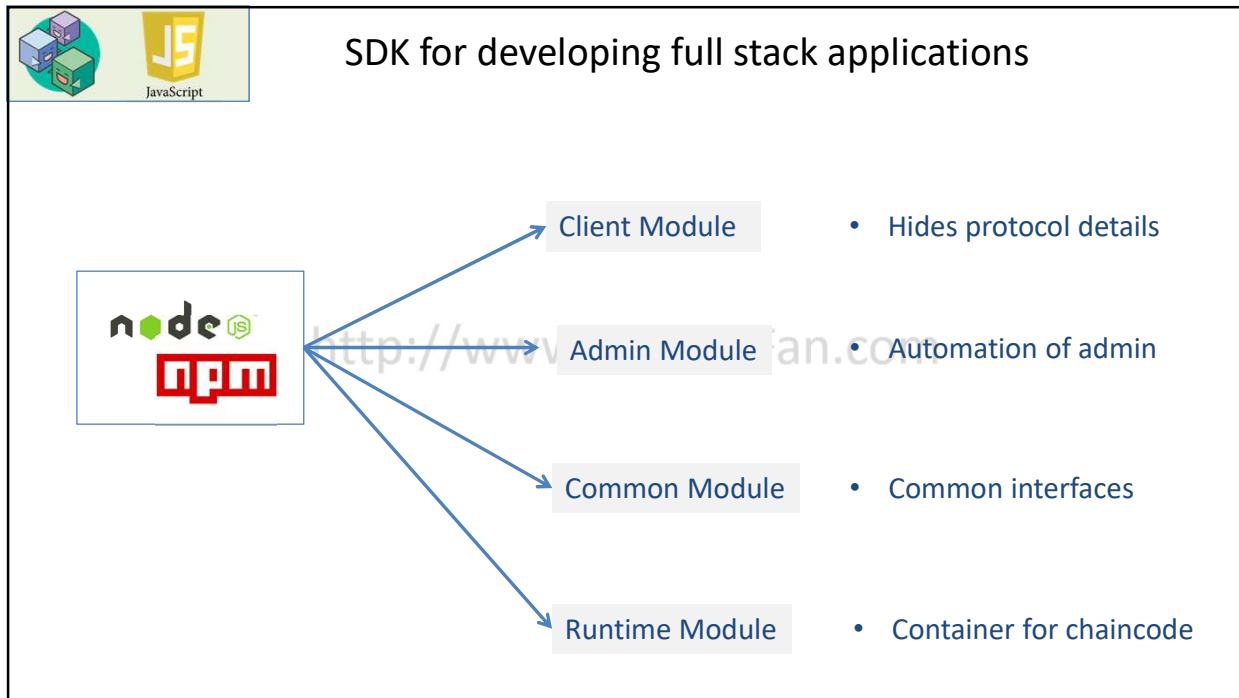
 @acloudfan

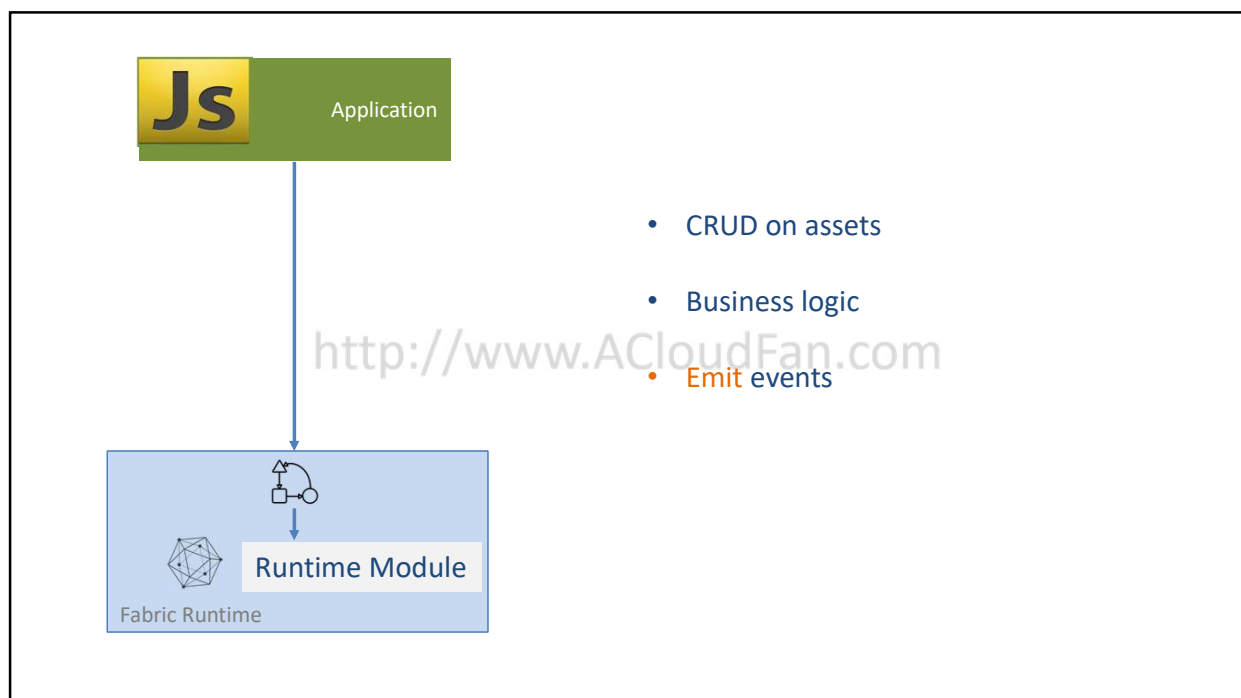
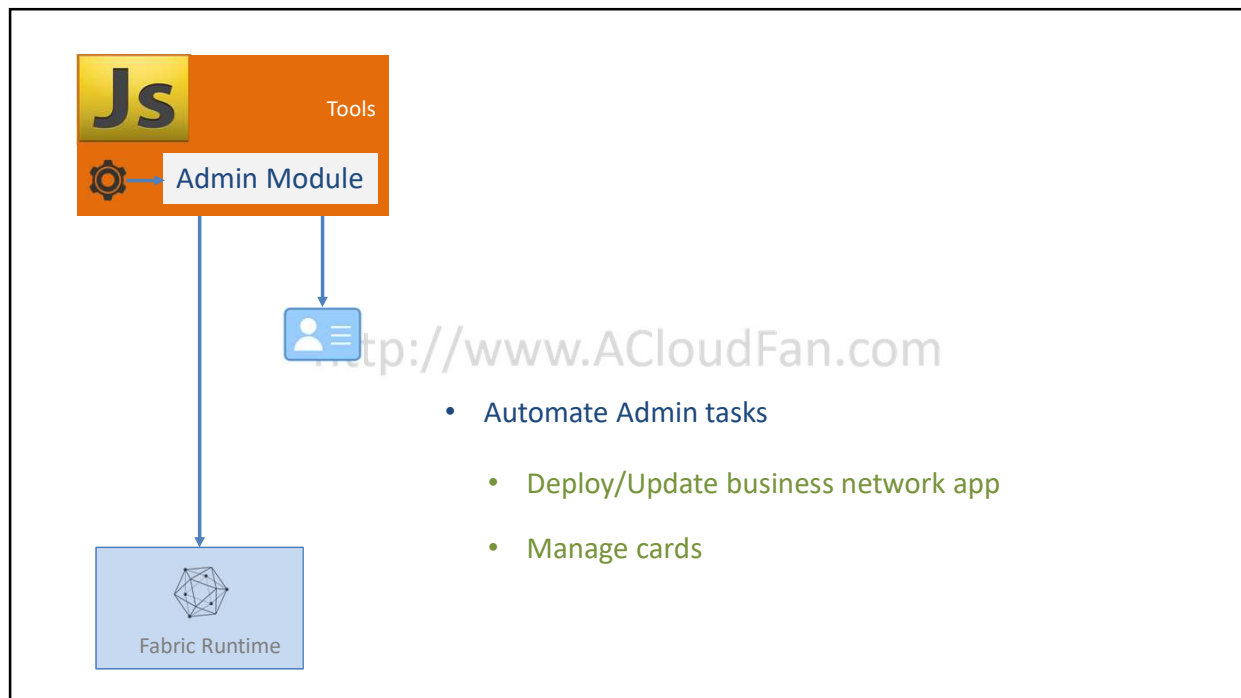
<http://ACloudFan.com>



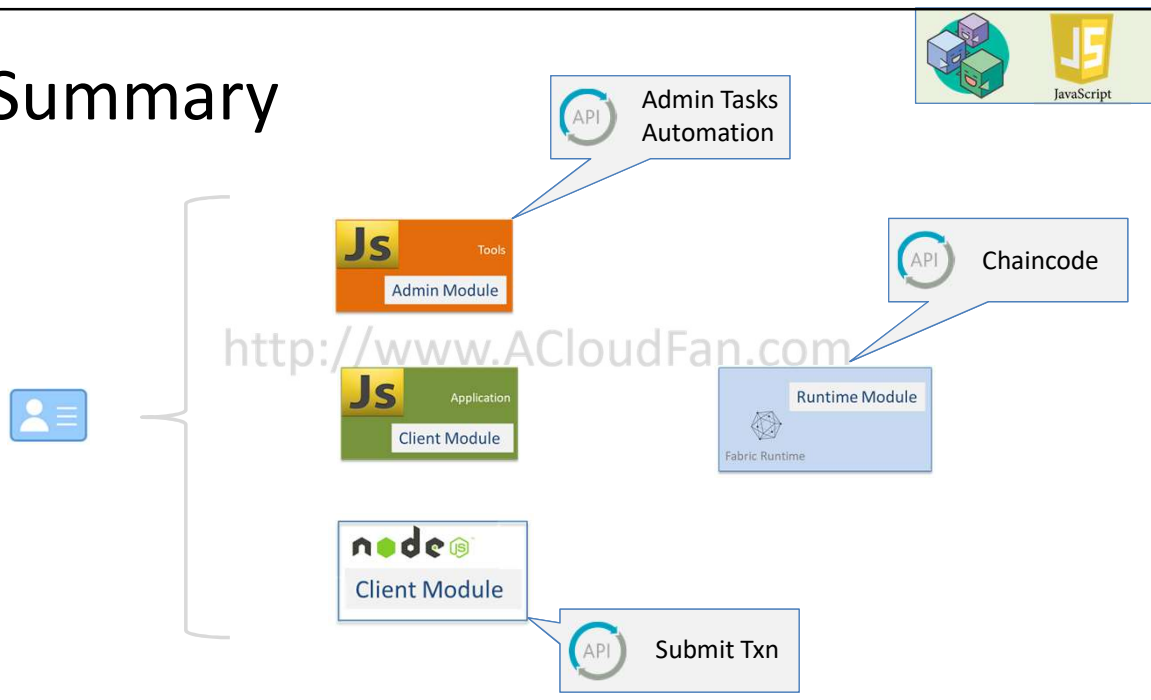
SDK for developing full stack applications







Summary



Rest Server Tool

Learning Objectives:

- Overview
- Walk through

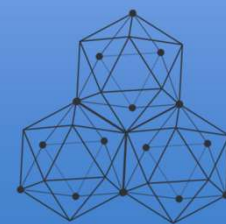
PREREQUISITES

Basic understanding of RESTful API

raj@acloudfan.com

@acloudfan

<http://ACloudFan.com>



RESTful API

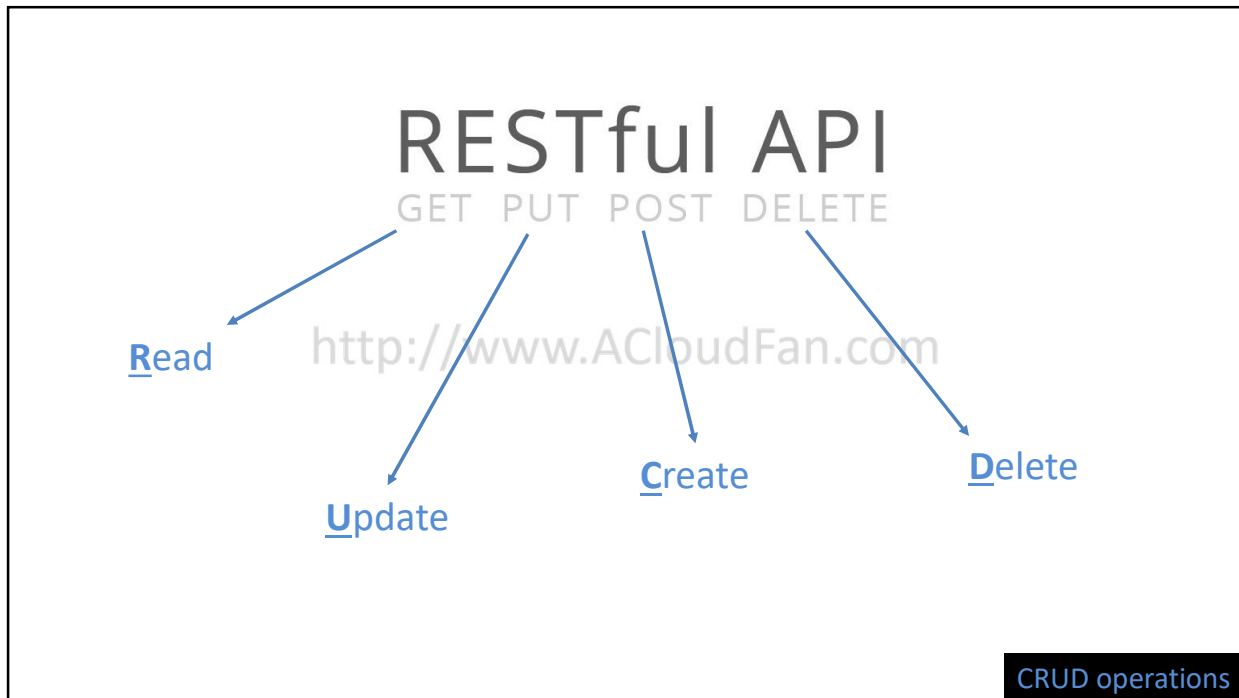
- A set of constraints

<http://www.ACloudFan.com>

- A set of design practices

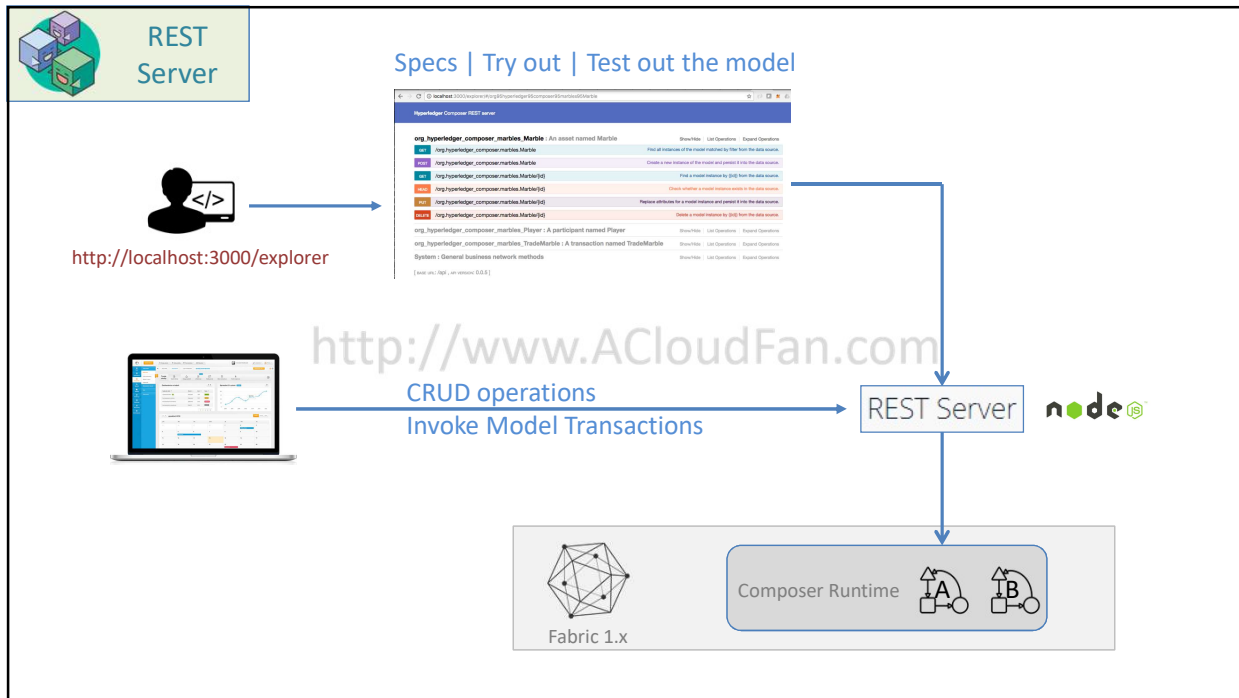
RESTful API





“

Standalone NodeJS process that exposes the business network (*Resources*) as REST API.





REST Server

Interactive mode

```
> composer-rest-server
? Enter the name of the business network card to use: admin@test-bna
? Specify if you want namespaces in the generated REST API: always use namespaces
? Specify if you want to enable authentication for the REST API using Passport: No
? Specify if you want to enable event publication over WebSockets: No
? Specify if you want to enable TLS security for the REST API: No
```

+ config parameters for serving the API




REST Server

- Easy access to the Network resource specifications
- Developers can use it for:
 - [Explore](http://www.ACloudFan.com)
 - [Testing](http://www.ACloudFan.com)
 - [Visibility into transactions](http://www.ACloudFan.com)
- Application code will be simpler & Easy to maintain

Rest Server – Security

raj@acloudfan.com

 @acloudfan

<http://ACloudFan.com>

Learning Objectives:

- TLS & Authentication
- Multi user setup

