Giant Clouds, Tiny Computers

Salesforce.com Meets the Raspberry Pi

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SELL. SERVICE. MARKET. SUCCEED.

Where to find stuff:

- http://developer.force.com
- Github: ReidCarlberg
  - LAB-Wireless-Sensor-Network
- SlideShare: ReidCarlberg
- Twitter: @ReidCarlberg
- LinkedIn: ??????

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Safe harbor statement under the Private Securities Litigation Reform Act of 1995:

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Our Mission: Cloud Computing Driver, Catalyst and Evangelist

Mainframe

Client/Server

Enterprise
Cloud Computing

No Hardware/Software
Subscription Model
Automatic Upgrades
Constant Innovation

1960s 1980s Today

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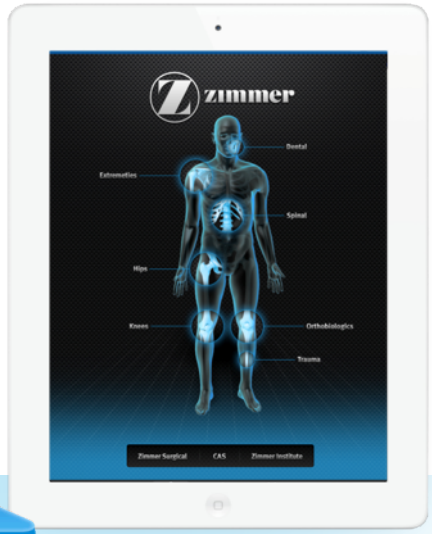
The World's #1 Cloud Platform for Building Apps

salesforce platform™

The Fastest Path From Idea To App



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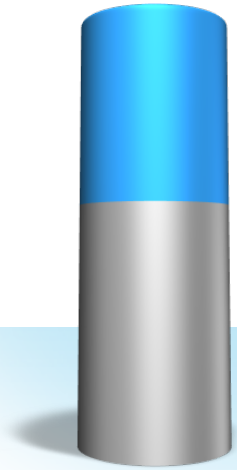
Open: Access Your Data Anywhere, Anytime

Any Data
Salesforce API



API: Nearly
50%
Of All Transactions

Simple, powerful & secure API's

SOAP, REST, Bulk, Metadata, Apex & Visualforce

Any Device
Salesforce Touch

HTML5 app runs on any device (iPad today)

Intuitive interface built for users on the go

Optimized for touch – tap, scroll, swipe

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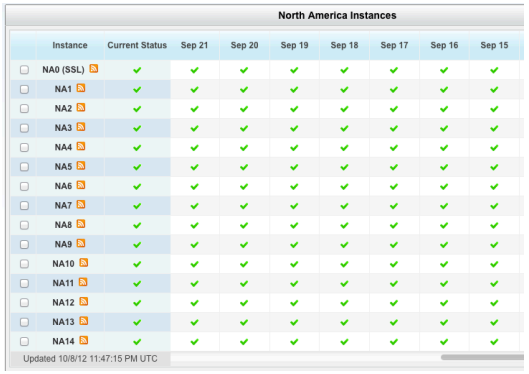
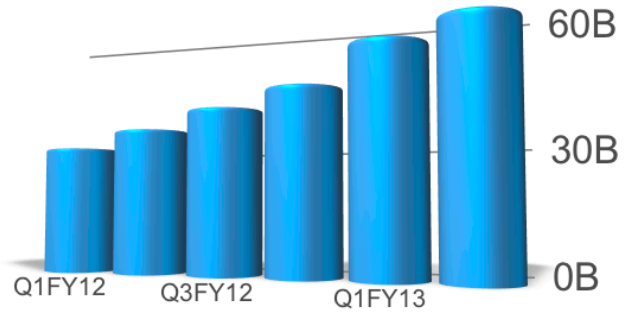
Trusted: Our Highest Value

Trust.salesforce.com



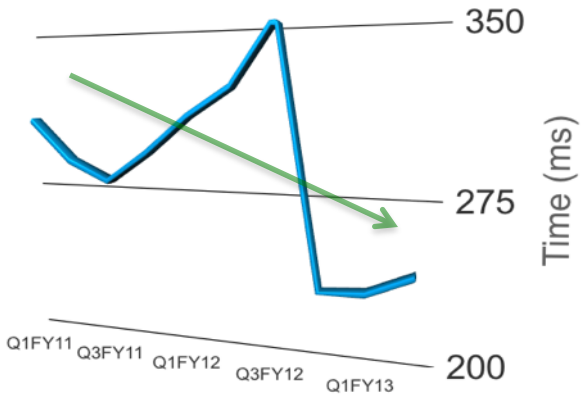
Transactions per Quarter

59B Transactions
69% YoY Growth



Average Page Time

FY12: 306ms
FY13: 241ms



Toyota Connects People, Cars, Dealerships, and Manufacturers using Social

TOYOTA friend

Built a product social network that allows your car to be your friend

Car console provides access to information directly to the driver

Toyota Friend app connects owners to dealers, manufacturers, and friends via one environment

http://www.youtube.com/watch?v=9falmVgjq6o

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GE Share

http://www.youtube.com/watch?v=OFmsP7qAhQI

appexchange

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Connect Your **Products** Into the Salesforce Platform

THE SOCIAL MACHINE
Powered by ETHERIOS

The Social Machine® Powered By Etherios

Machine to Machine (M2M) Connectivity into the Salesforce Platform

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App by Etherios

The Social Machine® is a strategic and transformative solution that enables organizations to connect their products with the Salesforce Platform. Gain a strategic advantage with The Social Machine.

RELEASED
4/19/2013

Watch a Demo

PRICING
Contact us for pricing

CATEGORIES
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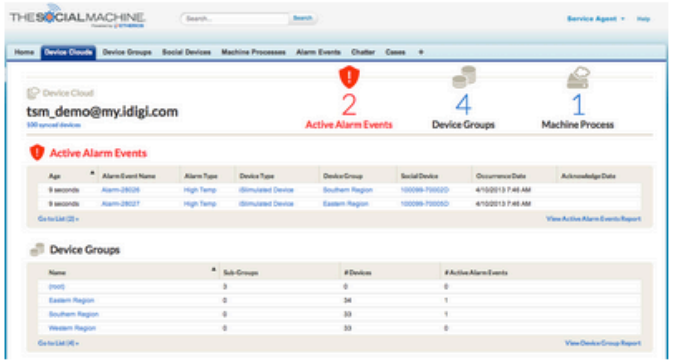

TSM Device Cloud Home Screen

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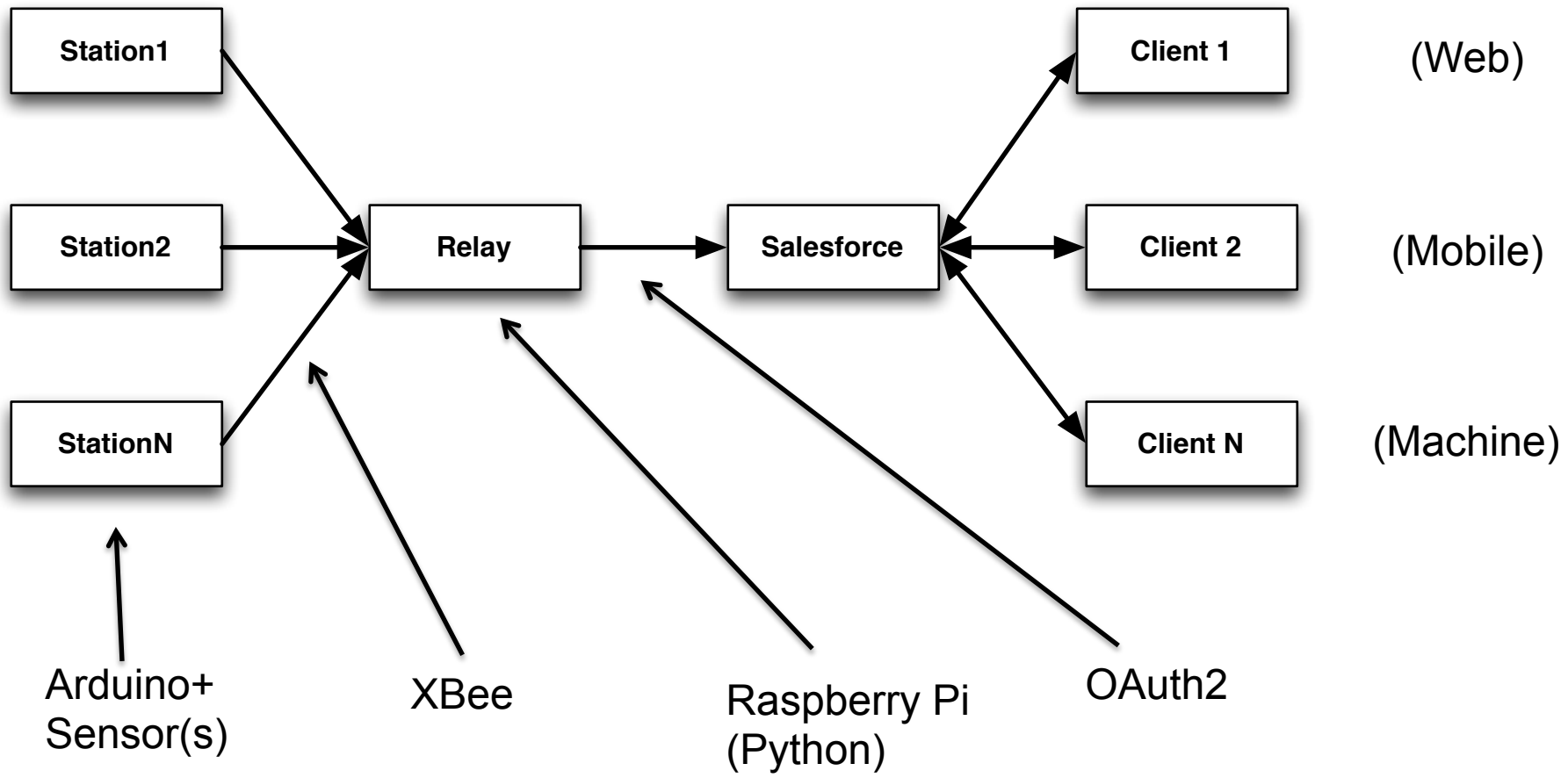
Round 1: Model Train Control

- Arduino
- Ruby Proxy
- Salesforce

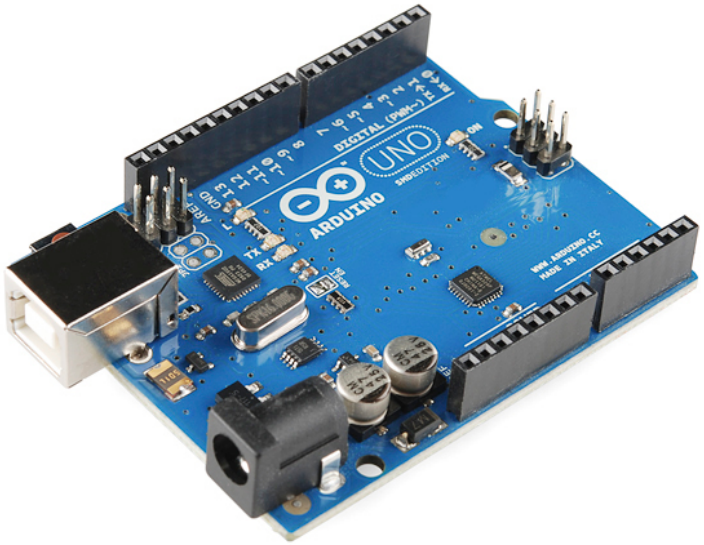
http://www.youtube.com/watch?v=i7iLeN27zfA

Round 2: Wireless Sensor Network



Arduino

- ~$30
- Built in Analog to Digital Converter
- Lots of Device Support
- HTTP Support
  - Ethernet / WiFi
- No SSL



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Raspberry Pi

- ~$40
- Linux
- Python (+whatever)
- USB
- Ethernet
- HDMI Output
- /dev/ttyama0
- No Analog to Digital Converter

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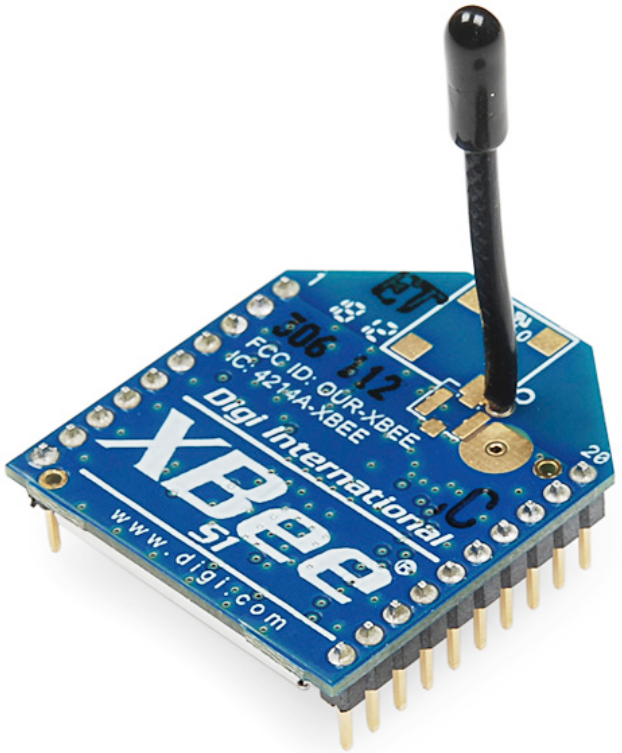
The XBee

- ~$22
- ~300ft / 100m range
- Serial communication
- Arduino: connects to serial port via shield
- Raspberry Pi: connects to serial port via wires
- (Made by Digi)
- (Who bought Salesforce partner Etherios last year)



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Arduino / RPi / XBee Notes

- XBee shield prevents Arduino programming – be sure to flip the switch!
- RPi's GPIO board Serial Port is in use by default.
  - Edit inittab and command.txt to remove TTYAMA0 references
- RPi's GPIO access requires SUDO by default, TTYAMA0 does not.
- Temperature sensing – I need to do more work here.
- Soldering sucks! (But it's easier with thinner soldering wire.)

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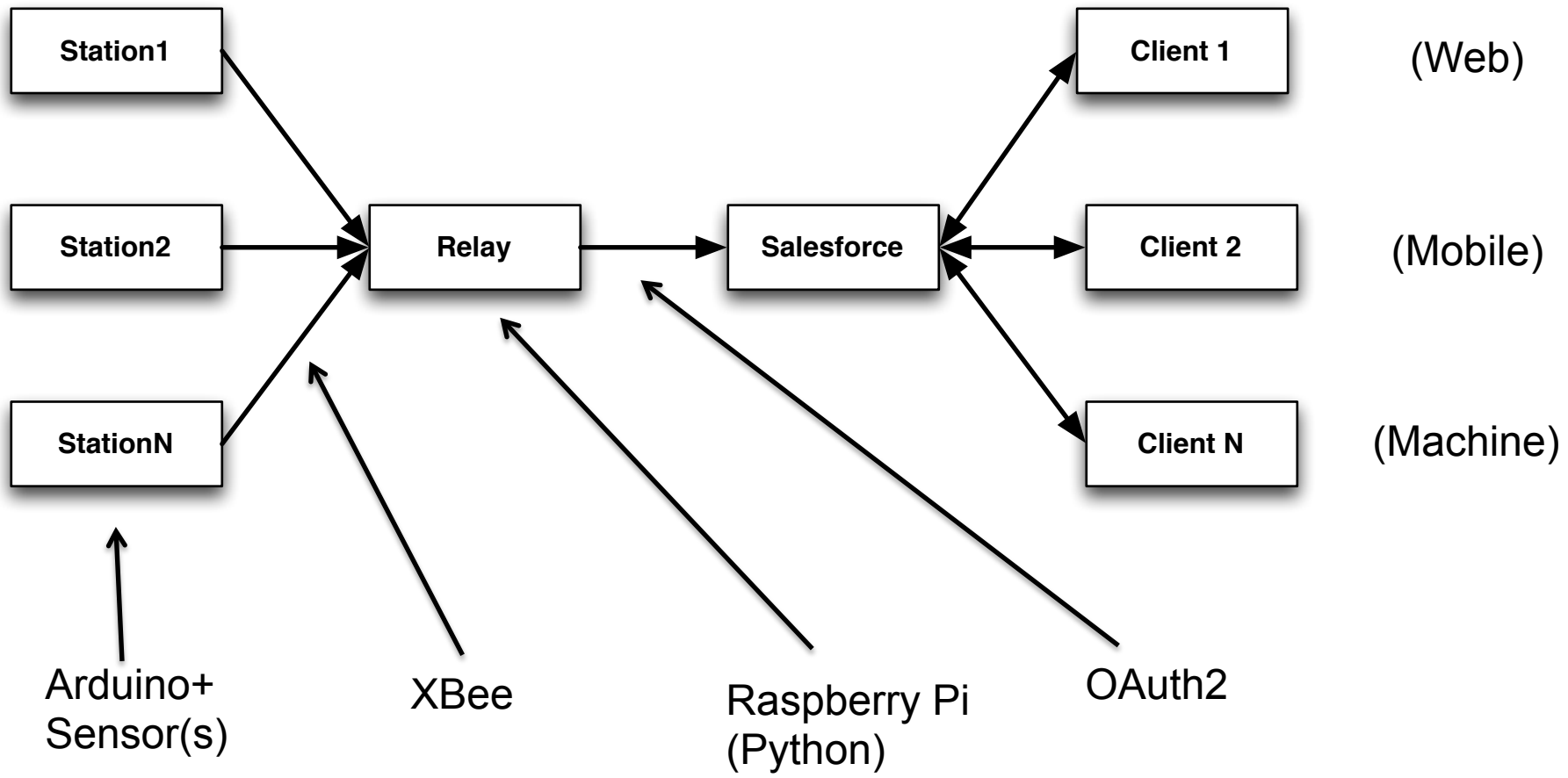
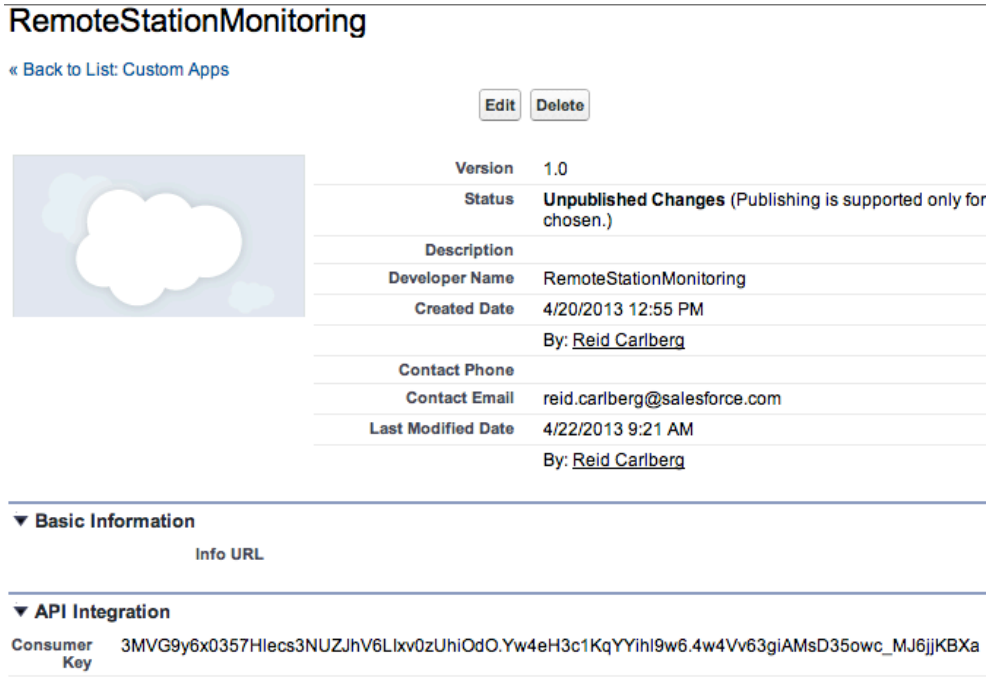
Round 2: Wireless Sensor Network



Salesforce & OAuth2

- Point & Click Configuration
- Autonomous Client / Username & Password flow



http://wiki.developerforce.com/page/Digging_Deeper_into_OAuth_2.0_on_Force.com

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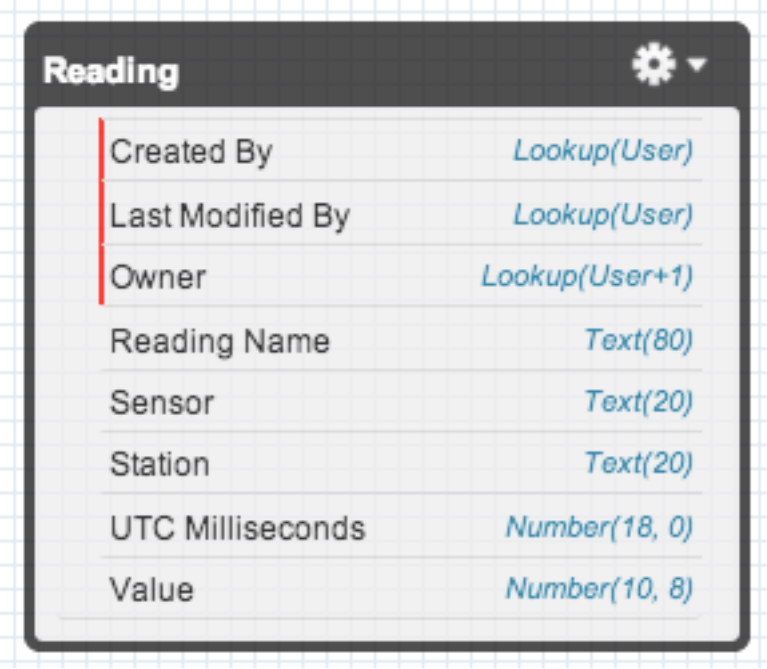
Salesforce & Your Data

- Point & Click Configuration
- Used a minimalist object
- Robust possibilities
- Highly performant



Salesforce & Your API

- Automatic REST & SOAP APIs
- Governor Limits
- Custom endpoints

```
@RestResource(urlMapping='/StationReading/*')
global with sharing class ReadingResource{

    @HttpPost
        global static String doPost(String Station, String Sensor, String Value) {

            LABR_Reading__c newReading = new LABR_Reading__c();
            //station
            newReading.Station__c = station;
            //sensor
            newReading.Sensor__c = sensor;
            //value
            newReading.Value__c = Double.valueOf(value);
            //timestamp in milliseconds (useful for graphing)
            newReading.UTC_Milliseconds__c = DateTime.now().getTime();

            insert newReading;

            return 'processed';
        }

}
```

http://www.salesforce.com/us/developer/docs/apexcode/index.htm

Salesforce & Storage

- Optimized for customer & business data
- Store what's customer & business relevant
- Heroku has great options for massive data

Salesforce Notes

- Use a free Developer Edition – they're FREE & easy
  - http://developer.force.com/signup
- OAuth Client IDs take a few minutes to propagate
  - If you see an unknown client id error, grab a coffee
- If you want a Mobile Client, check out our Mobile Packs
  - http://www2.developerforce.com/mobile/services/mobile-packs
- If you see server error (500) responses, clear old data
  - Click the "System Overview" link in your Setup area.
- Your Security Token Is Your Friend
  - Setup > My Information > Security Token

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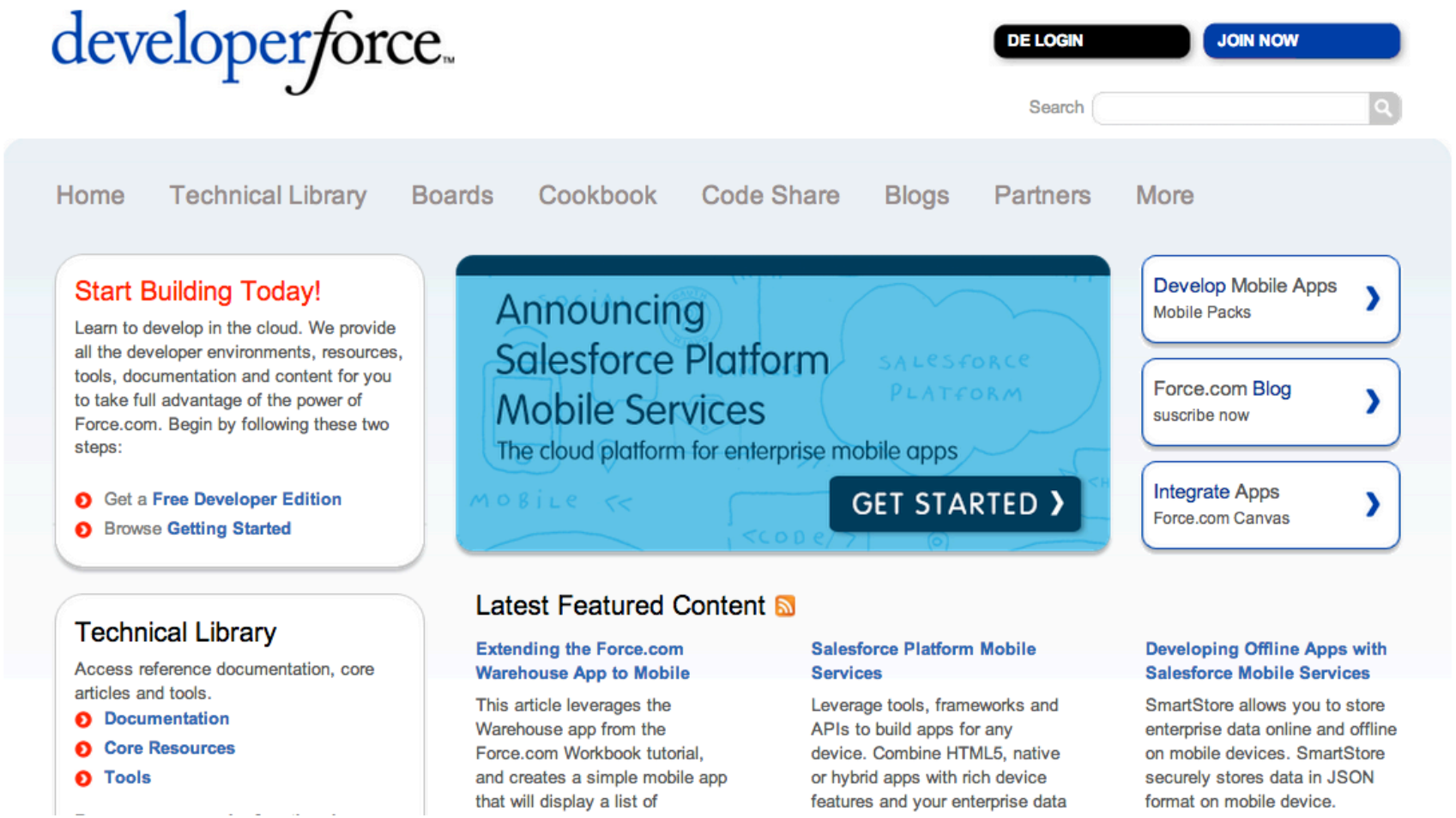
Demo!

Next Steps



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Questions?

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Thank You