



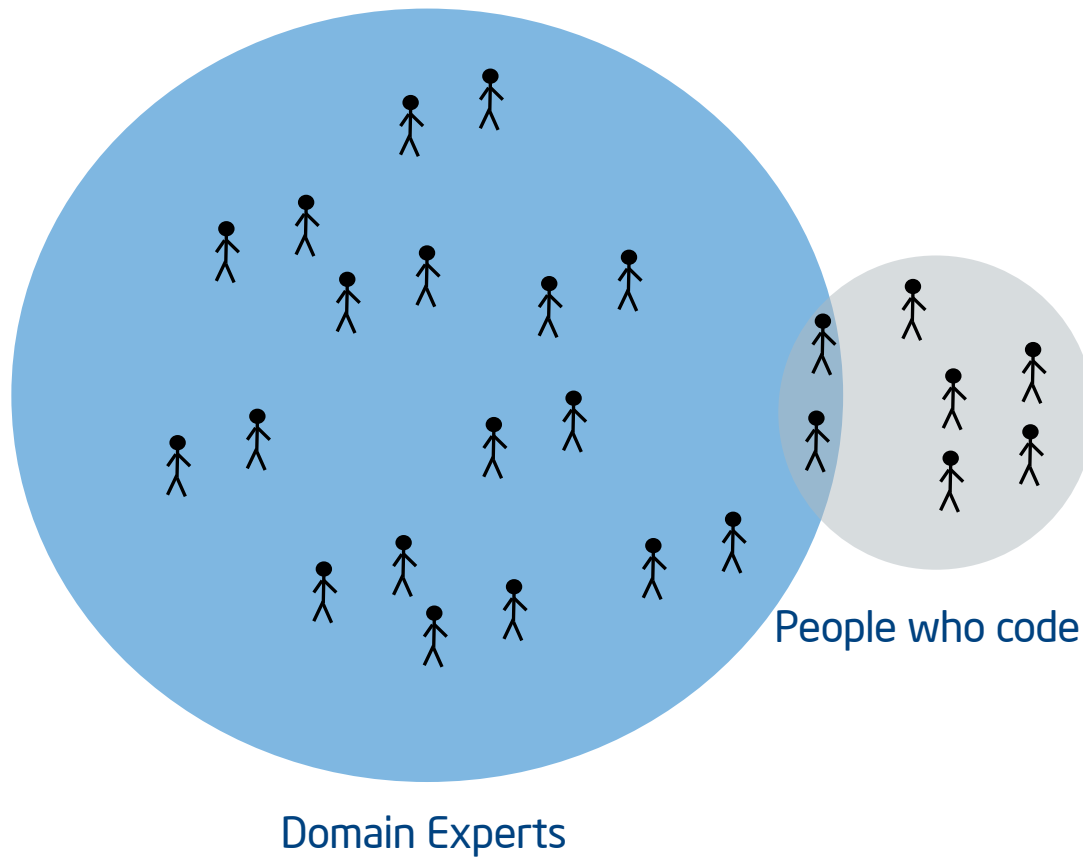
# Connecting Enterprise APIs to HTML5 Cross-Platform Application Development

**Travis Broughton**

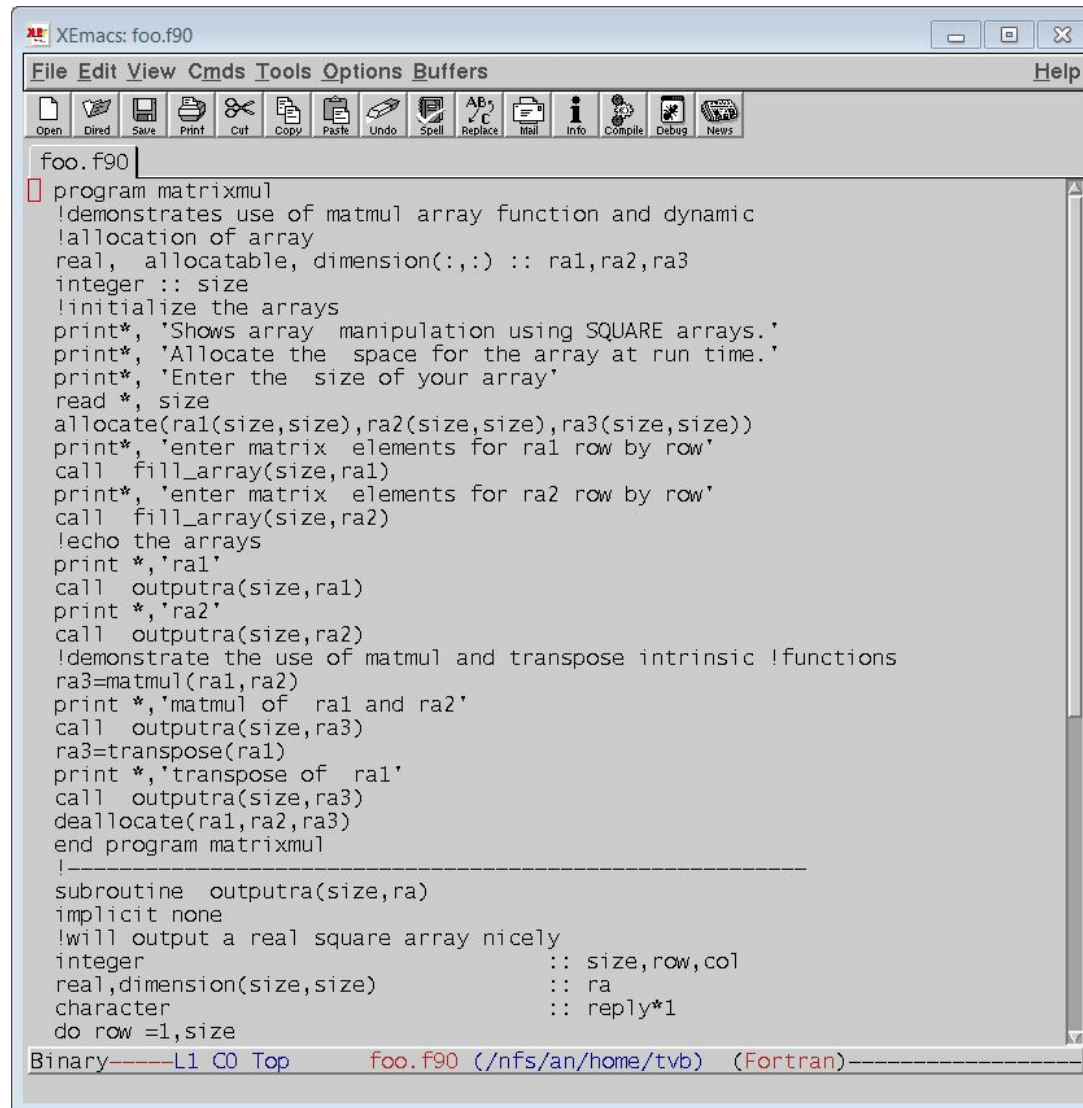
**Enterprise Architect**

**Intel Data Center Software Division**

# In the not too distant past...



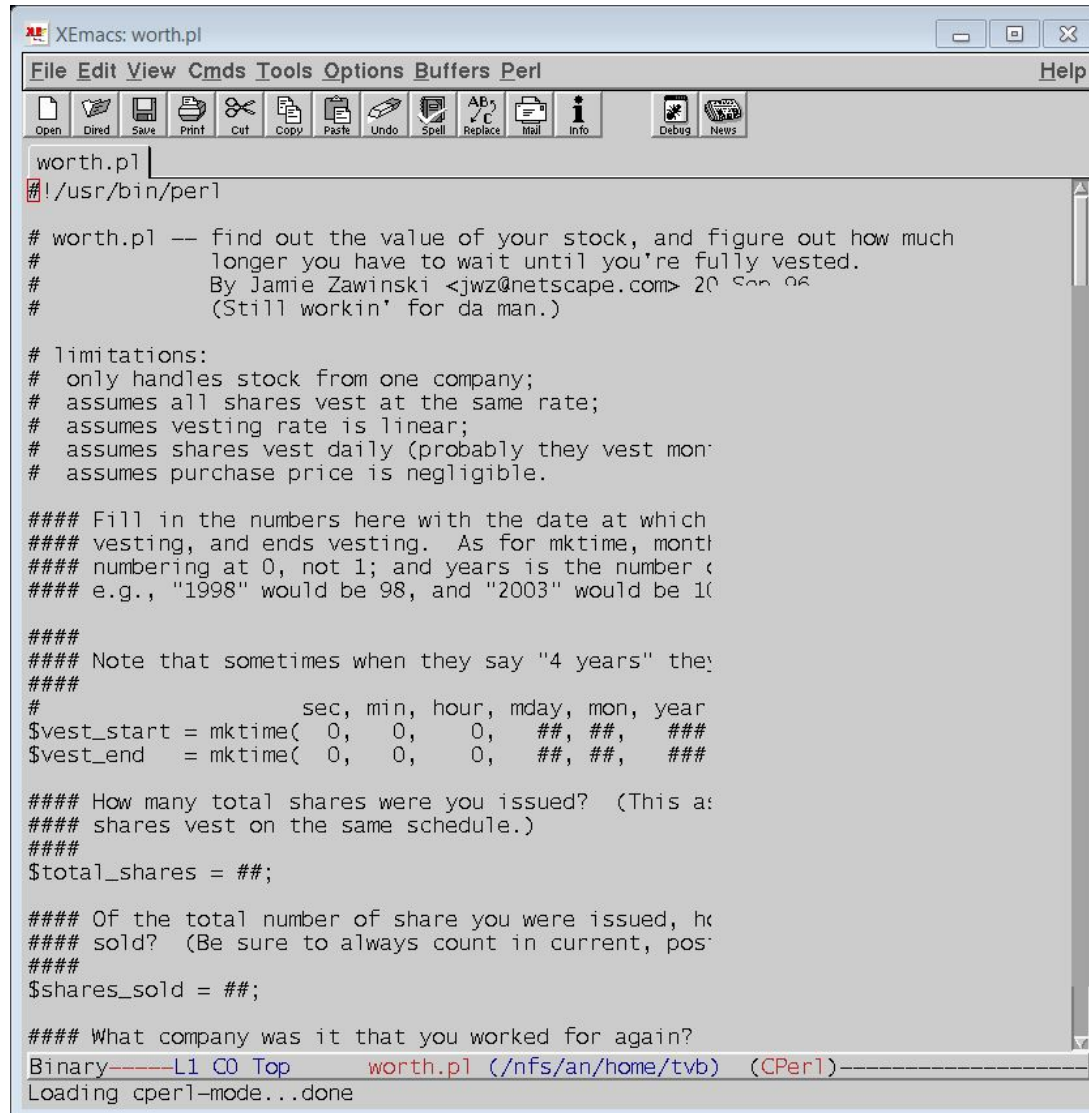
# Internal Tools Reflected Tribal Knowledge



```
foo.f90
program matrixmul
!demonstrates use of matmul array function and dynamic
!allocation of array
real, allocatable, dimension(:, :) :: ra1, ra2, ra3
integer :: size
!initialize the arrays
print*, 'Shows array manipulation using SQUARE arrays.'
print*, 'Allocate the space for the array at run time.'
print*, 'Enter the size of your array'
read *, size
allocate(ra1(size, size), ra2(size, size), ra3(size, size))
print*, 'enter matrix elements for ra1 row by row'
call fill_array(size, ra1)
print*, 'enter matrix elements for ra2 row by row'
call fill_array(size, ra2)
!echo the arrays
print *, 'ra1'
call outputra(size, ra1)
print *, 'ra2'
call outputra(size, ra2)
!demonstrate the use of matmul and transpose intrinsic !functions
ra3=matmul(ra1, ra2)
print *, 'matmul of ra1 and ra2'
call outputra(size, ra3)
ra3=transpose(ra1)
print *, 'transpose of ra1'
call outputra(size, ra3)
deallocate(ra1, ra2, ra3)
end program matrixmul
!-----
subroutine outputra(size, ra)
implicit none
!will output a real square array nicely
integer :: size, row, col
real, dimension(size, size) :: ra
character :: reply*1
do row =1, size
```

Source: [fortrantutorial.com](http://fortrantutorial.com)

# Shared Knowledge Spread Across Tribes



```
XEmacs: worth.pl
File Edit View Cmds Tools Options Buffers Perl Help
Open Dired Save Print Cut Copy Paste Undo Spell Replace Mail Info Debug News

worth.pl |
#!/usr/bin/perl

# worth.pl -- find out the value of your stock, and figure out how much
#             longer you have to wait until you're fully vested.
#             By Jamie Zawinski <jwz@netscape.com> 20 Sep 96
#             (Still workin' for da man.)

# limitations:
# only handles stock from one company;
# assumes all shares vest at the same rate;
# assumes vesting rate is linear;
# assumes shares vest daily (probably they vest monthly);
# assumes purchase price is negligible.

#### Fill in the numbers here with the date at which
#### vesting, and ends vesting.  As for mktime, month
#### numbering at 0, not 1; and years is the number of years
#### e.g., "1998" would be 98, and "2003" would be 100.

####
#### Note that sometimes when they say "4 years" they
#### mean 4 years and 4 months.

#             sec, min, hour, mday, mon, year
$vest_start = mktime( 0, 0, 0,  ##, ##,  ##
$vest_end   = mktime( 0, 0, 0,  ##, ##,  ##

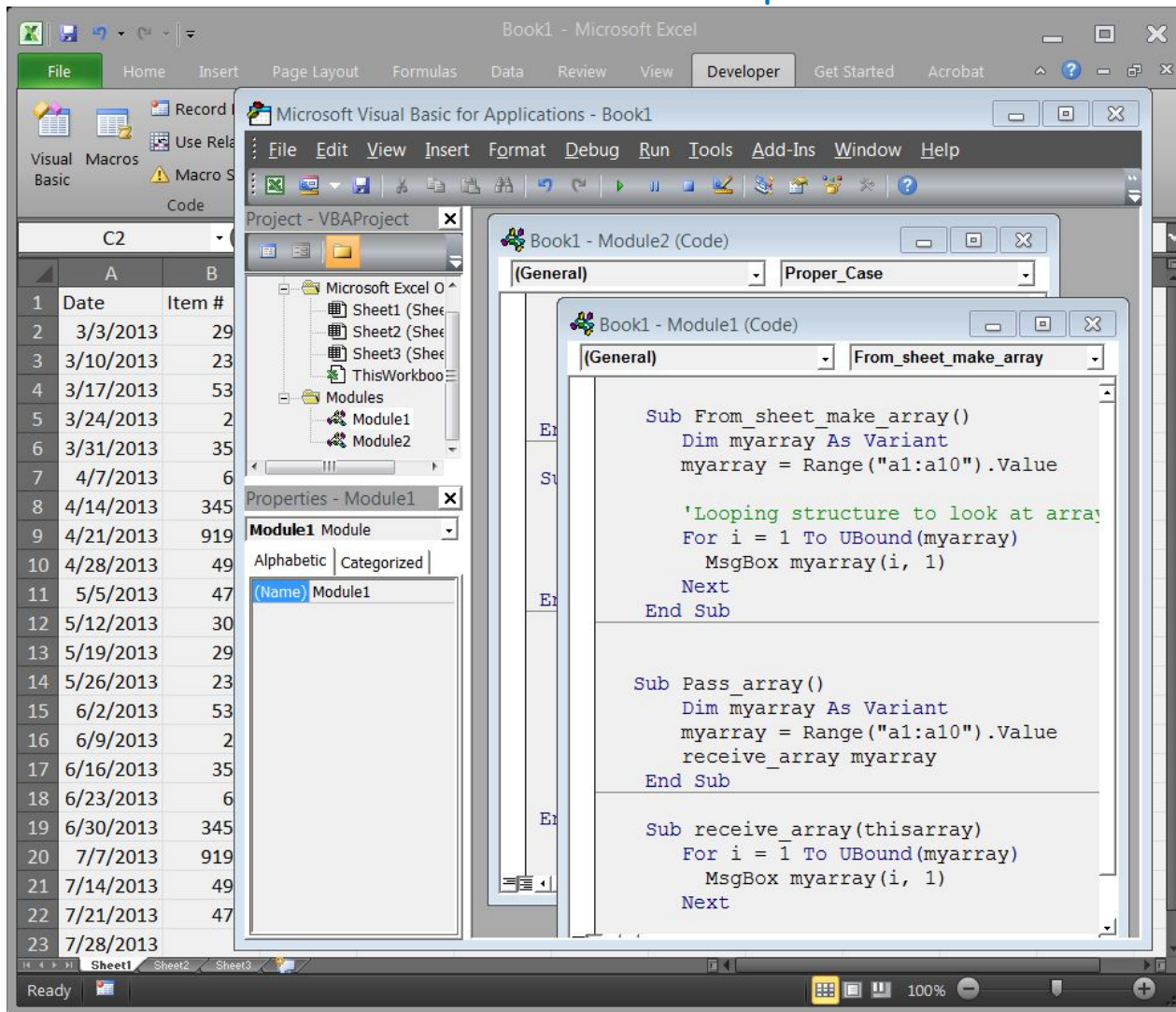
#### How many total shares were you issued?  (This assumes
#### shares vest on the same schedule.)
####
$total_shares = ##;

#### Of the total number of share you were issued, how many
#### sold?  (Be sure to always count in current, position.)
####
$shares_sold = ##;

#### What company was it that you worked for again?
Binary-----L1 C0 Top      worth.pl (/nfs/an/home/tvb) (CPerl)-----
Loading cperl-mode...done
```

Source: <http://www.jwz.org/hacks/worth.pl>

# Anyone Could Be a Developer...



*...with the right tools and training*

# Today, Programming Starts Earlier

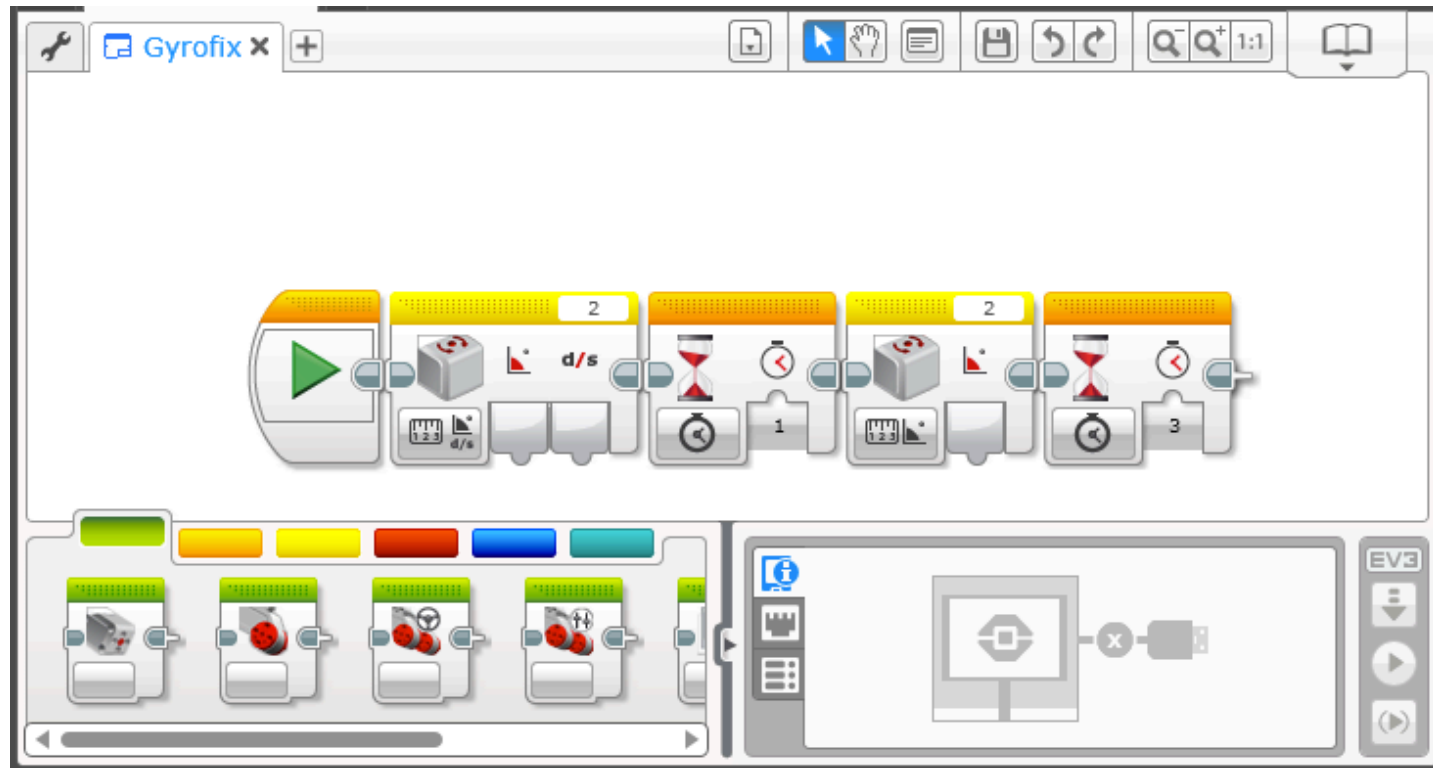
The screenshot displays the Hopscotch programming environment. On the left, a 'Menu' sidebar is visible with two categories: '- Movement' (orange) and '- Drawing' (purple). The '- Movement' category includes blocks for 'move', 'rotate', 'change x by', 'change y by', 'set rotation', 'set position', and 'set speed'. The '- Drawing' category includes blocks for 'leave a trail', 'end', 'set line color', 'set line width', and 'set line color'.

The main workspace shows a project titled 'Paranoid and Awesome' with a toolbar containing icons for a green alien, a monkey, a pink brain, a green dinosaur, and a plus sign. A dropdown menu at the top of the workspace indicates 'When Play button is tapped'. The workspace contains a sequence of blocks:

- leave a trail
- set line width to 2
- repeat times 79
- set line color to (purple)
- rotate degrees 30
- move distance 100
- set line color to (grey)
- rotate degrees 30
- move distance 100
- set line color to (yellow)
- rotate degrees 30

On the right side of the workspace, there is a 'Play' button with a right-pointing triangle icon.

# Tools Are More Intuitive





# WYSIWYG App Design

The screenshot displays the Intel XDK (0115) interface for a project named "MyHybrid". The interface is divided into several panels:

- Code Editor:** Shows JavaScript code for a hybrid app. The code includes comments for Intel and Cordova, and defines a function to handle touch events. The code is as follows:

```
1 /*  
2 Intel  
3 @api private  
4 */  
5 if(!window.af||"function"!==typeof af)(var af=  
6 function(a,b){return a.insertBefore(a,b);}  
7 function(a,b){return a.insertBefore(a,b);}  
8 function(a,b){return a.insertBefore(a,b);}  
9 function(a,b){return a.insertBefore(a,b);}  
10 function(a,b){return a.insertBefore(a,b);}  
11 function(a,b){return a.insertBefore(a,b);}  
12 function(a,b){return a.insertBefore(a,b);}
```
- File Explorer:** Shows the project structure, including files like `app_framework.min.js`, `appframework.ui.min.js`, `css`, `plugins`, `icon.png`, `images`, `index.html`, `js`, `README.md`, `screenshot.png`, and `sounds`.
- JSLint Errors:** Lists errors found in the code, such as "Expected exactly one space between 'if' and '{', 'window' was used before it was defined.", "Missing space between 'af' and '{', and "Missing space between '||' and 'function'".
- DEVICES:** A dropdown menu showing the selected device, "Apple iPhone 5".
- INFORMATION:** Displays app details:
  - Platform: Intel XDK + Cordova 2.9
  - Device: Apple iPhone 5
  - OS: iOS
  - Manufacturer: Apple
  - Screen: 640x1136
  - Viewport: 640x1136
  - Density: 326 PPI
  - CSS Pixel Ratio: 2
  - CSS Pixels: 320x568
  - User Agent: Mozilla/5.0 (iPhone; CPU iPhone OS 7\_0 like Mac OS X) AppleWebKit/537.51.1 (KHTML, like Gecko) Version/7.0 Mobile/11A465 Safari/9537.53
  - Note: [Specs](#)
- LIVE UPDATE SERVICE:** A section for managing the live update service.

The main window displays a simulated iPhone screen with the app running. The app's UI includes the Intel logo, the text "Beep Vibrate", and buttons for "Play Sound" and "Play Dead".



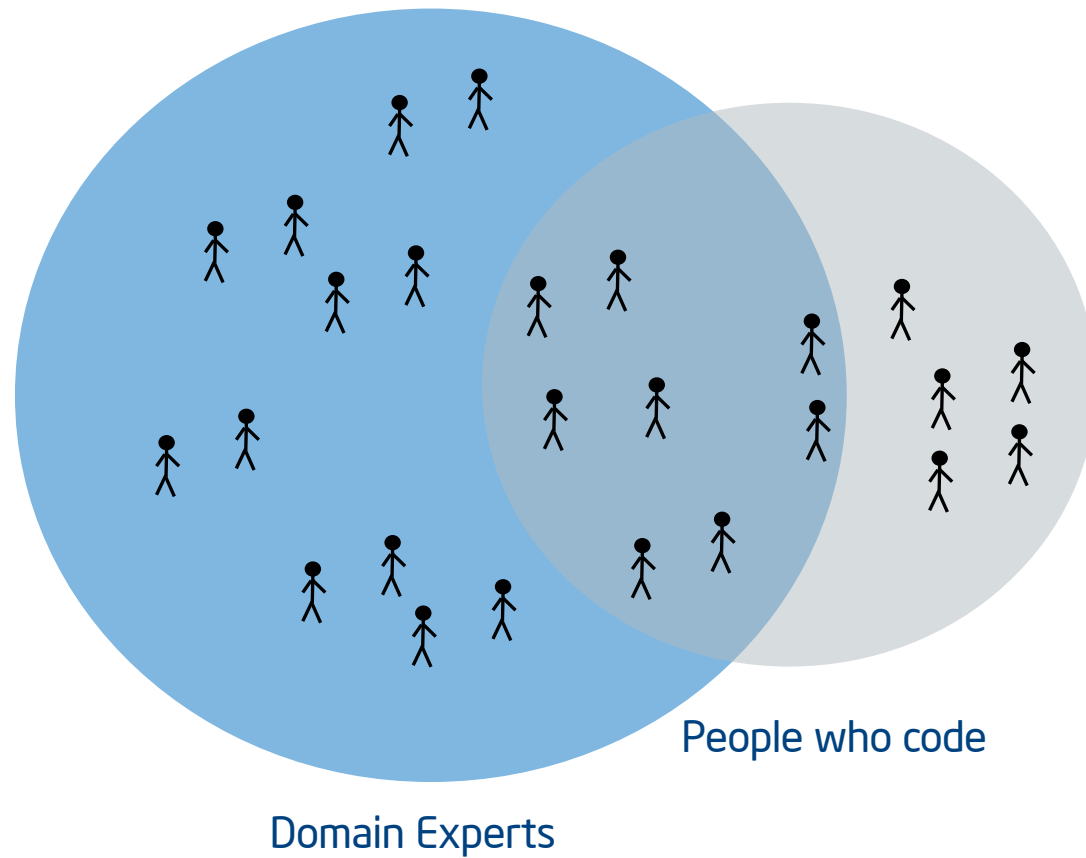
# Programming For the Masses

Technology electives in Middle School, High School, and University

Codecademy

Khan Academy

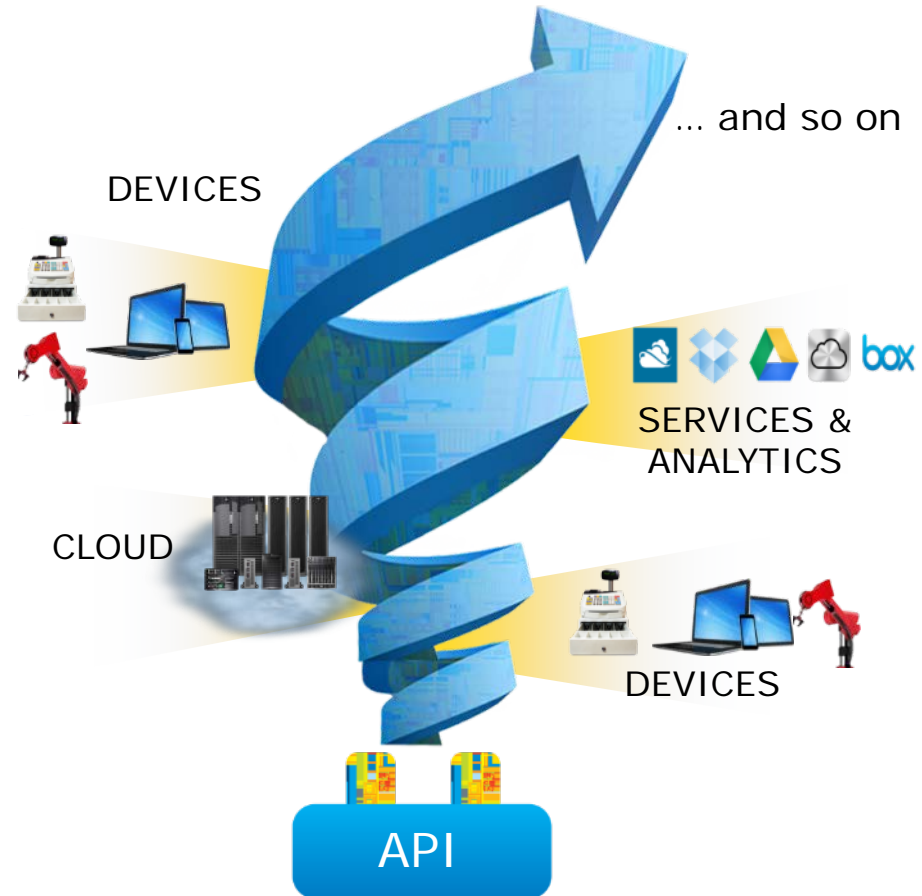
# In the not too distant future...



# Apps & APIs Turn the Enterprise Into A Platform

## Creates a virtuous spiral for innovation & optimization

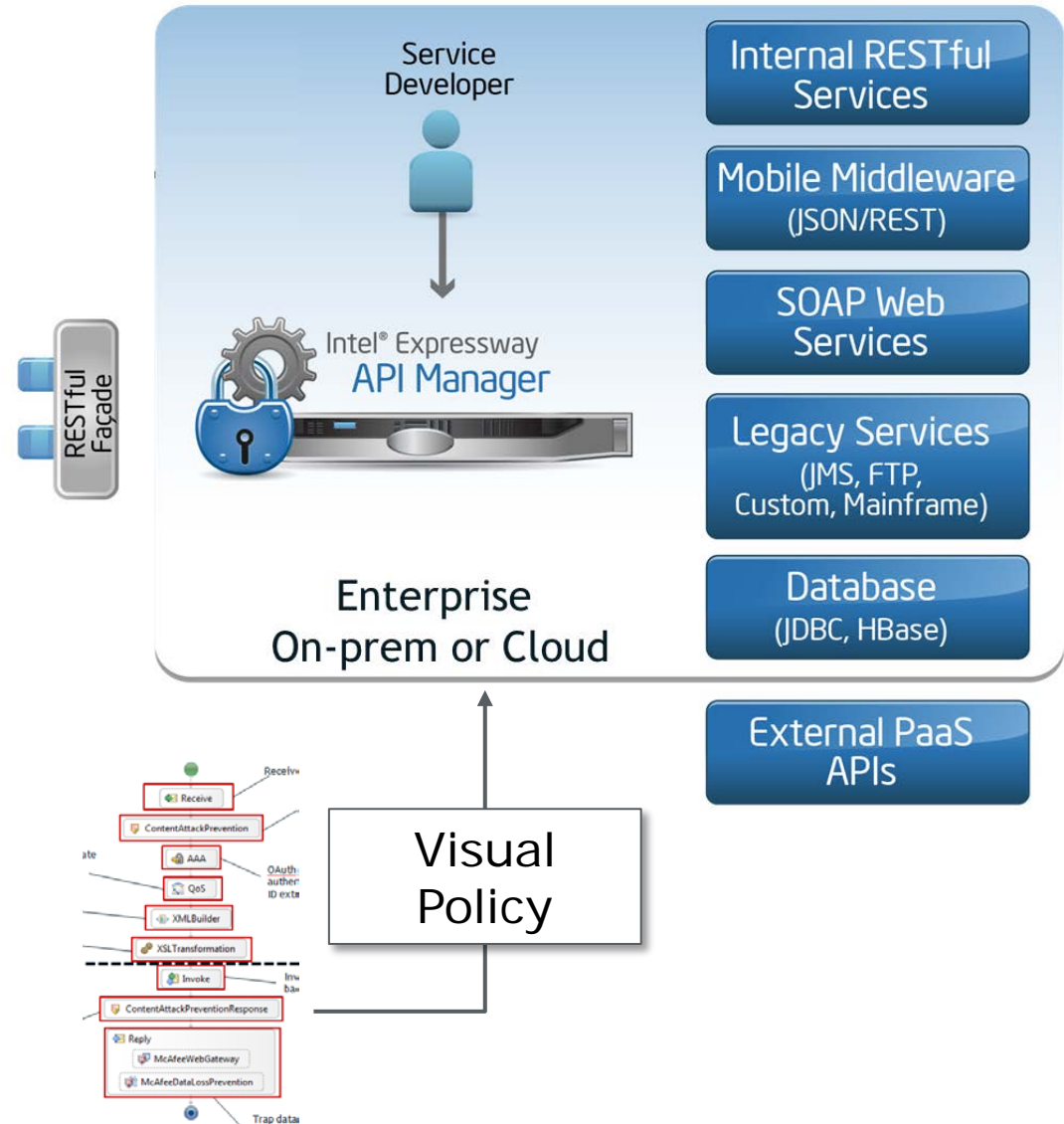
- APIs extend the reach of apps as they become part of distributed data network
- More people & devices use APIs, generating more data
- Analytics & feedback loops optimize
- API to Mobile connection are new client/server
- Developers & APIs are the new currency



**Intel is uniquely positioned with hardware, analytics, API portfolios to deliver open approach**

# Surface Virtually Any Data Service as an API

- ✓ Surface APIs from any enterprise system – from application servers to mainframes
- ✓ Supports Hybrid APIs – Expose one API from local or cloud application servers
- ✓ “Zero coding” visual policy – Reduces Enterprise cost drivers
- ✓ Expose legacy data formats for mobile or consumer devices, including mainframe data, unstructured and semi-structured data




# Portals Make APIs Accessible

## Room Availability

API Version  
1.0

Subscribe



API Provider

Facilities  
facadmin

conference\_rooms

facilities

meetings

Contact

Facilities Admin  
facadmin

Facilities APIs including room status, physical plant status & controls, etc.

### Description

Find real-time availability of conference rooms based on in-room sensor readings

### Interactive Documentation

API Key:

**/roomavailability**

Show/Hide | List Operations | Expand Operations | Raw

GET

/roomavailability

Get room availability status

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# Documentation Makes APIs More Accessible

## /roomavailability

Show/Hide | List Operations | Expand Operations | Raw

GET

/roomavailability

Get room availability status

### Implementation Notes

Returns room list with availability status based on location parameters

### Response Class

Model | Model Schema

#### RoomAvailabilityInfo {

Facility (undefined, optional),  
Header (undefined, optional),  
Rooms (List[Room], optional): List of room status

}

#### Room {

BuildingName (string, optional): Name of the building,  
Confidence (int, optional): Confidence rate (0-100),  
FloorNumber (int, optional): Floor of the building,  
IsAvail (boolean, optional): Room availability,  
RoomMapImage (string, optional): Room location on the map (url of the image),  
RoomName (string, optional): Internal room id,  
RoomType (string, optional): Room type

}



# Test The API from Within the Portal

## Response Content Type

application/json ▼

## Parameters

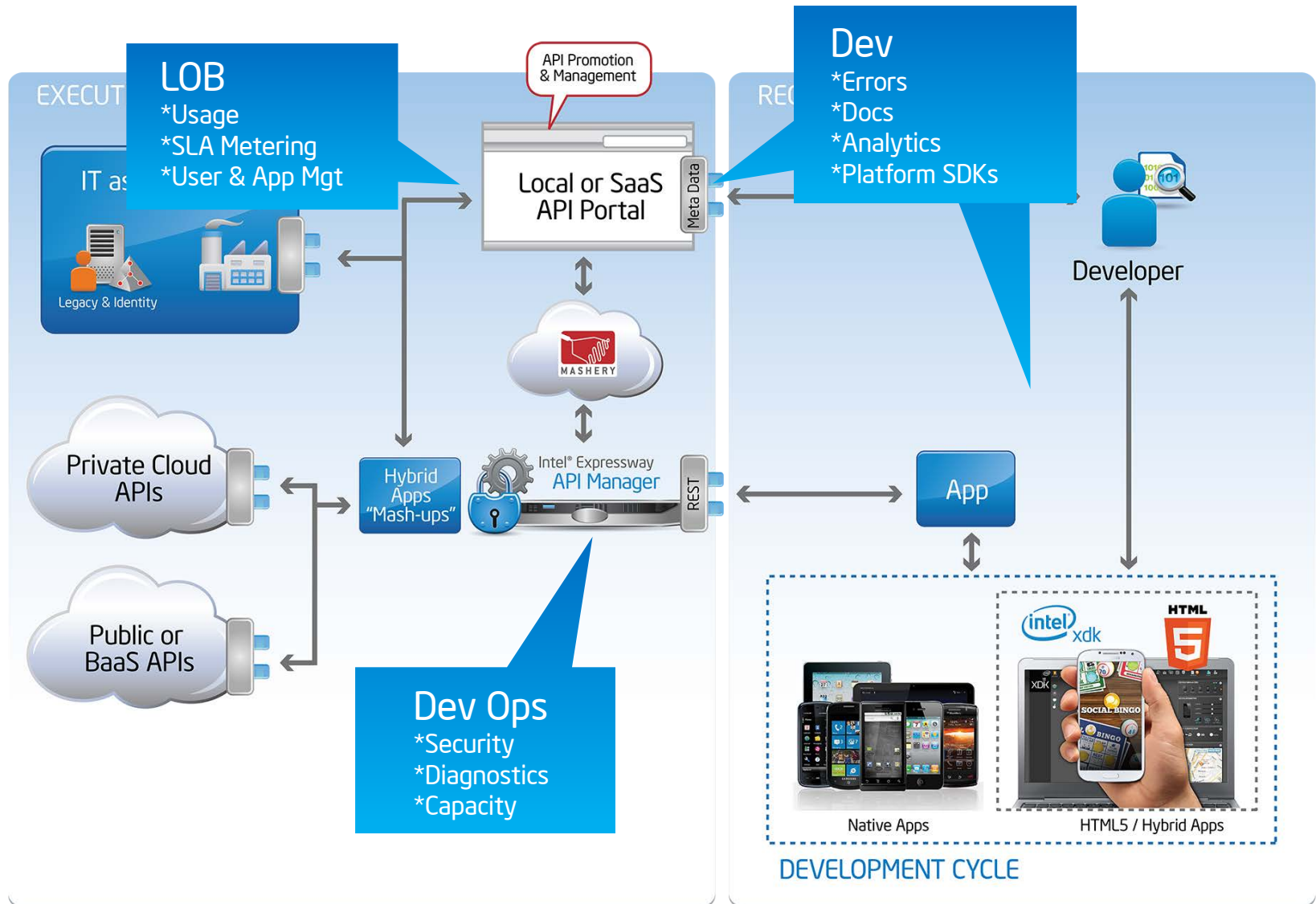
Parameter	Value	Description	Parameter Type	Data Type
site	<input type="text" value="(required)"/>	Site where the buildings are located. Mandatory field.	query	string
building_name	<input type="text" value="(required)"/>	Building where the rooms are located	query	string
floor_number	<input type="text"/>	Floor where room is located	query	int
room_type	<input type="text" value=""/>	Type of room available is requested for (e.g. Phone Booth, Collaboration, Public Conference Room, Training Room)	query	string
limit	<input type="text"/>	Cap the number of results to speed up the request	query	int

## Error Status Codes

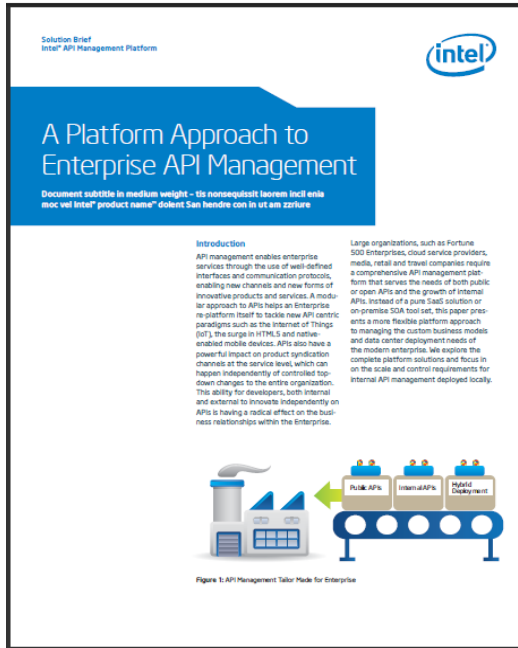
HTTP Status Code	Reason
403	Raised if the supplied API key is not recognized

Try it out!

# API Management Tooling & Flow



# API Resource Center: cloudsecurity.intel.com



Solution Brief: Internal APIs



Use Case Video



On-demand Webinar:  
GNAX Health  
Transitioning SOA  
Platforms  
to API Mgt



